PROMOTING HOLISTIC LEARNING IN GRADES 1-3 STUDENTS THROUGH STEAM APPROACH: A PARTICIPATORY ACTION RESEARCH

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A Dissertation

Submitted to
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AN ABSTRACT

of the dissertation of *Phurba Tamang* for the degree of *Master of Philosophy in STEAM Education,* presented on *26 January 2026,* entitled *Promoting Holistic Learning in Grades 1-3 Students through STEAM Approach: A Participatory Action Research.*

APPROVED BY

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In 2019, Curriculum Development Center introduced an integrated curriculum for Grades 1-3, aiming to equip students with twenty-first- century skills. Despite this initiative, the curriculum has largely continued to be implemented in a compartmentalized manner, limiting learning to textbooks rather than fostering real-world, multidisciplinary, or interdisciplinary skills. The goals of integrated curriculum can only be achieved if teachers and educators shift from a disciplinary mindset to multidisciplinary and/or interdisciplinary approach. This participatory action research study explored strategies to promote holistic learning through STEAM approach according to the Grades 1-3 integrated curriculum in Nepal.

During this research, the research team conducted two cycles of collaborative learning activities, following the core components of planning, action, observation, and reflection. We identified the challenges the teachers faced in fostering integrated learning and explored various aspects of the integrated curriculum, including thematic teaching, soft skills, holistic learning, models of integration, arts integration, the STEAM approach and design thinking. Through critical self-reflection, the teachers developed thematic integrated plans aimed to foster more holistic learning first in cycle and then in second

cycle. The co-researchers gained insights both before and during each reflection stage of the cycles, actively participating in decision-making and co-constructing the knowledge.

The research concluded that integrated learning is like hitting multiple targets with one stone. Teacher must aim to address the subject-specific learning outcomes, soft skills, multiple domains and various other indicators for holistic learning, thereby achieving multiple goals simultaneously. The research team recognized the strengths of the arts and highlighted the benefits of arts integration within the STEAM Approach. When combined with design thinking, arts integration creates an environment where students can identify relevant and practical problems, explore potential solutions and reconsider their approaches all while enjoying the process and promoting holistic learning.

Over the course of one year, the teachers were not only equipped with the knowledge and skills necessary to teach according to the integrated curriculum, but they also engaged in critical self-reflection, experienced phases of transformative learning, and gained confidence to continuously learn, share, and support their colleagues. Grades 1-3 teachers were empowered to challenge prevailing hegemonic structures, in which so-called junior teachers are typically assigned to teach younger students, and female teachers depend on male colleagues for their professional development. This study provides a road map for education reform by advocating for teacher professional development in arts-integrated STEAM pedagogy, informing policy shifts toward a holistic curriculum and establishing a multi-dimensional framework for future research on sustainable twenty-first century skills development.

……. 26 January 2026

Phurba Tamang

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शोध सार

स्टिम शिक्षामा दर्शनशास्त्रको स्नातकोत्तर डिग्रीको लागि फुर्बा तामाङको शोध प्रबन्धको शीर्षक "स्टिम दृष्टिकोणमार्फत कक्षा १–३ का विद्यार्थीहरूमा सर्वांगीण सिकाई प्रवर्द्धन: एक सहभागितामूलक कार्य अनुसन्धान" १२ माघ २०८२ मा प्रस्तुत गरिएको थियो |

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उप प्रा. बिनोद प्रसाद पन्त, पीएचडी

शोध निर्देशक

सन् २०१९ मा पाठ्यक्रम विकास केन्द्रले कक्षा १-३ का लागि एकीकृत पाठ्यक्रम लागू गर्यो, जसको उदेश्य विद्यार्थीहरुलाई एक्काईसौं शताब्दीका सीपहरुले सुसज्जित बनाउनु थियो| तथापि, विषयगत रूपमा छुट्टाछुट्टै पाठ्यक्रमको अभ्यास अझै कायम रहँदा सिकाई पाठ्यपुस्तकमै सीमित भएको छ, जसले वास्तविक जीवनसँग सम्बन्धित बहुविषयक वा अन्तरविषयक सीपहरुको विकासमा अवरोध पुर्याएको छ| शिक्षक तथा शिक्षाविदहरुमा विषयगत सोचबाट बहुबिषयक र/वा अन्तरविषयक दृष्टिकोणतर्फ रूपान्तरण नभएसम्म एकीकृत पाठ्यक्रमका लक्ष्यहरू हासिल गर्न सकिँदैन| यस सहभागिता मूलक क्रियात्मक अनुसन्धानले नेपालका कक्षा १-३ का एकीकृत पाठ्यक्रमअनुसार STEAM दृष्टिकोणमार्फत सर्वांगीण सिकाई प्रवर्द्धन गर्ने रणनीतिहरूको अन्वेषण गर्यो|

यस अनुसन्धानको क्रममा, अनुसन्धान टोलीले योजना, कार्यान्वयन, अवलोकन र प्रतिबिम्बनका मूलभूत चरणहरू अनुसरण गर्दै सहकार्यात्माक सिकाई गतिविधिका दुई चक्र संचालन गर्यो| शिक्षकहरूले एकीकृत सिकाई प्रवर्द्धन गर्दा भोग्नु परेका चुनौतीहरू पहिचान गरियो र एकीकृत पाठ्यक्रमका विभिन्न पक्षहरू जस्तै थिमेटिक शिक्षण, व्यवहार कुशल सीप, सर्वांगीण सिकाई, एकीकरणका ढाँचाहरू, STEAM दृष्टिकोण अन्तर्गत कला एकीकरण र डिजाइन चिन्तन जस्ता पक्षहरूको अन्वेषण गरियो| समालोचनात्मक आत्म-प्रतिबिम्बनमार्फत शिक्षकहरूले पहिलो चक्रमा र त्यसपछि दोस्रो चक्रमा अझ सर्वांगीण सिकाई प्रवर्द्धन गर्ने उदेश्यसहित विषयवस्तु-आधारित एकीकृत योजना विकास गरे| सह-अनुसन्धानकर्ताहरले प्रत्येक चक्रको प्रतिबिम्बन चरण अघि र त्यस अवधिमा दुवै समयमा यी अन्तर्दृष्टिहरू हासिल गरे| उनीहरूले निर्णय प्रक्रियामा सक्रिय सहभागिता जनाउँदै ज्ञानको सह-निर्माण गरे|

अनुसन्धानले एकीकृत सिकाई भनेको एउटै तीरले धेरै शिकारहरु गर्नु जस्तै हो भनेर निष्कर्ष निकाल्यो| शिक्षकहरूले विषयगत सिकाई उपलब्धि, व्यवहार कुशल सीपहरू, विभिन्न सिकाई क्षेत्रहरू र सर्वांगीण

सिकाइका विविध सूचकहरूलाई एकसाथ सम्बोधन गर्ने लक्ष्य राख्नुपर्छ, जसले एकै पटक धेरै उदेश्यहरू पुरा गर्न सहयोग पुर्याउँछ| अनुसन्धान टोलीले कलालाई महत्वपूर्ण शक्तिको रूपमा पहिचान गर्दै STEAM दृष्टिकोणभित्र कला एकीकरणका फाइदाहरूलाई उजागर गर्यो| कला एकीकरणलाई डिजाईन चिन्तनसँग संयोजन गर्दा विद्यार्थीहरुलाई सान्दर्भिक तथा व्यवहारिक समस्याहरू पहिचान गर्न, समाधानहरूको अन्वेषण गर्न र पुनर्विचार गर्न सक्षम बनाउँछ साथै रमाइलो वातावरण सिर्जना गर्दै सर्वांगीण सिकाइलाई प्रवर्द्धन गर्दछ|

एक वर्षको अनुसन्धान अवधिभर, शिक्षकहरू केवल एकीकृत पाठ्यक्रमअनुसार शिक्षण गर्न आवश्यक ज्ञान र सीपले सुसज्जित मात्र भएनन्, उनीहरूले समालोचनात्मक आत्म प्रतिबिम्बन, रुपान्तरणकारी सिकाइका चरणहरू अनुभव गरे र निरन्तर सिक्ने, साझेदारी गर्न तथा सहकर्मीहरूलाई सहयोग गर्ने आत्मविश्वास पनि हासिल गरे| कक्षा १-३ का शिक्षकहरूलाई परम्परागत पदानुक्रमलाई चुनौती दिन सशक्त बनाइयो, जसले साना कक्षामा तथाकथित 'जुनियर' शिक्षकहरूले मात्र पढाउने र महिला शिक्षकहरूले आफ्नो पेशागत विकासका लागि पुरुष शिक्षकहरूमा निर्भर रहनुपर्ने प्रभुत्ववादी धारणालाई तोड्न मद्दत गर्यो| यो अध्ययनले कला-एकीकृत STEAM शिक्षण शास्त्रमा शिक्षकहरूको पेशागत विकासको वकालत गर्दै, समग्र पाठ्यक्रमतर्फ नीतिगत परिवर्तनलाई सूचित गर्दै र दिगो एक्काईसौं शताब्दीका सीप विकासका लागि बहुआयामिक रूपरेखा स्थापना गर्दै शैक्षिक सुधारका लागि मार्गचित्र प्रदान गर्दछ|

..... १२ माघ २०८२

फुर्बा तामाङ

उपाधि उम्मेदवार

This dissertation, entitled *Promoting Holistic Learning in Grades 1-3 through STEAM Approach: A Participatory Action Research,* was presented by *Phurba Tamang* on *26 January 2026.*

APPROVED BY

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I understand that my dissertation will become a part of the permanent collection of the library of Kathmandu University. My signature below authorizes the release of my dissertation to any reader upon request for scholarly purposes.

……. 26 January 2026
Phurba Tamang
Degree Candidate

DECLARATION

I hereby declare that this dissertation is my original work, and it has not been submitted for candidature for any other degree at any other university.

……. 26 January 2026

Phurba Tamang

Degree Candidate

DEDICATION

I dedicate this dissertation first and foremost to my Creator, God, for granting me the strength, wisdom, and perseverance to complete this work. I also dedicate it to my parents, whose guidance and sacrifices paved the way for my educational journey. This work is further dedicated to my wife, whose foresight regarding the value of higher education made all my learning possible and whose unwavering support has been indispensable. I dedicate this dissertation to my two beloved sons, who bring joy and inspiration to my life. I also express my gratitude to Dr. Jeffery Sanders and Caroline Sanders, whose constant support and encouragement have made a significant difference throughout this journey. Finally, I dedicate this work to all my respected teachers, who have mentored and shaped me throughout my academic path, as well as to educators, students, and friends, whose encouragement and example continue to inspire a lifelong pursuit of knowledge.

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ABBREVIATIONS

AD	Anno Domini
CDC	Curriculum Development Center
CEHRD	Centre for Education and Human Resource Development
DEEWR	Department of Education, Employment, and Workplace Relations
EQUIP	Education Quality Improvement Program
ETC	Education Training Center
HoT	Higher Order Thinking
ICT	Information and Communication Technology
KISC	Kathmandu International Study Center
KU	Kathmandu University
KUSOED	Kathmandu University School of Education
LoT	Lower Order Thinking
MoEST	Ministry of Education Science and Technology
MoT	Medium Order Thinking
MPhil	Master in philosophy
NCED	National Center for Educational Development
NCF	National Curriculum Framework
PAR	Participatory Action Research
PD	Professional Development
SDG	Sustainable Development Goals
SESP	School Education Sector Plan
STEAM	Science, Technology, Engineering, Arts and Mathematics
STEM	Science, Technology, Engineering and Mathematics
TPD	Teacher Professional Development
UAE	United Arab Emirates
UN	United Nations
US	United States
VIP	Very important Person

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CHAPTER I
INTRODUCTION

Background

I am a learner, teacher and researcher
Singer, dancer, actor and practitioner
Over the years, I made many mistakes
Learning from them, I shaped the paths one takes

I didn't know that I didn't know
Now I know that I don't know
As a PAR researcher, every day I strive to grow
I wonder what's next in the show.

The co-researchers and I, together in the boat
In the ocean of research, we struggled to swim and float
Identifying problems, planning, implementation and reflection
Each step we took brought clearer insight and direction

Finally, the research team reached the shore
With insights of integrated learning evidently more
There we realized we were transformed than before
Still our hearts demand more, always ready to explore

Through this journey of transformation
In pursuit of integrated learning solution
We engaged in negotiation, collaboration and reflection
Resulting in solutions developed through co-creation

I as Multiple Identity

Like everyone else, my learning started with the simple wonder of childhood and has continued to grow with me through the years. My path is shaped by a journey through three important identities: student, teacher, and teacher educator.

My Experience as a Student

I was born and raised in the eastern part of Nepal, where I completed my secondary-level school in my village. My parents believed that my learning began when I started attending pre-school, an institutional school about an hour's walk from my home. However, I now realize that my learning had begun much earlier, long before I entered the classroom. At school, I was introduced to numbers and letters, but I already had friendship with these concepts through observation, conversation, and play *bhadakuti* (Parajuli, 2025*)* at home and within my community. *Bhadakuti is* a traditional roleplaying game played by Nepali Children. When I look back, I recall only a few experiences where learning was enjoyable and connected to real life. The song I learnt in pre-school "*Aaitabaar bihaanai ghaam sita uthe ma, haat mukh dhoyera padhna base ma (*Early in the morning I woke up with sun and sat to read after washing my hands and face*)*" still makes me feel nostalgic. Through this song, we learnt the days of the week and daily routines. I also remember participating in a school cultural program in Grade Two, where I acted as the bodyguard of a landlord in a drama depicting the exploitation of people living in poverty. Although we were very young, the drama helped raise critical awareness about antisocial practices in society. Similarly, in Grade Four, I participated in a drawing and coloring competition on the theme "Environment." Although I did not win a prize, the experience encouraged me to reflect on my local environment, recognize pollution, and imagine a cleaner, healthier future. Another meaningful experience was when our English teacher brought storybooks from the library and read them aloud. These moments transported us into different worlds through imagination, especially when we felt bored with passive lectures. Through these stories, we learned about diverse people, cultures, and places while sitting in one corner of the classroom.

On the other hand, I had deeply painful experience of caste-based discrimination during this period. I recall an incident at a friend's house. It was a half-day Friday, and I had stopped there to play on my way home from school. After some time, I felt thirsty

and picked up a jug of water to drink. As I held the jug, my friend's mother shouted at me and treated it as impure simply because I belonged to the so-called "untouchable" Tamang community. This incident left a lasting negative impression on my young mind. I often wish there had been transformative education, both inside and outside school, to address such social injustices at that time.

Later, I attended another nearby community school for my secondary education where teaching and learning were largely dominated by traditional lecture methods, as was common in many schools then. Among the few meaningful experiences, I remember a lesson in Grade Seven based on the poem "Parichaya" (Identity) by the Yugkavi (poet of the era) Siddicharan Shrestha. Our Nepali teacher recited the poem melodiously, followed by a discussion that made the lesson deeply engaging and impactful. It gave me goosebumps and instilled a strong sense of pride in being Nepali. Even after many years, I can still recite the line: "Nepali hun kathin girima chadhna laai sipaalu" (I am Nepali, skilled at climbing mountains). The poem touched me emotionally and encouraged critical reflection.

In contrast, I also had another painful experience during this time. I had a stammering problem and struggled to speak fluently from childhood. Although I was an obedient and hardworking student, and often knew the correct answers, I found it difficult to express myself orally. When teachers asked me questions, my words would get stuck, as if something were holding them back. I felt deeply embarrassed and was sometimes scolded. On one occasion, I even stayed away from school for a few days due to shame. Looking back, I realize that I have expressed my understanding through writing, drawing, or creative tasks. I would have been more motivated if I had been given opportunities such as writing answers, composing poems or songs, or expressing ideas through any other form of art. My difficulty was limited to speaking, not to thinking or creating. However, my stammering was neither recognized nor addressed through supportive pedagogical approaches. Instead, I was labeled and stereotyped. I now understand that this was related to communication skills, which could have been nurtured through inclusive classroom practices. The school system, however, focused primarily on completing the syllabus and preparing for examinations, rather than developing life skills.

At the same time, my learning outside school was rich and meaningful. During the vacations, or when my parents traveled to the Terai during the monsoon season for rice planting, I took responsibility for herding goats at home. Each day, I guided the herd to suitable grazing areas, ensured access to water, protected them from predators, and cared for any that were sick or injured. I also made sure none wandered off or damaged others' crops. This role required constant decision-making, where to graze, how long to stay, what plants to avoid, and how to ensure the safety and well-being of the herd. At times, when I was distracted by activities like bird hunting or fishing, the goats would enter nearby fields and damage crops. In such situations, I had to confront landowners, apologize, compensate for the loss, and bring the goats back safely. Through these experiences, I was already practicing mathematical concepts such as counting, measurement, and estimation, as well as forms of communication, both with people and, in a way, with the goats. I was also developing leadership, responsibility, decision-making, problem-solving, and management skills.

However, I never had opportunities to connect or share these experiential learnings within the school context. Reflecting on my schooling, I realize that meaningful, engaging, and life-connected learning experiences were limited in the classroom. In contrast, such learning was abundant at home, in the community, with friends, and even in the forest while herding goats. I often wonder how transformative my education could have been if schools had integrated such contextual, experiential, and life-skill-based learning into their teaching practices.

My Experience as a Teacher and Teacher Educator

I started my teaching career twenty-two years ago at one of the public schools in my village. I had no idea of teaching and learning. I taught in the same way I had been taught in my school. I taught mathematics in lecture method, compelling my students to engage in rote learning. Even though I worked hard, lecturing more slowly, louder and repeating concepts while trying my best to help them understand, I often received complaints from school management and parents about students' poor performance. I was about to quit my teaching profession, thinking it was not my cup of tea. In the meantime, I heard about the importance of child-centered teaching and learning, but I struggled to understand and implement it in the classroom for many years. Gradually, through

participation in professional development activities, I learned and began to apply the child-centered approach in my teaching. Moreover, I experienced collaborative learning with colleagues who mentored and guided me by sharing their experiences and ideas. I came to understand that teachers' efforts are effective only if students are mentally prepared to learn what teachers aim for them to achieve.

About 17 years ago, when I was teaching Grade Eight at a school in Kathmandu, we were just getting ready to start the lesson. One student stood up and requested, "*Sir, we've seen you singing during the annual functions. Could you please sing a song for us to refresh us? We're tired after listening and working in the previous periods. Please, please, please!*"

The whole class joined in the request. Considering their request, and to help them prepare mentally for math lessons, I sang a Nepali love song and then started the lesson. From that day on, I sang Nepali, Hindi, and English popular songs of that time in several lessons, assuming it would help students to focus on the lesson. However, I later found during tests and terminal examinations that the songs didn't help students learn effectively. They remembered only the songs, not the mathematics I taught. In this way, I sang love songs, told jokes or stories, or recited poems at the beginning or in the middle of the lesson, assuming that it would prepare them for my math lessons. However, it had no real impact on making learning more effective. Even now, when I occasionally meet former students, some say they remember me singing songs but not the mathematics I taught.

During that time, I also encouraged students to think beyond the mathematics textbook. For this, I assigned them, in turn, to bring one math trick or interesting math fact each day. They brought these things daily by exploring reference materials and consulting family members and shared them with the class at the beginning of each lesson. The students and I learned from one another in new ways. We discontinued this activity as students had to prepare for their final term examinations and then went on a long break. During that break, I gathered all the materials shared by the students, typed them, and published them as a book of one thousand copies, which I distributed to many students in a few schools in Kathmandu and in my district, Dhankuta. That book was not my creation; I was simply compiling the students' work. I now realize that, many years

ago, I was unknowingly promoting collaborative learning as a facilitator by engaging students in exploring ideas and information together and learning from one another, rather than prescribing information myself. Although this added a new dimension to students' understanding of mathematics, it had little impact on their learning achievement, as these activities did not align with the lesson objectives. In this way, I was learning by making mistakes, struggling, and growing.

After 13 years of teaching experience, I joined Kathmandu International Study Center (KISC) as a math teacher trainer in the Education Quality Improvement Program (EQUIP) department in Lalitpur district. EQUIP works with school principals, teachers, students, and parents of different schools of different parts of Nepal. I have been delivering mathematics and general training to teachers for a long time. The situation of many teachers was not different from mine. During the training sessions and classroom observations, some proactive teachers tried to demonstrate their best practices by making class lively through singing songs, reciting poems, and cracking jokes, just as I had done in the past. Around that time, I conducted research for my master's degree in mathematics education at Kathmandu University on mathematics teachers' perceptions of their professional development. The study concluded that teachers gradually change their perceptions and implement new learning in their workplace only when they have continuous opportunities to participate actively in professional development activities within social settings. I realized that learning is a social process where people co-construct meaningful knowledge within communities of practice

Encountering with Integrated Curriculum

In 2019 AD, Curriculum Development Center (CDC) introduced the integrated curriculum for Grades 1-3. My department EQUIP assigned me to work with Grades 1-3 teachers, design and implement training sessions, and provide ongoing support both in person and at a distance. To explore integrated learning, I participated in several webinars, workshops, and reviewed integrated learning resources during the time of COVID-19. Drawing on limited insights, I designed and delivered training on the integrated curriculum to Grades 1-3 teachers at KISC's Nepali partner schools, both inside and outside the Kathmandu Valley. While delivering the training and working with these teachers, I noticed that they struggled with their pedagogical practices. To be

honest, I was also struggling with the pedagogical practices required for integrated learning, as I had not learnt about it from any authentic institution or experts. Therefore, I could easily relate to the teachers who were struggling to implement the new integrated curriculum. I particularly realized this when I met Grades 1-3 teachers at the school in Lalitpur, near my workplace, during several formal and informal meetings. I also met some of the teachers during a training on integrated learning organized by another organization, where we shared many confusions and concerns. Additionally, I visited the school a couple of times to work with a group of Grades 1-3 teachers to learn about integrated lesson planning. During those meetings, we were only able to discuss general information about the integrated curriculum and learning. Both the teachers and I were aware that we needed to become more familiar with integrated learning, and we recognized that we had common goals. The school principal was also concerned about the implementation of the new integrated curriculum and shared these concerns with us during our meetings.

In the meantime, I joined an MPhil in STEAM Education, aiming to learn more about integrated learning. I realized that STEAM pedagogy is one of the most effective approaches for promoting holistic learning, as it provides teachers with useful and relevant pedagogical practices that fulfill the objectives of the integrated curriculum while valuing collaborative learning. It was interesting for me to learn that STEAM education is a transformative approach that aims to prepare socially responsible citizens who take care of themselves, their families, communities, the nation, the planet, and their surroundings, addressing the fourth goal of sustainable development through quality education. I wanted to explore more about the pedagogical practices of basic level Grades 1-3 teachers by collaborating with them in planning, implementing, and reflecting on their day-to-day teaching. During my first semester, I interviewed two teachers from the same school as participants for qualitative research as part of my MPhil study, where I explored their perceptions of the integrated curriculum in Nepal. The assignment reported that they perceived the integrated curriculum as the connection or interlinking of two or more subjects along with soft skills, which reflected a general understanding. It was clear that we needed to learn more about the integrated curriculum and explore appropriate ways to implement it.

Teachers and curriculum are interdependent in the teaching-learning process. Teachers need the curriculum to teach, and the curriculum needs teachers to implement it. Working with the curriculum is an integral part of all teachers' daily lives as noted by Walker and Soltis (2004). A teacher cannot imagine teaching students without curriculum; in fact, teachers connect with students through it. We can say that teachers and students are part of the curriculum. It guides the teachers and educators on what to teach, how to teach, and when to teach. The curriculum has been developed and implemented since the beginning of formal education in Nepal and has undergone many modifications and revisions. The disciplinary model of the curriculum focused on rote learning and did not aim to address twenty first (21st) -century skills. As noted by Manandhar et al. (2022), it didn't effectively help learners develop problem-solving skills for their daily lives, despite the efforts of stakeholders, teachers and students. In this context, Curriculum Development Center (CDC) (2007), through National Curriculum Framework (NCF), introduced an integrated approach, particularly for early Grades 1-3 to achieve the all-round development of children. While this NCF provided a conceptual basis, the Curriculum Development Center (CDC) (2019) implemented this idea by developing an integrated curriculum for Grades 1-3 for children aged 6 to 9 years. NCF was inspired by the Sustainable Development Goals (SDGs) 2030, as highlighted by Rieckmann (2017), particularly Goal 4, which recognizes education as a catalyst for national sustainable development through the transformation of people's lives, as stated by Ministry of Education, Science and Technology (MoEST) (2019). Therefore, the Curriculum Development Center (2019) introduced an integrated curriculum that teaches skills and disciplines through connected themes, as outlined in the School Education Sector Plan (SESP). Drake and Reid (2018) also stated that the intention behind implementing an integrated curriculum is to promote holistic learning that helps students solve real-life problems by connecting learning to real-world contexts, offering an effective approach to developing 21st-century capabilities. This new curriculum connects the school with homes, knowledge with skills and cultures, and cross-disciplinary concepts based on students' questions about themselves and the world, as stated by Beane (1995). In contrast, the disciplinary model of curriculum departmentalized knowledge, leading students to construct fragmented pieces of information rather than a holistic

understanding of concepts. Students learn better and achieve more through an integrated curriculum, which helps them develop a complete understanding of concepts. It increases their engagement, reduces absenteeism, and improves their attitude toward school, as noted by Drake and Reid (2018). The shift from a segregated to an integrated curriculum requires educators to adapt their pedagogical practices accordingly. The segregated curriculum demands separate teachers, routines, content structures, pedagogies, and assessment practices, as noted by Manandhar et al. (2022). In contrast, the integrated curriculum emphasizes innovative and progressive pedagogical practices along with authentic assessment strategies, as highlighted by Pant et al. (2020).

Teachers in Nepal, who have been teaching under a fragmented curriculum for decades, are accustomed to disciplinary practices and are not adequately equipped with the pedagogical skills required for an integrated curriculum. Grades 1-3 teachers in Nepal, including those I have worked with, need to shift their mindset from disciplinary to interdisciplinary approaches. Only then can they adopt the pedagogical practices required to foster holistic learning in line with the philosophy of the integrated curriculum. Therefore, the research agenda of this study emerged from the context I have navigated.

Problem Statement

Since the integrated model of curriculum is different from existing disciplinary model, it requires teachers to plan, teach, and assess differently than before. The integrated curriculum for Grades 1-3 in Nepal expects the teachers to integrate disciplinary learning achievements and soft skills through a thematic approach, which is different from past practices. As Kunwar and Acharya (2025) highlight, the Grades 1-3 curriculum in Nepal has the capacity to integrated knowledge, skills, and competencies in a meaningful way. However, they also emphasize that the successful implementation of the integrated curriculum requires addressing gaps such as insufficient teacher professional development, limited resources, and low community engagement.

According to Shrestha et al. (2022), school leaders, teachers, and students are unable to fully understand the purpose of integrated teaching and learning, which makes implementation difficult. Their study on STEAM Education for school teachers in Nepal revealed that many teachers across the country commonly view the integrated curriculum

as simply a new textbook with old ideas, with themes merely compiled into textbooks. The same applies to the majority of Grades 1-3 teachers in Nepal.

Teachers struggle to integrate multiple subjects along with soft skills due to a lack of knowledge and skills in integrated learning, as well as limited conceptual clarity regarding the integrated curriculum, its approaches, resources, lesson planning, and assessment processes. In fact, the integrated curriculum was intended to be introduced only after equipping teachers with the necessary knowledge, skills, and attitude for integrated learning. However, the curriculum was implemented first, and professional development was provided afterward and in a very limited form. As teachers and schools are required to implement it without clearly understanding what, why, and how, they experience frustration, confusion, and difficulty, as noted by Kunwar et al. (2024) who highlight that it is vital to prepare teacher comprehensively and effectively before launching the integrated curriculum.

The Government of Nepal provides Teacher Professional Development (TPD) through the Centre for Education and Human Resource Development (CEHRD) and Provincial Education Training Centers (ETCs); however, these interventions remain limited in impact, and many teachers continue to struggle with the practical implementation of integrated curriculum as reported by the Ministry of Education, Science and Technology (2025). Furthermore, private school teachers often lack access to such government-provided TPD programs. In contrast, most higher education institutions' teacher education programs address the integrated curriculum only partially. KU, however, has been offering STEAM education, an integrated and interdisciplinary approach to learning for teachers, teacher educators, and researchers since 2019 (Pant et al., 2020), along with a series of webinars, seminars, and workshops. Nevertheless, thousands of teachers in Nepal still lack the knowledge, skills, and attitudes necessary to facilitate integrated learning in the classroom.

In Nepal, where the integrated curriculum has been newly implemented, stakeholders often find it difficult to think beyond disciplinary boundaries, and teachers are not adequately equipped with integrated teaching approaches. Expecting teachers who have been guided by an informative and reformative image of the curriculum to implement an integrated curriculum that reflects a transformative image, as noted by

Qutoshi (2021), is like asking them to fit a square wooden block into a round hole. To be honest, I have spent years exploring integrated curriculum intensely; how, then, can we expect teachers to implement it effectively without sufficient support or with only a few hours, days or weeks of guidance? It seems that teachers were instructed to use the integrated curriculum and teach in a student-centered way to transform learners, but they were 'informed' of this change in a traditional, teacher-centered manner.

In this situation, it is not surprising that teachers face several challenges in their day-to-day classroom practices. While the successful implementation of an integrated curriculum requires teachers to possess the appropriate knowledge, skills, and attitudes, the top-down structural support provided by CEHRD and ETCs (Ministry of Education Science & Technology [MoEST], 2025) is limited to empowering them with the practical agency they need. To address this implementation gap and empower teachers at their local level, this study seeks active engagement and collaboration with teachers and explores pedagogical interventions that facilitate integrated learning through iterative cycles of reflection, planning and action.

Purpose of the Study

The purpose of this study was to explore how STEAM pedagogy enables basic-level grade 1–3 teachers to develop and implement integrated teaching strategies for holistic learning in accordance with the integrated curriculum in Nepal.

Research Questions

i) How does STEAM pedagogy enable Grades 1–3 teachers to develop and implement theme-based integrated teaching strategies for holistic learning?

ii) How does STEAM pedagogy enable Grades 1-3 teachers to develop and implement arts-integrated teaching strategies for holistic learning?

Significance of Study

The results of this study can benefit various areas of education and support school stakeholders. In this section, I have discussed the curricular, pedagogical, professional, tactical, and assessment significance of this study.

Curricular Significance

This research can be useful for policymakers and curriculum designers in modifying and revising education policies and curricula, as well as in planning for higher

grades. Additionally, it can support publishers in developing relevant teaching resources, such as textbooks, teaching guides, and assessment tools.

Pedagogical Significance

By revealing existing pedagogical practices, this research will enable the researcher, participants, teacher readers, and practitioners to reflect on and adapt their teaching methods in accordance with the integrated curriculum. It will assist teachers in planning and implementing strategies that foster holistic learning. The researcher and participants will understand the importance of STEAM pedagogy in addressing the needs of the integrated curriculum, while readers will gain insight into its practical application.

Professional Significance

This research will allow the researcher and participants to develop 21st -century skills, such as collaboration, communication, critical thinking, creative thinking, problem-solving, and decision-making, and to experience transformative learning through critical self-reflection as noted by Dhakal (2017), on their daily work, assumptions, beliefs, and experiences, while thinking forward. Educators from various government and non-governmental organizations, local training centers, and school leaders can incorporate the findings of this research into their training curricula to design effective and relevant programs that address existing challenges and issues. During the study, the researcher and participants will also develop problem-solving skills by identifying problems, planning, acting, and reflecting within their daily practice.

Assessment Significance

Although this study focuses on teaching strategies for integrated learning, it will show that integrated learning requires a shift from traditional paper and pencil tests. It will help teachers consider assessing holistic learning and development through multiple ways, rather than relying solely on verbal or in written assessments.

Delimitation of the Study

The purpose of my research was to explore how STEAM pedagogy enables basic-level Grades 1–3 teachers to develop and implement integrated teaching strategies for holistic learning in accordance with the integrated curriculum in Nepal. Therefore, my study was limited to the teachers teaching in Grades 1- 3 at one institutional school in

Lalitpur district. It is delimited to the integrated teaching strategies for integrated learning, thematic teaching approach and arts integration.

Chapter Summary

This chapter begins with a reflection on my learning journey as a student, from my pre-school to secondary level, followed by my experiences as a teacher, teacher educator, and MPhil STEAM Education student. I reflected on how I missed the opportunities of holistic learning due to the disciplinary curriculum and teachers' mindsets, both as a student, and later as a teacher and teacher educator. I discussed how I grew as an educator from a teacher to a facilitator making mistakes, repeating them, critically reflecting on myself, as I shifted from informing to reforming and ultimately developing to transforming. I have discussed how this growth mindset led me to conduct this research guided by its purpose, problem, significance and delimitation of the study.

CHAPTER II
LITERATURE REVIEW

Once I became aware of my research purpose and questions, I needed to explore the research topic and the theoretical lens that would guide my study in greater depth. Therefore, I visited libraries, bookstores, and websites to access both print and digital copies of books, articles, journals, dissertations, and papers. At first, it felt like diving into an ocean, but eventually, I managed to identify suitable and relevant literature. The exploration of literature continued throughout the research process as new needs emerged, according to the flow and direction of the research. In this chapter, I have conducted a conceptual review to establish a strong context for my research, along with a theoretical review discussing how the theories guided both me and the teachers from the beginning to the end of the research process.

Conceptual Review

First, it was essential for me to gain a deeper understanding of the research topic related to the integrated curriculum and to review the related literature in order to establish the context for my study. A conceptual review involves identifying and analyzing themes connected to the research focus. Since my research examines integrated teaching strategies used by Grades 1-3 teachers to foster holistic learning in Nepal, I began by exploring the topic from general perspective and gradually moved to a more specific one. Through this process, I identified several key themes relevant to my research: integrated curriculum, holistic learning, thematic teaching, STEAM Pedagogy, arts integration, and design thinking.

Integrated Curriculum

During the review of integrated curriculum and approaches, I had the opportunity to explore the history of the integrated curriculum and its process of evolution through the work of several educators. I also realized that the concept of an integrated curriculum didn’t emerge overnight. It was rejected, critically reviewed, and accepted over time. As Beane (1995) argues, an integrated curriculum is more than simply a realignment of lesson plans across various subject areas; rather, it focuses on the problems, issues, and

concerns posed by life in the search for self and social meaning. Morris (2003) explains that integrating a curriculum means combining subjects together so that learning objectives connect across the entire curriculum rather than focusing on a single subject. An integrated curriculum is not only about the integration of content; it also involves the integration of time, effort, and resources of educators during planning, implementation, assessment, and even reflection. It requires the commitment of multiple stakeholders to achieve a common educational goal. Subject-specific educators and teachers need to focus on how students make meaning of life through their contributions of time and effort in integrating disciplinary concepts with life skills. Initially, an integrated curriculum might appear to limit deeper learning as it doesn't focus on depth content. However, it actually promotes both deeper and broader learning by offering context, purpose and motivation.

Morris (2003) argues that when an integrated curriculum is implemented effectively, students develop an understanding of the broader picture, and their knowledge becomes purposefully connected to other learning areas as well as real-life experiences, thereby saving teachers' valuable time. The "broader picture" refers to holistic learning, as mentioned by Kelly (2001) who states that an integrated curriculum helps students to explore learning in a holistic way as providing opportunities to experience knowledge as a meaningful whole. The study by Dowden et al. (2024) also reports that a democratically designed integrated curriculum engages students in holistic learning experiences. This level of learning depends on the degree of integration, as it increases from a disciplinary to transdisciplinary approach.

Educators need a variety of approaches such as discipline-specific, multidisciplinary, interdisciplinary, and transdisciplinary when designing a curriculum (Jacobs, 1989). Both educators and students can select curriculum approaches based on the needs of their school context. Some content areas require a disciplinary approach, while others benefit from multi/inter/transdisciplinary approaches. However, integrated curriculum approaches are often more effective in facilitating meaningful learning connected to real life. Fogarty (1991) proposed ten models that educators can use to design an integrated curriculum: fragmented, connected, nested, sequenced, shared, webbed, threaded, integrated, immersed, and networked. According to Fogarty (1991),

these ten models can be grouped into three categories of curriculum integration: within single disciplines (fragmented, connected, and nested models), across several disciplines (sequenced, shared, webbed, threaded, and integrated models), and within and across learners (immersed and networked models). Drake and Burns (2004) later consolidated these models into three broad approaches to integration multidisciplinary, interdisciplinary, and transdisciplinary, where the degree of integration increases progressively.

A multidisciplinary approach is one in which disciplines are deliberately connected while still maintaining their distinct identities (Drake, 2012). According to Drake and Burns (2004), intradisciplinary approach, fusion, service learning, learning centers or parallel disciplines, and theme-based units are various approaches to multidisciplinary integration. Fusion represents the initial stage of curriculum integration, where knowledge, skills, and attitudes are combined within the school curriculum (Drake & Reid, 2018). Service-learning involves students in community projects conducted during class time, while learning centers or parallel disciplines address a topic or theme through the perspectives of several different subject areas. Similarly, theme-based units allow students to work more intensively by integrating multiple subject areas around a single theme and concluding with an integrated culminating activity (Drake & Burns, 2004). In a multidisciplinary approach, a theme is examined from the perspectives of several disciplines, thereby promoting clarity and deeper comprehension (Draghicescu et al., 2013). In Nepal, the integrated curriculum was developed by Curriculum Development Center (2019), building on the ideological foundation laid by Curriculum Development Center (2007). Previously, the primary education curriculum was organized into six separate subjects: Nepali, English, Mathematics, Social Studies & Creative Arts, Science, Health & Physical Education, and a local subject. These have now been consolidated into three learning domains in the integrated curriculum: Language, Mathematics, and Our surroundings (Kunwar et al., 2024). This reflects a multidisciplinary model in which Mathematics, English, and Nepali are taught through common themes facilitated by theme-based units. The interdisciplinary approach allows teachers to organize the curriculum around common learning objectives across subject areas, where interdisciplinary skills are taught while keeping the subject boundaries less

distinct (Drake & Burns, 2004). In Nepal, the integrated curriculum combines Social Studies, Science and Environment, Health and Physical Education, and Creative Arts into the theme "Our Surroundings" as an interdisciplinary approach, also facilitated through theme-based units (Curriculum Development Center [CDC], 2019). The transdisciplinary approach to curriculum integration allows teachers to organize learning around students' questions and concerns, helping them develop life skills while engaging with real-life contexts (Drake & Burns, 2004).

The integrated curriculum in Nepal for Grades 1-3 currently uses multidisciplinary and interdisciplinary models, with the goal of progressing toward transdisciplinary integration in the future. According to Lamsal (2021), these models were adopted after analyzing international practices, Nepalese experiences, teaching and learning practices, teacher provisions, and professional development. Therefore, this study focuses on the integrated curriculum for Grades 1–3 in Nepal, limited to multidisciplinary and interdisciplinary models.

Holistic Learning

As discussed above, the goal of integrated curriculum is to foster holistic learning. It aims to develop socially responsible citizens who take care of themselves, and the world as noted by Drake and Reid (2018). For this, the students should be considered as a whole person. Palmer (2017 as cited in Pant et al., 2020), argues that the educators need to see the students as whole and capable individuals. Students, like adults, possess innate human potential such as intuitive, emotional, physical, imaginative, and creative as well as rational, logical, and verbal abilities (Miller, 2009). According to Miller, each student has innate creativity, individual physical, emotional, intellectual, and spiritual attributes, and an endless ability to learn. As Johnson (2023) noted, just as each small part contains the whole within it, each student or child contains the whole human within. Shrestha (2018) asserted that there is a strong need for holistic education to develop the whole person and produce globalized citizens.

The traditional disciplinary model of curriculum focused primarily on subject matter, addressing only the lower order skills of cognitive domain while leaving the other areas unaddressed as Miller (2009) stated, the traditional model of education remains fixed and divided, which eventually results in alienation and human suffering.

Curriculum Development Center (2019) expects the curriculum to develop children's physical, mental, spiritual as social cultural aspects while giving proper importance to life skills by integrating diverse subjects in the curriculum. Lhomi (2020) argued that the education system in Nepal previously focused mainly on the cognitive domain, even though holistic development was expected. The education system aimed for holistic growth but addressed it only partially. This is like cleaning only a person's face and expecting the whole body to be clean; no matter how much is addressed partially, it remains incomplete. Johnson (2023) mentioned that the whole is much more than the sum of its parts. Although it may not be possible to address all dimensions of students fully, we can address them as much as possible as Miller (2009) expressed concern that the current practices often neglect educating the whole human being.

Johnson states the learning which recognizes interconnectedness of all human dimensions is holistic learning. Holistic learning is the opposite of rote memorization (Young, 2007). Johnson described six types of connection that attempt to facilitate holistic learning: linear thinking and intuition, relationship between mind and body, relationship among subjects, relationship between self and community, earth connections and self-connections. Miller (2009) also emphasized that learning is an active, multisensory engagement between learners and the world. In fostering holistic learning, learners are provided with experiences that allow them to take an "eagle's view" of information seeing it as interconnected pieces, like assembling the parts of a broken picture or object to identify missing gaps or information as noted by Young (2007). Young further explained that holistic learning assumes learners already possess a conceptual framework, and practice is used to fill in gaps. Young adds that holistic learning tightly interweaves concepts constructed together resulting in a complete understanding with multiple dimensions. Dutta (2022) noted that the holistic learning approach is a learner centered and comprehensive approach to education in which teachers aim to address students' emotional, social, ethical, and academic needs through an integrated learning, using multiple methods and strategies to create a holistic learning culture. Considering the views of Dutta (2022), Dowden et al. (2024), Johnson (2023), Kelly (2001), Miller (2009) and Young (2007), it is evident that the integrated curriculum

and holistic learning are interrelated, and that the integrated curriculum fosters integrated learning for holistic learning.

As mentioned above, the learning achievements of different disciplines, themes, and soft skills are to be interwoven to construct a complete understanding in accordance with the integrated curriculum in Nepal, to foster holistic learning.

Thematic Teaching Approach

As the integrated Curriculum in Grades 1-3 in Nepal explicitly has prescribed to teach in thematic teaching approach, this section discusses about that approach. Before examining thematic teaching approach, it is necessary to understand the concept of themes. As highlighted by Johannessen (2000), a theme serves as a broad or overarching topic that offers a flexible framework within which teachers can work in diverse ways. Ye and Xu (2023) also emphasized that themes identify shared aspects across interdisciplinary knowledge and combine these knowledge components into a unified whole through linking, coordination, and restructuring. As discussed earlier in the section on holistic learning, a theme provides the context for holistic learning, allowing multiple contents and skills to be addressed while considering the diverse dimensions of learners. Such an organization of a curriculum around a central theme is referred to as a thematic unit as noted by John (2015). Johannessen (2000) further explained that a thematic unit is a well-structured exploration of a concept that begin with students' existing knowledge and gradually leads them into new areas of understanding. The approach used to facilitate the thematic curriculum consists of a set of organized learning experiences such as programmes, courses, and the other school-sponsored activities that provide students with exposure to a broad, predominant content theme, as stated by Finch et al. (1997). Lhomi (2020) also stated that the thematic approach is a holistic teaching method in which the most relevant and appropriate methodologies can be incorporated. The functioning of the solar system can serve as a metaphor illustrating the thematic teaching approach; the sun represents the central theme, the planets and satellites symbolize the integrated contents, and the solar system itself represents the thematic unit.

According to Johannessen (2000), thematic teaching addresses several problems created by traditional approaches by enabling the integration of instruction within a meaningful context. It begins with what learners already know and guides them toward

unknown territory encouraging more critical thinking. As Beane (1997) noted, the goal of an integrated curriculum is to enable learners to explore themselves and then the world. Similarly, thematic teaching allows learners to first understand the familiar aspects of themselves before engaging with the unfamiliar aspects of the world. The integrated curriculum for Grades 1-3 advocates a thematic teaching approach for integrated learning. In Nepal, the curriculum includes 19 main themes that encompass learning achievements from the disciplines of Our Surroundings, Mathematics, English, and Nepali, along with 29 soft skills. The 11 themes are Me & my family, My daily life, Our community, My school, Our environment, My creativity, Hobbies and habits, Our culture, Community technology and market, Our activities and Our immediate world. The themes are organized progressively, moving from the learner's self to the wider world. The integrated curriculum in Nepal, with learning achievements drawn from different disciplines and soft skills, is structured using a thematic approach. According to Drake and Reid (2018), this approach features a common theme across different subject areas, while each subject remains distinct. The themes mentioned above integrate at least two subjects from Our Surroundings, Mathematics, English, and Nepali. Therefore, it is clear that the integrated curriculum, holistic learning and the thematic teaching approach are closely interconnected in the context of Nepal.

STEAM Pedagogy

After the integrated curriculum was introduced in Nepal in 2019, I struggled to find relevant pedagogical approaches to plan professional development activities for Grades 1–3 teachers. During my MPhil studies in STEAM education at Kathmandu University, I realized that STEAM pedagogy could help teachers implement the integrated curriculum more effectively. Before encountering the notion of STEAM, I understood STEM and STEAM to be the same. Many educators still share this understanding; however, the "A" for Arts is missing in STEM. STEAM is an acronym for science, which fosters inquiry; Technology, which develops skills; Engineering, which encourages design thinking; Arts, which nurtures creativity and imagination; and Mathematics, which develops computational, logical thinking, and problem-solving skills. Since Arts is more than subject content, its inclusion in STEM creates a significant difference. The arts can metaphorically weave together the non-art disciplines (Brown,

2007; Efland, 2002, as cited in Hunter-Doniger, 2018), helping both students and teachers to express, communicate, create, imagine, observe, perceive, and think while integrating science, technology, engineering, artistic, and mathematical skills (Taylor, 2019). Students learn more effectively when the arts are a central part of their curriculum (Hunter-Doniger, 2018) because STEAM pedagogy employs arts-based, inquiry-based, and project-based learning that addresses students' experiences, interests, learning styles, and multiple intelligences that support integrated learning. Therefore, STEAM education is not opposed to STEM education. In fact, it enhances STEM's objectives by helping prepare socially responsible citizens for sustainable development (Taylor, 2019).

STEAM education allows students to participate in transformative learning, promoting interconnected ways of knowing (Taylor, 2019). During transformative learning through STEAM pedagogy, learners engage in critical self-reflection on their beliefs, values, and assumptions while engaging in rational discourse (Christie et al., 2015) through STEAM activities. STEAM pedagogy allows learners to experience emancipation with autonomy and responsibility, grounded in the idea that individual freedom can never be separated from the freedom of others (Grundy, 1987). In this way, STEAM pedagogy prepares students as transformed, socially responsible citizens who care not only for themselves and their families but also for their community, nation, and planet.

STEAM Education supports integrated learning by enabling students to connect multiple disciplines to their real-life experiences and engage in ongoing innovation across various areas, as mentioned by Manandhar et al. (2022). Drake and Reid (2018) also have recommended STEAM programs to implement the integration of Science, Technology, Engineering, Arts and Mathematics. In addition, Nepal's National Framework for Sustainable Development Goal 4: Education 2030 includes STEM subjects, including Arts (Ministry of Education, Science and Technology, 2019). Ouafa (2025) highlighted that STEAM addresses students' physical, social, emotional and cognitive development, fostering creativity, critical thinking, and problem-solving abilities rather than relying on rote learning, thereby promoting holistic development. Koirala (2023) also noted that implementing a STEAM based integrated curriculum can open new opportunities for teaching and learning aligned with 21st -century learning skills identified by the United

Nations (UN) offering integrated, holistic learning to students from diverse cultural backgrounds. Moreover, the thematic teaching approach is one of the integration models promoted by STEAM education.

Therefore, I believe that STEAM pedagogy can support educators, school leaders, teachers, parents, and students in effectively implementing the integrated curriculum for Grades 1-3, as it fosters a learning environment that motivates students to think critically and creatively when addressing real-life challenges (Pant et al., 2020).

Arts Integration

Believing that STEAM pedagogy facilitates the intent of the integrated curriculum by fostering holistic learning, I also felt the need to explore the arts in detail, which is one of the major components of STEAM. To begin with, regarding the concept of arts, Sickler-Voigt (2023) states that the arts are forms of human expression that result in creative products and performances. Arts refer to the skills of creating forms, in simple terms (Uştu et al., 2021). Humans from different parts of the world have been articulating their views, feelings, and stories creatively through arts since the beginning of civilization. Arts is an integral part of our life. Being social beings, we communicate by expressing and receiving from each other through various forms and levels of art in our day-to-day lives. Eisner (2003) highlighted that art serves as a vehicle that allow us to explore and reflect on own ideas. According to Burnaford et al. (2013), the arts unite individuals to work toward shared goals, express essential concepts and beliefs, and have the power to transform people's perspectives. Eisner (2003) further explains that the arts help us gain a deeper understanding of ourselves by nurturing our imagination, allowing us to envision the new possibilities, and enabling us to step into the shoes of others to experience what we have not experienced personally. Understanding the world through the perspectives and senses of others, Greene's idea (as cited in Pinar, 1998) suggests that the arts cultivate empathy in learners by engaging their imagination, which ultimately fosters creativity. Eisner stated that we learn to perceive things we previously had not noticed, to feel what we had not felt before, and to use ways of things that are indigenous to the arts.

Realizing this, the arts have been used to express and communicate in various sectors such as business, health, law, journalism, religion, politics, entertainment, etc.

However, the educator sector has rarely utilized the arts, overlooking its power. Pant et al. (2023) argued that science and arts are viewed as separate disciplines in Nepal. Teachers and students in schools participate in singing, dancing, drawing, acting, and storytelling, but these activities do not address the curriculum expectations. These forms of art are usually practiced during cultural programs for entertainment or celebratory purposes. I, being a proactive teacher, sang love songs, narrated stories, cracked jokes, and used pictures that were not relevant to the lesson to entertain students and help them overcome boredom during class. However, these activities had no significant impact on students' academic performance. The students enjoyed the art performances and felt that the lesson was engaging; however, there was nothing to take away from it. Time was wasted, and I had to rush through the course to cover the syllabus in preparation for exams. According to Wiggins (2005), I committed the twin sins of coverage-focused and activity-oriented teaching while using the arts during the lessons. Many schools and teachers believe that arts are only meant for entertainment and celebrations. On the other hand, Dewey argued that no subject, including the arts, should be taught in isolation by Efland (1998, as cited in Burnaford et al., 2013).

Since, pedagogy itself is the art and science of teaching (DEEWR, 2009, as cited in Child Australia, 2017), arts and education are inseparable. Infusing the arts into the curriculum allows students to do more than memorize; it encourages them to explore further, construct their own meaning (Hunter-Doniger, 2015). Sickler-Voigt (2023) defines arts integration as *"Powerful vehicle to cross the boundaries of core subjects and arts concepts affective and cognitive modes of expression, form and content, processes and products, the self and the world*." Sickler-Voigt (2003) further emphasizes that students learn more effectively when the arts are a central part of the curriculum, as they can metaphorically serve as the weft through which non-art disciplines are interwoven, enabling students to receive a higher-quality education that meets their individual needs and motivates them to learn. Burnaford et al. (2013) stated that arts integration is an evolving strategy for school growth, as the arts and school development go hand in hand, enabling students to aim for and reach greater levels of achievement. Pant et al. (2023) emphasize that arts integration enables learners to go beyond memorizing routine content and applying pre-established methods to solve problems, challenges conventional beliefs

and norms, advocates for innovation, and fosters critical and creative thinking. Timalsina et al. (2025) noted that arts-based pedagogy is a tool that empowers those whose knowledge and voices have been overlooked. Shrestha et al. (2022) asserted that it is an empowering pedagogy for teaching and learning all subjects in an integrated way, helping teachers and students develop self-motivation, creativity, imagination, and critical thinking.

Pant et al. (2023) regarded art as an expression of human imagination and creativity, expressed through different forms such as visual, performance and fine arts. Sickler-Voigt (2023) also categorized the arts into forms such as literary arts, visual arts, performing arts and media arts. According to Sickler-Voigt, (i) visual arts include forms like drawing, coloring, painting, pottery, sculpture, graphic design, architecture, interior design, and decorative arts; (ii) Performing arts include music, drama, dance, instrumental performance, props, body movement and voice; (iii) literary arts include poems, stories, creative writing and spoken words; and (iv) media arts include the use of digital tools and technology to create moving images, photographs, graphics, sounds and text.

Regarding the integrated curriculum, CDC textbooks for grades 1–3 in Nepal include many arts-based activities to promote integrated learning. The various forms of art are designed as vehicles to support learning outcomes. The quality of holistic learning depends on the skills and creativity of the schools and teachers.

Design Thinking

As the research moved forward, I realized that I needed to study design thinking more deeply. Razzouk and Shute (2012) defined design thinking as both an analytical and creative process that encourages individuals to experiment, develop prototypes, collect feedback, and refine their ideas. Shrestha et al. (2023) noted design thinking as a process in which learners try to solve challenges that impact people. According to Razali et al. (2022), it is a holistic concept for the forms of cognitive learning and design, empowering learners to engage in multidisciplinary ways with positive changes. (Razali et al. (2022) also mentioned that design thinking provides a tangible solution to complex challenges that are difficult to define or to comprehend. It is also a process that results in a plan of

action to improve a situation (Pressman, 2019). For this process, Plattner (2010) proposed the following steps: empathize, define, ideate, prototype, and test.

Lee (2018) also describes the five stages of design thinking proposed by Institute of Design at Standford. Empathize is a stage that focuses on understanding the people with whom the design is created. In the define stage, students analyze the information gathered during the empathy stage to develop a clear problem statement and determine what needs to be addressed to achieve an effective solution. In the ideate stage, students generate a wide range of creative ideas and possible solutions to the defined problems, producing many ideas and then selecting one of them for further development. In the prototype stage, students transform their ideas into tangible models or prototypes based on user needs and feedback, which helps refine solutions and explore improvements. According to Rudd et al. (1996), there are two types of prototypes: high-fidelity prototypes and low-fidelity prototypes. High-fidelity prototypes are more detailed and realistic models that look and work similarly to the final product, helping designers test how users interact with it. However, low-fidelity prototypes are simple and basic models such as sketches, paper designs, visuals, colors or icons, used in the early stage to quickly present ideas and get feedback. They can be a very simple drawing made with paper and pencil. Finally, students evaluate the prototype by gathering feedback to identify weaknesses and opportunities for improvements.

Theoretical Review

A theoretical literature review helps the researcher identify ideas and theories used by other researchers in their studies, books, and articles, and choose the appropriate theory to guide their own research. The purpose of this study was to explore how STEAM pedagogy enables basic-level Grades 1–3 teachers to develop and implement integrated teaching strategies for holistic learning in accordance with the integrated curriculum. In my research, participants and I co-constructed the knowledge through rational discourse. I also expected my participants to co-construct knowledge with their students in their classrooms. During the research, over several months, the research team went through the process of transformation from a critical self-reflection perspective. Therefore, I have referred to social constructivist learning theory, transformative learning theory and participatory action research as a theoretical lens.

Social Constructivist Learning Theory

Vygotsky is considered as the main contributor to social constructivist learning theory. This theory is based on constructivism, where the learner actively constructs knowledge based on prior knowledge, as noted by Taylor (2015). According to Vygotsky, the human mind is a feature of relationship between subject and object, which is constructed through subject's interaction with the world (Verenikina, 2010). Learners alone cannot construct new knowledge independently unless they have an environment that allows them to interact with the world. Therefore, Taylor (2015) noted that social constructivist learning theory recognizes that learning is a social process in which learners co-construct meaningful knowledge in communities of practice through collaborative learning. Pritchard (2017) mentioned that working collaboratively in small groups is a constructive approach to learning.

Learners have some prior knowledge that they have constructed from their previous experiences interacting with the people around them. This theory emphasizes the role of learners as active meaning-makers and problem solvers by contributing their prior knowledge and experience to any learning situation, as mentioned by Turuk (2008). Learners construct knowledge when they are active. They become active only when they can connect learning with their daily lives. The emphasis of social constructivist learning theory is on the interaction of learners with others or with more knowledgeable or peers, resulting in the construction of new ideas and understanding with reference to their prior knowledge or understanding (Pritchard, 2017).

Since, the integrated curriculum is new in Nepal, teachers themselves cannot learn the appropriate pedagogical practices of integrated teaching and learning alone. They can learn better only from knowledgeable others or peers through social interaction and dialogue, where they build and exchange their experiences, thoughts, and ideas, leading to a deeper understanding, as noted by Pritchard (2017). The integrated curriculum expects the teachers to work together with colleagues and students to design and implement the lesson plans in such a way that the students can actively engage in thinking, processing, reflecting, questioning, and sharing in the classroom. This social constructivist learning theory guides this research by allowing the researchers, participants, and students to experience collaborative learning through social interaction.

Transformative Learning Theory

The main objective of the teaching and learning process is to bring about a transformation in learners in response to real-life situations. Hsu (2020) emphasizes the urgent need for a paradigm shift in the education system, guided by a transformative worldview and a vision for an alternative future. The methodology of my research envisions the research team being empowered while undergoing a process of transformation. Transformation is more than just change; it is broader, deeper, and more meaningful and involving both inner and outer growth. Miller (2009) also noted that students transform holistically. The process of learning that results in both inner and outer transformation can be understood as transformative learning. The contributor of transformative learning theory, Mezirow (1996, cited in Taylor, 2008) stated that transformative learning is the process of using a prior interpretation to construe a new or revised interpretation of the meaning of one's experience in order to guide future action. Elsewhere, Mezirow (1997) stated that transformative learning is the process of effecting change in a frame of reference. The frame of reference is structure of assumptions and expectations through which we filter sense impressions that selectively shape and delimit perceptions, cognition, feelings and disposition, as noted by Mezirow (2000). Mezirow further explains that frame of reference is composed of two dimensions: habit of mind and a resulting point of view. The habit of mind is broad and not easily changed, whereas the point of view is narrower and can be influenced more easily. Costa and Kallick (2008) explained that a habit of mind means having the tendency to think wisely when facing problems whose answers are not easily found. This way of thinking can create certain feelings, beliefs, and attitudes toward people who are different from us (Illeris, 2018). Illeris agreed with Mezirow that habits of mind are expressed through specific points of view that affect how we understand things. These points of view can change more easily with reflection and feedback from others. The habit of mind lasts longer and is stronger than a single point of view.

According to Mezirow (1997), the four ways of transformative learning are (i) elaborating an existing point of view, (ii) establishing a new point of view, (iii) transforming a point of view, and (iv) transforming a habit of mind. These are the types of changes that occur. Similarly, the revised ten phases during the process of

transformative learning are (i) disorienting dilemma, (ii) self-examination, (iii) sense of alienation, (iv) relating discontent to others, (v) explaining options of new behaviour, (vi building confidences in new ways, (vii) planning a course of action, (viii) knowledge to implement plans, (ix) experimenting with new roles and (x) reintegration (Christie et al., 2015). These are the chronological stages of the process. However, Kitchenham (2008) echoes Mezirow in noting that it is not necessary for a person to experience all the phases in order. The progression through these stages is facilitated by six core elements: individual experience, critical reflection, dialogue, holistic orientation, awareness of context, and authentic relationships (Taylor, 2009).

Johns (2013) conceptualizes experience as the act of thinking, feeling or doing something, including every internal thought. Taylor and Cranton (2013) consider individual experience as the primary medium of transformative learning. Mezirow (1991, as cited in Kitchenham, 2008) identified critical self-reflection as the central component of transformation. Similarly, Mezirow (1997) emphasized that transformation of frames of reference occurs when one goes through critical self-reflection on the assumptions which our interpretation, beliefs, and habits of mind or points of views are based. As Mezirow presented three types of reflections they occur during transformation: content reflection, process reflection, and premise reflection. Kitchenham (2008) agrees with Mezirow that actual critical reflection is the process of premise reflection, where the person sees a broader view of what is operating within their value system. Taylor (2009) highlighted that experience and critical reflection unfold within the landscape of dialogue, through which critical reflection is put into action. Illeris (2018) noted that transformation involves dialogue between the conscious and unconscious, enabling individuals to achieve self-awareness and integration into the community of humans. This perspective resonates with Taylor and Cranton's (2013) emphasis on "whole person" learning through dialogue with both the self and others.

Taylor (1998) mentioned interdependent relationship between critical reflection and affective learning, as well as the role of other ways of knowing and relationships in the learning process, emphasizing holistic orientation to teaching. To engage in a holistic approach to transformative learning, Davis-Manigaulte et al. (2006)) suggests Heron's term "presentational" or expressive ways of knowing, which include engagements with

different forms of art, myth, fable, and allegory. They asserted that expressive ways of knowing can take educators and learners out of their comfort zones, both cognitively and affectively, fostering transformative learning. The development of awareness of context fosters transformative learning by promoting a deeper understanding of the personal and sociocultural factors that influence the process (Taylor, 2009). Additionally, Taylor (2009) argued that the foundation for transformative learning is established through authentic relationships between teachers and learners, integrating all the core elements that foster transformative learning.

In conclusion, transformative learning occurs when an individual experiences a perspective transformation by critically challenging their existing beliefs and value systems, called shift in frame of reference. It involves a process that moves from recognizing one's existing point of view to transforming habits of mind, from a disorienting dilemma to reintegration through premise reflection and holistic orientation that engages 'other ways of knowing' by involving the whole person. As a researcher, I aim to facilitate a transformative process within my research team, encouraging a shift in our frames of references by challenging our own taken for granted underlying assumptions, beliefs, and values as noted by Christie et al. (2015), while going through the phases and steps of transformative learning. This concept of transformation and critical self-reflection aligns with the idea of Johnson (2023) that holistic education enables learners to critically examine and define their own values and views.

Participatory Action Research (PAR)

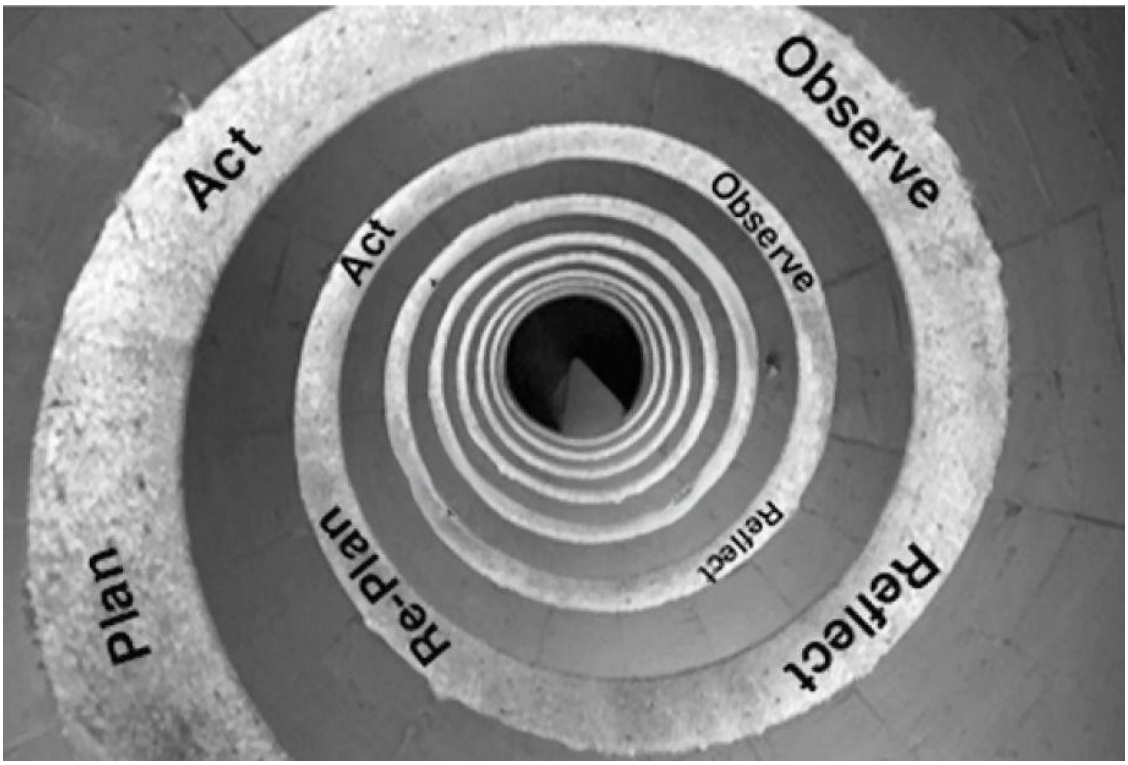
The purpose of this research was not only to explore how STEAM pedagogy enables basic-level Grades 1–3 teachers to develop and implement integrated teaching strategies for holistic learning but also to encourage participants to reflect on and improve their day-to-day classroom teaching and learning through action research as noted by Whitehead and McNiff (2006). Similarly, Borda (1979, as cited in Wright, 2015) stated that PAR is a process that engages people in investigating their own reality in order to change it. Kemmis et al.(2014) highlighted that PAR can help practitioners better understand and improve their work from their own experiences and traditions, help them use a common language and take part in meaningful professional discussions, enable them to engage in real actions and improve how they work together, build strong

communities by connecting practitioners within and across different places and professions, and help them change their practices to make them more fair, effective, and sustainable. Chevalier and Buckles (2019) noted that PAR attempts to make sense of the world and make it better as well. This aligns with the views of Upreti et al. (2024), who argue that PAR in educational settings is a transformative journey that seeks to change the educational behaviors of school communities through collaborative effort. Kurt Lewin, in 1946, characterized action research as a cyclical process involving the steps of planning a change, implementing the plan, observing what happened, and reformulating the plan based on the observations (Kemmis et al., 2014). Being a subset of action research, PAR follows the repeating and revising cycles of planning, action, observation, and reflection. This process allows the researcher and participants to become more social, collaborative, critical and emancipatory during the iterative cycles. It offers a democratic and practical model of knowledge production, in which participants take ownership and use the knowledge produced to address their own local issues (Puri, 2023). Wagle et al. (2024) emphasized that in PAR, contribution of each participant is acknowledged, their autonomy is respected and ownership is ensured.

Planning constitutes the first stage, where the research team identifies a social or educational problem and collaborates to design an intervention. This is followed by action, the implementation phase where the proposed change is put into practice. Observation occurs simultaneously with action, involving systematic documentation process to gather the evidence on the intervention effects. Finally, reflection serves as the fourth stage. As Johns (2013) stated, reflection is about being reflective moment to moment and learning through our everyday experiences with awareness. Johns further elaborates that it is a reflexive process of self-inquiry and transformation of being and becoming the practitioner.

Figure 1

Participatory Action Research Cycle



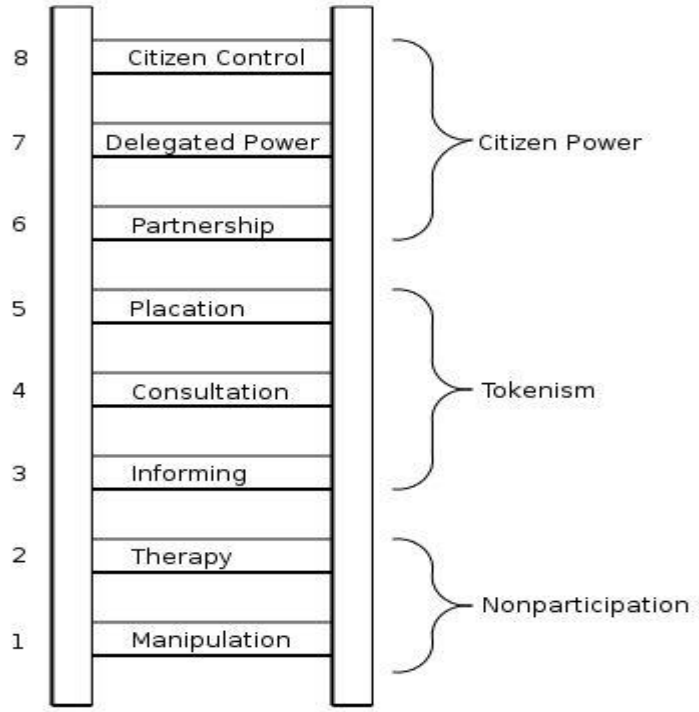
(Kemmis et al., 2014)

This research provides opportunities for researchers to act as activist-scholars who can bring transformation in teaching and learning in a particular place (Mirra et al., 2016, as cited in Pant, 2020). For this, the PAR ideologies proposed by Rajbanshi and Luitel (2020) are as follows: (i) rapport building is just as important as interacting in a community of practice; (ii) indigenous knowledge that participants bring make them experts; (iii) researchers and participants are co-researchers, without whom the bicycle of PAR cannot go long distance; (iv) knowledge is co-constructed through interaction among co-researchers; (v) it empowers participants by breaking power dynamics; and (vi) participatory action is dialectical in nature. As mentioned by Kemmis et al. (2014), the role of researcher is that of a facilitator of the research process. Similarly, Whyte (1991) also emphasizes that the researcher's role is that of a co-learner rather than an expert, where the researcher's expertise involves the ability to step back as participants take ownership of their own learning. Regarding the participants, PAR requires the investigators, and the people traditionally considered the subjects of the investigation to

act as co-investigators (Freire, 1970, as cited in Wright, 2015). Consequently, participants engage in research at the higher rungs of Arnstein (1969) eight-rung ladders of participation. According to Arnstein, as illustrated in Figure 2, there are eight rungs of participation: manipulation and therapy within the 'non-participation' category; informing, consultation, and placation under the 'degrees of tokenism' category; and partnership, delegated power, and citizen control within the 'degree of citizen power' category. During PAR, the participation level of the participants reaches at least the 'partnership' and 'delegated power' rungs, where the power is redistributed through negotiation between the researcher and participants, directly involving in the decision-making process.

Figure 2

Arnstein's Ladder of Participation



(Arnstein, 1969)

Therefore, I use transformative learning theory as a theoretical framework, along with social constructivist theory, which guides me as the lead researcher in participatory action research, and the participants as co-researchers. Together, we critically reflect and

transform perspectives while addressing the research problem related to the integrated curriculum for holistic learning.

Empirical Review

Several studies related to integrated learning have been conducted nationally and internationally. Fu and Sibert (2017) conducted research on the topic "*Teachers' perspectives: Factors That Impact Implementation of Integrated Curriculum in K-3 Classrooms*" in ten school districts in Ohio in USA, among 42 teachers who taught in K-3. The main purpose of this study was to explore the influencing factors that teachers faced while implementing the integrated curriculum in their classroom. The research concluded that most K-3 teachers implemented the integrated curriculum but preferred using less integrated forms. Additionally, time for planning, support from the community and colleagues, and their knowledge and skills influenced the teachers' adoption of different forms of integration.

Hamad et al. (2022) carried out a study in the UAE using exploratory sequential mixed-methods design research titled "*Understanding Science Teachers' Implementations of Integrated STEM: Teacher Perceptions and Practice*." This study aimed to explore the lived perceptions and experiences of science teachers who had incorporated integrated STEM into their teaching. It was concluded that STEM can be implemented; however, teachers face several challenges such as maintaining records of evidence, managing curriculum content, and a lack of time and clear guidelines.

Lam et al. (2013) conducted qualitative case study research among eleven Singaporean teachers on the topic *"Curriculum Integration in Singapore: Teachers' perspectives and practice".* The purpose of the research was to examine teachers' conceptions of teaching and learning in relation to their experiences implementing the integrated curriculum. The research concluded that although participants recognized the benefits of integration, they also faced challenges such as the dominance of a disciplinary-based curriculum and a lack of knowledge of integration and assessment.

Shrestha (2021) conducted research on the topic "*Teachers' Content Knowledge and Pedagogical Content Knowledge for Teaching: As Preconditions to Develop Students' Mathematical Thinking at Grades 1–3 in Nepal*" in the Karnali, Gandaki, and Bagmati provinces of Nepal, among 99 teachers who teach mathematics at Grades 1–3.

The study aimed to examine teachers' content knowledge and pedagogical content knowledge related to numbers and basic operations. The findings indicated that teachers were not ready to implement the new materials and needed professional development support to cope with the recent changes.

Koirala (2023) carried out a qualitative case study titled "*STEAM-Based Integrated Curriculum: Perceptions and Practices of School Head Teachers*" in three publics schools of Gorkha Municipality in Nepal. The study aimed to explore the current implementation status of the integrated curriculum in Grades 1-3 and its role in promoting transformative learning practices at the school level. The findings revealed that although the integrated curriculum was designed to promote holistic learning and enhance students' knowledge, skills and competencies, it did not effectively foster enthusiasm for its full implementation within the school education system. The study recommended providing support through concrete professional training.

Paudel (2024) conducted a study titled "*Teachers; Understanding and Implementation of Authentic Assessment in the Integrated Curriculum for Grades 1 to 3: The Case of Nepal*" employing a convergent mix-methods design. The research integrated qualitative interviews with eight teachers and quantitative surveys with 280 teachers. The findings revealed a significant gap between the theoretical principles of authentic assessment and its practical application, primarily attributed to resource constraints, inadequate professional development, and time limitations.

The above research, conducted both nationally and internationally, clearly shows that teachers continue to struggle to understand, plan, integrate, implement, and assess according to the integrated curriculum.

Research Gap

Although previous studies on integrated teaching and learning shared certain commonalities, they were conducted within their own cultural and contextual settings. Most research in Nepal was carried out in Gorkha, Kavre, Bagmati, Gandaki, and Karnali district, focusing primarily on headteachers and mathematics teachers. While these studies explored perceptions, practices, and challenges related to the integrated curriculum, they did not provide participants with opportunities to address these challenges through locally developed pedagogical interventions, particularly for Grades

1-3. This study was planned not only explore teachers' perceptions and practices but also actively empower Grades 1-3 teachers in Nepal by introducing and evaluating appropriate integrated teaching strategies tailored to their local context. This participatory approach aimed to address the gap by moving from description to practical implementation, contributing both knowledge and actionable strategies to the field of integrated curriculum.

Chapter Summary

In this chapter, I have presented a literature review relevant to fostering holistic learning through an integrated curriculum in schools. I have articulated a conceptual review of the integrated curriculum, holistic learning, thematic teaching approaches, STEAM pedagogy, arts integration and design thinking. Following this, I have also included a theoretical review of social constructivist theory, transformative learning and participatory action research theory linking them with how my research agenda is closely aligned with these theories. Similarly, I have included empirical review of national and international research, followed by the research gap.

CHAPTER III
RESEARCH METHODOLOGY

Being aware of the methodology guiding this research, in this chapter I have introduced the philosophical considerations, the research method that guided the research process from beginning to end, an introduction to the research participants, procedures for collecting field notes, data analysis, quality standards, and ethical considerations.

Research Paradigm

The purpose of this research was to explore how STEAM pedagogy enables basic-level teachers of Grades 1–3 to develop and implement integrated teaching strategies for holistic learning. My research agenda required collaboration with participants during the planning, implementation, and reflection of classroom lessons. As Taylor and Medina (2011) stated, a comprehensive belief system is necessary to guide research and practice in the field, and I also found it necessary to adopt such a belief system for my study. Given the complexity of the research problem, which involved understanding of teachers' lived experiences, examining structural influence in curriculum implementation, and collaboratively developing practical strategies, a single paradigm was insufficient. Therefore, I adopted multi-paradigmatic perspectives, drawing on interpretivism, criticalism, and postmodernism to explore and address the complex challenges associated with teachers' professional practice as noted by Taylor et al. (2012). I needed to stand in the participants' shoes being empathetic and exploring their lived experience and meanings (Taylor & Medina, 2011), which guided me to adopt an interpretive perspective. At the same time, I had to move beyond the interpretive understanding to action, adopting a critical perspective that positioned me as an advocate and change agent within the research process (Taylor et el., 2012). Similarly, to challenge the dominant assumptions and uncover alternative perspectives, I adopted postmodernism, using aesthetic and creative approaches to make these perspectives visible (Taylor et el., 2012). Therefore, the multi-paradigmatic perspective, combined perspectives, guided this study.

Ontology

Ontology is the view of the nature of reality, which varies across contexts and experiences. Each individual's reality differs from others, as people hold multiple realities shaped by their unique backgrounds and experiences (Kamal, 2019). Since the participants in my research came from different backgrounds and cultures, the ontological assumption of my research was that reality is multiple and contextual.

Epistemology

Epistemology is concerned with how the investigator constructs knowledge and comes to understand the truth and reality (Kamal, 2019). The participants with whom I collaborated came from different backgrounds, bringing their own prior knowledge and experiences. We socially co-constructed knowledge through dialogue, reflection, and shared experiences within the given context, grounded in mutual understanding and relational engagement. The epistemological assumption underpinning my research is intersubjective.

Axiology

According to Killam (2013), axiology deals with the theory of value. A person's actions and behavior are guided by the values they hold, which are shaped by culture and environment. The pedagogical practices of individuals and organizations are guided by beliefs and values (Grundy, 1987). Since the participants and I come with different values shaped by different cultures and environment, the axiology of my research is value-laden, guided at least partially by my own values along with respecting the values of the participants.

Participatory Action Research as Research Design

While Chapter II defined PAR as a collaborative process, this section details its practical execution. The research design is structured as a systematic, iterative journey intended to bring about meaningful change. The following sections describe how this was achieved through two iterative cycles, each consisting of four stages: planning, action, observation, and reflection.

Planning

Planning served as the initial stage of this PAR. While the process began with building rapport at the school, the conceptual planning actually started when I was

preparing the proposal for this research during my MPhil studies. The participants and I worked together as a collaborative research team to address the co-identified the specific challenges of implementing the integrated curriculum in their context. It was through this collaborative process that I shifted from acting as an individual researcher to participating in joint decision-making with the participants. We worked together to create a common plan for the research team, which was then broken down into individual or paired lesson plans for Grades 1-3. This collaborative planning occurred twice: the first planning cycle was based on the problems identified in the beginning of first cycle and the second planning was based on the reflections of the first cycle, aiming for more effective planning and implementation.

Action

The research team executed the plans in two iterative cycles. During this phase, the participants implemented STEAM -integrated lessons in their classrooms, aiming to foster holistic learning in alignment with Nepal's integrated curriculum. In cycle 2, I also joined with one of the participants to co-implement the lesson. Each cycle involved participants facilitating these plans over at least two one-hour periods in Grades 1-3.

Observation

As the lead researcher, I engaged in participant observation. To maintain the 'partnership' rung of participation, other participants from the same grade acted as co-observers, while the pre-primary level coordinator served as a critical friend. We documented how the STEAM activities fostered cognitive, affective, physical, and social engagement. I recorded participation levels and group discussions, focusing on how students connected different ideas. Furthermore, I examined the alignment of activities within each lesson, as well as the coherence of lessons within the theme, to ensure they effectively addressed learning objectives. I remained consistent across both cycles during the documentation process. However, cycle 1 focused on a board overview of STEAM implementation, while cycle 2 shifted to a more specific examination of how students engaged holistically during the lessons.

Reflection

The reflection stage was more critical than the other stages for addressing the challenges of implementation. I ensured that my role focused on encouraging

participants' self-inquiry rather than imposing my own expert views. The research team engaged in reflection throughout each cycle, beginning with an examination of existing practices under the integrated curriculum even before cycle 1 started. By cycle 2, through our shared experience of co-teaching, the boundaries between researcher and participant blurred, shifting the narrative from 'I' to 'We' in the research. During reflection, we reflected on what the participants did, how they felt, what went well, and what could be improved in their planning and implementation. My role was to facilitate the participants' critical reflection on their work.

The participation of Grades 1-3 teachers reached the 'partnership' and 'delegated power' rungs, where the power was redistributed through negotiation between the researcher and participants. They were directly involved in decision making process, through the action research spiral: co-identifying local issues, co-designing plans, implementing strategies, and critically reflecting on the results. As noted by Upreti et al. (2024), PAR empowered the participants to co-construct localized knowledge and formulate actionable solutions to address challenges in their professional environment. This approach ensured that the research was conducted with participants as partners rather than on them as passive subjects, effectively fostering holistic learning.

Research Site and Co-researchers

This study was conducted in a private, nonprofit educational institution located in Godavadwari-12, Thecho, Lalitpur, Bagmati province, within the Kathmandu Valley, Nepal. The school, which is adjacent to my workplace, is approximately six kilometers south of Lalitpur city. While the area is traditionally a stronghold of the Newar community, the students come from diverse locations, ethnicities, cultures and backgrounds. Established in 1997, the school has 21 teachers and 412 students from Nursery to Grade 12. Within this context, I collaborated directly with 8 female teachers, who served as co-researchers in the PAR process. Together, we implemented the thematic approach in the classrooms of 76 students from Grades 1-3. As discussed in Chapter I, I met with the participants in several formal and informal settings to share experiences, struggles, and concerns regarding integrated teaching and learning, considering both the school context and students' needs. Through repeated conversations, negotiation of priorities, and mutual agreement, the participants and I decided to

collaboratively explore more effective strategies for implementing the integrated curriculum. In this way, the direction of the study was co-constructed rather than driven solely by my research agenda. Below is detailed information about the participants.

Table 1

Profile of the Co-researchers

Pseudonym	Gender	Qualification	Total Teaching Experience	Years at this school	Role
Ritima	Female	Bachelors completed	8 years	4 years	Grade teacher in grade one
Juli	Female	Bachelors running	3 years	3 years	Grade teacher in grade one
Prashansha	Female	Bachelors running	5 years	5 years	Grade teacher in grade two
Roja	Female	Bachelors running	2 years	2 years	Grade teacher in grade two
Ranjita	Female	Bachelors completed	25 years	16 years	Our surroundings and Nepali teacher
Nishma	Female	Bachelors completed	8 years	7 years	Science and Math teacher
Sojina	Female	Bachelors running	4 years	4 years	English teacher
Gita	Female	Bachelors completed	17 years	6 years	Pre-primary level coordinator

Data Collection Tools

In this study, I utilized Kuragraphy as a local epistemological tool to gather the evidence, following the conceptualization of Desjarlais (2003). Kuragraphy encompasses broader range of meanings, including chats, opinions, objects and events, allowing participants to express lived experiences in their own terms. I employed a semi-structured interview questionnaire designed to elicit storytelling about lived experiences rather than

pre-determined responses. Additionally, I utilized a 1-10 self-rating scale to quantify participants' confidence and understanding of the integrated curriculum. The PAR process was further documented through my reflective journal and the collection of participants' thematic lesson plans. I utilized digital tools, including my tablet and mobile phone, to capture field notes, audio recordings, photographs, and videos of kuragraphy sessions and classroom implementations.

Data Collection Approach

The data generation process spanned the entire duration of the research, capturing participants' input through their expressions, gestures, verbal communication, written plans, and creative art forms. The process began with formal negotiation with school leadership to gain access to the school and the participants. The participants used the 1-10 self-rating scale to reflect on their understanding of integrated learning at the beginning and end of cycle 1 as well as at the end of cycle 2. I facilitated reflective sessions where meanings were co-constructed through local metaphors and various artefacts. As a participant observer, I documented all lessons, capturing field notes, photos and videos using my tablet and mobile phone. Additionally, I collected visual data, including diagrams, pictures, and creative work such as drawings, poems, and metaphors produced by the participants. The process concluded with semi-structured interviews and final group reflection, as they critically reflected on their experiences throughout the research.

Data Analysis and Interpretation

After implementing the integrated lessons across two iterative cycles, I systematically reviewed the field notes, observations, lesson plans, reflective journals, reflective poems, songs, metaphors, audio recordings and photographs, which were organized in a folder on my computer. I transcribed the audio recordings of interviews and field notes into text data (Creswell, 2012) and arranged all events from the beginning to the end of the research in a chronological narrative format. I then categorized the research timeline into two sections corresponding to Cycle 1 and Cycle 2. Within each cycle, I generated themes or suitable topics for the key moments and events, and interpreted their meanings by comparing and analyzing them with relevant literature.

For the self-evaluation scores collected before and after each cycle, I applied qualitizing approach, interpreting the numerical data narratively and linking it with the

reflections and co-learning discussions (Nzabonimpa, 2018). Throughout the analysis, I focused on clarifying issues and identifying connections within and across the planning, action, and reflection stages of each cycle. I looked for deeper meanings and continuously reflected on the evolution of solutions to the problem, acknowledging and analyzing the plans that were less effective. Finally, I wrote a cohesive narrative that connected participants' stories, experiences, and themes, incorporating visual arts, stories, metaphors, poems, and songs as part of the interpretation and meaning-making process, while also aligning the findings with relevant literature.

Quality Standards

In this PAR, I adopted praxis, pedagogical thoughtfulness, and reflexivity as quality standards that honor the transformative, multi-paradigmatic and participatory nature of the study.

Praxis

Praxis serves as a core quality standard in PAR by shifting research from simply knowing to active application of knowledge for the betterment of humankind (Singh, 2012). For this, Freire (2000) defined praxis as a human activity in which theory and practice, or reflection and action, are inseparably linked. This study-maintained praxis as a quality standard by ensuring that the research group's reflection and action were inseparably connected throughout the process of transformation.

Pedagogical Thoughtfulness

Critical researchers purposefully write in a manner designed to elicit critical awareness and critical understanding in readers (Taylor & Medina, 2011). According to Van Manen (1990), pedagogical writing prompts responsive reading. I ensured pedagogical thoughtfulness by using narratives, poems, metaphors, illustrations, pictures, songs, and by writing ensuring that the research continues to foster critical awareness and understanding.

Reflexivity

Reflexivity is another key quality standard of PAR, ensuring the research process remains open, transparent, and critically self-aware, enabling researchers to examine how their own listening, writing, and interpretation shape the representation of the participants' experiences, as noted by Palaganas et al. (2017). Finlay (2008) asserted that

reflexivity is a concept that gives momentum to reflective practice, involving both personal reflections, the ‘me’ part and social critique, the ‘world’ part. In this study, reflexivity facilitated both inner and outer transformation within me and among the participants. Critical reflexivity led us to reflect on our beliefs and practices (Dahal, 2023) in both forms of transformations.

For inner transformation, I engaged in personal reflexivity examining my own contribution to the research process as noted by Dahal (2023) through reflective journaling and kuragraphy. This helped us consider how our backgrounds roles, and personal experience shaped our perspectives. Overtime, the research team became active contributors who gained confidence in sharing ideas and questioning assumptions. Although the process sometimes felt uncomfortable, it increased self-awareness and personal growth.

Similarly, regarding outer transformation, this study was conducted with the participants rather than on them (Rajbanshi & Luitel, 2020), which aligns with Bleakey’s (1999) concept of reflection as action, thinking with the world. Reflexivity changed how the group worked together, creating a more equal space where everyone could contribute to decision making resulting in practical changes. Trust increased as the group became comfortable sharing different opinions. Alongside this, the group developed stronger relationships and a shared sense of responsibility for the research.

Ethics in PAR

I considered all the ethical considerations in conducting this PAR, including consent, respect for research participants, permission to enter the sites, voluntary participation, and the freedom to withdraw at any stage of the study. Mainly, I put the three basic principles into practice: respect for persons, beneficence, and justice, as outlined by Brydon-Miller (2008).

I practiced the first principle, ‘respect for persons’ by building trust and spending sufficient time with participants, even though I was already familiar with them. I informed them about the nature of the research and treated them as autonomous agents who could choose whether or not to participate. For the second principle, ‘beneficence’ which involves assessment of risks and benefits, I respected the participants’ right to choose how and when to participate and ensured confidentiality of their information.

Pseudonyms were used instead of real names throughout the study and in all written reports. I also ensured that no participants were harmed physically, mentally, or emotionally during the research process. Similarly, I practiced the third principle, 'justice' by respecting the cultural and social practices of the school and participants and by treating all participants fairly and equally.

Chapter Summary

In this chapter, I discussed how I conducted the research, the philosophical assumptions that guided it, and the research design I adopted. I have described how the study was conducted in alignment with the PAR framework aligned, outlined in the PAR section in chapter II. Additionally, I explained the tools and methods used for data collection and analysis. I discussed how I maintained praxis, pedagogical thoughtfulness, and reflexivity as the quality standards. Finally, I explained how I addressed ethics in PAR throughout the research process.

CHAPTER IV
JOURNEY OF TRANSFORMATIVE SHIFT FROM SINGULAR TO MULTIPLE PERSPECTIVES

In this chapter, I discussed how I built rapport and gained full trust from the participants. I presented how they shifted to the role of co-researchers and lived it, engaging in an in-depth study of the integrated curriculum, its components, and the process of identifying the problem. I also discussed how the research team collaboratively explored solutions and developed general and specific plans to foster holistic learning across all three grades. Similarly, I described how I observed as a participant observer and how we reflected, both individually and in groups, with lessons learnt for next cycle.

Rapport Building, Trust Gaining, and Introducing Research Agenda

I had already met with the participants, who are Grades 1-3 teachers, several times in formal and informal meetings before this study, discussing, sharing, and learning from each other about teaching and learning. Moreover, I had also already interviewed two Grades 1-3 teachers as participants for qualitative research as part of my MPhil study assignment, where I explored their perceptions on integrated curriculum in Nepal. In some professional development meetings, they shared their confusion and concerns about the new integrated curriculum and integrated teaching and learning in Grades 1-3 at various points. I wanted to help them, but I also didn't have much knowledge about the integrated curriculum. I thought how wonderful it would be if we could learn and grow together. Keeping this in mind, I approached the school principal with a proposal for research among the Grades 1-3 teachers in his school for participatory action research (PAR). He was more excited knowing the nature of my research 'PAR', its process and anticipated result. However, he was concerned about the availability and the consent of the Grades 1-3 teachers in his school. Therefore, he asked me to consult with the pre-primary level coordinator and the teachers themselves. Even the pre-primary level coordinator was also excited about the research when she heard about it, but she was

worried about her teachers' availability. A kuragraphy session (Desjarlais, 2003) was conducted with the Grades 1-3 teachers after school on March 1, 2023.

The first session with the teachers was held in the lower primary staff room after 4 pm on March 1, 2023. When I entered the room, the eight participants teaching Grades 1-3, including the coordinator, were already gathered. We knew each other but I didn't know which grades and subjects they taught. During the conversation, I came to know that there was grade teaching only in Grade 1 and 2, with two grade teachers each. Since there was no grade teaching in Grade 3, there was one Math teacher, one English teacher, and one teacher who taught both Our Surroundings and Nepali in Grade 3.

Connecting with their sharing about their roles and responsibilities in the school and their concerns they shared in previous meetings, I asked them how the situation of integrated learning is in their school. Like previous meetings, Nishma said,

> *Integrated curriculum is new for us. We are trying to teach but we have a very limited understanding that integrated learning happens when we merge the multiple subjects and teach accordingly. We would teach effectively if you provide some techniques and tips.*

Ritima added,

> *Some of us had attended training on integrated curriculum a year ago. We were confused in the beginning when we heard about it but now I think that integrated curriculum is all about connecting two or more subjects. However, we don't know how to teach according to the new integrated curriculum.*

Gita shared and drew my attention,

> *We don't know how to integrate more than one subject. Some of us know little about thematic teaching because we were pre-primary teachers in the past. We learnt about the thematic teaching in the training. We are not able to find the connection between thematic teaching and integrated curriculum yet. Even though we attended some training courses on integrated curriculum. We have very little understanding.*

Responding to them, I shared about the research, its nature, and how it could address their concerns regarding integrated learning. I explained their role as a co-researcher throughout the research. They said that they would get back to me after

discussing whether they would be involved in the research or not in their team. I later received information from the principal that his Grades 1-3 teachers had agreed to be part of the research. However, he mentioned that they might be busy preparing for the final term examination. In the meantime, I met the pre-primary level coordinator and planned another kuragraphy session for March 22, 2023.

In this second session, we all were mentally prepared for this collaborative action. After I explained about the research, its process, and everyone's role in the team, we again started reflecting on their day-to-day teaching and learning in Grades 1-3 in their school. As the school was busy preparing for the upcoming final term examination, and after the exam, and would then close for the term break, we couldn't meet at the school even after the examination. However, we worked on a schedule for our regular meetings. It was difficult to manage time because there was grade teaching in Grade 1 and 2, but not in Grade 3. Ritima and Juli from Grade 1, and Prashansa and Roja from Grade 2, were busy throughout the day until 3:30 pm, whereas Nishma, the Math teacher; Sojina, the English teacher; and Ranjita, who the Our surroundings and Nepali teacher in Grade 3, had free time before lunch and classes until 4 pm. Therefore, we decided to have a kuragraphy sessions mostly after school at 4 pm, and sometimes before lunch with Grade 3 teachers if needed. Gita, the pre-primary level coordinator, was considered a critical friend. However, we planned to meet only after the new academic session 2081 BS began. We also agreed to utilize our term break to explore integrated learning while the teachers were at home. We exchanged our contact numbers and agreed to create a messenger group where we could share notices, concerns, resources, ideas, information, and learn about integrated learning from each other. By this time, we had become more familiar with one other and had gradually building trust through both formal and informal meetings, which continue to this day. Reassuring them of respect and confidentiality during the research, I provided them with the informed consent form, explained the details, and asked them to review it and bring it to the next session if they felt comfortable and trusted in the research.

When the teachers were busy preparing for the examination and the results, I, as the lead researcher, met the principal in his office and had an interview on April 5, 2023. When he was asked to share the situation of integrated teaching and learning, he said,

> *In reality, we have not been able to implement the integrated curriculum in our school. We are not able to implement thematic teaching like in preprimary. We are not able to integrate the subjects. Grade one and two teachers practicing thematic teaching adapting from preprimary but they struggle to integrate ideas into the themes. Grade three teachers haven't started thematic approach yet. I think teachers lack knowledge, skills and attitude for integrated learning in the classroom. They have only superficial knowledge about theme-based learning, and lack knowledge and skills on how to integrate subjects.*

After the meeting with the principal, I created a messenger group for the research team. I also sent friend requests on Facebook and continued adding the participants to the group. Since the participants had already agreed to be part of the research as co-researchers, I decided to address them as co-researchers and use pseudonyms to protect their confidentiality, as introduced in chapter III in all subsequent meetings. In the meantime, I reflected that they admitted that integrated teaching was a new idea for them. The integrated curriculum was only introduced in Nepal in 2019 AD. Since it was new in Nepal, the principal also mentioned that his teachers had limited understanding of integrated learning to implement the integrated curriculum in his school. They understood that an integrated curriculum involves merging or connecting more than one subject, as it is commonly understood that integrating generally means blending into a functioning or unified whole. However, the co-researchers had heard about and had some information on the integrated curriculum, which they had gained from some training and seminars. Usually, the teachers are provided with teaching methods, techniques and tips in such training and seminars to make the teaching and learning effective. As Pant et al. (2022) mention, teachers often request sharing of the best techniques; likewise, the co-researchers expected me to provide them with tips and techniques for integrated learning. I understood that they were oriented towards controlling and managing the environment for integrated learning which algins with Habermas' idea of technical interest as discussed by Grundy (1987).

Regarding ideas for fostering integrated learning, the integrated curriculum developed by CDC Nepal is designed such that teachers are expected to teach using a thematic approach (Curriculum Development Center, 2019). However, both the co-

researchers and the principal admitted that they had very limited understanding of thematic teaching, although the teachers in pre-primary levels plan and teach in thematic approach. Moreover, the integrated curriculum has prescribed grade teaching in all three grades for thematic approach, but there is grade teaching only in Grade 1 and Grade 2, not in Grade 3, in the co-researchers' school. In this situation, the grade teachers in Grade 1 and Grade 2 can plan and implement thematic plans independently with flexibility of time because they remain in the same class throughout the day. On the other hand, at least three co-researchers are teaching in Grade 3, who are expected to collaborate in planning and implementing common themes, which demands more time, energy, and collaboration skills. This is the situation in the majority of schools in Nepal. Either there is no grade teaching in school, or they have only a few classes. Having two different groups of co-researchers in a team itself is a challenge as well as opportunity. It helps the team to add challenges and ideas from different perspectives and explore the ways to work in both situations.

Initial Reflection

As the new academic session of 2082 began, we met again in the same room on April 22, 2023, reflecting on our understanding of integrated learning. We decided to reflect on our understanding of integrated learning by scoring ourselves out of 10 and conducting self-evaluation. The co-researchers rated 4,1.5,3,2,2,1,3 & 5 out of 10. The average score was 2.6875. We then agreed to explore integrated learning further and bring more insights to the next meeting.

Following the reflective session on April 22, 2023, I spent the evening reviewing my field notes. I realized that the co-researchers were not open to sharing in front of Gita who is also the pre-primary level coordinator. I decided to facilitate equal opportunities for thinking and sharing among the co-researchers during the meeting. In our next meeting, we reflected on the integrated learning using metaphors. I first shared, *"Integrated learning is like 'momo' made up of mixing many things together. Integrated learning is also like a rainbow of combinations of seven colors."* Then, I asked co-researchers to think of the metaphors for two minutes and then to share their metaphors from left to right within one minute, taking turns. Ritima said, "*For me, integrated learning is like 'pizza', which is prepared by mixing many things and is tasty to eat*." Juli

added, "For *me integrated learning is like 'rainbow' made of seven colors which will turn into one while ray.*" Roja shared, '*For me, integrated learning is like 'biryani' cooked by mixing rice, meat, and many other things*" Prashansa articulated, *"Integrated learning is like 'chatpate' which is spicy and prepared by mixing many ingredients"* Ranjita added, "Integrated *learning is like 'country' with a diverse group of people*." Nishma also added, "*Integrated learning is like 'chhoyla' prepared by mixing many things"* Sojina also shared, "Integrated *learning is also like 'thukpa*'." Gita finally added, "*Integrated learning is like a garden with different flowers*."

This time, all the co-researchers equally participated in sharing their ideas. We reflected that teachers should integrate multiple subjects in one framework so that learners can engage with more than one form of learning at the same time. We also reflected and realized that we were not able to facilitate learning in our classrooms in ways similar to pizza, chatpate, biryani, rainbow and so on. As we were about to wrap up the meeting, Gita suddenly added one more metaphor,

> *Integrating many things into one is like Prithvi Narayan Shah unifying 'baaisi' and 'chaubisi' into one Kingdom. If Prithvi Narayan Shah hadn't unified Nepal then, Nepal would have been colonized by either British or India or any other country. Similarly, if there is no integrated learning, the learning will be incomplete.*
>
> Prashansa echoed,
>
> *So integrated learning is like unifying multiple subjects into one but it's not like capturing the small states into a single country. I think we need to learn how to integrate multiple subjects. Sir, you can share with us the ideas and skills of integration.*

I, as a lead researcher, said "*Today, we are tired. Some of us are already late. Let's discuss this in the next meeting."*

After the meeting, I was at home reflecting on the discussions shared by the co-researchers and considering why they may not have been open to expressing their ideas in the presence of Gita, the pre-primary level coordinator. Perhaps the coordinator proactively shared her ideas, as usual, and the other co-researchers did not feel necessity or confidence to contribute. This is common in organizations and communities, where

seniors often share their ideas confidently, while juniors tend to hesitate. When seniors share the ideas, the juniors or subordinates may take them as the final outcome of the discussion, assuming that such ideas represent the contributions of all group members. Such outcomes of the meetings tend to address or represent only the interests and agendas of those who are confident enough to speak due to hierarchy, educational background, or financial or social status. Although it appears to promote the voices of all group members, in reality, it often allows those in power to impose their ideas as final decisions. This reflects the third rung of Arnstein's (1969) ladder of citizen participation, known as "being informed". It appears to offer equal opportunities to all group members; however, in practice, it does not. In such situations, the role of the facilitator is to engage participants in learning environments that support rich, inquiry-based dialogue, as noted by (Taylor, 2015), providing equal opportunities for thinking and sharing time to all members in the group. As the lead researcher of PAR, I was concerned whether the ideas of Gita, the pre-primary level coordinator and my own might dominate or overshadow other co-researchers' ideas or demotivate them for sharing, which would not allow the coresearchers to come up with shared ideas. As Rajbanshi and Luitel (2020) mention, knowledge in PAR is co-constructed through interaction with the co-researchers and by breaking power dynamics. Therefore, I planned to facilitate equal opportunities for thinking and sharing time by consciously refraining from expressing my own opinions and by providing the co-researchers with equal thinking time and turn-wise sharing opportunities to involve all the co-researchers, share their perspective.

During the meeting, all the co-researchers, both seniors and juniors, equally shared the metaphors of integrated learning after I engaged them in thinking and sharing within specific time and instructions. I began this by asking the co-researchers to think of the metaphor of integrated learning and sharing it with the group. As Lakoff and Johnson (2020) state that majority of our conceptual system is metaphorical in nature, I first provided an example of a metaphor of integrated learning with reasoning and then passed the turn to the next co-researcher to share their metaphor with reason within one minute to facilitate co-researchers in articulating their understanding of integrated learning. This provided freedom to the co-researchers to reflect and share their understanding of integrated learning. The metaphors shared by the co-researchers, such as pizza, rainbow,

biryani, chatpatte, country, chhoyala, thukpa, garden, and unification of Nepal by Prithvi Narayan Shah, reflected that the co-researchers had a basic understanding of integrated learning as the result of combining subjects. Metaphors like rainbow, country, and garden represented less integration, whereas pizza, biryani, chatpatte, chhoyala, and thukpa represented more integration that other metaphors. Just as it is not easy to form rainbow, a country, or a garden, or to prepare dishes like pizza, chatpatte, chhoyala, and thukpa for ordinary people, similarly, facilitating integrated learning is also different from facilitating learning in traditional way.

Need Identification

In the meantime, I was in Siraha for a week to conduct training for the teachers. After the training, I was in a grocery store to settle the snack bill for the training on April 27, 2023. It was already 5 pm in the evening, and the shopkeeper was with his son, who was probably studying in Grade 7 or 8 and preparing for an exam. The shopkeeper said, "*In total it is Rs 750, how much do you want me to make the receipt of, how much more money do you want me to add to the bill?".* I replied, *"No, please prepare the actual bill.*"

The shopkeeper seemed to be accustomed to making fake bills. He continued insisting that I provide a false amount for the bill. He looked at me as if he was helping me by offering a commission. I had to clearly tell him that I don't entertain such practices. That evening, I reflected on the shopkeeper's son, who was witnessing our conversation, and what he might have learned from his father, how his ethical values might be shaped, and how he might develop as a socially responsible citizen. This incident also triggered me to think about what kind of education is needed at present to prepare the new generations for the future. I reflected that education is the only way to address these unethical issues. The question remains why our education system has not been able to address these social issues.

In the next kuragraphy session with the co-researchers on May 1, 2023, I shared the story of the shopkeeper and his son and encouraged them to think on how to address such social issues from school. We then began focusing on identifying the factors hindering them from facilitating integrated learning effectively. I asked the question "*What could be the challenges or problems hindering us to implement the integrated learning in our school?"* Then, I asked the co-researchers to think for a while and asked

them share one by one, Nishma shared, '*We are not able to plan the lesson, do activities, group work, etc. because we don't have sufficient time".* Ranjita said, "*Students say they understand during the lesson in class but don't bring complete homework from home, they don't concentrate on the study and talkative students are the challenges we are facing."*

Prashansa added, *"Similarly, organizing activities, evaluation and confusion in planning are the challenges."* Roja also added, *"Students with different learning needs, lack of concentration and large number of students in class are also the challenges we are facing for integrated learning."*

After hearing from all the co-researchers, I said,

> *Most of these things hinder fostering integrated learning but are out of our control. Can we reflect on the things in our control to make our day-to-day teaching effective? How about exploring integrated learning and what are the experiences of other educators like us?*

Everyone agreed with this, so I shared the digital copy of the paper *Perceptions of Nepali experts on integrated curriculum* (Lamsal, 2021) in the messenger group and asked them to print it, read it and come prepared to share their thoughts in the next meeting. At the very moment, Ritima shared that they were struggling to find time for the research after school, as the school sometimes held its own meetings after 4 pm. We agreed to meet separately during grade teachers' leisure time and after 3:30 pm with Grade 1 and 2 teachers, and to hold a full research team meeting once a week.

In the next session on May 18, 2023, all the coresearchers were gathered to share their thoughts on integrated learning after reading the paper (Lamsal, 2021). Ritima started sharing thoughts, "*The paper is about integrated curriculum, its importance, different models of integrated curriculum and models of integration in integrated curriculum in Nepal*" Roja added, "*After reading the paper, I understood that integrated learning is not only about integrating many subjects into one and presenting it to the students but also helping students to develop life skills which traditional teaching approach couldn't do effectively."*

Nishma also added,

> *It also talks about the integrated curriculum in Nepal, and multidisciplinary and interdisciplinary models. I didn't understand this. We realized that integrated learning is for holistic learning, it helps our students to develop life skills. However, it is not mentioned how to plan and teach integrated learning.*

After Nishma shared, Ranjita articulated her confusion, "What *is the difference between subject specific and holistic learning? I think we need to know about holistic learning also*." Sojina echoed Ranjita and added, "*Ranjita Ma'am is right. For me, the concept of multidisciplinary and interdisciplinary is also new. I have never heard about this before in my teaching life*."

All the co-researchers agreed with her. They also acknowledged that, while they understood what integrated learning is and why it is important, they were unsure how to implement it in the classroom. They struggled with designing and organizing activities for integrated learning. Therefore, after discussion, the entire research team co-identified the common problem faced by the co-researchers in their school for integrated learning, "*How to plan and design the activities and implement the integrated lesson for holistic learning?"* Considering the concerns of the co-researchers, I said,

> *Why don't we explore an integrated curriculum once? I am pretty sure we may find many things addressing our questions about integrated learning, holistic learning, multidisciplinary and interdisciplinary as it is an authentic document for Grades 1-3 from CDC. Do we have curriculum in our school? Have we gone through it?*

Ritima said,

> *That's a great idea but we don't have an integrated curriculum with us neither we have in our school."* I said, "*The digital copy is on the CDC website. I will provide you with a digital copy of the integrated curriculum through the messenger group. You can download it and have it on your smartphone or computer.*

Gita, the pre-primary level coordinator assured, "*I will request the principal and print at least one copy of the integrated curriculum. I think it is good to have one hardcopy in school."*

We wrapped up the session with the following tasks: I would share the digital copy of the integrated curriculum, Gita would provide the hard copy, and the entire research team would explore it in depth. After the meeting, I shared the digital copy of the integrated curriculum in the messenger group that evening, and Gita printed the integrated curriculum, informing the principal, and provided the copies to the co-researchers. All members of the research team went through the curriculum before the next meeting.

As I reflected on the shopkeeper's lack of ethics in his occupation and how his son was learning these norms, I started thinking about how to address this issue. I realized that integrated learning could be a useful way to draw attention to such problems. On the other hand, when the research team discussed the factors hindering the implementation of integrated learning in classroom, we identified several challenges, such as insufficient time, size of class, students from diverse backgrounds and behavioral issues. These challenges indirectly hinder the occurrence of integrated learning and are beyond the teachers' control. In fact, these are general challenges at all levels of learnings. Discussing the challenges which teachers can't address would be in vain. It is clear that the co-researchers focused only on the external factors beyond their control due to self-serving bias, the tendency to deny blame for failure which is noted by Baumeister and Bushma (2017). It was necessary for the co-researchers to focus on factors within their control that they could address through their own efforts. Therefore, I asked them to focus more specifically on challenges for integrated learning rather than general ideas. I proposed that the team review the paper *Perceptions of Nepali Experts on Integrated Curriculum* and explore the challenges in comparison with the author's views (Lamsal, 2021). I aimed to facilitate self-reflection among the co-researchers so that they would examine their own values and beliefs about teaching and learning, taking greater responsibility as suggested by Farrell (2006), rather than focusing on external challenges beyond their control. It is ironic that, in our society, when we stand in front of the mirror, we tend to see the image of others and their weaknesses. For example, when someone talks about an inefficient teacher, images of other teachers often come to mind, rarely our own. In reality, the purpose of looking into a mirror is to identify the dirt on our own face so we can clean it; however, we often see the faces of others and focus on their flaws

instead. This tendency reflects a lack of self-reflection. To understand the expectations of Grade 1–3 teachers regarding integrated learning, we agreed to review Lamsal (2021) and engage in self-reflection. This led us to realize that integrated learning supports holistic learning, viewing children as a whole persons, as noted by Pant (2022). Moreover, integrated learning develops life skills for twenty first century, as mentioned by Drake and Reid (2018).

By this point, we were aware that our understanding of what and why integrated learning was superficial. Although our understanding was limited, we collaboratively co-identified the challenge: "How to design strategies for integrated learning in classroom?" The co-researchers were used to preparing activities for disciplinary lessons, but they hadn't prepared activities for integrated learning before. Their planned activities focused on segregated learning. We realized that our knowledge of integrated learning was insufficient to incorporate it into the lesson plans. Therefore, we agreed to explore integrated learning further by studying the integrated curriculum. In this way, the research team started delving into the research and integrated learning, gradually moving from a general understanding to a deeper reading of the reference materials, papers, and the integrated curriculum.

Exploration, Learning and Continuous Reflection

As the research team began discussions and exploration to identify the problems in fostering integrated learning in their school, we realized that we needed to explore integrated learning in depth before addressing the problem. In this section, I narrate how the research team collaboratively studied the integrated curriculum in depth, learned about thematic teaching approach from experienced co-researcher, explored the soft skills, models of integration and holistic learning.

Studying the Integrated Curriculum

After a week, we met again in the staff meeting room after school on May 25, 2023. We shared our learning after going through the integrated curriculum. We identified that the integration curriculum in Nepal includes its significance, soft skills, themes, thematic arrangement of themes, disciplines, learning achievements, facilitating learning methods, and assessments. Since our identified problem was about how to design the strategies for integrated learning, we decided not to focus further on

assessment. Prasansha mentioned, "*It is mentioned about themes in the curriculum. There are 19 themes, and we are expected to teach in a thematic approach in Grades 1-3*." Juli also shared, "*I also noticed themes in the curriculum,"* I responded, *"I came to know that some of you have experience of teaching in a thematic approach."* Ritima said,

> *Yes, we don't know so much about the thematic approach, but we sometimes plan thematically based on our experience of teaching in preprimary in previous school. We are not sure it is the same approach the curriculum is talking about.*

Only the grade one and two co-researchers and Gita had some knowledge of thematic approach but remaining were unaware of it. I said, *"If the curriculum expects us to plan and thematically, we all should know about thematic approach. And the knowledgeable have to teach us. Who is going to do this?"* Ritima said,

> *Gita Ma'am might have good knowledge of thematic approach because I have heard that she has done a one-year course on preprimary teaching and learning. Moreover, she has been mentoring pre-primary teachers in planning and teaching. I think she can help us.*

Other co-researchers also echoed her. Gita also willingly agreed to share thematic teaching approach based on her experience. I requested,

> *Ma'am, could you please prepare to facilitate a short learning session on thematic teaching is? However, I would like to request other co-researchers to add sharing from their experience. There are also other components such as soft skills and models of integration. First let's explore the thematic approach and then soft skills and models of integration*

Gita, the co-researchers and I agreed that Gita will facilitate co-learning session on the thematic approach to teaching and learning with the other co-researchers.

Thematic Teaching Insights from Experienced Co-researcher

We had our subsequent sessions in Grade 1 classroom on May 30, 2023, as a co-learning session on thematic approach to teaching and learning. Gita came prepared with relevant materials. Using the chart in the picture below. She explained the key concepts of the thematic approach and invited reflections, questions and contributions from the others.

Figure 3

Kuragraphy on Thematic Teaching by Local Expert

She took wild animals as the theme. Based on ths theme, she explained how Math, Nepali, English, Science, Arts/Music and Communication and Language could be taught by linking all the subjects to the theme using a worksheet. She also engaged us in playing memory games using cards and connecting stories about wild animals. These were the thematic activities used in pre-primary school. The other co-researchers also seemed somewhat more confident about themes and planning.

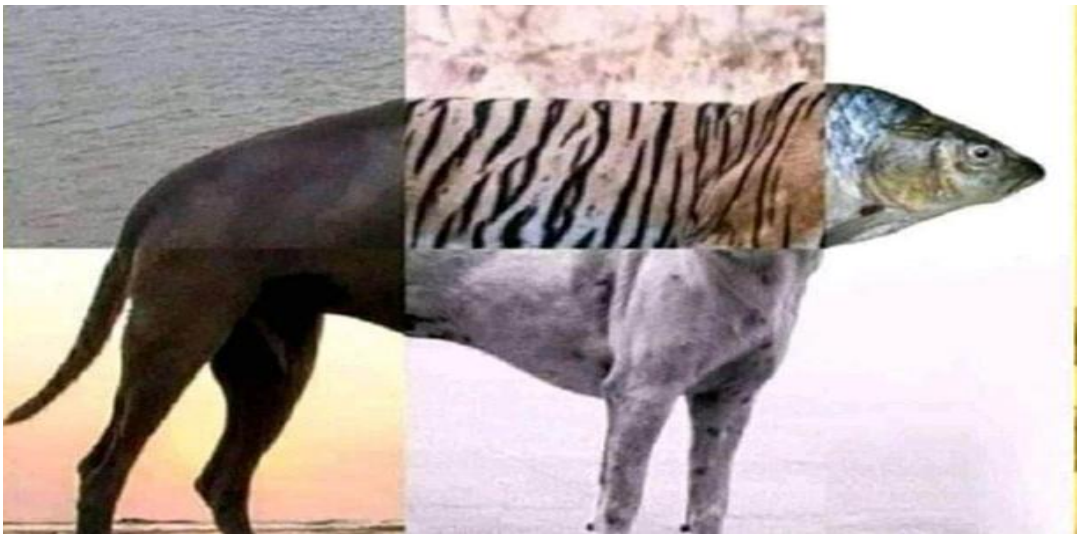
In our next session on June 1, 2023, we began the discussion by sharing the picture below of an interesting animal to the messenger group and asked the co-researchers to identify the animal in the picture. I found this picture on my Facebook wall as response from the student.

Teacher: *Why don't you understand mathematics?*

Student: *This is what we understood about mathematics?*

Figure 4

Concept Perceived by the Students



The room resonated with laughter. After a while, Roja said, *'There is no such animal in the world.'* I said,

> *Yes, if we connect it to our day-to-day teaching and learning, if students are taught the different parts of different animals in a day, students will make similar absurd images of animals in their mind. It means students won't have a clear image or concept of the topic we expect them to have*.

I added, "*What would the teachers have done to give the clear concept of the animal to the students?*" Sojina replied,

> *The teachers in all periods would have taught the parts of the body of the same animal. For example, first period - head of fish, second period -body of fish, third period - fins of fish, fourth period - tail of fish and so on so that students get a complete picture of fish by the end of the day connecting the learnings throughout the day.*

Gita said, *"That's what I meant to say in our last session. There the theme was wild animals. In this picture, the theme could be fish.*" Ranjita said, *"I saw themes like my family, my daily life, my school, my community and so on in the curriculum. It means we have to teach the whole day about my family in math, English, nepali, our surroundings and other subjects."* Gita replied, "*Yes*" Ritima questioned, "*We have taught many subjects in our school, but it is mentioned only about Nepali, English, Math and Our*

Surroundings in the curriculum." Before the discuss school, thematic approach got diverted, I said *"We will discuss this later. What do other co-researchers think being thematic is like?* Nishma said, "*On Environment Day, the theme would be 'Environment' in the school where we do everything about the environment on that day such as poem, drawing, speech, debate, drama about environment."* Ranjita also added,

> *I think the thematic approach is like bringing all the scattered components into one place. It is like joining the jigsaw pieces to form a complete picture. Like my son joins the parts of spiderman to form a complete picture of spiderman*.

By this time, there were similar expressions in other co-researchers' faces. I thanked her and said, "*I will be away from Kathmandu for ten days. Let's explore soft skills and models of integrated curriculum in between."*

On my way home after the meeting, I reflected on the co-researchers becoming familiar with integrated learning and discussing and sharing their ideas. These are the same teachers who, during the first session, had asked me to provide teaching techniques similar to those they receive from other training and seminars. However, as the lead researcher of this PAR, I wanted my co-researchers to develop the knowledge, skills, and attitude to co-construct knowledge themselves in their context, as mentioned by Dhungana et al. (2021) and to apply it anywhere, and in any situation, rather than relying on others for the readymade technique. Long back I heard a Chinese quote 'Give a man a fish, and you feed him for a day; teach a man to fish, and you feed him for a lifetime' and was impressed with it. However, teaching a person to fish using only one technique in a particular context is not sufficient to enable them to sustain themselves for a lifetime. They should be equipped with the knowledge, skills, and attitudes that allow them to fish in any situation stream, pond, lake, river, or sea and to store or use the fish creatively throughout the year. Similarly, the aim of this research is to enable the co-researchers to develop the teaching strategies in their context for sustainable pedagogical practice, as Wagle et al. (2024) asserted regarding sustainable pedagogical innovations. As Sinha (2015 as cited in Tamang, 2021) mentioned, Teacher Professional Development (TPD) recognizes that teachers need to engage in lifelong learning. Likewise, the co-researchers in this study should be able to innovate teaching strategies independently, according to the situation, even in the absence of experts. To support this, I facilitated the process by

encouraging them to explore integrated learning resources such as paper, reference materials, and the integrated curriculum and share ideas within the team which is a sustainable approach to teacher professional development.

During the exploration, the research team realized that the integrated curriculum prescribes a thematic approach to teaching for integrated learning, yet the team lacked knowledge of thematic teaching. We identified that Gita had substantia knowledge and experience of thematic teaching and requested her to share her experience with the research team. She gladly accepted our proposal and facilitated a co-learning session on thematic teaching, similar to Fogarty's webbed model of integration (Fogarty, 1991). The entire research team learned what the integrated curriculum prescribed for thematic teaching, why it was recommended and how to do it.

Larraz (2017, as cited in Rijal, 2021) stated that thematic education practices under the integrated curriculum are helpful for learners in acquiring transversal skills, which are the ultimate goal of education. Rijal (2021) noted that the integrated curriculum is not merely a simple organization of teaching content or lessons; rather, it involves creating various real-life situations as themes, allowing different disciplines to work in a complementary manner. I, as the lead researcher, had previously acted as the facilitator, but in this session, a co-researcher not only contributed but facilitated the co-learning session, which I visibly sensed as a shift of power from the lead researcher to the co-researchers. During the co-learning session, the co-researchers shared their understanding of thematic teaching based on their pre-primary teaching experience. They were learning from their colleagues as a local resource person, an authentic practitioner who understands how knowledge can be applied in their context to make it more relevant. Local knowledge was being used to address local issues. This was an opportunity for the co-researcher to develop her knowledge and confidence, and to acknowledge her local wisdom (Rajbanshi & Luitel, 2020).

Exploring and Learning Soft Skills

I was in Rukum in one of the schools where there is a female principal. She usually seeks help of her male colleagues to make decisions. I heard people complaining about her for not making decisions independently. However, I critically reflected on the reasons for her dependency on male teachers during the decision-making process and

connected with her schooling, which lacked the practice of life skills. After returning from the Rukum visit, we met on June 14, 2023. We began the session by reflecting on the integrated curriculum, theme, soft skills, models of integrated curriculum and holistic learning. Then, the co-researchers shared the soft skills we read about in the curriculum. During the sharing, Nishma said, *"In the curriculum, the soft skills are life skills such as thinking skills, intrapersonal skills. There are 5 main soft skills and a total of 29 soft skills with their sub soft skills.*" Ritima questioned, "*What are these S1, S2…?*". I broke the silence, "*There must be a meaning of S1. It must be code language. Lets again go through the soft skills section in the curriculum."* Finally, Juli said with excitement, *"S may be for soft skills and 1,2,3 … may be for the order of soft skills."*

I asked the other co-researchers to check, and they found that she was correct. She was happy to discover these things. I took this opportunity to share with the co-researchers about the female principal's lack of decision making and problem-solving skills, who rely on male teachers to the co-researchers. I reflected that if the female had been exposed to life skills during her school life, she could have become a strong leader the school. Since all the co-researchers were female, they were able to relate with the female principal in the story. Gita added, "*We also make our preprimary students practice life skills like - taking turns, sharing, putting shoes on their own, taking care of belongings, throwing wastepaper in the dustbin*".

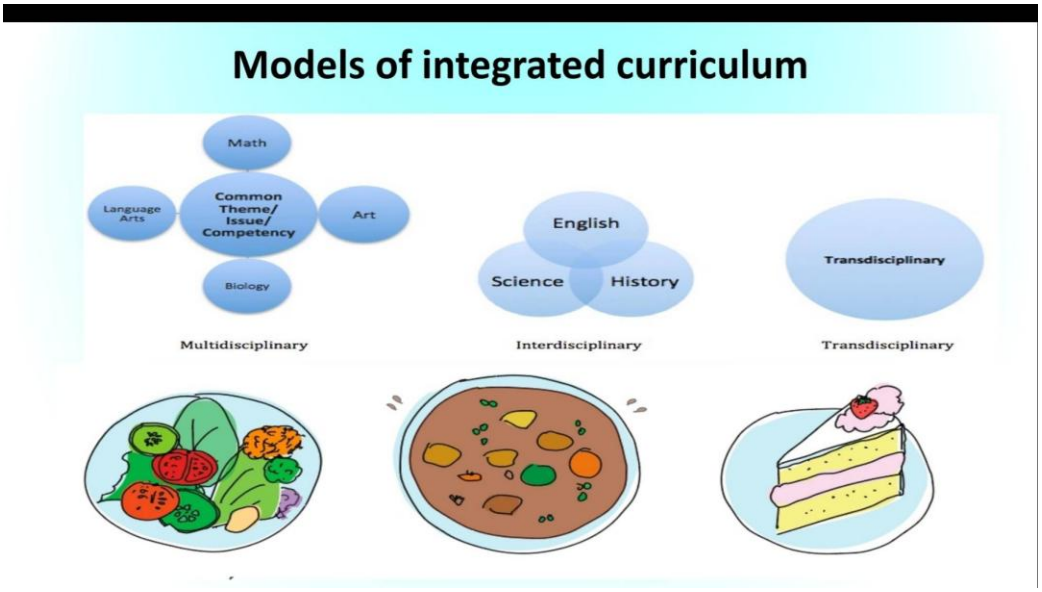
Ranjita who teaches our surroundings and Nepali in grade 3 shared, *"It means we are expected to integrate these 29 soft skills in our lessons."* Prashansa, also a grade 2 teacher added, "*Twenty first century skills/life skills/soft skills also should be integrated into the lesson."* I replied, *"yes, according to the integrated curriculum*". I reminded them of the story of a shopkeeper and his son in Siraha and explained the necessity of integrating life skills into the lessons. Some of the co-researchers were not happy with the curriculum, Nishma said, "*How is it possible to do all these things at a time? How can we teach many things in one lesson?*"

It was already late, and the teachers were concerned about their tuition. I proposed that we first explore the basic knowledge of three major areas in the integrated curriculum: soft skills, models of integration, and holistic learning first, and revisit them later for a more comprehensive understanding. We all agreed to discuss the models of

integration in the next kuragraphy session and to engage in self-study on multidisciplinary and interdisciplinary models of integration until then. I shared the picture below in the messenger group.

Figure 5

Models of Integrated Curriculum



(Drake & Reid, 2018)

Exploring Multidisciplinary and Interdisciplinary Models of Integration

On 21 June 2023, we met in the same staff meeting room and started discussing models of integrated curriculum. Reflecting from the analogy in the picture above, Ranjita gave one metaphor,

> *I think multidisciplinary is like the cultural diversity of our country Nepal where people of diverse cultures are live together with the feeling of brotherhood under same umbrella but still having their own cultural values and importance. It is also like 7 provinces in Nepal.*

Roja said, "*Interdisciplinary is like aalunimki which is made up of mixing potato, nimki, spices, sauce, etc*." I asked the co-researchers to go through the picture explaining multidisciplinary and interdisciplinary again I sent in a messenger group. Gita said, "*It is so confusing sir. In the curriculum, it is mentioned that Nepali, English and Math are under multidisciplinary whereas our surroundings is under interdisciplinary*."

I asked, "*Can we see any differences between multidisciplinary and interdisciplinary?*"

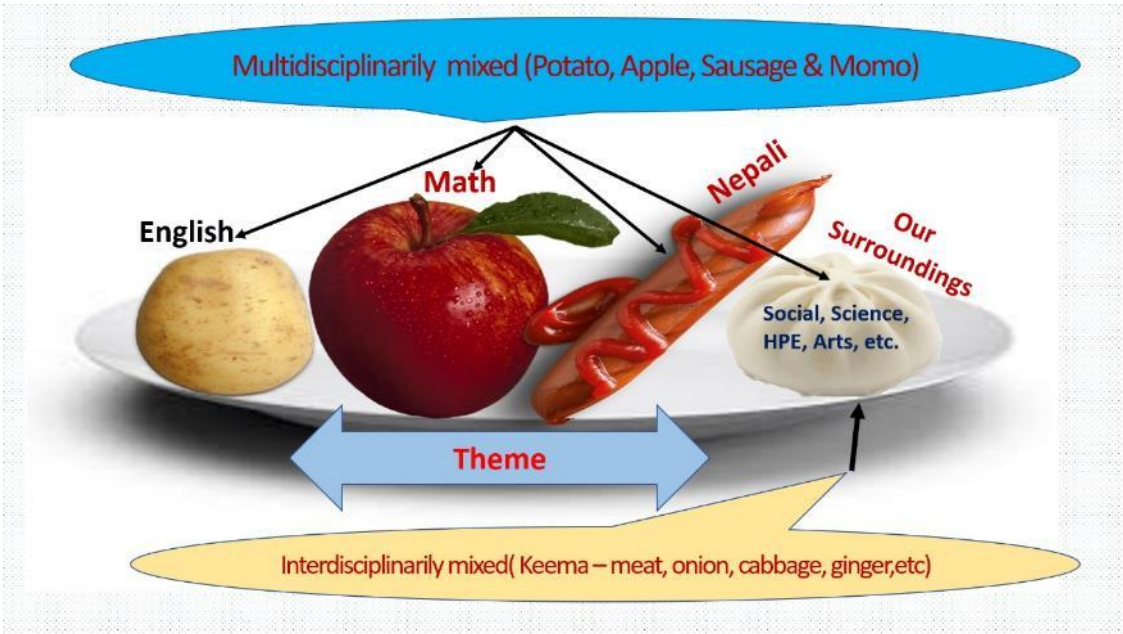
Nishma said, "*Looking at the picture you shared, I think the subjects are less mixed in multidisciplinary than in interdisciplinary. But how?*" I spoke, "*Let's imagine we have a plate. What four foods do you expect to have on the plate?"* Ritima said, "*Potato"*, another said, "*apple*", the third said, '*momo*' and the fourth said, '*sausage*'.
I asked the grade 3 math teacher to draw plates and potato, apple, sausage arranged on the paper.

After long discussion and exploring the integrated curriculum, we created this picture, in which we compared the plate to a theme, the potato with English, the apple with Math, the sausage with Nepali and the momo with Our Surroundings. We discovered that potato, apple, sausage and momo are multidisciplinary arranged on the plate because they are placed together but remain distinct, reflecting multidisciplinary connections. Similarly, momo is interdisciplinary because its ingredients, the kima, onion, garlic, ginger, cabbage and momo masala are mixed together, representing the integration of subjects such as social studies, science and environment, creative arts, health and physical and others. The image in Figure 6 is developed later based on our discussion outcomes.

After we developed the illustration of different foods on the plate, co researchers who teach English, Math and Nepali said, "*The subjects we teach are multidisciplinary*' and similarly co-researchers who teach our surroundings said, '*Our surroundings are interdisciplinary*'. Ranjita who has long experience said, "*I remember we used to study similar subjects when we were in school."* I asked the question, "*Which model of integration is more integrated, multidisciplinary or interdisciplinary based on our discussion so far*? Ritima said, " *I think interdisciplinary is more integrated than multidisciplinar*y".

Figure 6

Multi/Interdisciplinary Subjects According to Integrated Curriculum in Nepal



All the co-researchers are now aware of the models of integration according to Nepali integrated curriculum in Grades 1-3, though these may vary from country to country. However, there was still confusion on how to plan according to a multidisciplinary or interdisciplinary model of integration.

Exploring and Rethinking Holistic Learning

In the next session on June 22, 2023, I posed one question: 'Why integrated learning?' for brainstorming and began the meeting. All the co-researchers had somewhat similar answers, such as for meaningful learning, authentic learning, life skills, and holistic learning. I asked the co-researchers to share their understanding of holistic learning Prashansa who had experience of teaching in preprimary said, "*Holistic learning/development is about physical, mental, emotional and social learning or development."* Other co-researchers also echoed them. I challenged them, *"How holistic is the word holistic? Are the existing indicators of holistic learning or development sufficient enough to make the completely holistic or whole? Can we add more dimensions for holistic learning?* Sojina said, *"We have learnt about these four areas for development from the trainers in the training."* Gita also added, "So *far, I have learnt and in practice, we focus on four areas like other teachers mentioned. I think it is like*

these four walls which make this room enclosed." Ritima said, " *I agree with others. I think there are four dimensions of growth mental, emotional, physical and social."*

I realized that the co-researchers were hegemonized by the teaching of their trainers. I wanted the co-researchers to think critically and uncover their hegemony of relying on others. I wanted them to explore the ways to make the learning more holistic. Therefore, I divided them into pairs and asked them to think of more factors or indicators that make the learning more holistic. They discussed in pairs and shared the list of factors that could make the learning more holistic. According to the discussion from the co-researchers, there should be physical development, cognitive development, social development, emotional development, connection to daily life, collaborative learning, fun learning, interesting activities, active participation of students during the activities, and experiential learning. One of the co-researchers noted down the indicators of holistic learning during the meeting. The co-researchers were surprised to come up with nine factors/indicators of holistic learning because previously they were thinking only about physical, emotional, mental, and social areas of development. I again encouraged as well as challenged them to think and add more factors, which could make the learning more holistic. The discussion came up with three more indicators, such as soft skills, addressing local issues, and connecting to daily life. Now there were twelve indicators co-constructed by the co-researchers, breaking the layer of four areas of development.

Table 2

List of Holistic Learning Indicators Generated by the Co-researchers

Initial list of Indicators of Holistic Learning	**Updated list of Indicators of Holistic Learning**
• Physical development • Cognitive development • Emotional development • Social development • Connection to daily life • Collaborative learning • Fun learning activities • Active participation of students	• Physical development • Cognitive development • Emotional development • Social development • Connection to daily life • Collaborative learning • Learning with Fun/ Interesting activities

• Experiential learning	• Active participation of students • Experiential learning • Practice Soft skills • Address local issues • Thematic

We decided to address these indicators to make the learning process more holistic in our lessons. Connecting with the indicators of holistic learning mentioned above, I asked the co-researchers to brainstorm strategies that could address all these indicators. During the discussion, I noticed that my co-researchers seemed lost, as if they were flying inside a cloud without knowing which direction to take. At that moment, I recalled the paper "Journeying from Mathematics Educator towards STEAM Educator" by Pant (2022), which included examples of storytelling (Pandey, 2021) and project-based learning (Karki, 2021). Thinking that the examples in the paper might guide us out of the "cloud," I shared its digital copy in our messenger group.

From the examples in the paper, we realized how multiple concepts can be integrated within a single thematic lesson. This enabled us to generate ideas for activities that promote holistic learning. We then agreed to continue the discussion in the following session in pairs or groups, focusing on grade-wise themes, issues, and potential activities aligned with the learning achievement according to the curriculum. Meanwhile, the co-researchers were still struggling to manage time for regular sessions.

As I was going through the notes and photos from the session and the story of the female principal I shared with the research team, I felt the principal represented the co-researchers to some extent, as all of them were female. Females in Nepal have limited opportunities in the planning and decision-making process in Nepal, as noted by Subedi (2017). It is not possible to develop decision-making and leadership skills unless they practice making decisions from small to big throughout childhood to adulthood at home, in school, and in the community, taking risks, learning, and gaining confidence. As a result, Khadka (2023) asserted that women with such a background don't have the confidence to make decisions and lead the organization. The same applies to the female principal in Rukum and the female co-researchers, with the level and context varying. In

the midst of these thoughts, I felt hopeful that this research would provide an environment for the co-researchers to practice those skills, which they might not have experienced before, and also allow their students to practice as well. However, the purpose of sharing the story of the female principal with the co-researchers was also to make them feel that I am one of them, who sees from their perspective.

During the self and group study on soft skills, the co-researchers learned to locate and code a total of twenty-nine soft skills in the integrated curriculum through discussions and by learning from each other. Many times, I was tempted to provide information, explain, and demonstrate when the co-researchers were struggling. It was not only the co-researchers struggling, but also, I was struggling to overcome my temptation by helping them with ideas about soft skills. However, I exercised patience and facilitated their opportunities to contribute insights into the soft skills they had explored by provoking questions. This approach helped them reduce their dependency on a knowledgeable guide and become more responsible for their own learning and sharing. In this way, the co-researchers and I both were in the journey of empowering, as Baum et al. (2006) noted that PAR focuses on empowering all those who are involved. The co-researchers were being empowered to realize their power as knowledge constructor, and I was being empowered by releasing my power as a knowledge depositor. Like Bodner et al. (2001) mentioned about knowledge construction, the co-researchers were co-constructing knowledge, cumulatively building on the ideas of others, where social interaction modified the ideas, colleagues constructed. As a result, the co-researchers took ownership of their own learning regarding the soft skills discussed in the curriculum.

Now, the co-researchers were aware of the learning achievements and soft skills but were unaware of how to integrate them for integrated lesson plans. As we explored more about multidisciplinary and interdisciplinary models of integration, they were more confused. We used the illustration of food items apple, potato, sausage, and momo on the plate and compared them with the disciplines and model of integration in integrated curriculum, which made it easier to simplify the abstract and complex concept. However, they could only differentiate between the subjects in multidisciplinary and interdisciplinary models in the curriculum. In fact, the teachers struggle to conceptualize the multi/inter/transdisciplinary models of integration, who are habituated to the

disciplinary approach of teaching, where disciplines are taken to be separate and distinct from one another (Manandhar et al., 2022).

After this, the research team discussed holistic learning and rethought the indicators of holistic learning beyond the physical, mental, emotional, and social domains, thinking out of the box. In the beginning, the co-researchers struggled to critically think about the already established limited horizon of understanding of holistic learning. As Johnson (2023) asserts, the whole is more than the sum of its parts and the sum of existing indicators captures only a portion of what constitutes holistic learning. This indicates that there is always space to capture more for holistic learning and for the possibilities of adding the indicators of holistic learning as much as we can. Therefore, we broke the walls of our understanding of holistic learning, critically thinking about how holistic the word 'holistic' is, expanding the indicators of holistic learning from four to nine, then to nine to twelve. During this process, the co-researchers illuminated the power of the existing set of beliefs and assumptions about holistic learning as Brookfield (2017) noted, are often accepted as normal and common sense. However, despite this achievement, the co-researchers remained confused and felt lost in the fog like crows, unable to see clearly. They could not yet grasp a clear picture of integrated learning. The co-researchers were stressed due to a disorienting dilemma, as mentioned by (Roberts, 2013) as a result of thinking critically about the factors of holistic learning. As a researcher, being aware of the process of transformative learning, I took it as a normal occurrence that happens in education. I was confident that the co-researchers would get clear picture and come out of this educational fog once they get the context to integrate the learning achievements, soft skills, holistic learning indicators, and models of integration while planning to design the strategies for integrated learning for holistic learning. As noted by Khanal (2023), learning in context creates a natural situation with meaningful learning, the co-researchers would get a context to work on using their knowledge of soft skills, holistic learning indicators, and models of integration. During this process, the co-researchers will learn by doing rather than simply discussing ideas.

Planning for Action

After the research team together explored the challenges of implementing the integrated curriculum and its intent, the research team was now ready to plan. During this

planning, the co-researchers aimed to address the problem that they were struggling to foster integrated learning at their school. I narrated and discussed how the research team planned as a team, incorporating the learnings from the previous stage of the cycle.

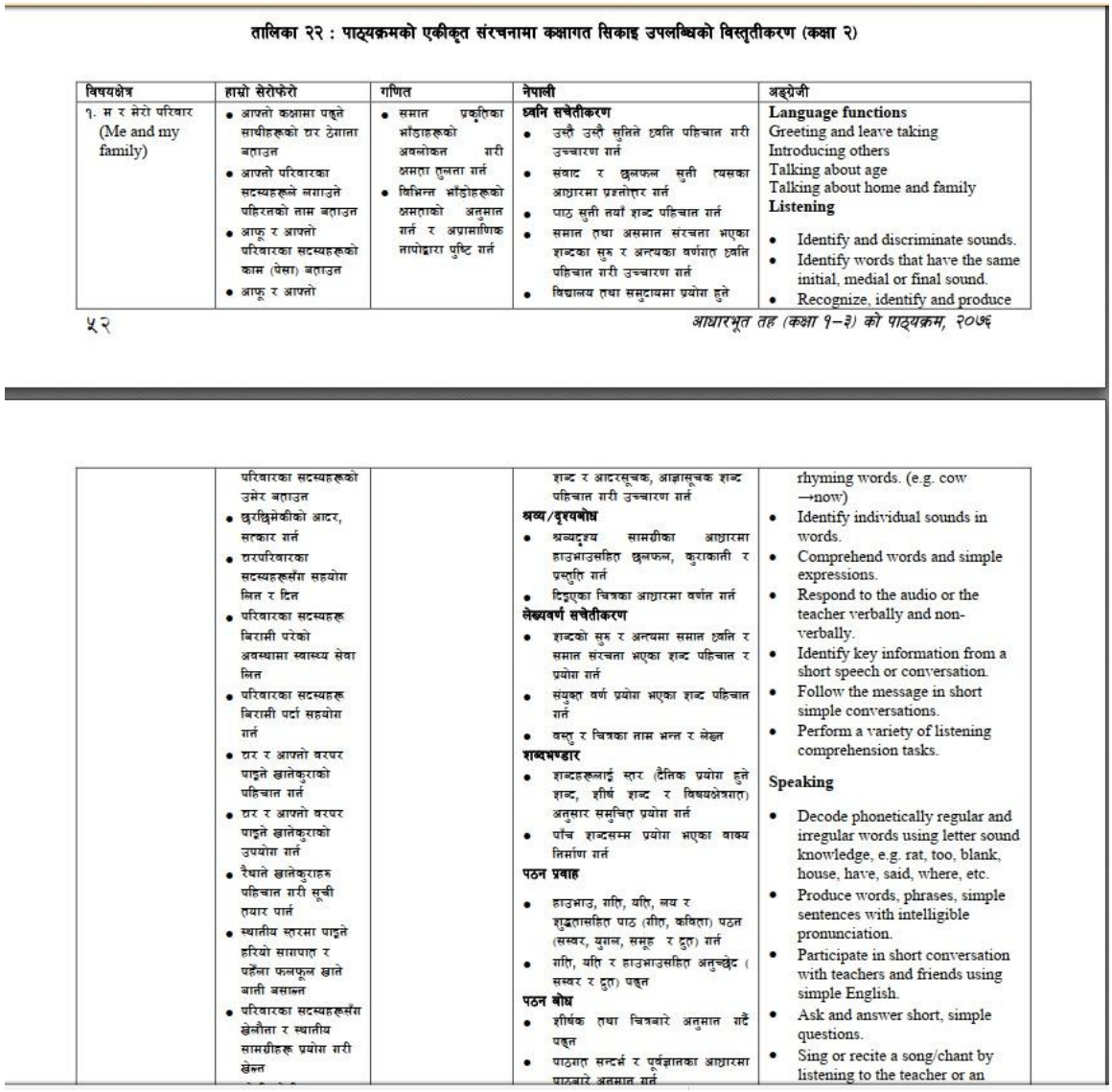
Crafting Our First Thematic Plan

With the basic knowledge of soft skills, models of integration, and holistic learning indicators, the kuragraphy session on June 23, 2023, began with some reflection on what our problem was and what we were supposed to do. I asked, "*Now, can we plan thematically*?" The co-researchers remained silent, showing no reaction. They were still confused, and their facial expressions reflected mixed feelings. Ritima broke the silence and said, "*If we go further in the integrated curriculum, I think we will get more ideas on how to plan thematically.*" To make them more convenient, I said, *"Then, let's explore the curriculum more in depth and see how the curriculum tells us to plan thematically?"* Since the format of the integrated curriculum is theme based, we already had agreed that the foundation of the lesson will be thematic approach. For this, we referred to the co-learning session facilitated by Gita. After the co-researchers shared about the arrangement of the themes and subject wise learning achievements in the curriculum, we decided to work on an example of a daily thematic plan.

We agreed and selected "Me & My family" for the theme for the grade 2 whole day thematic plan. This grade and theme were chosen as it allowed all co-researchers to work within a common focus while addressing different disciplinary learning achievements, accommodating both grade teachers and subject specific teachers. We divided the co-researchers into four pairs of Math, English, Nepali, and Our Surroundings and asked them to identify and select the learning achievements from the curriculum. The Math, English, Nepali and our Surroundings groups selected the learning achievements: *Capacity of different vessels in family, House and family members, Tell the name of things at home in Nepali language and Tell the name of the works of family members* respectively referring to the curriculum section below in figure 8.

Figure 7

Subject-wise Learning Achievements Distribution in the Theme Me and My Damily in Integrated Curriculum



तालिका २२ : पाठ्यक्रमको एकीकृत संरचनामा कक्षागत सिकाइ उपलब्धिको विस्तृतीकरण (कक्षा २)

विषयक्षेत्र	हाम्रो सेरोफेरो	गणित	नेपाली	अङ्ग्रेजी
१. म र मेरो परिवार (Me and my family)	• आफ्नो कक्षामा पहुने साथीहरूको ठर ठेगाना बताउन • आफ्नो परिवारका सदस्यहरूले लगाउने पहिरनको नाम बताउन • आफू र आफ्नो परिवारका सदस्यहरूको काम (पेसा) बताउन • आफू र आफ्नो	• समान प्रकृतिका भाँडाहरूको अवलोकन गरी क्षमता तुलना गर्न • विभिन्न भाँडोहरूको क्षमताको अनुमान गर्न र अप्रामाणिक तापोद्वारा पुष्टि गर्न	**ध्वनि सचेतीकरण** • उस्तै उस्तै सुनिने ध्वनि पहिचान गरी उच्चारण गर्न • संवाद र छलफल सुनी त्यसका आधारमा प्रश्नोत्तर गर्न • पाठ सुनी तर्यो शब्द पहिचान गर्न • समान तथा असमान संरचना भएका शब्दका सुरु र अन्त्यका वर्णगत ध्वनि पहिचान गरी उच्चारण गर्न • विद्यालय तथा समुदायमा प्रयोग हुने	**Language functions** Greeting and leave taking Introducing others Talking about age Talking about home and family **Listening** • Identify and discriminate sounds. • Identify words that have the same initial, medial or final sound. • Recognize, identify and produce

५२ *आधारभूत तह (कक्षा १–३) को पाठ्यक्रम, २०७६*

	परिवारका सदस्यहरूको उमेर बताउन • छरछिमेकीको आदर, सत्कार गर्न • ठरपरिवारका सदस्यहरूसँग सहयोग लित र दित • परिवारका सदस्यहरू बिरामी परेको अवस्थामा स्वास्थ्य सेवा लित • परिवारका सदस्यहरू बिरामी पर्दा सहयोग गर्न • ठर र आफ्नो वरपर पाइने खानेकुराको पहिचान गर्न • ठर र आफ्नो वरपर पाइने खानेकुराको उपयोग गर्न • रैथाने खानेकुराहरू पहिचान गरी सूची तयार पार्न • स्थानीय स्तरमा पाइने हरियो सागपात र पहेँला फलफूल खाने बानी बसाल्न • परिवारका सदस्यहरूसँग खेलौना र स्थानीय सामग्रीहरू प्रयोग गरी खेल्न		शब्द र आदरसूचक, आज्ञासूचक शब्द पहिचान गरी उच्चारण गर्न **श्रव्य/दृश्यबोध** • श्रव्यदृश्य सामग्रीका आधारमा हाउभाउसहित छलफल, कुराकानी र प्रस्तुति गर्न • दिइएका चित्रका आधारमा वर्णन गर्न **लेख्यवर्ण सचेतीकरण** • शब्दको सुरु र अन्त्यमा समान ध्वनि र समान संरचना भएका शब्द पहिचान र प्रयोग गर्न • संयुक्त वर्ण प्रयोग भएका शब्द पहिचान गर्न • वस्तु र चित्रका नाम भन्न र लेख्न **शब्दभण्डार** • शब्दहरूलाई स्तर (दैनिक प्रयोग हुने शब्द, शीर्ष शब्द र विषयक्षेत्रगत) अनुसार समुचित प्रयोग गर्न • पाँच शब्दसम्म प्रयोग भएका वाक्य निर्माण गर्न **पठन प्रवाह** • हाउभाउ, गति, यति, लय र शुद्धतासहित पाठ (गीत, कविता) पठन (स्वर, युगल, समूह र द्रुत) गर्न • गति, यति र हाउभाउसहित अनुच्छेद (सस्वर र द्रुत) पढ्न **पठन बोध** • शीर्षक तथा चित्रबारे अनुमान गर्दै पढ्न • पाठगत सन्दर्भ र पूर्वज्ञानका आधारमा पाठबारे अनुमान गर्न	rhyming words. (e.g. cow →now) • Identify individual sounds in words. • Comprehend words and simple expressions. • Respond to the audio or the teacher verbally and non-verbally. • Identify key information from a short speech or conversation. • Follow the message in short simple conversations. • Perform a variety of listening comprehension tasks. **Speaking** • Decode phonetically regular and irregular words using letter sound knowledge, e.g. rat, too, blank, house, have, said, where, etc. • Produce words, phrases, simple sentences with intelligible pronunciation. • Participate in short conversation with teachers and friends using simple English. • Ask and answer short, simple questions. • Sing or recite a song/chant by listening to the teacher or an

CDC (2019)

Somehow, we selected the learning achievements from four disciplines under the theme me and my family according to the co-learning session on thematic planning and teaching by Gita. But we got stuck in how to select the soft skills out of 29 soft skills from the curriculum. Nishma asked, "*Can we select the soft skills randomly*?"

I asked them to visit the curriculum again and explore. We together found what soft skills can be integrated in what themes, subjects and learning achievements to use as mentioned in the curriculum page number 85 below in figure 9.

Figure 8

Soft Skills Distribution into the Themes Integrated Curriculum

१२.३ कक्षा १-३ को पाठ्यक्रममा व्यवहारकुशल सिपहरूको एकीकरण

तालिका २५ : पाठ्यक्रममा व्यवहारकुशल सिपहरूको एकीकरण (कक्षा १, २ र ३)

क्र.स.	विषयक्षेत्र/ विषयक क्षेत्र	एकीकृत हुने व्यवहारकुशल सिपहरू			
		हाम्रो वरिपरिको	गणित	नेपाली	अङ्ग्रेजी
१.	म र मेरो परिवार (Me and my family)	S1.1, S1.2, S3.1, S3.4	S1.4, S1.5, S3.1	S3.1, S 1.2, S 1.1, S 3.2, S 4.3	S1.5, S2.1, S2.3,S3.1, S3.2, S3.4, S5.4
२.	मेरो दैनिक जीवन (My daily life)	S2.1, S4.3, S4.4, S5.7	S1.1, S1.2, S1.3, S3.1	S 2.1, S 1.1, S 4.3, S 3.2	S3.1, S3.2, S3.4
३.	हाम्रो समुदाय (Our community)	S1.1, S3.2, S3.3, S5.4	S1.1, S1.2, S1.3, S1.4, S1.5, S3.1, S3.2	S 4.3, S 1.1, S 1.2	
४.	हाम्रो विद्यालय (Our school)	S1.1, S1.2, S2.3	S1.1, S1.2, S1.3, S1.4	S 4.3, S 4.4, S 1.1, S 3.2	S1.1, S1.5, S2.1, S2.5, S2.6, S2.7, S3.1, S3.2, S3.4, S5.2
५.	हाम्रो वातावरण (Our environment)	S5.4, S5.7		S 4.3, S 1.3, S 4.4, S 3.1, S 1.1, S 3.2	S1.3, S2.7, S3.1, S3.2, S3.4, S4.4, S5.2, S5.4
६.	मेरो सरसमान (My belongings)				S2.1, S2.3, S3.1, S3.2, S3.4, S4.4,
७.	मेरो सिर्जना (My creation)	S1.2, S1.3, S3.4	S1.1, S1.2, S1.4, S3.2	S 3.2, S 1.1, S 3.1, S 1.3, S 3.3	
८.	हाम्रो संस्कृति (Our culture)	S2.3, S3.5, S5.2		S 1.1, S 3.1, S 4.5, S 1.5, S 3.2, S 4.3	S1.2, S2.1, S2.4, S3.1, S5.1, S5.2, S5.5
९.	सञ्चार प्रविधि र बजार (Communication technology and market)	S3.1, S4.2	S1.1, S1.2, S1.3, 1.4, S3.2, S4.3, S4.4	S 1.1, S 2.4, S 1.1, S 3.1, S 3.2, S 4.3	S2.1, S2.2, S2.4, S3.1, S4.5
१०.	हाम्रो वरपरको संसार (Our immediate world)	S1.1, S1.2		S 1.1, S 1.5, S 5.1, S 3.2, S 4.3	
११.	हाम्रा वरपरका जीवजन्तु (Living beings of our surrounding)	S1.2, S1.3, S1.4			
१२.	सङ्ख्याको ज्ञान (Number sense)		S1.1, S1.2, S1.3, S1.4		
१३.	गणितका आधारभूत क्रिया (Basic mathematics operation)		S1.2, S1.3, S3.2		
१४.	नाप, क्षेत्रफल (Measurement; Area)		S1.1		
१५.	फलफूल र तरकारी (Fruits and vegetables)				S1.3, S1.5, S3.1, S4.4
१६.	बानी र रुचि (Hobbies and interests)			S 1.1, S 3.1, S 4.3, S 1.5, S 3.2	S1.3, S2.2, S2.3, S3.1, S3.2
१७.	चरा र जनावर (Birds and animals)				S1.4, S2.6, S3.1, S3.4, S5.4
१८.	हाम्रा क्रियाकलाप (Our activities)			S 1.1, S 3.1, S 4.3, S 1.5, S 3.2	

(तालिकामा उल्लिखित S1.1, S1.2, ... S5.5 ले खण्ड ११ मा समावेश भएका व्यवहारकुशल सिपहरू जनाउँछन् ।

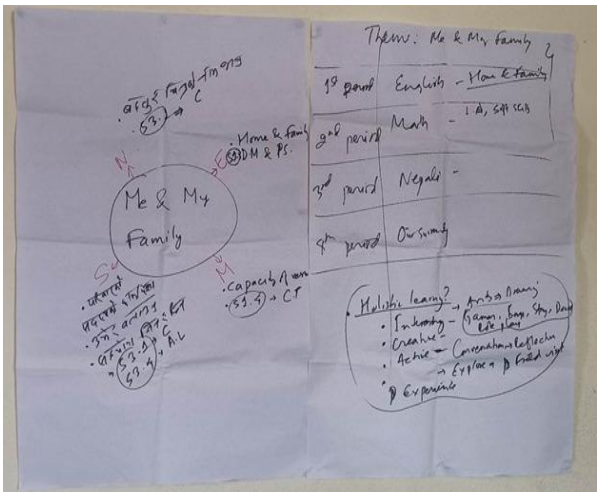
आधारभूत तह (कक्षा १–३) को पाठ्यक्रम, २०७६ ८५

CDC (2019)

After this, we discussed how subject areas, learning achievements and soft skills can be demonstrated through diagrams and matrix tables in charts. We came up with an outline of the thematic planning of the day where each pair of groups selected the learning achievements and soft skills. Below is the photo of the scratch thematic planning.

Figure 9

One Day Thematic Plan: Scratch Version by the Research Team



We were happy that we could somehow prepare a format of whole day thematic plan. Then, we decided to work on a grade-wise and subject-wise integrated lesson plan in the next meeting. In next meeting, I was expecting co-researchers to come with some ideas for integrated lesson planning on June 26, 2023. In contrast, the co-researchers couldn't bring any ideas, instead they were requesting me to share my ideas or sample lesson plans. In response to their request, I said, *"Why not explore the CDC textbooks and teachers guide? There might be some ideas."* Then, we downloaded the CDC textbook and teacher guide from the CDC website. Also, we planned to purchase a set of Grades 1-3 CDC textbooks. We couldn't discuss it more this time. I asked the team to go through the CDC textbooks and teacher guides and share what they found in the next meeting.

Integrated Planning: Hitting Many Targets with One Stone

In our kuragraphy session on July 2, 2023, the co-researchers seemed a little bit confident this time because they had gone through integrated lesson samples in the teacher guide. In the meeting, we discussed and identified how the activities were aligned to address the learning achievements and soft skills in both multidisciplinary and interdisciplinary models of integration. Gita said, '*Isn't it like pashupati ko yatra maa sidra ko vyaapaar*?" Ritima added, '*Yes, it is like ek tir dui shikaar*." I said, "*I think it is*

also like ek panta dui kaam." Ranjita, who is a Nepali teacher, corrected me, "*Sir, I think it is ek kaam dui panta'*

The entire team laughed. We concluded that integrated learning is to complete two works at a time. Roja threw an idea, "*How about completing more than two works at a time if we can*?" Ritima said, "*Interesting. It means ek kaam dherai panta or ek tir dherai sikaar*" Gita critically shared, "*It sounds good, but it is difficult."*

Nishma also shared, "*It is difficult, but we can try. We can make our lessons more holistic like we discussed in last meeting*."

We all realized that we would aim to do many tasks at a time in our professional and personal lives. Then, from the teachers' guide, we compared the lesson plans of Math, Nepali, and English with the "Our surroundings" lesson plan and realized that there is only one learning achievement and one soft skill aimed to be achieved in the multidisciplinary model and multiple learning achievements and soft skills in the interdisciplinary model of integration. Nishma said, *"I see, multidisciplinary is less integrated than interdisciplinary*."

We agreed with her statement. Then, I asked the co-researchers to plan the integrated lessons from the theme and the topic, whatever they were teaching currently. We agreed to plan a whole day's thematic plan and share the plan with the messenger group and other co-researchers to provide feedback for better integrated lessons. Below are the brief, whole day thematic plan prepared collaboratively by the co-researchers of Grade 1, 2, and 3.

Table 3

One Day Thematic Plan for Grade One

Grade: One			**Theme:** Our School
Discipline	**Learning Achievements**	**Soft Skills**	**Teaching and Learning Process**
Our Surroundings	• Tell name and address of friends and teacher • Tell name of things in school • Take care of plants in school	Application skills (S1.1) Communication skills (S3.1) Awareness and respect for environment (S5.4)	• Place name of school and address on the table in group • Singing song of name of teacher and friends • Drawing things in class and color • Visit garden and interview gardener • Roleplay about cleanliness
English	• Talk about school through picture cards • Ask short questions about school using simple sentences • Read sentences & short paragraph from textbook	Visual literacy (S4.3) Creative thinking skill (S1.3)	• Share the idea from the picture card about school • Drawing school and write one/two sentences about it • Reading comprehension and solving problem accordingly

Nepali	• Write name of things in school in nepali • Explain about things found in school in nepali	Learning skills (S1.2)	• Write name of things in school in nepali • Explain the observed things in nepali • Compare and explain pictures of different schools
Math	• Count things in the playground	Learning skills (S1.2)	• Visit the playground • Group of students count big trees, small tress, doors, shoe racks and write • Group leader shares their number

Table 4

One Day Thematic Plan for Grade Two

Grade: Two			**Theme:** My Community
Discipline	**Learning Achievements**	**Soft Skills**	**Teaching and Learning Process**
Our Surroundings	• Tell names of communicable and non-communicable diseases • How do they transmit? • Sanitation of surroundings	Collaboration Skills (S3.2) Cooperation and Empathy (S3.3)	• Storytelling • Station Rotations with free play, table game, taking turns to read and writing • Roleplay

	• Proper use of toilet		
Math	• Identify three digits odd and even numbers	Communication skills (S3.1)	• Rhymes • Concept of odd and even with pencil and marker • Relate odd even with communicable and non-communicable disease • Coloring worksheet • Survey – Number game
Nepali	• React based on experience and guessing	Learning skills (S1.2)	• Game • Experience sharing by students they learnt throughout the day

Table 5

One Day Thematic Plan for Grade Three

Grade: Three		**Theme:** Communication Information & Technology	
Discipline	**Learning Achievements**	**Soft Skills**	**Teaching and Learning Process**
Our Surroundings	• Read information, symbols, pamphlets, posters and traffic signals and obey them in public places. • Use computer and mobile for	Communication skills (S3.1)	• Show picture related to communication • Sing songs of communication information and technology

	learning and communication • Be aware of harms of computers and mobile		• Discuss the pictures of ICT tools on the projector screen • Sing song again discussing the benefits and harms of mobiles
English	• Good and bad impact of technology	Communication skills (S3.1) Collaboration skills (S3.2)	• Game pre-knowledge test • Explain communication and technology in English • Roleplay • Video show about good and bad uses of technology • Group work in worksheet • Drawing and coloring of means of technology using in daily life
Math	• Read information from bar diagram • Draw the bar diagram	Collaboration skills (S3.2) Visual literacy (S4.3)	• Rhymes • Teacher explains bar diagram using power point • Discuss the bar diagram of social media • Survey by group of students on social media

- Trace the bar diagram and color
- Game related to social media

Now, all the co-researchers were ready and excited with their plan to implement. We agreed that I, the lead researcher, will observe the lesson and take notes. The co-researchers from the same class will also observe the lesson. Sometimes, Gita, the pre-primary level coordinator, will also join the lesson whenever she has leisure time. I assured them that I won't be in their classroom as an outsider observer to judge, but as their team member.

As usual, I was checking the notes from the in the evening, and I felt that the co-researchers were still confused and struggling with how to do it, due to the "habit of mind" mentioned by Mezirow (1997) in relation to disciplinary activities, although we agreed to move forward with designing activities for holistic learning. The co-researchers themselves realized the need to revisit the integrated curriculum to explore and learn more about integrated learning. Usually, teachers in Nepal do not refer to the curriculum. Their classroom instruction is guided by textbooks rather than the curriculum, and it is shaped by textbook-based teaching, as Gautam and Raj (2022) also revealed. Before the research, there was no curriculum in the school, nor had they reviewed even the digital version. In this situation, as they became involved in the research, they began to explore the curriculum as an authentic primary document for deeper learning. This marked the beginning of a shift from their existing textbook-oriented viewpoint to a curriculum-centered viewpoint. During the revisit of the curriculum, the co-researchers not only explored and located the authentic expectations but also developed a clearer understanding of how the designers had structured the themes, learning achievements, and soft skills.

While planning integrated learning using the thematic approach, we first practiced designing a full-day thematic plan for Grade Two on "Me and My Family." Four pairs selected learning achievements from four disciplines and identified soft skills, which helped the co-researchers understand the structure and purpose of a daily plan. In the next

meeting, as they were still struggling, we revisited CDC textbooks and teacher guides and compared sample period-wise plans to learn in detail, which provided clearer and more practical planning ideas. Through two rounds of discussion and reflection, our goal was to shift our mindset from hitting one target with one stone, to hitting two targets with one stone, and eventually to hitting many targets with one stone. In the Nepali context, '*Ek tir ek shikaar*' to '*Ek tir dui shikaar*' to '*Ek tir dherai shikaar*'. Similarly, '*Ek kaam ek panta*' to '*Ek kaam dui panta*' to '*Ek kaam dherai panta*'. This realization helped us break down the mental barrier of our limited belief that we could hardly accomplish two things at the same time. This represented the shift of teachers' mindsets from achieving one goal to two goals and then many goals for holistic learning, aligning with the shift proposed by Thapaliya and Luitel (2024) from informing to reforming to transforming through integrated learning (Qutoshi, 2021).

Meanwhile, the research team also found that the multidisciplinary (nested) model integrates fewer learning achievements and soft skills compared to the interdisciplinary model, as mentioned by Drake and Burns (2018). In the multidisciplinary model, only a few learning achievements and soft skills are integrated into Mathematics, English, and Nepali, whereas more are integrated into the subject "Our Surroundings" as prescribed by the Curriculum Development Center (2019). With all these knowledge and skills, each pair of coresearchers from each grade prepared a multidisciplinary and interdisciplinary lesson plans for integrated learning and shared them with the group. The other researchers provided feedback in a healthy way so that strategies were redesigned according to the feedback, fostering a collaborative environment, in spite of the possibility of the temptation to provide, and the fear of receiving negative feedback, as mentioned by Lamichhane (2019). Now, the research team was fully prepared with a plan aiming to address multiple learning targets during the lessons and was eagerly waiting for the day to implement it.

Action

As a research team of educators who work directly with Grades 1-3 students, we collaboratively identified the problem and solutions and prepared a plan to address the common problem after weeks of discussion, reflection and review of the papers and the integrated curriculum. Now, it was time for action in the classroom. I was prepared to

observe as participant observer the entire lessons and Gita was prepared to observe one lesson. Every day, I met the co-researchers before the lesson, and they were excited and nervous at the same time. When I shared '*I am excited to see our plan in action*.' In response, they said,

> *We are excited too. Since this is our first time teaching using thematic approach based on the integrated curriculum, we are also a bit nervous. We are uncertain whether we will be able to implement the plan successfully and whether it will actually work. However, we have the plan in hand to refer to in case we forget what to do next*.

Grade One Co-researchers in Action

On the first day, July 4, 2023, Ritima and Juli implemented a full-day grade one thematic plan, teaching Our Surroundings, English, Nepali, and Mathematics around the theme "Our School" during the first to fourth periods, respectively. Ritima began the lesson with circle time with songs about greetings, weather, and school. In the first period, Ritima facilitated games, storytelling, group discussion, and garden visit during the Our Surroundings lesson so that students would tell the name and address of the school, friends and teachers, tell the number of things in school, take care of the plants in school, and practice application and communication skills during the activities. In the second period, Ritima facilitated drawing and coloring, roleplay, and picture reflection during the lesson on English so that students would talk about school through picture cards and ask short questions using simple sentences, and practice creative thinking skills during the activities. In the third period, after lunch, the co-researchers facilitated a picture activity and group work during the Nepali lesson so that students would write and explain the thing found in school and practice learning skills. In the fourth period, after a warmup game, they facilitated playground visit and reflection during the Math Lesson so that students would count the things in the playground and practice learning skills. Finally, the co-researchers wrapped up the day with a thematic conclusion.

Grade Two Co-researchers in Action

The next day, July 5, 2023, Prashansa and Roja implemented their grade two thematic plan, teaching Our Surroundings, Nepali, and Math on the theme "My Community" during the first to third periods, respectively. In the first period, the co-

researchers facilitated storytelling, picture reflection, group work, and station rotation so that students would tell the name of communicable and non-communicable diseases, tell how they are transmitted, participated in sanitation of their surroundings, use of toilet properly, and practice collaboration, co-operation, empathy, and taking turns during the Our Surroundings lesson. The first lesson took longer than planned, continuing until lunch. In the next period, the co-researchers facilitated a game, roleplay, and group discussion so that students would react based on experience and guessing and practice learning skills. After lunch, in the third period, the co-researchers facilitated songs, games, coloring and survey during Math lesson so that students would identify three-digit odd and even numbers and practice communication skills.

Grade Three Co-researchers in Action

Like the Grade one and two teachers, Ranjita, Sojina, and Nishma implemented the Grade three thematic plan on the third day, July 6, 2023, on the theme "Communication Information and Technology". To make the day more thematic, the co-researchers arranged the projectors in the hall with the support of the computer teacher. Ranjita facilitated the pictures, songs, and ICT activities during the Our Surroundings lesson so that students would read and obey the information, symbols, pamphlets, posters, and traffic signals, use computer and mobile for learning and communication, beware of the harms of computers and mobiles, and practice communication and visual literacy skills. Her lesson took more time than planned. After this lesson, Sojina facilitated brainstorming, roleplay, and group discussion during the English lesson so that students would explain good and bad impacts of technology and practice communication skills. In the third lesson after lunch, Nishma facilitated rhymes, digital pictures, surveys, coloring, and a game during the Math lesson so that students would read the information from a bar diagram and draw the bar diagram.

Activities for Integrated Learning

During the lessons, the co-researchers used varieties of activities. Games, storytelling, garden visit, drawing & coloring, role play, picture activity, group work, and playground visits were the activities conducted in Grade one. Action songs, storytelling, pictures, groupwork, station rotation, roleplay, games, and surveys were the activities conducted in Grade two. Similarly, pictures, songs, reflection from the digital pictures,

role play, picture, surveys, drawing, coloring, and visual aids were the activities conducted in Grade three. As mentioned below, the following main activities were used by the co-researchers to foster integrated learning.

Roleplay

During the thematic plan implementation, the co-researchers performed roleplays in all three grades during the Our Surroundings, Nepali, English, and Mathematics lessons. The roleplays focused entirely on addressing the expectations of the curriculum. The co-researchers also involved the students as performers in the roleplays. The students either actively participated in or observed the roleplays. The classroom resembled a drama stage, with the co-researchers and some students as performers. The other students sometimes laughed, sometimes felt sad, and sometimes appeared upset according to the scenes in the drama. During the roleplay, students also could practice soft skills such as communication skills, collaboration skills, critical thinking skills and others. The students shared their learning after the roleplay.

Figure 10

Roleplay Performance by Students

Game

The co-researchers also conducted games in all three grades to implement the thematic plan implementation during the lessons. They used a variety of games. Card games, Worksheet games, and memory games directly addressed the learning

achievements from the curriculum or were at least used to test prior knowledge or review the lesson, whereas warm-up games and block games were not relevant to addressing the lesson objectives. The co-researchers engaged the students physically, mentally, emotionally, and socially during the games. They willingly participated in the games, learnt and had fun at the same time. During the games, students practiced collaboration skills, communication skills, time management skills, and application skills.

Figure 11

Co-researcher and Students during Games

Visual Aid Method

In all the grades, the co-researchers used visual aids to implement the thematic plan. During the lessons, the students looked at pictures of the school, various diseases, communication, and social media, and reflected in line with the lesson objectives. They were curious to see the images in the picture and discuss them in their groups.

Figure 12

Co-researchers and Students with Visual Aids

The students explored the pictures either in groups or individually and expressed their opinions addressing the questions posed by the co-researchers. During the picture activity, the students practiced critical thinking skills, collaboration skills, and communication skills.

Groupwork

The co-researchers in all grades facilitated group work to implement the thematic plan. The students worked and discussed in pairs, triads, or larger groups on the given task or topic assigned by the co-researchers addressing the learning objective. The students in groups shared their ideas and listened to others. In grade three, the co-researchers also assigned a leader for each group, who reported to the whole class. The grade three students were more comfortable working and discussing in groups than the students from grade two and three. During the group work, the students practiced collaboration skills, communication skills, listening skills, time management, etc.

Figure 13

Students Learning in Group Work

Storytelling

The co-researchers used storytelling to implement the thematic plan of grade one and two. They narrated stories about students and school and students suffering from communicable disease and non-communicable diseases. The stories were prepared by the co-researchers. Juli in grade one used pictures while narrating the story. The co-researchers narrated the stories with appropriate expressions, voice modulations, and gestures to make the stories interesting. The students attentively listened to the story. They showed happy, sad, and confused facial expressions during the story narration. The co-researchers asked the students to share the moral lesson from the stories. In grade two, the story was a little bit longer than it was planned. The students were struggling to pay attention towards the end of the story. The students practiced critical thinking skills and creative thinking skills during the story narration. Overall, the co-researchers and students both enjoyed the storytelling.

Figure 14

Co-researchers and Students during Storytelling

Drawing and Coloring

Drawing and coloring were used to implement the thematic plan by co-researchers of grade one and three. The co-researchers made the students draw and the color pictures of school, objects, surroundings, and bar graph addressing the learning objective based on the theme. The co-researchers asked the students to share what they wanted to say from their pictures and graphs to the whole class. All the students were actively involved in drawing and coloring articulating their thoughts through the images and colors they wanted. Students practiced critical thinking skills, creative thinking skills, and communication skills during drawing, coloring, and sharing from their product.

Figure 15

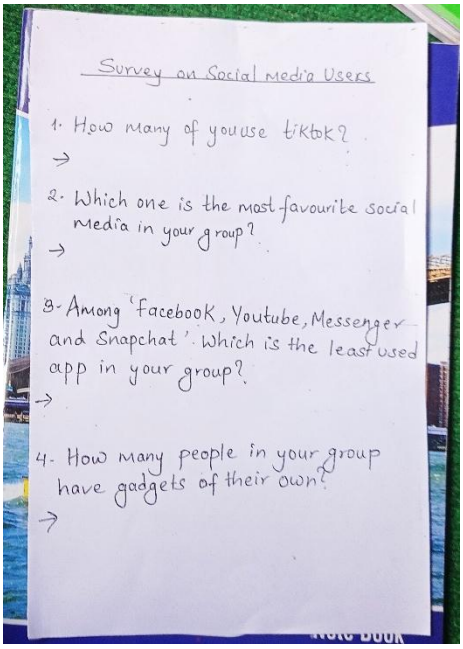
Students Expressing their Learning through Drawing

Survey based Learning

The co-researchers involved their students in surveys in grade two and three to implement the thematic plan. Students in groups were given tasks with instructions to collect data from the class or school. The group of students in grade three collected data on people using social media with questions provided by the co-researcher and shared their analysis. However, the co-researcher helped the students to represent the data of teachers suffering communicable and non-communicable diseases in the past collected by students in grade two. The students were actively involved physically, mentally, emotionally, and socially during the data collection, representation, and analysis. It was interesting to see these students learning research skills from such an early age
. During the survey, they mainly practiced collaboration skills and communication skills.

Figure 16

Students Conducting Survey on Social Media Uses



Garden Visitation

The grade one students visited the school garden and playground during the Our Surroundings and Mathematics lessons, respectively, to implement the thematic plan. The co-researchers explained the instructions to the students during the visit and then took the whole class to the garden visit and playground visits. The students observed the different flowers in the garden and asked some questions related to the garden and flowers to the

gardener, and then returned to the class. Similarly, the students were taken to the playground and asked to identify and count the objects such as trees, swings, ladders, people, fallen leaves, stones, school buses, and sticks in the math lesson and returned to the class. The students shared what they did and felt during the visit with their friends and class. They practiced communication skills, critical thinking skills, and self-management during the visit and reporting.

Figure 17

Co-researchers and Students Visiting the Garden

Station Rotation

The co-researchers in grade two conducted a station rotation activity. They divided the students into four groups at four stations and provided instructions and the different tasks at each station and rotated the groups to engage in the four different tasks assigned, addressing the lesson objective about diseases. At station 1, students paired disease names and cards. At station 2, they studied and memorized communicable and non-communicable diseases. They then wrote the names of the diseases on worksheets at station 3 and finished by playing a game at station 4. During the station rotation, the students were engaged physically, mentally, emotionally, and socially.

The students were eager to complete tasks at each station and go to the next station. In this way, students had fun and learnt according to the objective at the same

time. They practiced time management skills, self-management skills, and collaboration skills during the station rotation.

Figure 18

Students Engaged during Station Rotation

Multimedia Instruction

Ranjita, Sojina, and Nishma used ICT to implement the thematic plan in Grade 3. Using a projector, they showed pictures, brainstorming questions, a video, a bar graph, and tasks during the Our Surroundings, English, and Nepali lessons. All these ICT tools were used to meet the expectations of the lesson objectives and the overall theme. The co-researchers provided follow-up tasks to the students based on the activities displayed on the projector screen. It was a different experience for the students to learn through these tools, watch the video, and discuss it. The students practiced communication, collaboration, and visual literacy skills during the ICT-integrated lessons. As with other activities, the lessons lasted a little longer than planned.

Figure 19

Students Learning through Multimedia Instruction

After observing the implementation of thematic plans in three grades, I was organizing the notes and reflecting on the implementation of the co-researcher's plan, I could feel their preparedness, readiness, and nervousness before the lessons. Since they were teaching using a thematic approach based on an integrated curriculum for the first time, it is common for teachers implementing a new technique for the first time to feel both excited and nervous prior to implementation (Xu et al., 2024). However, their written lesson plans, informal catchups before the lessons, the necessary teaching materials, and their preparedness made them confident. Teachers without a plan are often unclear about what they are doing. As noted by Farrel (2002), planning in advance provides confidence; the coresearchers were somewhat confident as they knew what to teach, which resources to use, what activities to apply, and how much time to allocate.

Following the plan, the co-researchers in each grade delivered the lessons by weaving them around the theme using a thematic approach, much like flowers being woven together with thread to form a garland. The co-researchers' focus was to organize the content around the theme in a series of lessons, integrating subjects that tied into the main theme as mentioned by John (2015). The purpose was to enable students to grasp

the broader concept by linking information, topics, and subjects across the theme by the end of the day. Barancová et al. (2024) noted that students can explore the topic in a wider context and understand it from multiple perspectives. The intent of the thematic approach was more visible in grades one and two compared to grade three, as grade teaching was implemented in grade one and two but not in grade three. It is necessary to plan, implement, and assess lessons while considering the holistic development of children, which is more effectively achieved by a teacher who remains with the same class throughout the day. Such practice is facilitated by the concept of grade teaching which is prescribed by the integrated curriculum to support thematic instruction. From this point of view, the co-researchers of grade three who teach the separate subjects separately obviously struggled to work together in common planning, implementation, and assessment. It was similar to the story below.

> *Once upon a time, three friends decided to build their dream houses. The first man hired each worker separately the mason, carpenter, plumber, electrician, and others. The mason built the walls and left. Then, the carpenter arrived, broke parts of the wall to set up the doors and windows, completed his task, and left. After that, the plumber showed up, broke the walls once more to repair the water system, finished his work and departed. The other workers also did the same. Because no one coordinated, the house took much more time, money, and effort than needed, and many resources were wasted. The second man gathered all the workers, carefully planned everything, and coordinated their responsibilities. His house was built more quickly, at lower cost, and with much less effort. The third man had many skills and could work as a contractor, engineer, mason, carpenter, plumber, electrician, etc. With a little support from his relatives, he built the house by himself. Everyone was amazed that he finished it using the least money, time, and resources. His friends couldn't believe how efficiently he did it*.

Various Integrated Teaching Strategies and their Effectiveness

During the implementation of the thematic plan, the co-researchers not only used a thematic approach but also incorporated learner-centered, interactive activities they had been practicing for a long time, such as roleplay, games, pictures, group work, storytelling, drawing, coloring, surveys, field visits, station rotation, and ICT integration.

Based on the extent to which the strategies contributed to holistic learning, they are divided into three categories: effective, moderately effective, and emerging effective for holistic learning. The strategies were analyzed in relation to the indicators of holistic learning developed by the research team, including physical development, cognitive development, social development, emotional development, connection to daily life, engaging learning activities, active participation, experiential learning, soft skills, addressing local issues, and thematic integration, similar to the significant aspects of human experience as noted by Mahmoudi (2012).

Effective

Roleplays, songs, and storytelling were effective strategies used by the co-researchers, as they addressed multiple indicators of holistic learning. All of these strategies supported learning achievements aligned with the thematic focus. During roleplays, students engaged in thinking, feeling, reflecting, and sharing individually or in groups, addressing the cognitive, affective, and social domains as well as connection to daily life. During songs, students participated in singing and dancing, experienced emotions, and engaged with the lyrics, addressing the cognitive, affective, social domains, and experiential learning. Similarly, during storytelling, students actively listened, thought, felt, reflected, and shared their takeaways from the story. These strategies connected students' learning to their daily lives, promoted enjoyment, allowed the practice of soft skills, and simultaneously addressed the lesson objectives. Overall, these strategies addressed multiple indicators of holistic learning in a single attempt.

Moderately Effective

Field visits, group work, pictures, and drawing and coloring were moderately effective strategies. All these strategies were facilitated to achieve the lesson objectives and themes. During the field visit and playground activities, the students were engaged moderately physically, mentally, emotionally, and socially, and it took a longer time. It was more like an exposure visit. During group work, the students worked and discussed in groups, focusing on questions that addressed the theme and lesson objectives, which fostered social engagement and the practice of collaboration and communication skills. Grade three students were comfortable with group work, whereas Grade one and Grade two students were not. The students were able to connect the theme and topic to their

daily life activities through the use of pictures and shared their thoughts and feelings, engaging mentally and emotionally while also practicing communication skills to a limited extent. These pictures were used at the beginning of the lesson as a starter activity. The students also drew pictures aligned with the lesson objectives from their imagination and colored them, which allowed them to engage mentally and emotionally. They completed the drawing and coloring toward the end of the lesson to reflect their understanding. Although these strategies were moderately effective, they could be more effective with careful planning and implementation.

Emerging Effective

The games were primarily used as warm-up or transition activities and did not address the lesson objectives, except for the card games used for elicitation, during which students engaged mentally, emotionally, and socially to some extent. During the surveys, the students were engaged mentally, emotionally, and socially while meeting respondents, collecting data, and simultaneously practicing collaboration and communication skills. However, grade three students were more confident in following instructions, collecting data, and representation than grade two students. During station rotation, the students were actively engaged at their stations, working on tasks mentally, physically, socially, solving problems, moving from one station to another, and collaborating in groups. Even so, the activities were primarily revisionary and somewhat chaotic, which could be minimized with proper planning.

The groups of teaching strategies: effective, moderately effective, and emerging effective for holistic learning are categorized based on the implementation of the thematic plan by the co-researchers. These categories may reflect the co-researchers' interests and experiences, as well as the students' levels and class sizes, which were evident in the planning and implementation. Additionally, the strategies may fall into different categories depending on the co-researcher, the students, and the classroom environment.

Reflection

It was agreed within the research team, prior to the implementation of the thematic plan, that everyone would reflect afterward. After observing a series of thematic lessons in each grade, I reminded the co-researchers to write their reflections in notes and share them in the messenger group. I realized that they were too general and that the co-

researchers needed facilitation for critical self-reflection. We discussed this in the messenger group and decided to hold reflection sessions on July 9, July 10, July 11 and July 12, 2023, consecutively with grade one, grade two, and grade three co-researchers.

Lead Researchers' Reflection on Implementation

As the lead researcher, I participated in all the lessons, together with Gita and another one or two co-researchers. To ensure a comfortable classroom environment, we had informal chats with the co-researchers before each lesson, which helped ease any tension. During the lessons, I maintained supportive presence, offering supportive cues such as smiling, nodding, or shaking my head in affirmation. The other co-researchers either co-implemented the lesson or provided support to their peers.

Each day, the co-researchers facilitated the activities within the lessons and aligned the lessons with the overarching theme, much like flowers being woven together with thread to form a garland. At the end of each day, the teaching and learning process resembled a garland of flowers, in which the teacher wove the subjects as the flowers, the theme served as the thread, and the activities represented the petals of the flowers. However, the lessons in Grade three were less connected to each other as different co-researchers implemented the plan, although they had collaborated during the planning stage. In contrast, the lessons in Grades one and two were more connected, and the co-researchers were more confident about the preceding and subsequent lessons since they were grade teachers who remained in the same class throughout the day.

Co-researchers' Individual Reflection on Implementation

During the kuragraphy sessions with co-researchers from each grade, I focused primarily on how they felt before, during, and after the implementation of the thematic plan, what went well, and how it could be done better next time, based on the reflection notes they shared earlier.

Reflections on Feelings During Implementation

When I asked, "*How did you feel before, during and after the implementation of thematic plan*?" to all the co-researchers separately, Ritima shared,

> *Well. Initially, we thought we would not be able to implement everything we had included in the plan, but it went well in practice. I was nervous at first, wondering*

whether the plan would work or not. However, after the lesson, I felt very relieved and happy that I could successfully implement the planned lesson.

Agreeing with Ritima, Juli shared, "*Like she said, I was nervous at the beginning and even during the lesson. At the same time, I was also excited to see how the lesson would go and how the students would react. They really enjoyed our lessons."* Prashansa also expressed her emotions,

On the day of the lesson, our class went smoothly as we had planned. My colleague and I were very nervous, wondering whether my plan would work or if I might forget some of the things I had prepared. Therefore, we kept the lesson plan with us to follow it. That gave me a little more confidence. The plan really helped us. At the same time, I was very happy to see my students enjoying the stories, games, role plays, and learning stations while learning at the same time. We felt so relieved at the end of the lessons as we could deliver the lesson as we planned.

Roja echoed Prashansa and added,

Like Prashansa said, I was also nervous and worried about the plan because it was the first time we planned a thematic lesson according to the curriculum. But the plan we had gave us confidence to conduct the lesson smoothly. After the lesson, we were very happy to see our students learning and having fun at the same time with the theme 'My Community'.

Ranjita expressed her feelings,

It was the first time I worked on a thematic plan together in a team in my professional life. I was not comfortable with working together and being on the same track. I felt this was not necessary in the beginning, but I realized its importance as we went exploring the realities. Moreover, I was worried about whether I could implement the plan effectively or not. After the lesson, I was so happy that I implemented the plan. Students were happy too. This has motivated me to continue it in future.

Nishma also expressed her feelings,

Before the lesson or while preparing for the lesson, I was feeling like learning and experimenting. I enjoyed reflecting on and working in group. However, I was stressed on the day of implementing my lesson plan. I was nervous but I somehow

managed it. I successfully implemented the plan. After the lesson, I was very happy and thankful to the research team because I made it.

Sojina articulated her feelings,

To be honest I was not interested in the beginning of this research. I was struggling to manage time. But I worked together with my colleagues and prepared a thematic lesson plan. I was nervous. I was not confident. But I was feeling like I was achieving something after I implemented the lesson plan.

Gita shared based on her observations,

Based on my observation and hearing from the co-researchers, the plan worked well. The co-researchers are confident now. In the past, they used to plan without knowing the curriculum. But this time, they knew about the expectations of the curriculum, and they knew what they were planning for. As a coordinator, I was happy to see my teachers exploring, discussing, sharing and learning from each other which would directly impact teaching and learning in the classroom. Even though plan was ready, I was also suspicious whether they could implement it or not. They implemented the plan effectively.

Reflections on What Worked Well?

When the co-researchers were asked '*What worked well?*' during the implementation, Ritima shared from her experience,

So far, our plan has been executed well. We took our students for garden visit, sang songs and performed roleplay The students could relate to the roleplay and enjoyed it. Throughout the day, we discussed the school across different activities and subjects, and the children were able to begin connecting key concepts of the theme. It was like students joining the pieces of jigsaw to form a complete picture. Students demonstrated active engagement physically, mentally, emotionally, and socially while learning about their own community, becoming aware of diseases and sanitation, and linking these ideas to their real-life experiences.

Prashansa described the things from the lesson she taught,

We played some fun games that helped children become physically and mentally active. The storytelling activities helped them connect to daily life and understand how their daily habits affected their health. The station activities encouraged

creativity, enhanced writing and reading skills, and aided in memorizing key points of the chapter. Roleplays supported their social and emotional development and allowed them to collaborate while addressing local issues. Throughout these activities, the children were engaged and enjoyed themselves, while also developing important soft skills.

Roja added to Prashansha' sharing, *"As Prashansa shared, all the students were actively engaged physically, mentally, emotionally, socially knowing about their own community, being aware of diseases and sanitation and real life."* Ranjita also reflected on and described the things that happened in her lesson,

I used ICT for the first time to teach. The students were happy to learn about communication and technology through the projector and songs. Previously, I would only explain the concepts verbally. This time, I also integrated multiple learning achievements and life skills into my lesson, which I had not done before. The students worked together and engaged in discussions, practicing collaboration and communication skills.

Sojina shared the experience from her English lesson,

Students also drew the different technologies they use in their daily lives. In my English lesson, they were physically active while playing a game. They enjoyed themselves and were excited during group discussions, engaging emotionally. For social development, they communicated, listened to their peers, and worked collaboratively in groups. For cognitive development, they engaged in critical thinking throughout the discussion.

Nishma explained from her math lesson,

Holistic learning was addressed in multiple ways during the lesson. Students sang rhymes, performed actions, and moved their bodies while playing games, keeping them physically, mentally, emotionally, and socially active. Games, singing, and group discussions made students happy, excited, and fully engaged across all these domains. Students worked in groups, cooperating, sharing ideas, and communicating effectively. They were also encouraged to think critically and analyze while observing pictures or brainstorming questions individually and in groups.

Gita, who observed the co-researchers' lessons, also shared from her experience,

> *I learnt about the integrated curriculum in depth and realized that our efforts were not productive due to the lack of knowledge of integrated curriculum. We have grade teaching in grades one and two where two teachers teach in each grade, but we don't have grade teaching in grade three. It was a little bit easy for grade teachers as they didn't have to rely on others whereas the grade three teachers teaching different subjects had to meet, discuss, plan and implement the plan for the common theme. It was a different experience for them*.

Reflections on Lessons Learnt for Next Cycle

Following the questions about what went well, I asked 'What are the areas for improvement, and how can they be addressed? Based on the things that went well and things to improve, Ritima shared about her learnings,

> *We found that some activities were not relevant to the theme and lesson objective. We realized that we need to consider the children's level properly and maintain patience and time management to improve our lessons in future. I think we were a bit overambitious also. Next time, we could include more fun and interesting activities while reducing the total number of activities.*

Juli added on Ritima's sharing, *"We could have planned fewer activities with more fun and interesting elements. Additionally, we could plan for shorter activities rather than longer ones."* Prashansa critically self-reflected on her lessons and shared,

> *We struggled to manage time and to involve all students in the same activity simultaneously. To improve, we can focus on time management by designing fewer activities. I also realized that focusing on one, or at most three activities at a time. We could make the lessons more thematic by emphasizing community connections, such as taking our students to visit the local community*.

In line with Prashansha's reflection, Roja also shared the things she learnt and planned to try future,

> *It took a little more time than expected to deliver the lessons. Some activities within the lesson were not well connected. We could have planned shorter activities and connected them well. I agree with Prashansa and also think that we could have planned the lessons according to the students' level and interests.*

Ranjita also shared the learning from her struggle and what she would do next time,

> *I struggled a lot to cope with the thematic approach and teamwork in the beginning. Planning together and managing multiple targets at once was another challenge for me. Using technology for the first time was not easy, and I realized I could have used the song more effectively with more practice. I also realized that the thematic approach could make learning more integrated and meaningful, when themes and the learning objectives of the subject (discipline) are aligned. Working together is time-consuming, but it promotes an environment of good relationships and trust. I would have spent more time in advance with my colleague to prepare a better plan. Next time, I will collaborate closely with my colleague to make the lesson plan more thematic and focus on both my interests and the students' interests.*

Nishma reflected on her challenges, articulating both the lessons learned and her plans for future actions,

> *Some students felt bored because my lesson was too long. Activities should be minimized. I came to realize that linking math with other subjects and real-life issues through a thematic approach will help students understand the idea more clearly. However, we as grade three teachers need time, energy, and patience to work together in groups. I realize I would have planned the lessons in more detail and connected students learning from previous lessons connecting to math. Moreover, I would have allocated time for activities. I will connect math learning achievements with other subjects in my next lesson. Additionally, I will make lessons more interesting and engaging to prevent boredom.*

Sojina also shared the insights gained from her struggle, along with her intended course for similar future scenarios,

> *I struggled and couldn't complete the lesson in time. I could not differentiate all of my students. Although I implemented my plan, I could have done better with proper planning and time calculation. I think I was overambitious. However, I tried to address at least four indicators of holistic learning, including physical, mental, emotional, social, and critical thinking. Some activities were time-*

consuming and repetitive, so I could have planned fewer activities. I also realized that I did not use English throughout the English lesson and could have communicated more in English. If I were to do it again, I would spend more time planning and discussing with colleagues, and I would try to address more indicators of holistic learning.

Gita also expressed based on the experience and lesson observations she did,

The teachers were busy all day long from 8:30 am to 4:00 pm in school. They struggled a lot to manage time for the meeting. We have to learn more and work more for effective integrated teaching and learning. I would continue motivating thematic planning and work on how to make it more thematic. I would focus more on integrating soft skills. I would try my best to support my teachers by addressing their needs.

During the grade-wise reflection sessions with all the co-researchers, a sense of achievement was visible in the co-researchers. In the beginning of the reflection, the co-researchers described how they identified their struggle in designing activities that facilitate integrated learning for holistic learning (Drake & Reid, 2018). It was crucial to understand the emotions and feelings of the co-researchers during the research process to ensure that the study was on the right track, as Feiss et al. (2023) noted that teachers experience a variety of emotions while teaching. When they were asked to share their thoughts and feelings before, during, and after the lesson, the majority of the co-researchers reported feeling nervous and worried due to an implementation dip, which refers to the early difficulties or decline in confidence experienced when trying new approaches (Fullan, 2011). Fullan noted that this is normal and part of the process of change. Since this is a discomfort leading to dilemma, it is a trigger for transformative learning. As soon as they completed all the tasks in the plan by the end of the day, they felt relieved, thinking that they successfully implemented the thematic plan.

Reflecting on their lessons more deeply, the co-researchers explored the things that went well and things they could do better for integrated learning. Starting with the things that went well, all the co-researchers agreed that their teaching was based on a thematic approach which hadn't happened before. As Lhomi (2020) states, thematic approaches integrate the subjects within a single concept; the grade teachers and the

subject specific teachers experienced that the English, Math, Nepali and Our surroundings were integrated within the themes. They also felt that students could grasp the connections between the lessons and relate them to the central idea of the theme. Within the theme, their students learned better and had fun at the same time, actively participating compared to before. Boulahouajeb et al. (2024) asserted that fun activities stimulate student engagement and motivation for better learning.

Appleton et al. (2006) defined engagement in three ways: behavioral engagement, cognitive engagement, and affective engagement. In line with this, the co-researchers also reported that the strategies they used engaged their students physically, socially, mentally, and emotionally, or at least in two of these domains during the activities. Since Miller (2009) affirms that learning is multisensory, there should be effective learning during the lessons. Moreover, the students were able to connect their learning to daily life activities through themes, real-life issues, and examples, making the learning contextual and meaningful. According to Davtyan (2014), contextual learning connects academic content to real-life contexts, and these contexts provide meaningful experiences that promote students' meaningful learning (Budiman et al., 2021). Furthermore, the students also practiced soft skills, such as communication, collaboration, critical thinking, creative thinking, empathy, and visual skills, during the activities. These are the skills needed to make decisions, communicate clearly, and manage oneself to live a healthy and productive life, as noted by Sing and Agarwal (2024). The co-researchers of grade three introduced integrating ICT in teaching and learning for the first time in their school, as Pant et al. (2024) noted that the integration of technology helps improve teaching and learning to meet the needs of twenty-first century education. These students, especially Generation Alpha, have grown up with digital technologies and cannot remember a time without them (Dahal, 2023). In this way, the co-researchers reflected that they were able to address many aspects at once during the lessons. Their lessons were thematic, integrated disciplinary learning achievements, soft skills, and ICT, connected with real life, and engaged the students in multiple domains focusing on integration and connection for holistic learning, as noted by Miller (2009).

Why Can’t You Understand Such a Simple Thing? vs Why Can't I Make You Understand Such a Simple Thing?

We learn not by simply doing, but by thinking about our new doing, as asserted by Dewey (1934). After the co-researchers shared the aspects that went well, reflecting on their new practices, they shared the things that did not go well or could be improved despite the positive experiences they had. The first thing the co-researchers realized was that their lessons took longer than planned. Teachers can choose the content, activities, and resources they need, but the lesson time is fixed.

Additionally, the thematic plan and integrated lesson plans require more things to consider. Using them too much or too little can make the lesson run overtime or finish early. The co-researchers used the elements too much, which is why it took longer than planned. This shows that their lesson planning still had room for improvement. For this, they recognized that they could complete the lessons on time if they managed time well, as Khan et al. (2016) noted, that effective time management makes lesson planning more effective. The co-researchers also realized that they were overambitious and planned more activities than necessary. They discerned the need to reduce the number of activities and shorten their duration, avoid repetition of similar tasks, and focus on a maximum of two strategies in one lesson. Similarly, they felt that the students felt bored during those long activities and long lessons. Apart from the longer lessons, they thought that the reason students felt bored might be that the activities were not as relevant as they should have been or that their interests were not sufficiently addressed, in line with Golle et al. (2022), who asserted that students feel bored if learning activities are uninteresting and of little relevance to them. Here, the co-researchers wished to have more fun and interesting activities next time by designing the activities according to the level and interest of students. For this, teachers need to understand their learners’ levels, interests, and learning styles (Goyibova et al., 2025), so that they can modify their lessons, accordingly creating a boredom-free learning environment.

Similarly, the co-researchers felt that they could make the lessons more thematic than they had been. They strived to connect the lessons and activities, as Isnaini et al. (2024) asserted, that it is difficult for teachers to connect concepts across subjects. Although the teachers have awareness about the thematic approach to integrated learning,

they need time to adjust and shift their mindset from disciplinary to multidisciplinary teaching. The co-researchers are hopeful that, with more time and effort, they can make the lessons more thematic in the future. Moreover, the three co-researchers of grade three rarely worked in a team before and were not comfortable working together, as Hargreaves (2001) mentioned, that teachers often face difficulties in discussing, planning, and implementing lessons collaboratively due to scheduling, timetabling constraints, etc. The three co-researchers had to manage time for meetings, plan the lessons linking to each other and the theme, and implement. According to Guo et al. (2025), necessary coordination from teachers, a spirit of collaboration, and collaborative skills are required for such collaborative lesson planning. They sensed that they should spend more time together to understand the common theme and its expectations during the planning to make the plan more effective. Beside this, they realized that thematic teaching not only promotes integrated learning, but also an environment of good relations and trust amongst the teachers (DuFour, 2013). To summarize, the co-researchers felt their strategies supported holistic learning based on the team's indicators but realized there was still room for deeper holistic learning. The co-researchers realized that the students learnt more holistically than before, not because the students demonstrated increased effort in paying attention compared to before, but because the co-researchers increased their effort in planning the lessons based on the curriculum expectations and the students' interests. It was recognized that the effectiveness of students' learning is largely determined by the teachers' careful and strategic planning, as Bruner (1960) argued that any discipline can be taught in a way that is intellectually appropriate, allowing any child to learn it effectively regardless of their development stage. In this way, the research team moved through a process of shifting from 'Why don't you understand such a simple thing?' to 'Why can't I make you understand such a simple thing?', from teacher-centered to student-centered, and from disciplinary to multi/interdisciplinary.

The Journey from Ignorance to Awareness

After the meeting the co-researchers individually and in pairs, I met them again as a group for a group reflection on July 15, 2023, in the staff meeting room after school. We ordered samosas (fried pastry with a savory filling, usually shaped like a triangle or cone) from the school canteen to have during the session. Before the reflection meeting, I

affirmed all the co-researchers for their efforts. I facilitated reflection on the problem the research team identified and the planning process for the implementation of integrated learning for holistic learning. They had mixed emotions on their faces, feeling that they had achieved something, but could have done better for holistic learning during the meeting. In the meantime, we were engaged in kuragraphy and having samosas at the same time.

After this, I asked them to score themselves out of 10 based on their understanding of integrated learning and their success in applying it. The co-researchers rated themselves 5, 3, 3, 4, 4, 3, 4, and 4 out of 10. The average score was 3.75. There was no significant change in either the individual scores or the average score compared to the scores from the reflection before the first cycle. I said, *"It's interesting there is no significant change in the score even after we invested our time and efforts for integrated learning. What may be the reason behind this?"* Nishma replied, *"Yes sir, we have developed a lot during this cycle. I scored 1 then but 4 now. I think I am more knowledgeable than 2 months ago.*" Ranjita added, "*I scored 5 before but now I have scored 4*." I questioned her "*Do you mean you have learnt nothing throughout this cycle*?" She replied,

> *No sir. I have learnt many things. And I am very confident about the curriculum now. Previously I was like throwing stones in the dark without aiming at the target, but Now I know my target, and I aim the target knowing what I am doing. Moreover, I have understood, planning for integrated teaching and learning is like 'Pashupati ko yaatraamaa sidra ko vyapaar' (Hitting many targets with one stone)".*

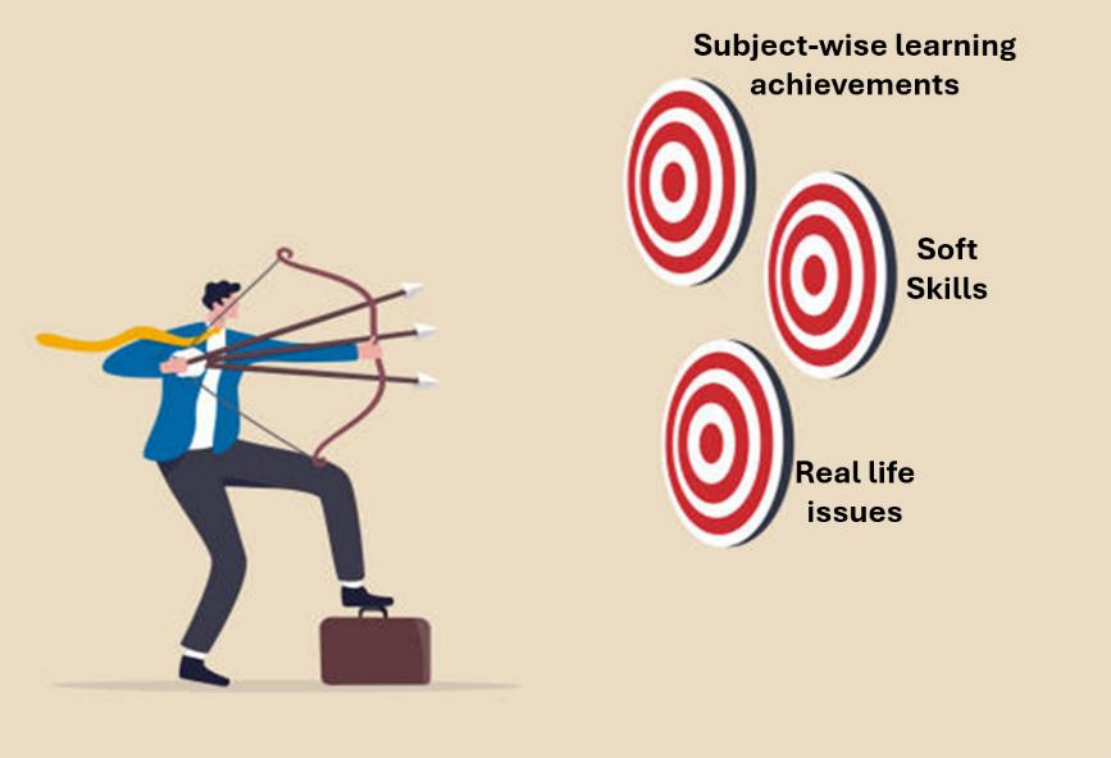
Ritima added, "I *think it is killing many birds with one stone*" Gita added, "*And the thematic approach helped us to kill many birds of learning achievements and soft skills*". We all agreed with her. We all had a sense of achievement. I broke the silence "*What next*?" I referred to their score for indicators of holistic learning and understanding and implementation according to integrated curriculum and randomly threw an idea "*Why not try for another cycle and aim to do better?"* The pre-primary level coordinator, Gita said, *"Sir, I also think we need to work together more for better. However, we are having summer vacation for a few weeks. Let's continue after the school reopens".* The other co-

researchers also agreed. I agreed as well, but I asked them to think, explore, and come up with ideas on how we could do better in the next cycle.

That evening, I was pondering the reflection meeting, and I was confused to see only a slight change in score when the co-researchers revisited the indicators of holistic learning. The average score increased from 2.6875 to 3.75, which was not a significant change although there were positive impacts seen in students' participation and holistic learning. It happened because earlier, they didn't know that they didn't know, but later, they realized their lack of understanding. The co-researchers scored themselves higher at first, not because they knew more before and less later, but because they later realized they hadn't known as much as they had initially thought. According to the Dunning–Kruger effect, incompetent individuals have little insight into their own incompetence (Kruger & Dunning, 1991, as cited in Dunning, 2011). Dunning (2011) asserted that everyone is naturally ignorant of some things, and they often don't realize how this affects their decisions and actions. Roer-Strier and Sands (2015) also noted that interviewees are reluctant and hesitant at the beginning, as they are in an 'on guard' phase and may appear uncomfortable. Although, there was no significant increase in scores, the co-researchers' knowledge, skills, and attitudes were broadened. The co-researchers in the group realized from their experience that the thematic approach helped them facilitate holistic learning when an integrated lesson plan connects the theme, multiple learning outcomes, and soft skills. The research team realized that planning for integrated teaching is like 'hitting many targets with one stone.' Most importantly, the team recognized that effective implementation of the integrated curriculum requires greater collaboration and effort.

Figure 20

Analogy Illustrating Teacher Aiming to Achieve Multiple Targets for Integrated Learning



Chapter Summary

In this chapter, I discussed my rapport-building and the process of gaining trust with the co-researchers, identifying problems for holistic learning, exploring integrated learning in depth, and planning thematic integrated lessons that incorporate soft skills, and activities addressing the indicators of holistic learning. Similarly, I discussed how the co-researchers implemented these plans and engaged in critical self-reflection.

CHAPTER V
FROM CREATIVITY TO SOLUTIONS: INTEGRATING ARTS AND DESIGN THINKING

In this chapter, I have presented the second cycle of PAR conducted with Grades 1-3 teachers as co-researchers to further enhance the holistic learning practices through arts integration and design thinking. This phase focused on continuing the effective practices and addressing the challenges recognized to foster deeper, more meaningful and authentic learning experiences, building on the insights and reflections from the first cycle. Here I have narrated and discussed how the co-researchers together explored arts integration as strategies to promote critical thinking, problem-solving, creativity, and other life skills among students. This chapter highlights the professional growth of co-researchers, their development of confidence in integrated teaching and learning, and their transformation journey into a transformed educator who reimagined the classroom practices for holistic learning.

Introduction to Second Cycle of PAR

The school went on summer vacation after the reflection session in cycle one. After the vacation, almost a month later, the research team met again on August 25, 2023, to further explore and enhance integrated teaching and learning practices for holistic learning. Although the research team had identified problems related to integrated learning and designed thematic plans that integrated learning achievements with holistic learning indicators, opening the door for integrated learning in their school, we realized there were still areas that needed further work. The co-researchers' designed thematic plan was generally prescribed by the CDC, which limited their ability to address their own interests and strengths. It was therefore realized that we needed to be more specific about our strategies and explore further the CDC materials, as well as the interests and strengths of both the co-researchers and the students. The students felt bored, the lessons were lengthy, and the lessons could have been better aligned and more connected to the central theme. In this way, as Kemmis et al. (2014) asserted, reflection will make the researchers able to formulate an action plan for the next action step, these reflections

guided the need for the second cycle to explore further to deepen our understanding of the strategies for holistic learning. So, the research team decided to explore more ideas for integrated learning in CDC textbooks, teacher guides and other resources. As usual, Nishma continued recording notes discussed in the meeting.

Exploration Learning and Continuous Reflection

Based on the learnings from the first PAR cycle during the reflection, the research team again realized the need to explore more about the relevant and meaningful topics that would help foster more holistic learning. Here, I have narrated and discussed how the research team explored the arts integration and its role in holistic learning.

Discovering the Arts Integration in STEAM

On 2nd September 2023, we met again in the same meeting room as usual. I could easily sense that the co-researchers were both stressed and excited about the research ahead. They were stressed about time management, extra effort, frequent sessions, and various other adjustments, yet excited about the learning opportunities and challenges the research would bring. After informal catch up, I asked the co-researchers to share what they have from CDC textbooks and compare them with the reference books they are using. Ranjita said, "*CDC textbooks have less content in comparison to private school textbooks*." Ritima added, "CDC *textbooks start with basic skills. Activities in our surroundings are more creative*." Nishma also added, "Yes*, the activities are easy and practical. They require group work*." Again, Ritima added, "I *found the lessons are coherent*." Prashansa elaborated, "*The textbooks are full of colorful pictures, worksheets, songs, poems, and dialogues, which we also have been using in our lessons*." I supported, "*I also noticed you all have used different forms arts in thematic plan earlier*." Ranjita noted, "So *far, I know, all of us are good at arts. We use art to make our class interesting*. *We did this in the last cycle*"

As the co-researchers were identifying arts as their strengths comparing with CDC resources which they have been practicing knowingly or unknowingly, I took this opportunity to share about STEAM,

> *Yes, I agree with you. Since we are exploring strategies for more effective holistic learning than before, the arts can also be one of the strategies we are looking for. STEAM education, which is spreading rapidly around the world, supports*

integrated and holistic learning. How about exploring STEAM education for a few days and sharing some insights in our next meeting?

Gita said, "*STEAM sounds like water vapor. Let's see if it works better. What do you think friends?*" All the other co-researchers agreed with her. Ranjita said, "Sir*, we don't have resources related to whatever you just shared. Could you please share some of them if you have*?" I agreed to share the resources, and we concluded the session with the homework to learn more about STEAM. I shared YouTube videos from Kathmandu University and articles related to STEAM Education in the messenger group.

In our next session on 18th September, I asked the co-researchers to share what they had explored about STEAM Education. They simply said that it is an abbreviation of Science, Technology, Engineering, Arts, and Mathematics. Since they couldn't explain more, I took this moment to share more about STEAM which is the result of the integration of arts into STEM. Connecting with the activities related to art-based methods planned by the co-researchers in cycle one, I emphasized integrating arts and its importance in implementing the STEAM approach, explaining that to make STEM education more effective, interesting, and make the students creative. STEAM education is an upgraded one. To make them understand, I gave them very simple examples of their thematic whole day lesson they designed in the first cycle where four subjects were integrated into the theme, similarly Science, Technology, Engineering, Arts, and Mathematics are also integrated to foster holistic learning. However, the co-researchers couldn't grasp STEAM Education. Therefore, I highlighted that since their strength is arts, they can use arts integration as a STEAM approach. We decided to discuss arts integration further in the next session on November 1, 2023.

That evening, I was reflecting on what the co-researchers had shared during the meeting. As they explored the CDC textbooks in detail, they found them to contain less content, with lessons organized from simple to complex, and more coherent compared to previous textbooks that they used in their school. The textbooks have worksheets, which themselves serve as workbooks. Moreover, the CDC textbooks include colorful pictures, songs, poems, dialogues, stories, and many other interactive activities, where it was found to include many art-related activities. It was also found that the co-researchers had used different forms of arts, which are their strengths in the thematic plan to foster

holistic learning in the first cycle. Connecting with this, when I shared about STEAM education, I felt that the co-researchers didn't find the concept of STEAM relevant to them. Being empathetic to them, I thought,

> *I am still learning STEAM for 2 years as an MPhil student. How could the co-researchers grasp the intent of STEAM in one session. Learning is a process and doesn't happen overnight. They will get familiar with STEAM by the end of the research.*

I also realized that they would learn gradually throughout the research as they got opportunities to think, discuss, share, and reflect as a team in different contexts. Since Hunter-Doniger (2018) argues that arts infusion naturally shares some ideas and principles of STEAM Education when it comes to it, I focused on arts-integration first. I planned to focus on arts integration at the next meeting.

Jahan Pugdaina Diwakar Tyahan Pugchha Kalaakar (Where the Sun Doesn't Reach, the Artist Does)

At the next session on November 1, 2023, I began the session by talking about STEAM and the arts:

> *STEM education was developed to promote holistic learning. The arts together with STEM are used to support holistic learning. Let's discuss the arts today. Everyone in the room is familiar with them, could you please think for a moment and, taking turns, share the benefits of the arts, especially in education*?

After a minute, I asked them to share their thoughts, Ritima said, "*Art helps the students to be more empathetic and interested in learning*." Nishma added, "Yes*, I have read somewhere that art makes the environment very interesting because it releases dopamine in the brain whenever anybody gets involved with arts*." Nishma said, "*Arts help to enhance the creativity of students and understand difficult concept in an easy way*." Sojina also added, "*Arts helps in critical thinking and decision making".* Similarly*,* Gita said*,* "*Arts based education helps students increase interest in learning*."

We all agreed with the benefits of the arts shared by the co-researchers, aligning with Greene's idea (as cited in Pinar, 1998) that the arts help us perceive the world through the senses of others and make students more empathetic; with Pant et al. (2023), who argue that the arts develop critical and creative thinking; and with Uştu et al. (2021),

who state that the arts increase motivation for learning and create a means to simplify difficult concepts; and with Gazzaniga's (2005) idea that openness to an interest in the arts produces neurotransmitter dopamine.

Considering these benefits of the arts, I reminded the co-researchers to reflect on whether arts-based teaching and learning addresses the indicators of holistic learning, our main goal that the research team developed during the initial phase. I highlighted that teachers are artists, as they have to be singers, actors, dancers, painters, storytellers, and many other roles in the classroom, which aligns with the idea discussed by Johnston (2002). As I was sharing this, a famous Nepali proverb popped into my mind, which I quote: "Jahan pugdaina ravi, tyahan pugchha kavi" (Where the sun doesn't reach, the poet does). It means that the poet can reach places where sunlight cannot, through the power of imagination. We agreed that if the poet is an artist, and so are all the other artists. Like poets, other artists also have access to places where others do not, as their imagination fosters critical thinking and creativity by enabling them to think outside the box and awaken people to realize that the world can be different from what it is. This also aligns with Greene's idea, as cited by Pinar (1998). Laxmi Prasad Devkota, the Great Poet of Nepal, also writes in his poem "The Lunatic" that he sees words, hears scenes, chats with odours, and touches objects thinner than the sky. We emphasized that the arts help us see beyond reality. Ranjita said, "So, instead of "Jahan pugdaina ravi tyahan pugchha kavi**",** we can say **"**Jahan pugdaina rabi tyahan pugchha kalakar**".** We agreed with her that teachers and students are artists and can go beyond the limit through imagination and become critical and creative. As Burnaford et al. (2013) as recommended arts integration as one of the strategies for active, practical,and student-driven learning, we decided to adopt this strategy for better holistic learning in this cycle. The school was on Dashain and Tihar vacation; therefore, we decided to meet after Tihar. However, I encouraged the research team to explore arts integration and STEAM during the vacation and prepare to share their findings at the next meeting. That evening, I updated the proverb to "Jahan pugdaina Diwakar, tyahan pugchha Kalaakaar" to adjust the rhyme.

Exploring the Arts Deeper

I came to know that the school was reopened after festival break. Gita informed the co-researchers and arranged the kuragraphy session again on December 5, 2023. We met after a month in the same meeting hall after 4 pm. The co-researchers couldn't share much about arts integration and STEAM in this session due to the post-festival hangover. I gave an illustration of potluck picnic where all the participants bring food from their homes, mix it up, and make a mixture of food that becomes delicious. I compared this mixture of food with the mixture of ideas shared by the co-researcher, which can result in brilliant and creative ideas for our research. I requested the co-researchers to share ideas based on their experience and reminded them that they are co-researchers, and they own this research. In this way, I consistently kept updating the progress of the research and encouraging the research team. Since we decided to adopt arts integration as the strategy for holistic learning, I encouraged the co-researchers to explore the CDC textbooks and find out what forms of arts are used in the textbook and prepare to share their findings at the next meeting.

On December 8, 2023, the session started by asking co-researchers to share more forms of art used in the CDC textbook. They shared pictures, stories, games, audio visual materials, rhymes, role play, free drawing, making use of hands in painting, drawing and many other interactive activities. I also asked the co-researchers to identify the arts-related strengths of each other. They shared that they are good at poems, songs, dance, drawing, storytelling, role play, etc. As we wrapped up the meeting, the co-researchers shared that they were very busy preparing for Christmas celebrations. They are grade teachers, so they have to come early in the morning, plan lessons, and take care of the students the whole day. In the meantime, the school also organized training on public speaking and storytelling as a part of their professional development. Therefore, we decided to continue discussing the arts and learnings from the school's training in the next meeting.

During our session on December 13, I asked the co-researchers to share some highlights of the training on public speaking and storytelling they had participated in a few days ago. Nishma shared on behalf of the team,

> *Well, in the training, the guest trainer discussed storytelling has lot of benefits. It promotes the learner with imagination, creativity, increases interest, makes learning fun and relevant. However, it was not practical. It was more about public speaking. Storytelling could be relevant to us but not public speaking.*

Connecting with Nishma's sharing, I emphasized, "*Not only storytelling but all forms of art have at least these benefits when they are integrated into lessons. I think public speaking can be integrated into the lessons as a communication skill."*

After acknowledging them, I distributed the post it notes and asked them to think of different forms of art and write them on the post it notes to explore more about arts. They wrote storytelling, drawing, paintings, pictures, sculpture, dancing, song, role play, dialogue, movies, digital storytelling and photography. I drew five columns on the whiteboard for literary form, visual form, performing form, media form, and other form of arts as mentioned by Sickler-Voigt (2023) and asked the co-researchers to paste their post it notes on the column based on category of form of arts. Co-researchers, together with the researchers, categorized storytelling under literary arts; drawing, painting, pictures, and sculpture under visual arts; dancing, singing, role play, and dialogue under performing arts; and movies, digital storytelling, and photography under media arts. Together, we realized that some forms of art may fall into more than one category. For example, storytelling using pictures belongs to both literary and visual arts. Therefore, we created an additional group, 'Others' to accommodate art forms that overlap multiple categories. At the end of the session, Juli shared,

> *I didn't know the arts in detail before, including that they have forms such as literary, performing, visual, and media arts. Also, I was very curious to know which category our art which role play falls into. which categories my other colleagues' arts belong to.*

Figure 21

Different Forms of Arts Categorized by the Co-researchers

Sojina added, "*It was also interesting to see that some forms didn't fall under those categorie*s." Other co-researchers also agreed. Then, we wrapped up the session with a plan to meet again at the same time at the same place as they were busy preparing their students for the Christmas program.

After I returned home from the meeting, I went through the notes I had taken and analyzed the situations from the last few sessions. I was happy to have the co-researchers, who themselves explored different art activities used in CDC textbook, identified their arts as strengths, found their category of arts and others, and reflected, and my role was just a facilitator, as usual, as mentioned by Whyte (1991). I was conscious as a researcher of PAR, that I facilitated so that co-researchers could co-construct or construct knowledge actively. Moreover, the training on 'Storytelling and Public speaking' organized by school helped the coresearchers to think from a learner centered perspective. Usually, teachers are not provided with professional development opportunities as Poudel (2022) reports, noting the lack of awareness, planning, support and encouragement for professional development which was a good initiative by the school allowing professional development activities for their teachers. It contributed something to this research. However, the training was not considered relevant or practical by the co-researchers, as noted by Gautam (2016) who reported that such training often fails to address the actual needs of teachers and classrooms. The school had invited an

external trainer, and the training was not need-based, which may have prevented it from addressing the specific needs of the teachers and the school. The training could have been more relevant, practical, and sustainable if it had been designed based on those needs. I was pleased that this research has already addressed such needs, and I am hopeful it will continue to do so in this cycle. This realization made me more enthusiastic about the remaining part of the research.

Planning for Arts Integration

After exploring the benefits of arts integration, the research team was ready to plan for integrating arts with STEAM approach. In this section, I have narrated and discussed how the research team explored the effective ways of arts integration and the essence of design thinking, and planned to incorporate them, aiming to address holistic learning more effectively.

Exploring the Effective Ways of Arts Integration

It was the end of the second week of December. I was invited by the school to participate in their Christmas celebration program. The program was full of cultural performances and speeches on the theme 'Christmas'. Everybody enjoyed watching the teachers and students sing, dance, and perform dramas, and decorations. The audience cheered by clapping and shouting. However, they felt bored during the speeches and other formal activities toward the end of the program, and many people left before it ended. I was thinking about how these forms of art were used during the cultural program but not in the classroom for teaching and learning. I questioned myself, "*Why do people use the arts in every area of life but not in education? How do people from other fields understand the importance and value of the arts, but not educators?"* Rabkin and Redmond (2006) stated that arts is not used in education as it is not perceived as academic or cognitive but affective and expressive**.** Pant et al. (2023) also claimed that the connection between art and education is not well recognized.

On January 10, 2024**,** after informal greetings, I thanked the co-researchers for inviting me in the Christmas program,

> *You, your colleagues, and your students gave an outstanding performance. Everyone appreciated it. However, many people started leaving during the*

speeches and formal parts of the program. I was thinking of you and your students' performing arts in the classroom and turning the classroom into a stage.

Gita replied, "*Thank you, sir. We have very talented teachers in our schools. Regarding the use of arts in lessons, I think we can try it in this research."*

We again reflected on the planning and implementation of Cycle One, during which we used different forms of art with a positive impact. We became even more convinced to adopt arts integration as a strategy for holistic learning. In this context, I had a plan to sing a reflective song for teachers as an example, which I had composed as a parody many years ago. So, I asked the co-researchers to listen to the song and then follow me.

Table 6

Reflective Song of Educator Prepared by the Lead Researcher

कलकत्ते काईयो केश मेरो बांगियो टेबुलमा ऐना छ घाँटी सुकाई दुखाई पढाएको मैले बुझेको रैनछ धानकै बाला झुलौंला के गरी बुझाउँला	I taught till my throat was sore and dry Yet still they didn't understand, don't know why How can I make them understand?
पढाउने विधि फेरेर हेर्छु केही पो हुन्छ कि चलेका शैली लगाई हेर्छु अनि पो छुन्छ कि खोज्दै सिक्दै सिकाउँला संगसंगै बढौंला	I'll try new methods, see what fits Use styles that spark, that truly hits I'll explore and grow together with my students
कथा कविता अनि गीत नाटक धेरै बनाइन्छ पढाउँदा प्राय वरिपरिका सामग्री चलाईन्छ नाच्दै खेल्दै सिकाउँला रमाउंदै पढाउँला	I'll write new stories, songs and roleplays Use local teaching resources in wise ways I'll teach with joy, dancing and playing
कक्षाकोठामा म मात्र बोल्थें अब चाहिं कम गर्छु सोच्ने र बोल्ने काम धेरै जसो विद्यार्थीलाई दिन्छु अनुभव जोड्दै सिकाउँला सान्दर्भिक बनौंला	I spoke alone in class before, I'll speak less I'll make my students think, speak and guess By connecting with experience and the context

The co-researchers enjoyed the song. After the performance, the researchers asked questions such as, "*How did you feel while listening to this song? What aspects of the song did you like the most? And how can we make this song more effective in achieving its objective?*' During the reflection, "Ritima said, "*We enjoyed the song a lot. It helped me to reflect on my day-to-day teaching and learning practic*e." Sojina added, "*When we were listening and singing the song, we were having fun and refreshment*,". Ranjita also supported, "*We felt easy to grab attention. The song helped us to do self-reflection.*" Nishma said, "*It created a learning environment with fun. It also helped me to think critically on my own day to day teaching practices*." Gita added, "*It helped us to connect with their real life. We also understood what you wanted to convey through the song.*

Figure 22

Research Team Singing the Reflective Song of Educator

I was excited to see the co-researchers delving into the meaning of the song and owning it as if the story in the song was theirs like Greene's idea (as cited in Pinar, 1998) that the arts understand the world through the lenses and senses of others making them empathetic to the character of the song. After their sharing, I challenged them, "*How could the song be used, making it more effective to foster holistic learning*?" The co-researchers came up with the ideas below:

1. Provide handouts of the lyrics before the song

2. Provide instruction/guidelines - what to do clearly before the song
3. Use brainstorming questions related to the topic
4. Guide the learners to connect the content of the song with their real-world experiences
5. The topic should be relevant
6. Make it action song to involve learners to move their body parts.

Nishma shared, "*Sir, this is helpful. We can apply these ideas to the arts we have decided to use in arts integration.*" Prashansha added, "If *we consider the things we discussed above before, during and after performing the arts, I think it will help address more indicators of holistic learning we developed*". I challenged, "Does *anyone want to add more points? You can bring the ideas to the next meetings also*.'

Here, since the above song strategy I facilitated was about arts integration, the co-researchers emphasized the relationship between action and reflection as indicators of arts integration. As asserted by Burnaford et al. (2013), this approach encourages learners to engage in deep reflection through teaching as inquiry, where teachers can examine how their practices influence student learning (Earl & Ussher, 2016). This means that an educator working on arts integration has to consider what to do before, during, and after the main performance of the arts, as Rabkin and Redmond (2006) mention that arts integration is not an easy or simple task. In the meantime, the co-researchers were busy preparing for exams, so we concluded the meeting, agreeing to meet again after a week.

A week later, on January 17, 2024, the research team met in the school's mini playground, since the school was conducting exams. It was cold inside the room, so we agreed to discuss our plan while sunbathing. I provided a copy of the lyrics of an educational parody song that I had sung in the previous session and asked the co-researchers to sing it together again. Most of the co-researchers sang with joy this time. Then, the co-researchers shared their final decisions regarding the forms of art they planned to implement in their classrooms. Based on their experience and interests, the grade one co-researchers, "*We will use role play and action songs to teach our surroundings and mathematics*". Similarly, the grade two co-researchers said "*We will use drawing and crafts to teach mathematics and storytelling to teach our surroundings*." The grade three co-researchers said, "*We will use digital storytelling to teach*

mathematics and songs to teach our surroundings." The coresearchers selected the form of arts like the soldiers select their weapons before the battle. They selected it based on their experience, interests, strength, students' interest and suggestions from colleagues as Dancis et al. (2023) asserts about the experience of engaging in democratic process. After hearing from the co-researchers, I encouraged the co-researchers to continue exploring their forms of arts focusing on how to foster holistic learning and concluded the meeting.

Reflecting Our Progress and Moving Forward

In our next session on January 23, 2024, the research team discussed how to use the selected forms of arts for holistic learning in the same staff meeting room. Before this, the team revisited the indicators that had been discussed during the first cycle. We all agreed that if we plan and teach through arts, addressing at most the indicators mentioned above, integrated and holistic learning occurs. In the meantime, I also encouraged the co-researchers to collaboratively compose a poem about the arts by adding one stanza each in the messenger group. I, as the lead researcher, initiated the poem by writing the first lines, and then the co-researchers continued and came up with the poem below.

Art is a vehicle for teaching and learning
Beyond informing, performing for transforming
Arts is an adventure for teaching and learning
Where we learn and have fun morning, day and evening
Learning is like a colorful game
Arts in it, not just in name
A way of conveying feelings and ideas in a care
Oh, my dear, no more fear
Colors and shapes, a visual delight
Spark curiosity, make learning bright
It's a journey with a jolly ride
Hop on it, let's make it alive

This poem is an example of collaborative composition that embodies the co-researchers' innovative thoughts about the arts, developed through their exploration of arts. As Burnaford et al. (2013) note, in agreement with Davis, (cited in Hart, 1995), the

exchange of ideas within a group generates new ideas. It also reflects their shared understanding of the arts, its benefits, and its possibilities.

On January 26, during lunchtime, the teachers had some free time, as they had just dismissed their students following the final day of examinations. I asked the co-researchers to reflect on what happened from the beginning of the research till now. Ranjita shared,

> *Well, we identified the problem in Grades 1-3 level in our school to teach according to integrated curriculum fostering holistic learning. For this we planned the lessons thematically incorporating the themes, learning achievements, soft skills, students' interests and implemented in the classroom. After individual and group reflection, we realized we need to be more specific and detailed for more holistic learning. For this, we realized that all the co-researchers used different forms of arts in the first cycle. Therefore, we chose forms of arts in our interest and are planning for arts integration addressing the indicators so that holistic learning occurs*.

All the other co-researchers agreed with her. Then, I asked the co-researchers, '*How to start planning?'* There was confusion amongst co-researchers. I broke the silence by reminding the co-researchers what they did in the first cycle which was the foundation for integrated learning that is thematic planning incorporating the themes, learning achievements, soft skills and students' interests. After this, one of the co-researchers proposed, "*Why not continue the things that things went well in previous cycle and integrate new things we discussed*? I again questioned, "*What are the things that we can continue from the previous cycle?"* Ritima said, "*I think we need to continue the thematic approach integrating CDC learning achievement and soft skills we applied in the first cycle*." Nishma looked at her note and read, "*Integrating thematic teaching with soft skills and the other holistic learning indicators*" And I asked again, "*What are the new things we can add integrating for better*?" Juli said, "*I think we can mainly add arts. Also avoid the things such as keeping lessons lengthy and most importantly make sure students don't feel bored*."

Ranjita shared, "*I can prepare a song to teach the concept with melody and make the students do actions. Hearing the words with music will make the students think and*

feel and dancing will make the students engage physically and socially." Gita added, "*Also, the lessons should be aligned with each other and the theme.*" I facilitated this reflection to make sure the co-researchers have a common understanding of what they learnt in cycle one which would be the foundation for cycle two. Although they will work on different forms of arts separately, they should have common ground with common goals as mentioned by Burnaford et al. (2013).

On February 2, we were discussing further reflecting on our goal of fostering holistic learning through the collaboratively prepared indicators and integrating the arts they have chosen. At the end of the meeting, Prashansa shared her problem, "Sir, *I am very sorry to say that I am unable to manage time for the research. There is a workload pressure from school. Therefore, I want to discontinue our involvement in the research from now*." I felt that she was representing the emotions of all eight co-researchers. I was shocked to hear this, and at the same time, I was thinking about how the research would continue. I could sense her frustration and tiredness. However, as a participatory action researcher, being empathetic and controlling my emotions and reactions, I requested,

> *Thank you for sharing your situation, Ma'am. We are almost at the end of this research. It will be like 'Hatti chhiryo puchhar adkyo (The elephant got through, but its tail got stuck'. Let's try to find a way so that we can accomplish it. Let's discuss and find a solution.*

That evening, I was thinking about why Prashansha was planning to quit the research. I was worried about what to do next. I, as PAR researcher, was aware that co-researchers might be frustrated and disappointed with me as noted by Chevalier and Buckles (2019), who stated that there will be frustration and disappointment with the facilitator. I also wondered what difference her absence might make or whether it would affect the effectiveness of the research. So, I immediately contacted Gita and was surprised to hear another news another co-researcher, Roja, was also leaving the school soon due to personal reasons. Both Prashansha and Roja were grade two teachers. We assumed that Prashansha might have thought she wouldn't be able to manage time for the research, as she would be alone in planning, teaching, and assessing her lessons. Actually, it had already been almost a year of brainstorming, reflecting, discussing, planning, and applying for the same purpose, which seemed to be dragging on. The co-

researchers had loads of responsibilities and expectations as grade teachers in an institutional school. They barely had time to eat lunch or even go to the toilet, as they had to stay with their 25 to 30 students throughout the day until dismissal. On top of that, they were expected to regularly prepare evidence-based lesson plans and attend both staff and parent meetings. In such circumstances, it was understandable that the co-researchers felt exhausted after actively participating from the beginning of the research.

Therefore, I decided to meet Prashansha in person and talk to her. The next day, she changed her mind and decided to continue participating in the research after our meeting. It was a huge relief for me as a lead researcher. I assured her that her efforts would not go in vain. According to Roer-Strier and Sands (2015), the co-researchers were able to talk about their pain possibly because of safe space, 'home for pain', which opened new space, enabling an intimate environment. That evening, I went through the notes from the past few sessions with mixed feelings about Prashansha, who decided to continue, and Roja, who was soon leaving the school. As I was thinking, I remembered the co-researchers were struggling with grade three students who were stealing money from bags in the classroom during cycle one. We tried to bring such local issues into the plan for integrated learning while designing the lessons, which the research team had realized that it could have been done better. I was hopeful that the research team would address the local issues more effectively this time.

Design Thinking in Arts Integration

In our next session on February 8, 2024, the coresearchers had already started planning thematic arts integration. After a quick catch-up, I reminded the co-researchers about the student who had been causing problems by stealing things and emphasized that our plan should also address such local issues relating to moral, social, spiritual which is also the expectation of integrated curriculum. Ranjita shared, "*Such moral and social issues could be addressed by moral education class. We used to study moral education subject back then.*" Gita also agreed, "*Yes sir, I also studied moral education when I was a student. But we don't have that subject*" I said, "*I also remember studying the moral subjects in primary school."* Again, I challenged the co-researchers,

> *The moral lessons were taught by teachers in school and written by students in exams. However, moral and social issues persist. Integrated curriculum expects*

> *us to integrate these issues in the lesson not only the disciplinary contents. What do you think about how we can work?*

Ritima broke the silence, "*I think we should make the students realize those things are morally, socially or ethically wrong by allowing them to explore deeper. I think arts integration will also help the students think deeply."* I proposed,

> *Like the research team identified the problem, explored the solutions, rethink on the solutions, implement the lessons and reflect, how about designing the lessons in such an away that students also identify the problems together, explore and find the solutions together and reflect on the solutions during the lessons.*

Nishma reacted, "*It sounds nice. We are trying to make our students researchers as well*. *They will go through the same process we went through and learn*." I agreed with her, "*Yes Ma'am, you are absolutely right. However, it may not be that intensive like we are going through but only the process."* Then, we listed out the steps of the process through discussion and reflection below.

1. Understanding the context/character
2. Identifying the issue
3. Exploring possible solutions
4. Sharing the solutions to the group
5. Rethinking and refining solutions

The co-researchers were initially unaware that the process we came up closely resembled design thinking process proposed by Institute of Design at Standford. Understanding the context and characters involved corresponded to the empathize stage. Identifying the core issue reflected the define stage. Exploring possible solutions represented the ideate stage. Sharing these solutions with the group as prototype stage. Finally, rethinking and refining solutions aligned with the test stage of the design thinking process. During the process of identifying solutions through design thinking approach, the unique expertise of each individual is integrated so that the collective creativity of the team contributes to the entire problem-solving process which includes understanding and analyzing the issue, generating ideas to address the problem, and eventually developing a prototype of the proposed solution (Meinel & Krohn, 2022). The co-researchers were excited to work on an arts-integrated plan addressing the points

discussed above. They seemed to comprehend this process because they have been practicing somewhat similar process in PAR from the beginning of this research. We agreed to work on grade-wise plans in such a way that students will also have to identify the local problem from the arts, come up with the solution to address that problem, share it with the group and again rethink the solution align with the common idea. I requested the co-researchers to share their plans with each other.

That evening, I was reflecting on the issues raised by the co-researchers, who mentioned that there used to be a moral education subject in schools. Now, there is no such moral education subject, and there is an even greater need for such awareness, as students are facing more moral and social issues. It is also an important area that educators through integrated curriculum in Nepal needs to work on as Beane (1997) argues that the main goal of an integrated curriculum is to help students find personal and social meaning by learning from real-life problems and experiences. Meinel and Krohn (2022) also asserted that design thinking empowers students as creative problem solvers. We also agreed to make the students see from lenses of others in the arts, identify the problems or issues relating to their daily life, explore the solutions individually or in group and rethink those solutions which align with the design thinking process stated by Goldman and Zielezinski (2021) as exploring, empathizing, brainstorming and prototyping. I was very curious to see how those students would explore the problems and come up with revised solutions in the thematic arts-integrated lessons, which was going to allow them to search for content and create their own meaning, as mentioned by Hunter-Doniger (2015). The plans that the co-researchers were working on not only allowed them to engage in knowledge co-construction and self-reflection but also enabled their students to do so. This would help build a sustainable culture of knowledge construction within the school community. However, I was not completely sure whether students aged 6 to 9 would allow themselves to go through this design thinking process. To make things easier, I updated what we had done so far and what we were aiming to do in the messenger group and encouraged the co-researchers to work collaboratively on the plans sharing feedback to each other considering the things below in the notice.

Table 7

Notice for the Co-researchers

What We Have Done So Far
Selected a theme, subject-wise learning objectives, and soft skills
What we plan to do addressing through arts
• How to engage students physically, mentally, emotionally, and socially? • How to help students practice the soft skills we have selected? • How to facilitate students in identifying problems in their daily life through questions? • How to facilitate students in generating ideas for solutions? • How to facilitate students sharing their ideas to their group and whole class? • How to help students rethink or revisit the solutions they have come up with? • If possible, how to support students in expressing their understanding through various forms of art? • How to enable students to experience experiential learning?

After a few rounds of planning, feedback and discussion, the coresearchers came up with the plans below in figures below. The plans continue the thematic approach with integrating the new components 'Arts' and 'Design thinking'.

Table 8

Roleplay Integrated Thematic Plan for Grade One

Grade: One	**Theme:** Communication Technology & Market		
Discipline	**Learning Achievements**	**Soft Skills**	**Teaching and Learning Process**
Our Surroundings	• Tell names of communication devices • Use mobile in day-to-day life	Communication skills (S3.1) Collaboration skills (S3.2)	• Roleplay instruction • Roleplay Performance • Reflection on roleplay • Identify problems • Explore solutions

			• Rethink on the solutions
Math	• Addition of two-digit numbers	Critical Thinking skills (S1.4)	• Station Activity based on roleplay • Worksheet for Addition

Table 9

Storytelling Integrated Thematic Plan for Grade Two

Grade: Two	**Theme:** Our Immediate World		
Discipline	**Learning Achievements**	**Soft Skills**	**Teaching and Learning Process**
Our Surroundings	• Identify the weather • Take care of themselves in different weathers	Communication skills (S3.1) Collaboration skills (S3.2)	• Storytelling instruction • Narration of story • Reflection after story • Identify the problems • Explore solutions • Share the solutions to the groups • Rethink on the solutions
Math	• Represent data in graph	Critical Thinking skills (S1.4)	• Follow up storytelling activity • Students survey and represent in graph

Table 10

Digital Storytelling and Song Integrated Thematic Plan for Grade Three

Grade: Three	**Theme:** Communication Information & Technology		
Discipline	**Learning Achievements**	**Soft Skills**	**Teaching and Learning Process**
Math	• Add & Subtract rupees	Critical Thinking skills (S1.4)	• Digital storytelling instruction • Digital storytelling video • Reflection on the video • Identify the problems • Worksheet – add & subtract • Explore solutions • Share the solutions to the groups • Rethink on solutions
Our Surroundings	• Develop habit of spending money in limit • Develop habit of taking care of belongings • Develop habit of saving money or things	Communication skills (S3.1) Taking care of self-skills (S3.2)	• Instructions on song • Singing song together • Reflection from song • Identify the problems • Explore solutions • Share the solutions to the groups • Rethink on the solutions

Action

After identifying arts integration as one of the strategies of STEAM Education for holistic learning and planned thematic lessons integrating arts with design thinking process for Grades one, two, and three. This time, the co-researchers were both excited

and confident about their plans. The co-researchers of Grades three, one, and two implemented their plans on February 16, 18, and 20, respectively. Nishma and Ranjita implemented their digital storytelling and song integrated thematic lessons, respectively on February 16. Similarly, Ritima and Juli implemented their roleplay lessons supported by postcards, drawing, and coloring integrated thematic lessons on February 18. On February 20, Prashansha implemented her storytelling lesson, supported by drawing, coloring, and song integrated thematic lessons. In the meantime, I was informed that Roja had left the school.

Digital Storytelling as Arts-based Pedagogy in Math Lesson

Nishma implemented her arts-integrated lesson under the theme "Communication and Technology" to teach addition and subtraction of rupees in mathematics while fostering critical thinking using digital storytelling. This time, the projector was set up in the classroom. The lesson began with the teacher's instructions while showing a digital storytelling video about Dipam. The students watched the video attentively.

Figure 23

Digital Storytelling Integrated Thematic Math Lesson

After the video, the students express their emotions and reactions to the story using emojis. They drew and showed their emoji representations. Some share the reason

why they have happy or sad emoji based on their feelings towards the story. Then, Nishma asked her students to guess the problem of Dipam, character in the story and identify his bad habits and the reasons why he had to suffer in the story. Then, Nishma posed a reflective question to the groups. "*What would you do if you were in Dipam's place*?" After the discussion, the groups shared their insights. The first group shared, "*We learnt not to steal or fight*", the second group shared, "*We would ask for permission before taking anything*." The third group added, "We *should not steal anything. We would have apologized to our parents if I was in place of Dipam*." The fourth group shared, "*We would avoid stealing and fighting with friends and family members*." Finally, the fifth group shared, "*We would ask our parents to find alternatives such as finding a pencil instead of taking one from others*." In the meantime, Nishma was writing those solutions on the whiteboard. Students were again asked to rethink the solutions by adding to or removing them from the list. After the group reflections, students solved the addition and subtraction of money problems in the worksheet provided by Nishma and checked their answers. Nishma then facilitated discussion on practical ideas such as how to save money, decision to what to buy, and making healthy choices, and including staying away from sweets for better health. The discussion from the reflection of students concluded that the leftover money should be either be spent for a good purpose or given to their parents.

During the lesson, students practiced mathematical operations of addition and subtraction as well as engaged in critical reflection on moralities, real life choices and good manners and behavior through the arts-integrated digital storytelling approach, which promotes a constructivist classroom as argued by Bohara (2023). Nishma could successfully implement the lesson with digital storytelling that fostered holistic learning, addressing maximum holistic learning indicators such as theme, soft skills, learning achievement, addressing local issues, self-reflection, fun and interesting lessons, promoting active student participation, and engagement in cognitive, affective, and social domains. The students also experienced the process of design thinking. They empathized with the character of digital storytelling, identified issues similar to their real life, and explored the solutions to address those issues. Although the students were not able to create a tangible prototype, some wrote their solutions in their notebook, they shared their

solutions with their groups and the whole class. A very simple, low-fidelity prototypes depicting their ideas (Möllers, 2016) were recorded by the co-researchers on the whiteboard and encouraged to rethink and add more suggestions, further refining their solutions.

Song as Arts-based Pedagogy in Our Surroundings Lesson

Ranjita implemented her lesson under the theme "Communication and Technology" in the subject Our Surroundings, aligned with Nishma's lesson, focusing on developing students' habits of spending money wisely and taking care of their belongings. Her lesson aimed to let students practice communication skills, and self-care skills through song integration.

Figure 24

Song Integrated Thematic Our Surroundings Lesson

Ranjita began the lesson by showing a picture and asking students to share their observations and thoughts, which helped activate their prior knowledge and curiosity. Then, she explained the instructions and introduced a song related to taking care of one's belongings, with the lyrics written on the board. She led the singing session along with the students, using gestures, actions, and clapping to make the activity lively and engaging. After singing, the teacher invited the students to reflect on the message of the

song in their groups by asking questions: Where do you keep your clothes after school? Where do you put your extra money? Do you ask your mother to buy more things in the market? How do you eat your food? Can you show it by acting? What happens if you spill out the food?

When Ranjita guided students to identify the issue the song wants to convey, they recognized issues such as losing belongings, leaving things unattended, and wasting food or money through discussion. Then, she asked students to discuss in group and provide suggestions to address the issue in the song. The first group suggested putting the clothes in the rack, second group realized spilled food could be fed to hens, third group realized they should eat all their food and take care of food, clothes, and money, and finally, the fourth group admitted that they have a habit of wasting food at home and in the canteen and promised to stop it. To encourage problem-solving, Ranjita asked students to discuss them in groups and suggest possible solutions. After sharing their ideas with the group and whole class, she encouraged the groups to rethink and refine their suggestions. Later, she distributed pictures related to the topic to each group. The students discussed and explained their pictures confidently, connecting them to the message of the song.

Through this arts-integrated approach using song and the design thinking approach, the students not only enjoyed learning but also reflected on their everyday habits. The activities promoted meaningful discussions, empathy, and awareness about self-care, responsibility, communication, and collaboration skills, which is aligned with Dabas and D'souza (2015), who discussed how music integration in lessons helps promote a culture that enhances students learning. Ranjita successfully implemented her song-integrated lesson, addressing the holistic indicators of learning such physical, cognitive, affective, and social domain, addressing local issues, theme, fun and interesting, soft skills, connection to daily life and self-reflection.

Role Play as Art-based Pedagogy in Our Surroundings and Math Lesson

Ritima and Juli co-implemented the grade one lesson under the theme "Communication and Technology" with 27 students in the class, aiming to help students identify communication devices and understand the use of mobile phones in daily life. They began the lesson with an action song as a starter activity. Then, Ritima explained what the students are expected to do during the role play performance and observation.

The role play included five main characters: two teachers, three students, a mother, a daughter, her friend, and two mobile shopkeepers.

The story of the role play centered around a young girl who loved using her mobile phone. One day, her mobile stopped working, and her mother complained about her excessive use. However, the daughter insisted on buying a new phone. Together, they visited a mobile shop and bought an expensive one. Over time, she became addicted to using mobile, and eventually, her mother took her to the hospital, where it was discovered that she had developed an eye problem from overusing her phone. In the middle of the roleplay, the music teacher was invited to sing a song, adding another element of arts integration. During the role play, students were actively involved both as performers and observers. The class also sang along to the action song. "*Telephone every day, listen to the radio every day, chatting on messenger every day, hello!"* which made the session joyful and memorable.

Figure 25

Roleplay Integrated Thematic Our Surroundings and Math Lesson

After the roleplay, Juli encouraged students to discuss how they felt during the role play and select postcards that represented their emotions. She modeled how to express reflections meaningfully through postcards, and the group leaders shared what their postcards symbolized. First group realized they sometimes watch mobile phone hiding from parents at home, like the person behind the curtain in the photo, second group shared that we should love each other like elephants in the photo, third group

promised to help parents to clean dish and keep room neat and tidy at home and the fourth group reflected that man in the photo running to hospital for eye treatment due to mobile overuse.

After this, Ritima asked the students whether they had habit similar to the character in the role play. Most of them said, "*No*," some said, "*Only on Saturdays*," and one student admitted to using it often. When they were asked how they would advise their friends, they responded,

> *It's very harmful to health. It causes eye problems, and the mobile display can damage the eyes. These problems can be solved by spending less time on mobile phones, going to the hospital for eye treatment, and using mobile phones only for 30 minutes after completing homework*.

The co-researchers asked the students to rethink their suggestions. The students then added two more: obeying their parents and not using mobile phones while eating or doing homework. After that, students participated in a fun "Cup Telephone" activity, where they practiced communication in pairs as speaker and listener. To reinforce learning, the teacher organized station activities around the classroom where the students: worked on a worksheet to answer the questions about mobile phones at home, created paper crafts to represent communication technologies and pasting them on chart paper, practiced addition of three digit numbers in the context of mobile devices and technology, and drew and colored the communication devices they had at home.

Through this arts-integrated approach using role play, music, and hands-on activities, students learned not only about communication devices and mobile usage but also about healthy habits, responsibility, and family values. The session helped develop their communication, reflection, and collaborative learning skills in an enjoyable and meaningful way. Ritima and Juli successfully implemented roleplay activities supported by music and song, addressing the maximum indicators of holistic learning and following the design thinking process mentioned above. As Bhattacharjee and Ghosh (2013) noted, the roleplay as a holistic teaching method replicated real-life scenarios with realistic experiences of use of mobile phone, allowing them to think critically and creatively.

Storytelling as Arts-based Pedagogy in Our Surroundings and Math Lesson

Prashansha implemented her story integrated lesson under the theme "Our Immediate World" in the subject Our Surroundings, aiming to help students name and recognize different types of weather while also developing communication, collaboration, and critical thinking skills. Prashansa and her students began the lesson by singing a weather song together, which created joyful learning atmosphere. After the song, she narrated a story related to weather. The story allowed the students to imagine different weather situations and how people respond to them.

After the story, Prashansha and I together facilitated students to identify the main problem in the story, discuss possible solutions, share them to the group and the class, and then rethink and refine their ideas. Following the discussion, she asked students to share their favorite types of weather. The students with excitement expressed their likes such as some loved sunny days, others preferred rainy weather, and a few enjoyed cold days the most.

Figure 26

Storytelling Integrated Thematic Our Surroundings and Math Lesson

After teaching our surroundings, Prashansha integrated mathematics under the same theme, focusing on collecting the data how many likes which weathers, and representing them in graphical representation using drawing and coloring. For this, the

students first listed the number of classmates who liked each type of weather on the board. With guidance from the teacher, they then created a simple graph to represent this data visually. Each group or individual colored the bars or symbols to show their class's favorite weather patterns.

Through this integrated approach combining storytelling, song, drawing, and coloring, students not only learned to identify weather types, but also practiced data collection and representation in a creative and enjoyable way. This reflective process encouraged the students to think critically and connect the story to their own experiences. Prashansha and I successfully co-implemented storytelling as arts-based pedagogy making class more effective and learner centered, as claimed by Chapagain (2025), by addressing the holistic learning indicators mentioned above.

Figure 27

Lead Researcher Facilitating the Reflection after Storytelling

Apart from the art-specific activities in all three grade lessons, there was a common approach across lessons: thematic planning, emphasis on soft skills, engagement of students in multiple activities, integration of at least one form of art, connection to

daily life and real issues, involvement in the design thinking process, and inclusion of fun activities were clearly visible. However, the students did not have the opportunity to implement or test their simple low-fidelity prototypes ideas from their notebooks or board.

Reflection

In this section, I have narrated and discussed the reflections of students and co-researchers during the reflection session after the plan implementation.

Reflections Through Students' Eyes

On the days of lesson observation, I had talked with some students about how they felt during the arts integrated thematic lessons. During the conversation, Mr Sherpa from grade one shared about the lesson,

> *Today, we had fun watching our teachers and friends perform a drama. The drama was about mobile phones and their overuse. It showed a student who didn't help his parents but made them buy new mobile phone and spend too much money and time on it. His mother had to take him to the hospital because his eyes were hurting from watching the mobile for a long time. I would suggest not watching them for a long time because it can cause eye pain. We should finish our work first and then watch mobiles. We should not waste money.*

Similarly, Mr. Limbu from grade two expressed the feelings about the recent lesson,

> *Today we enjoyed listening to stories and drawing and coloring graphs. I felt like the story was about me and my friends. I have similar friends like in the story who used to fight with friends a lot. He used to play in rain a lot. I suggest such friends do not play in the rain otherwise you will be hospitalized.*

During the interview, the students, after participating in the arts-integrated lessons, expressed that they had enjoyed watching dramas, drawing, coloring, and listening to stories. They mentioned that they were reflecting on themselves and their friends while watching and listening to dramas and stories. They demonstrated empathy toward the characters, as Goldman and Zielezinski (2021) state that empathy is the ability to understand another person's situation by seeing and feeling things from their point of view. They also realized appropriate and inappropriate behaviors regarding mobile phone

use. Empathy, realization, and reflection were the results of integrating thematic approaches, soft skills, arts, and design thinking components. Their reflections show that even a few one-day lessons had a significant impact on students' learning

Reflections Through Co-researchers' Eyes

After implementing the arts integrated thematic plans, the co-researchers reflected on their experience during the reflection sessions on March 1, March 14, April 20 and April 25.

Ritima's Reflection on Arts Integration Through Roleplay, Songs, and Postcards

When Ritima was asked to reflect on roleplay, songs and postcards integrated lesson what they implemented recently, she articulated,

> *We integrated roleplay to help students identify means of communication in daily life, communicate effectively with family and friends, develop awareness about using communication devices, and learn addition through real-life contexts under the theme Communication and Technology. We also combined action songs with roleplay. Learning from cycle one, we made both planning and implementation more systematic and purposeful, addressing multiple objectives and indicators of holistic learning effectively. Similarly, students got engaged mentally, emotionally, physically and socially as they brainstormed, reflected, danced, sang and discussed in their daily lives even confessing their habits of using mobile phones. The activities helped foster critical thinking, creativity, awareness, and soft skills. Through roleplay, students explored the problems and consequences of excessive mobile use. Students identified these issues through reflective questioning and collaboratively suggested possible solutions. The sessions included group activities, roleplay, and songs that promoted emotional expression, social interaction, and problem-solving. Students also participated actively through the use of postcards and other interactive materials. I came to realize that the arts particularly roleplay, is very effective for integrated learning. Few students would have truly understood or remembered the message, if we had only told the students not to use mobiles excessively. During the roleplay, they got engaged in learning with fun without pressure. One student reflected from the postcard where a person was hiding behind a curtain and confessed that he used*

> *to watch mobile secretly hiding from his parents at home. Such activities made learning meaningful and lasting. At that moment I felt like crying. While facilitating, we later felt that we could have guided students more deeply to help them identify genuine problems and develop more creative solutions.*

Juli's Reflection on Arts Integration Through Roleplay, Songs, and Postcards

When Juli was prompted to reflect on their recent roleplay, songs and postcards integrated lesson, she explained,

> *I was surprised to see the engagement of students. They interacted actively, read and wrote independently and followed the checklist better than expected which I was not expecting. We practiced soft skills, and the student's showed creativity. We also discussed culture, and some scenes in the roleplay reflected cultural aspects as well. Although we couldn't address all the indicators of holistic learning that we had identified, we managed to address multiple indicators as much as possible through our art-integrated activities. I agree with Ritima that we realized that we could have done better in helping students explore problems and solutions*

Both Ritima and Juli shared that they felt their thematic, arts-based pedagogy through roleplay fostered more effective learning than before. They felt that their students engaged in learning with enjoyment and learned without pressure. Students were engaged physically, mentally, emotionally, and socially as they danced, sang, acted, discussed, and reflected on their daily lives, even confessing habits related to mobile use. They realized that integrating roleplay promoted critical thinking, as Pant et al. (2023) note that the arts encourage critical and creative thinking. Moreover, they observed that their students explored real-life problems, developed deeper solutions, and reflected on better approaches, practicing problem-solving skills through questioning, reflecting, and thinking critically, as cited by Sickler-Voigt (2023) from Walker, Tabone, and Weltsek (2011). They were overwhelmed with joy when their students confessed to their excessive use of mobile phones. It was the power of roleplay; the student was so empathetic that he could step into the shoes of the character from their perspective, as noted by Goldman and Zielezinski (2021). However, they also realized that they could have facilitated more authentic problems-solving with better solutions.

Prashansha's Reflection on Arts-based Pedagogy Through Storytelling, Action Song, Drawing and Coloring

When Prashansa was asked to reflect and provide overview of their latest storytelling, song, drawing and coloring integrated lesson implementation, she explained,

> *In the recent lesson, my aim was to help students identify the different weathers in our surroundings and learn how to represent the data collected in a graph through mathematics, using storytelling and color craft for arts integration. I created the story myself. I was also a little nervous, concerned about whether it would work effectively or not. However, I was also confident in telling the story having my own story. When I started the lesson conducting action songs, it engaged the students physically, mentally, emotionally, and socially. As I started telling the story, I could clearly see the happiness and curiosity on the students' faces wondering what would happen next in the story. It was a "wow" moment. I felt that my students were both understanding and enjoying the story. Before, I thought that storytelling would address only the emotional domain, not the physical, because students don't need to be physically active while listening to a story. However, students were socially engaged while discussing questions in their groups during the reflection time. They confessed mistakes they had made, saying, "I also made the same mistakes as Romi, and I won't repeat them." The students were becoming aware of their mistakes and reflecting on whether they were similar to the character in the story or not. As far as I know, I think the objectives were fulfilled. Almost all the students learned what I had planned to teach. Even now, when I revisit those lessons, all the students confidently answer questions about seasons and graphs. Perhaps if I hadn't used storytelling, many students might have been confused. Not only the average learners, but even the slower learners were able to answer easily from that lesson. Well, we tried our best to address all the indicators of holistic learning. However, we could have done better if we had enough time. I also felt that I might not have reached all the students. I thought my story was a bit short and could have been made slightly longer.*

Prashansha, who implemented storytelling combined with action song, drawing, and coloring, shared excitedly that her student's immediate reactions during and after the storytelling were noticeable. They looked happy, curious and wondering what would happen next and both learning and having fun at the same time. Their story engaged the students mentally, emotionally and socially during the pair and group work. As Shavkatovna and Kizi (2020) reported, fostering emotional intelligence helps students gain insight into human behavior. Similarly, one student confessed the mistakes he had made after imagining himself in the place of the story's character (perhaps many other students also) and assured that he would not repeat them. The story followed by the inquiry questions not only entertaining the students but also leading them to question on their own actions and delving deeper into the content through storytelling, as noted by Sickler-Voigt (2023). As a result, Prashansha felt that her lesson objectives were fulfilled. This was confirmed the next day during the revision time, when she elicited responses from her students and they confidently answered the questions. She also believed that storytelling is helpful not only for the average learners but even the slower learners were able to answer easily from that lesson, as Burnaford et al. (2013) noted that arts connect with students who are usually left out. She could engage her students physically, mentally, emotionally, and socially by integrating action songs into storytelling.

Ranjita's Reflection on Arts-based Pedagogy Through Song and Picture

Similarly, when Ranjita was asked to provide an overview of the song and picture integrated lesson implemented recently, she detailed,

> *I planned to use a song to teach our surroundings, and the topic was "Being Frugal." on the theme communication and technology in grade three. At the beginning, I taught students about being frugal through the song, explaining how to take care of their belongings and avoid unnecessary spending. After singing the song with the students, I asked questions such as, "Do you waste food at home or not? Have you seen anyone wasting food? How do you take care of your belongings?" I encouraged the students to reflect on being frugal, and the song itself reinforced this concept. Students discussed it in groups to identify problems and find solutions. They reflected on what they or their friends should do or avoid doing to be frugal. By the end of the lesson, students learned by themselves*

> *reflecting, discussing and rethinking that they should not waste anything, take care of their belongings, avoid unnecessary spending, save money, and buy only what is necessary. Previously, I used songs simply to teach content without much intention. However, I used songs purposefully, aligning them with the theme, learning objectives, soft skills, and indicators of holistic learning this time. I think when my students were singing the song, they were also clapping and moving their bodies, so they were physically active. They reflected on their daily life using and saving their belongings emotionally while singing songs. They were able to sing, dance, and discuss together, engaging socially as well. Moreover, students realized that these things were very important and practical things in their life.*

Ranjita reflected that she not only performed the song but also guided her students to delve into its content through making them also sing and reflective questioning. She shared that she didn't know that songs could be used to help students develop physically, mentally, emotionally, and socially for holistic learning which aligns with the idea of Ralston (2021). As noted by Del Barrio and Arús (2024), music pedagogical approach fosters correlative physical, cognitive, and emotional development. By the end of the lesson, her students learned through reflection, discussion, and reconsideration that they should not waste anything, take care of their belongings, avoid unnecessary spending, save money, and buy only what is necessary. Together, the students identified problems related to their daily life and proposed solutions and reviewed them.

Nishma's Reflection on Arts-based Pedagogy Through Digital Storytelling

When Nishma was invited to reflect and share her experience of the digital storytelling integrated lesson plan recently, she expressed,

> *In this cycle, we worked together to teach addition and subtraction of money in Grade three using digital storytelling on theme communication and technology aligning with Our Surroundings lesson. I had never used digital storytelling before. In the past, we used audiovisual materials to teach, but we did not know about digital storytelling. Through self-study and with the support of computer teacher, we learned how to create digital storytelling and teach accordingly. We carefully planned to address the indicators of holistic learning as much as possible. Previously, we did not plan opportunities for students to explore and*

address real-life issues. However, in this lesson, students were able to explore issues related to their own lives, address them, and evaluate their own solutions. These were the main differences between my lessons then and now. While watching the digital story on the screen, we noticed the students' emotional engagement, as they were happy during positive situations and sad during negative ones. The story was also connected to the students' daily lives. I used to think that holistic development was only about the development of four areas mental, physical, emotional, and social. During this research, I realized that holistic development is not limited to these four areas. For example, holistic learning also involves connecting to real life and engaging in experiential learning. There are many other indicators that foster holistic learning, enabling students to develop as real-life problem solvers for the future. We can teach these skills in class only through intentional planning. Previously, we wondered how it was possible to connect a subject to real-life problems or to integrate one subject with another. However, through this research, we discovered that, except in some cases, it is possible to connect and integrate as much as possible if we work together, discuss, and explore ideas based on our experiences.

Sojina's Reflection on Arts-Based Pedagogy Through Digital storytelling on Math lesson

Reflecting on the integrated digital storytelling integrated lesson when she was asked, Sojina articulated,

Well, sometimes we used stories to teach before, but this time I noticed that students were more engaged in learning through digital storytelling. With this approach, we could teach not only math but also connect it to daily life issues. We felt that this lesson covered multiple areas. We created the story keeping the indictors of holistic learning in our mind such as critical thinking skills, experiential learning, problem solving skills. We tried our best to address these skills. Before, we used to teach focusing on one topic one subject. But we can teach addition and subtraction in math and poem in English and cover different areas such as life skills or soft skills and arts.

Since Nishma planned and implemented digital storytelling in collaboration with Sojina, they reflected that they did not know and had never used digital storytelling before. Nishma learnt about digital storytelling through self-study and group learning from others and created digital storytelling with the support of the computer teacher for ICT support showing the collaboration between art, non-art and ICT teachers, as stated by Hunter-Doniger (2018). She saw that her students were able to explore issues related to their own lives, discuss solutions and evaluate their own solutions aligning with design thinking. She realized that digital storytelling engaged her students more in learning than only storytelling. Nishma and Sojina felt that their digital storytelling covered multiple areas and holistic learning indicators.

Critical friend Gita's Reflection

The critical friend, Gita who was involved with research team from the beginning, actively contributing, participating, and co-learning alongside all co-researchers across the three grades. During the kuragraphy she said,

> *During the lessons in this phase, the co-researchers facilitated students identifying the problems they faced in their daily lives by reflecting through songs, stories, roleplays, drawings, and colouring, and explored possible solutions to address these problems. Through teaching with arts and connecting the activities to real-life situations, students were encouraged to reflect on their experiences, which helped them learn from their everyday lives. During the lessons, students learned that they should not panic when problems arise but instead explore solutions to solve them. I particularly appreciated the ways in which art facilitated this learning. Students learned a great deal and recognized that solutions are often present around them. However, I think we need to meet regularly at least once a month to continue co- learning from each other and ensuring effective implementation.*

Co-researchers' Journey of Transformation During the Research

After individual reflection, we also had another round of group reflection during our final kuragraphy session on May 4, 2025. This session focused on reflecting on the journey from the beginning to the end of the research and its impact on the co-researchers' professional development. This time, we met outside the school at a nearby

café in a quiet setting, where we enjoyed some food together, sharing our thoughts. This session was organized to encourage the co-researchers to open up more and share their personal experiences and views they had not yet expressed in what Roer-Strier and Sands (2015) call 'beyond the official story', the final phase of the primary interviews.

During the meeting, I asked them to score themselves again out of 10 based on their understanding of integrated learning and their success in applying it. The co-researchers rated themselves 7, 6, 6, 7, 7, 8, 7, and 7 out of 10. The average score was 6.875. This time, there was an increase in the average score from 3.75 to 6.875, which shows that they have confidence in their own understanding of holistic learning. The individual co-researchers reflected and shared about their journey of transformation throughout the research.

Figure 28

The Research Team Kuragraphy session at Café Nearby School

Ritima's Journey of Transformation

When Ritima was asked to reflect on her journey of learning during the research, she explained,

At the beginning of this research, I was not very excited. I assumed we wouldn't learn anything new about integrated learning. Initially, we thought our role was only to fill out forms with general ideas. However, as we started discussing the integration of multiple subjects and reflecting deeply on our problems and solutions, we discovered unexpected insights. We genuinely learned through direct experience, gaining first-hand knowledge instead of relying on second-hand information and we struggled to identify soft skills and integrate. The training I had attended in the past focused on general concept of holistic development without meaningful connections to lessons. During this research, we learnt about the recent integrated curriculum, soft skills and more indicators of holistic learning. I was able to implement these learnings into my lessons, achieve meaningful outcomes and best learning for students. As a result of this research, I have developed my learning skills. I explore resources online and share what I learned with my colleagues during one of the meetings at my school. Previously, I didn't know how or where to learn. Over time, we realized there is no single way to teach. We needed to be updated and maintain a continuous learning attitude for our continuous development. Now, we have many ideas for integrating various elements into our lessons. Previously, we taught subjects and used art separately, but through this research, we learned to integrate subjects, arts, and holistic learning indicators especially through roleplay, postcards, and songs. I have come to understand that learning is a lifelong journey. I have grown professionally as a teacher.

As Ritima reflects on the journey of research, she finds herself not excited in the beginning as she assumed that her role was only to fill out the survey forms. However, as the research progressed, being a PAR co-researcher, she began experiencing learning by doing and constructing first-hand knowledge, as McIntyre (2008) asserts that the active participation of participants in the co-construction of knowledge is one of the three key characteristics of PAR. She could also expand the horizon of understanding of holistic learning. Previously, she didn't know where and how to learn. As Baum et al. (2006) noted, the PAR process aims to empower people to have more control over their own lives, she felt empowered as she developed self-learning skills and began sharing new

ideas with her colleagues. She has perceived that learning is a long process and she believes that she is developing professionally by participating in the research.

Juli's Journey of Transformation

When Juli was asked to look back from the beginning to the end of the research and express her thoughts on the learning journey, she articulated,

> *Initially, I used to think that I should teach my students the same way my teachers had taught me. I was confused about how to integrate multiple subjects and other elements into a single lesson. By the end of this research, I have learned how to do that. I have also learned how to integrate soft skills and realized how to teach using different forms of art specially the roleplay and action songs.*

During the reflection, Juli realized that she used to think and teach that she should teach her students the way her teacher taught, as noted by Pant (2017) cited by Tamang (2021), who states that we teach our students in the same way we were taught. She was confused until the beginning of this research about planning for integrated teaching and learning. She believes that she is now equipped with the necessary skills for fostering holistic learning through arts integration. Her journey from confusion to clarity in this research created opportunities for her to construct new insights through the process of transformative learning, as noted by Taylor (2008).

Prashansha's Journey of Transformation

As Prashansha was asked to assess her professional growth during the research, with excitement she expressed,

> *I hadn't participated in any professional development before, and I felt like a burden at the beginning of this research. At first, I didn't know much about how to foster integrated learning in grade two. However, as the research progressed, I began to feel more comfortable teaching in my class, thanks to the learnings from our meetings. I also shared this with our Rita Ma'am, and she agreed. I used to think I understood holistic learning, but after this research, I realized it is much more than I had imagined. Along the way, I sometimes struggled to manage my time for the research and felt frustrated because of many other responsibilities at school and in my personal development. I felt pressured. However, putting those struggles aside and focusing on the positive, I found that learning about*

integrated and holistic learning through discussion, sharing, and reflection was the best learning experience of my life. I never imagined I would develop so much through this research. At this point, I am very happy with the progress I have made as a teacher. I haven't fully transformed yet, but I feel that I am gradually becoming one. I am becoming more creative these days. Previously, I used to do nothing at home, but now I have started taking schoolwork seriously. I constantly think about being creative, generating new ideas, exploring new things, and introducing them in my school. I feel this energy and motivation within me these days. As we approach the end of this research, I have realized that I am truly a co-researcher, as you used to emphasize time and again throughout the process. I feel that I did it; I made it. In the beginning, when we were asked to reflect, explore, discuss, share, and plan, I used to expect you to teach us, and we would simply implement it in the classroom. That would have been fine, and you would have been satisfied now, reflecting on my achievements, I realize that I actively participated, shared ideas based on my experiences, and contributed to the group. It was very effective, and I became a much better learner.

During the reflection, Prashansha articulated that she felt like a burden as the research started. However, she began to feel comfortable as the research progressed, along with their understanding of holistic learning. She reflected that she was so frustrated because she struggled a lot to manage time and thought about quitting the research. After overcoming that phase, she now realized that discussion, sharing, and reflection were the best learning experience of her life. She must be going through at least the disoriented dilemma in the process of transformation among ten phases of transformation, as noted by Mezirow (1991). She felt her development and gradually transforming towards an effective teacher. Moreover, she shared that she has developed the habit of self-study, continuously learning and exploring new things with a positive attitude towards her profession. Coming to this point of research, she has felt a sense of achievement in that she could contribute to knowledge construction.

Ranjita's Journey of Transformation

Like previous co-researchers, when Ranjita was also invited to share her learning journey from the entire research, she shared,

> *Of course, I have noticed my own development throughout this course. Previously, I used to sing songs to teach my students, but I was not intentional about it. I didn't know that songs could be used to help students develop physically, mentally, emotionally, and socially, or how to use them for holistic learning. Through this research, I have realized that our teaching should help students develop both academic and life skills. We should teach in a way that fulfills the objectives of the lesson. By the end of this research, I feel empowered. I have recognized that I had much to learn, and to do so, I needed to step out of my comfort zone to truly understand my strengths and weaknesses. Now, I feel confident in guiding my colleagues on how to foster holistic learning. Sometimes, we may feel hopeless, thinking that we cannot improve our skills. During this research, we realized that if we work together as a team, we can enhance our skills.*

Ranjita reflected that she is convinced that music integration can foster holistic learning. She is convinced that teaching should develop students holistically. At the same time, she also realizes the importance of continuous learning, which is one of the teacher competencies in Nepal (National Center for Educational Development, 2016). She perceives that one needs to come out of one's comfort zone to truly understand one's strengths and weaknesses, which she experienced during this research. She feels that this has empowered her in her teaching profession. Also, she realized that they should work as a team to equip each other.

Nishma's Journey of Transformation

As Nishma was also encouraged to reflect on her professional growth during the research, she explained,

> *At the beginning of this research, we were beginner learners. We knew very little about integrated learning, what it was for or how to teach it. We often struggled, felt confused, and doubted whether we could make it work. Previously, we had some knowledge of holistic development and the thematic approach, but integrated learning according to the new curriculum goes beyond that, combining multiple disciplines, soft skills, and indicators of holistic learning. In the early stages, it was difficult to distinguish between our limited understanding and the*

broader concepts of integrated, thematic, and holistic learning. As we gradually got engaged in the research, we committed mistakes, reflected on them and continuously assessed ourselves. It helped us to explore new ideas and improve ourselves when we learnt, shared experience, received feedback and had critical thinking in a group. During this process, we were empowered with new knowledge, skills and attitude. Even in daily life, I now integrate multiple tasks whenever possible, for example, going to college while also buying vegetables on the way home. Previously, we used different forms of art and activities to achieve a single objective, but now we have learned how to achieve multiple objectives through one form of art. We were able to manage our time more effectively with this approach. Over the period of time, I have experienced self-development, with more confidence in planning and teaching in accordance with integrated curriculum. In fact, I am confident enough to support others who may need guidance in this area. Now, after spending significant time exploring, reflecting, and applying integrated learning in practice, I recognize that there is still room for improvement in myself. However, I am confident in my ability to plan and implement lessons effectively, integrating disciplines, arts, and holistic learning indicators in meaningful ways.

Nishma, with excitement, shared her insights from the research journey. She reflected that she was struggling, confused, and had doubts regarding the research in the initial phase. She articulated that her horizon of thematic, integrated, and holistic learning has been expanded so far. She experienced collaborative learning by sharing her experience, planning, receiving feedback, and thinking critically and creatively. Now she can independently plan and teach for holistic learning. She experienced self-growth. She is confident in teaching according to the integrated curriculum and supporting her colleagues. She shared that she has started using the learnings from this research in her personal development as well. Her journey from confusion to confidence reflects her empowerment, as she overcame her dependency on seniors for learning, as noted by Rajbanshi and Luitel (2020), which is one of the ideologies of PAR.

Sojina's Journey of Transformation

Like others, when Sojina was also asked to reflect on her learning journey and professional growth during the research, she explained,

> *It was not easy to get started at the beginning of this research. We were confused about integrated learning, even though we had been teaching thematically, knowingly or unknowingly. Integrated learning seemed both similar to and different from what we already knew, which added to our confusion. However, as we explored integrated learning together in groups, we learned many new things. During this process, we felt greatly empowered, and now I feel that I have grown a lot.*

Like other co-researchers, Sojina also articulated that she struggled during the initial phase of the research. Along with the progress of the research, she learnt many things about integrated learning. She learnt many new things, learning together with equal contribution. The research began with her struggle and was going to conclude with her professional growth and empowerment, as Baum et al. (2006) noted that PAR aims to empower those who are involved.

Principal's Perspective on Co-researchers' Growth

The principal who was overseeing the process and outcome of the research shared,

Our teachers had little awareness and practice accordingly in their lesson. After the research, our teachers have levelled up one step up than before they use to teach for integrated learning. While implementing integrated curriculum, during this research I see the teacher's integrating numeracy, linguistics ideas better than before in their classroom. Our teachers have demonstrated these things with good improvement. And from the result or learning achievement aspect, there has been a satisfactory improvement in learning achievement of students. But if we look the development from holistic perspective, our students' discipline, behaviour, these things are visibly improved in students. Your intervention as research as brought a positive change in them. The teachers up to grade 3 have the better awareness of self-learning and keen to learn compared to other teachers. In the meetings, they used to share very superficial things

before, but now they share the ideas and learnings based on their lived experience and self-study. It proves that their level of understanding has been very high now.

Lead Researchers' Journey of Transformation

Throughout this research, not only the co-researchers but I, as the lead researcher, also experienced transformation. Like the co-researchers, I gained a deeper understanding of the integrated curriculum, holistic learning, integrated teaching strategies, arts integration, and STEAM pedagogy. Beyond exploring the content, I experienced transformation through the research process itself. Engaging in an extensive review of these themes provided me the theoretical understanding that moved beyond superficial awareness to deeper conceptual understanding. While I was previously aware of multiple perspectives at the theoretical level, I became strongly convinced of their value as I collaboratively studied, witnessed and experienced their implementation and refinement in practice.

Similarly, as a PAR researcher, I challenged my own assumptions and positional authority within the study. I gradually recognized the hidden forms of hegemony embedded in my thinking and the taken for granted beliefs about expertise and control. I was often tempted to provide readymade answers to the co-researchers throughout the research. However, I consciously restrained myself and shifted to asking probing questions instead, moving away from an oppressive mindset toward a collaborative one. I applied the same critical lens when I recognized the hegemonic influence of pre-primary level co-ordinator among the co-researchers and facilitated accordingly. This realization allowed us to question and expand the boundaries of our traditional, fixed understanding of ideas, idioms, and quotations. Ultimately, this led us to the uncovering of hegemony of the co-ordinator's authority, my own, and the common sense set of beliefs which we previously accepted as normal (Brookfield, 2017). Simultaneously, I shifted my position from expert consultant researcher to not only facilitator, but also co-planner and co-implementer. I experienced emancipation from my own internalized hegemony in the process of transformation.

By adopting interpretive perspectives and standing in the co-researchers' shoes for an extended period, I learnt to be more empathetic toward others. As I moved from an outsider perspective toward an insider position, eventually moving beyond the

insider/outsider binary (Wagle et al., 2023), I began to see from other viewpoints. This shift gradually repositioned me as a change agent scholar (Taylor & Medina, 2011), advocating change in Grades 1-3 classrooms, moving beyond informing practice toward transforming learning environments. I moved beyond focusing solely on what and how to also question why. Instead of concentrating only on observable behaviours, I began to examine the underlying beliefs, values and assumptions that shape those behaviours. This shift deepened my analytical lens and strengthened my commitment to transformative practice.

When one of the co-researchers withdrew in the middle of the study, it created a moment of uncertainty that tested my resilience. At the same time, we were having frequent, intense, and rigorous meetings and had to adjust the schedules based on the availability of the co-researchers. The weight of the process was so heavy that at times, I had to push myself to motivate myself and the co-researchers. Over the months, I developed greater resilience, adaptability, openness and patience in navigating moments of uncertainty and tension, as noted by Asadzadeh et al. (2022).

The personal and social levels of changes led to this journey of my transformation (Mertens, 2017), combining inner and outer transformation. My inner transformation occurred through shifts in my beliefs, values and confidence. The outer transformation emerged through the process of working collaboratively with the co-research throughout the iterative cycles. I learnt to facilitate dialogue rather than controlling outcomes. I realized that the leadership is not about dominance or command, but about enabling collective agency and shared ownership. I have already begun to practice these principles in my workplace, family and community in which I am involved.

Reflections on Promoting Holistic Learning Through Arts-Integrated STEAM Pedagogy

To address the problems identified in the first cycle and to foster more holistic learning, we adopted arts integration combined with design thinking as one of the key strategies, which was planned and implemented across all three grades. Based on lesson observations and individual and group reflections on the thematic plans where arts and design thinking were integrated, it was evident that the co-researchers were able to foster holistic learning more effectively than before. According to the reflections and sharing of

co-researchers and students, as well as the observations done by myself and a critical friend, the thematic plans addressed several holistic indicators, including engagement in physical, cognitive, affective, and social domains; connections to daily life; local issues; enjoyment and fun; soft skills; themes; and learning achievements.

The lessons in this cycle were more integrated than those in the first cycle, aiming to address the expectations of multiple disciplines and the indicators of holistic learning. The arts-integrated lessons transformed the classroom into a stage where co-researchers and students acted like artists and active audience members. During this cycle, the co-researchers independently identified problems in their day-to-day professional lives related to integrated teaching, explored possible solutions collaboratively through an inquiry approach, and reflected critically to find the best approaches beyond the classroom. Similarly, the students experienced a parallel process: identifying problems related to the themes and lesson topics in their daily lives, exploring possible solutions individually or in groups, and rethinking them during classroom activities.

During the planning and implementation of arts-integrated lessons, both the co-researchers and students benefited from the integration of arts and STEAM. This not only made the lessons more engaging where students had fun, remained curious, and achieved the intended learning outcomes but also promoted twenty-first century skills such as critical thinking, decision-making, problem-solving, collaboration, and communication among both co-researchers and students, as mentioned by Kakungulu Samuel (2024). The research team realized that integration occurs not only across disciplines but also among various forms of arts. The co-researchers integrated multiple forms of arts such as drawing, coloring, picture cards, and action songs, within a single lesson to address maximum indicators of holistic learning. Similarly, they also combined more than two disciplines, such as Our Surroundings and Mathematics, in one lesson. Both co-researchers and students engaged in self-reflection throughout the process. The research team realized that working collaboratively as a team enhances skills and that students are capable of doing, reflecting, and thinking critically and creatively when given opportunities and proper support.

As in every person, there is always room for improvement. The co-researchers also realized that the learning experience could have been more holistic, deeper in

content, and stronger in soft skills if themes, disciplines, and arts had been better integrated. As a participant observer, I felt that the more forms of art are integrated, the more effectively the holistic indicators are addressed. I also found that co-researchers who are grade teachers teaching the same group of students throughout the day are more effective than those who teach separate subjects and need to collaborate in teams to develop thematic plans.

However, the co-researchers were on a journey from informing to transforming, from teacher-centered to student-centered approaches, and from confusion to enlightenment. The principal also articulated the professional growth of the co-researchers. They facilitated their students' learning from passively receiving information with lower-order thinking (LoT) skills to middle -order thinking (MoT)skills to higher-order thinking (HoT) skills, actively constructing knowledge individually and in groups, as noted by Qutoshi (2021). Teachers who teach in junior classes tend to have lower confidence compared to those who teach in senior classes. Similarly, male teachers are often more dominant than female teachers. This is particularly evident in terms of qualifications, knowledge, skills, decision making and professional experience. During this research, the co-researchers were empowered as they uncovered this hegemony and began to see themselves as confident teachers and continuous learners.

Chapter Summary

In this chapter, I presented how the research was conducted with Grades 1-3 co-researchers to foster more holistic learning through arts integration, design thinking, and inquiry. I also have discussed how we focused on continuing effective practices and addressing the challenges identified earlier to foster deeper and more meaningful learning experiences. I have explained how the team collaboratively explored arts integration and design thinking as strategies to promote critical thinking, creativity, problem-solving, and other twenty-first-century skills among students. I have narrated the perspective of the school principal on his teachers' growth and highlighted the professional development of co-researchers, including their increased confidence in implementing integrated teaching and learning, Overall, this chapter reflects the transformative journey of the research team members into innovative educators who reimagined classroom practices for holistic learning.

CHAPTER VI
FINAL REFLECTION, CONCLUSION, AND IMPLICATION

In this chapter, I present my final reflections on the meaning-making from the first and second cycles. I have responded to my two key research questions, addressing the main research problem. Similarly, I discuss the methodological insights, its theoretical implications, the overall conclusions, the implications of the study, and its limitations.

Responding to My Research Questions

Grounded in my professional reflections and the experiences of co-researchers who represent Grades 1-3 teachers in Nepal following the introduction of the integrated curriculum by CDC, this study explored how STEAM pedagogy enables teachers to foster holistic learning. The two interrelated research questions guided the inquiry and examined through two iterative cycles of PAR. The first research question served as the foundation for the second.

Addressing the First Research Question

I explored the first research question during the first cycle of the research discussed in chapter IV, where, after strengthening rapport and trust, the research team collaboratively identified and refined the research problem through continuous reflection and study of the integrated curriculum. Through an in-depth study, the research team broadened the limited understanding of thematic teaching, soft skills, holistic learning, collaboratively designing and implementing the thematic plans across Grades 1-3, followed by the individual and group critical reflections that produced shared insights.

Although the co-researchers were not aware of STEAM in the beginning, they were unknowingly practicing interdisciplinary integration, one of the core principles of STEAM Education as noted by Shih et al. (2025). As the research team planned and implemented thematic teaching guided by this principle, it helped students begin connecting activities and lessons to the central idea of the theme, fostering holistic learning like assembling jigsaw pieces to form a complete picture. This interdisciplinary integration of diverse disciplines and activities served as a conceptual platform for

content knowledge, just as Hollywood directors build an ‘Avengers’ universe and Bollywood creators build a ‘spy universe’ for heroic collaboration to save the nation and the world. As a result, it was realized that planning for integrated learning is like hitting many targets with a single effort, as it allowed them to address multiple aspects simultaneously integrating themes, disciplinary learning outcomes, soft skills, and ICT; connecting learning with real life; and engaging students across multiple domains to foster holistic learning. This understanding marked a shift from a disciplinary to a multi/interdisciplinary perspective, moving beyond a convergent thinking.

Furthermore, as there were two distinct groups of co-researchers, grade teachers and subject-specific teachers. It became evident that thematic teaching is more effective and feasible for the grade teachers. In the absence of a grade-teaching model, subject teachers require strong collaboration and cohesive teamwork from the planning phase to final reflection, to successfully implement thematic instruction.

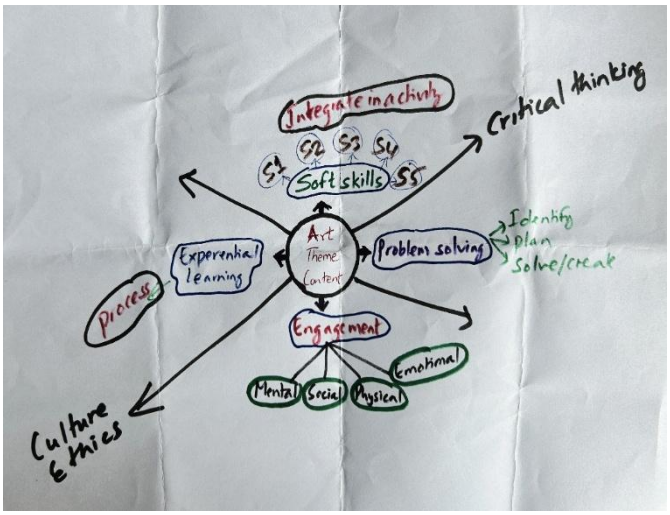
Addressing the Second Research Question

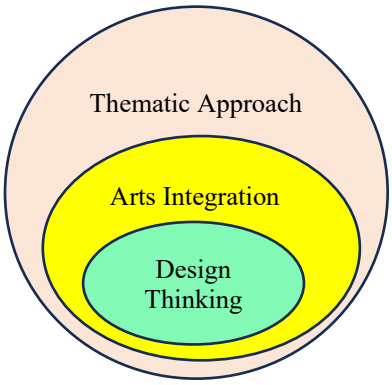
I explored the second research question in the second cycle of the research in chapter V. Reflections from the first cycle highlighted the need to deepen holistic learning using CDC resources and prior insights, leading the team to recognize that arts used in the thematic plans were particularly effective and aligned with the Art component of STEAM. The inclusion of arts emphasized creativity, self-expression, and human centered designs to solve complex, real-world challenges through inquiry and experiential learning (Shih et al., 2025). This approach highlights how the arts promote critical and creative thinking through imagination, guided by the Nepali proverb ‘Jahan pugdaina diwaakar tyaha pugchha pugchha kalaakaar’ (Where the sun doesn’t reach, the artist does). Our team co-planned, implemented, and reflected on the arts-integrated thematic teaching strategies. We chose specific forms of arts based on the strengths and interests of the co-researchers, generating ideas aligned with design thinking and action-reflection approach through discussions and reflections. Interestingly, students were identifying issues together, exploring and refining solutions, and sharing with peers, similar to the experiences of the teachers as co-researchers in the research. The only missing element was that they did not have the opportunity to test their low-fidelity

prototype. Upon reflection, it was realized this approach would be more effective with senior students.

Figure 29

Integrated Teaching Strategy Poster Prepared by the Research Team





Based on the reflections of co-researchers, it was evident that STEAM pedagogy, with arts integration and the incorporation of design thinking through inquiry and a thematic teaching approach, addressed more holistic learning indicators, fostering more comprehensive learning than before. This time, the students also reflected critically on their daily actions and behaviors. The co-researchers didn't commit the twin sins noted by Wiggins (2005): activity-based teaching without meaning and the coverage-based approach to complete the course. Reflecting the synergy between Western modern worldview and the cultural worldview by Luitel (2009), the synergy of non-arts and arts empowered both the co-researchers and the students, fostering deeper engagement and more holistic learning experiences. As the integrated curriculum serves as the overarching framework that organizes and connects learning across subjects and soft skills with the ultimate goal of fostering holistic learning, it is evident that STEAM approach acts as the practical vehicle for achieving this goal. This is how the co-researchers experienced STEAM pedagogy, empowering them to co-construct knowledge and ideas for more holistic learning through the three strategies suggested by Shih et al. (2025): interdisciplinary integration, inquiry based and experiential learning, and creativity and innovation.

Methodological Insights

I adopted PAR as my research design, which I described in chapter III, despite having limited understanding and no prior experience in using it. I have endeavoured to uphold the essence of PAR, emphasizing participation, action, and research throughout this study. Through learning during the sessions, along with discussions and reflections with my teachers and supervisor at the university, I was able to gain the trust of my research team to collaboratively identify the problem of implementing the integrated curriculum in their school. I had to struggle with my temptation to jump into the discussion and provide ready-made knowledge to the co-researchers. I was mindful of my positionality during sessions, ensuring my presence did not overshadow the voices of the co-researchers. I had to promote a democratic environment, facilitating group discussion by providing all co-researchers with equal opportunities for reflection and participation. As a PAR researcher, I played the role of facilitator and negotiator throughout the research process, at each stage of every cycle. I promoted a participatory approach in reflection, discussion, sharing, planning, and implementation in both cycles. I involved the co-researchers by encouraging them to contribute knowledge from their experiences and studies. This promoted their interests through arts, addressing both local and student needs and integrating local knowledge for sustainability. The co-researchers were empowered by challenging the hegemony of limited understanding and expanding the boundaries of their knowledge in holistic learning and thematic teaching, exemplified by proverbs such as 'hitting two targets with one stone' (ek tir dui sikaar) and 'what the sun cannot reach the poet reaches' (jahan pugdaina rabi tyahaa pugchha kabi). It was evident that the higher rung of the Arnstein's ladder of participation on which the co-researchers were engaged, the more empowered they became.

I negotiated the situation in which one co-researcher decided to withdraw from the research, and another actually withdrew. This was indeed a test of my resilience as the PAR lead researcher; however, I developed this capacity while overcoming the situation. By the end of the research, the co-researchers had identified local issues, explored solutions, and reflected on them. Similarly, they facilitated their students in practicing the same approaches in lessons that they had practiced during the research. During the self-evaluation, the co-researchers' scores on their understanding of integrated

or holistic learning were 2.6875 before the intervention, 3.75 at the end of the first cycle, and 6.875 at the end of the second cycle. Reflections at the end of both cycles revealed that the co-researchers had overestimated their understanding in the first self-evaluation, rated themselves closer to their actual level in the second round, and demonstrated further progress by the end of the research, as validated by their sharing and performance during this research. The PAR not only equipped the Grades 1-3 co-researchers with confidence and strategies for holistic learning, but the PAR also empowered them with confidence, knowledge, skills and attitude that they have started sharing their learnings in front of the secondary level teachers breaking the hegemony of junior as well as female teachers.

Although the PAR empowered the co-researchers with knowledge, skills, attitudes, and confidence in holistic learning and helped them develop as continuous learners, the research team could not take full advantage of PAR. The research took longer time than expected, almost a year, which demanded patience of the team. We had to adjust the schedule due to several factors such as meetings, exams, term breaks, and sickness, etc. Additionally, the co-researchers occasionally seemed upset or withdrawn during our sessions, as a result of work-related stress and busy schedules. Being grade teachers, they could not leave their students unattended in class, which posed a challenge for time management and scheduling meetings during school hours. The phases of identifying problems, planning and reflection didn't occur in the expected sequential order; therefore, we had to adjust these phases back and forth as needed. Throughout the process, our research was guided by an emancipatory interest and theory of transformative learning. To conclude, during the PAR, both the lead researcher and the co-researchers experienced empowerment. The journey through the phases and cycles of PAR was like peeling back the layers of the onion, with each layer revealing deeper insights, eventually reaching the core concepts of integrated curriculum, thematic teaching, holistic learning, models of integration, the STEAM approach, arts integration, and design thinking.

We expeerienced a shift from disciplinary to interdisciplinary approaches, from singular to multiple perspectives, from teacher-centered to child-centered practices, from being sympathetic to being empathetic, from low confidence to confidence, and from working as a one-man army to embracing teamwork.

Theoretical and Practical Reflection

I used social constructivist learning theory and transformative learning theory as my theoretical lens that guides my research. Grounded in social constructivist theory, I performed multiple roles including lead researcher, negotiator, facilitator and participant observer as required by my multi-paradigmatic design. Together, we co-constructed knowledge and ideas through group discussions, drawing on the existing local knowledge that participants already had to identify the problems in implementing integrated learning, explore the related issues in depth, plan strategies to address the problems. This collaborative learning occurred not only among the co-researchers but also extended to the students during the implementation in the lessons. As a result, the co-researchers co-constructed knowledge and ideas about the integrated curriculum and holistic learning, and similarly, the students constructed and co-constructed knowledge and ideas through the lessons that were planned.

Similarly, the transformative learning theory guided the research team to change the frame of reference towards learning, integrated learning, thematic learning, holistic learning and arts-integration. The co-researchers experienced a journey from elaborating their existing points of view to transforming their habits of mind during the two cycles of PAR, especially through critical self-reflection. The co-researchers experienced the transformation through the stages from disorienting dilemma to reintegration, although not in a sequential order. A few co-researchers articulated that they were being transformed from larva-like teachers to butterflies, perhaps just emerging from the pupa stage, although this butterfly metamorphosis metaphor does not fully capture the holistic nature of their transformation. The co-researcher who almost withdrew from the research shared that she struggled, frustrated and feel pressured but she had the best learning experience of her life as she put those struggles aside and focused on the positive. She said that she never imagined that she would develop so much gradually transforming being creative, generating and exploring new things and sharing them to colleagues.

During this PAR journey, the co-researchers and I experienced a transformative process, becoming emancipated through critical self-reflection on our existing beliefs, values, and pedagogical approaches, which often blamed the students with statements like, “Why can’t you understand such a simple thing?” After experiencing the outcomes

of implementing two progressive STEAM based thematic plans that considered expectation of curriculum and students' interests in two cycles, the research team came to realization that we played the primary role in enhancing holistic learning across both cycles and the responsibility for the outcomes lies with the teachers rather than with the students. As transforming researchers, we have changed our frame of references and begun to turn the question inward: "Why can't I help him/her understand such a simple thing?

Overall Conclusion

By the end of this research, the co-researchers were empowered with the knowledge, skills, and attitude to implement an integrated curriculum. Specifically, they were equipped with the arts-integrated thematic teaching approach as a STEAM pedagogy for the holistic learning in Grades 1-3 in Nepal. The planning, implementation, observation, and reflection during cycle one of the PAR led the research team to a deeper exploration in cycle two, where we found arts integration to be appropriate for more holistic learning. If I compare PAR process as house, then cycle one would be the ground floor providing a strong foundation for cycle two, the first floor.

As per my observation, the forms of art selected by the co-researchers addressed the learning outcomes from Creativity and Arts, a discipline of Our Surroundings in the integrated curriculum, which also promoted arts as content. The Grade Two co-researchers collaborated with the music teacher, and the Grade Three co-researchers collaborated with the ICT teacher for arts-integrated thematic plan for holistic learning of students. I also noticed that integration also occurred among different forms of art itself when storytelling was supported with group work, action songs, drawing, and colouring within a single lesson. Additionally, I also observed that a single art-integrated lesson addressed two disciplines: our surroundings and mathematics, covering multiple learning outcomes from the curriculum. The classroom was turned into a stage of performers through arts-integrated lessons, with co-researchers and students participating as both artists and audience members. In this way, the co-researchers were empowered implementing arts integration employing three strategies mentioned by Hunter-Doniger (2018): (1) all disciplines are regarded equally in pedagogy, content, and assessment; (2)

collaboration exists between art and generalist educators; and (3) students are encouraged to delve deeper into subjects through art.

Considering all the points discussed above, this PAR journey revealed that knowledge is most meaningful when co-constructed by the researcher and co-researchers through reflection, discussion, and shared action. The insights from this study indicate that participatory approaches are highly effective in promoting reflective, empathetic, sustainability, and holistic learning in educational settings.

During this process, collaboration, critical self-reflection, thematic approaches, arts integration, inquiry, and design thinking created more inclusive, meaningful, and empowering learning environment for the lead researcher, co-researchers, students, and other stakeholders involved. I perceived both PAR, integrated curriculum, and arts-integrated STEAM pedagogy produced the learners like local chickens. Usually, we see broiler and local chickens in our community in Nepal. From the moment local chickens get hatched, they must struggle against attacks from eagles, older chickens, dogs, cats, and jackals, as well as endure rain, sun, wind, and competition. Through these struggles, they develop essential life skills, and they are very active, fast and resilient in nature. On the other hand, broiler chickens are treated like VIPs, provided with food, water, a suitable temperature, and other forms of care, leading a luxurious life. As a result, they tend to be weak, slow, and vulnerable by nature. Teachers, experts, and researchers who provide ready-made information and knowledge to learners create an environment that produces broiler-like students' passive in their learning and knowledge and lacking life skills after the learning process. In contrast, teachers, experts, and researchers who facilitate an environment where students face problems, identify them, and explore effective solutions help develop life skills, producing local chicken like students who are competent, confident, and able to survive in any situation. This is why I am convinced that the integrated curriculum, STEAM pedagogy, and PAR all share this aim.

Implications of the Study

This study can serve as an important reference for the future in several meaningful ways. Specifically, it has implications at the practice level, policy level and for further study.

Practical Level Implications

This research encourages teachers to adapt their instructional methods to effectively implement an integrated curriculum aligned with arts-integrated STEAM pedagogy. It strongly advocates that educational institutions and educators prioritize the development of 21st -century skills among students. The insights from this study are already being shared with teachers with whom I am working in Kathmandu valley and beyond as part of ongoing professional development initiatives. By engaging with the lived experiences and transformative journeys of the co-researchers and myself, educators can better understand both the challenges and opportunities involved in implementing an integrated curriculum. As a result, teachers, students, schools and parents can benefit directly or indirectly through improved pedagogical practices and holistic learning approaches.

Policy Level Implications

This study provides valuable insights for policymakers and curriculum designers in revising educational policies and curricula to support thematic alignment and arts integration within STEAM education. It highlights the need for policies that promote integrated and holistic learning frameworks. Additionally, it can guide book publishers and educational resource developers in creating relevant teaching and learning materials that reflect the intent of integrated curriculum. Institutional support for arts-integrated STEAM pedagogy can contribute to systematic educational reform and sustainable implementation.

Implications for Further Study

Researchers interested in arts integration, STEAM education, and holistic learning approaches can use this study as a reference for future research. The study opens avenues for further exploration of integrated curriculum implementation in diverse contexts and educational settings. It may imply the need for future research to examine long-term impacts, refine pedagogical models, and explore additional strategies for fostering 21st -century skills through arts-integrated STEAM practices.

Limitations of the Study

This study was conducted through PAR, involving eight teachers (excluding myself), one critical friend, and seventy-six students in Grades 1-3 at a secondary-level

institutional school in Lalitpur District, Nepal, over a period of one year. Although the study duration was one year, the time for systematic information gathering through reflections, observations, and interviews was limited due to the academic calendar and institutional schedule. While PAR is typically conducted through multiple iterative cycles, this study implemented only two cycles due to time constraints and academic calendar. A third cycle could allow further refinement, but the two completed cycles were sufficient to meet the research objectives. Additionally, the study focused only on thematic teaching, arts integration, design thinking, inquiry, and holistic learning.

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APPENDICES

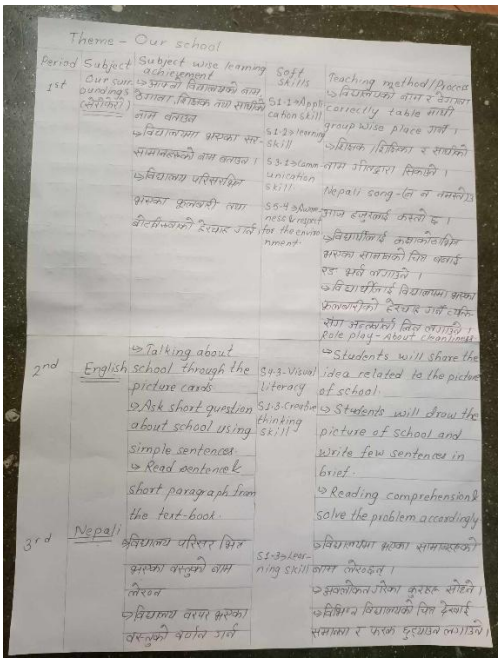
Timeline of Participatory Action Research (PAR) Milestones

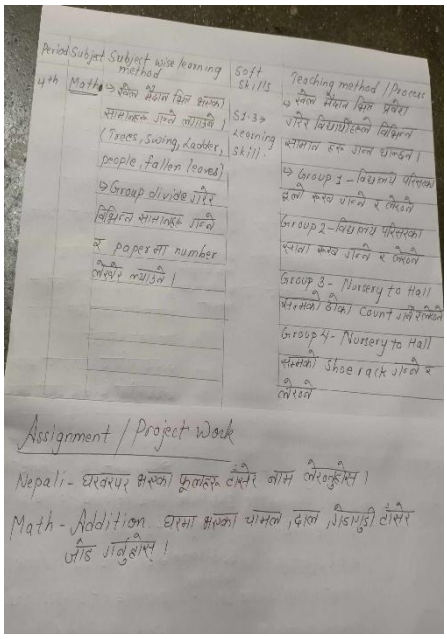
Phase	Date	Key Activities & Focus
Pre-cycle Reflection	March - April,2023	● Initial meetings with the Principal and co-researchers to reflect on the Integrated Curriculum. ● Co-identified gaps in implementation and established the research team
Problem Identification	May 2023	● Co-identified factors hindering integrated learning (time, planning, evaluation). ● Explored the "Thematic Approach" through co-learning sessions, kuragraphy and literature reviews
Cycle 1: Planning	June 2023	● Defined holistic learning indicators and designed integrated lesson plans for Grades 1-3
Cycle 1: Action	July 4-6, 2023	● Implemented thematic lessons across grades 1,2 and 3 with participant observation by researchers and co-researchers
Cycle 1: Reflection	July - August 2023	● Conducted individual and group reflection interviews.
Cycle 2: Planning	Sept 2023 - January 2024	● Reviewed CDC textbooks to refine integrated learning strategies ● Introducing the STEAM approach with a focus on Arts integration ● Integrated Design Thinking for Student problem solving

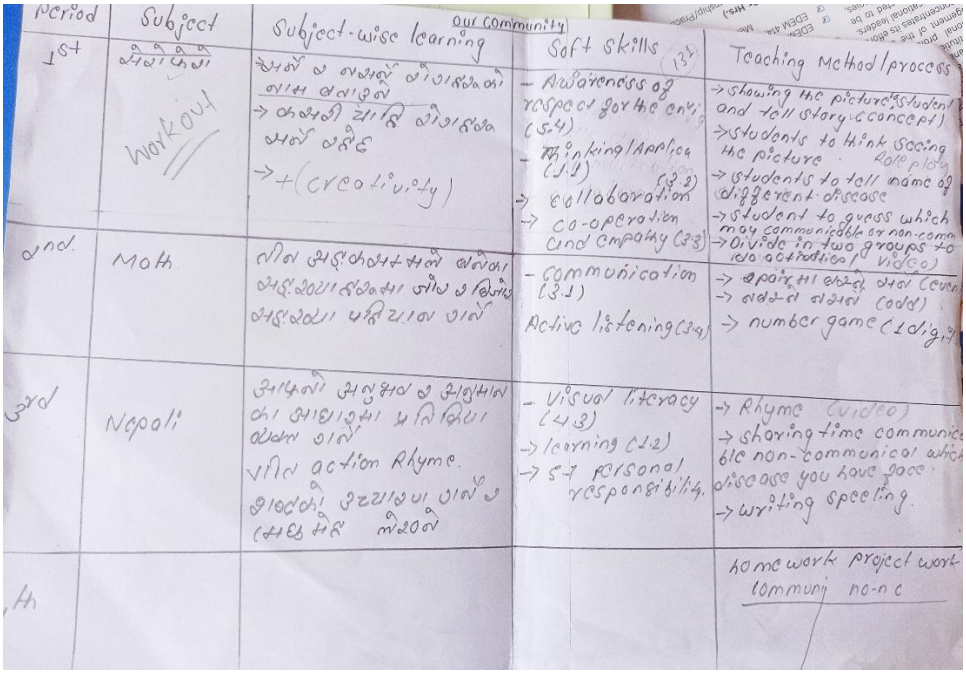
Cycle 2: Action	February 16-20, 2024	● Implemented cycle 2 plans in Grades 1-3, focusing on arts integration with design thinking.
Final Reflection	March - July, 2024	● Individual and group reflection on Cycle ● Final group reflections on the entire journey ● Exit interview with pre-primary level coordinator and school principal

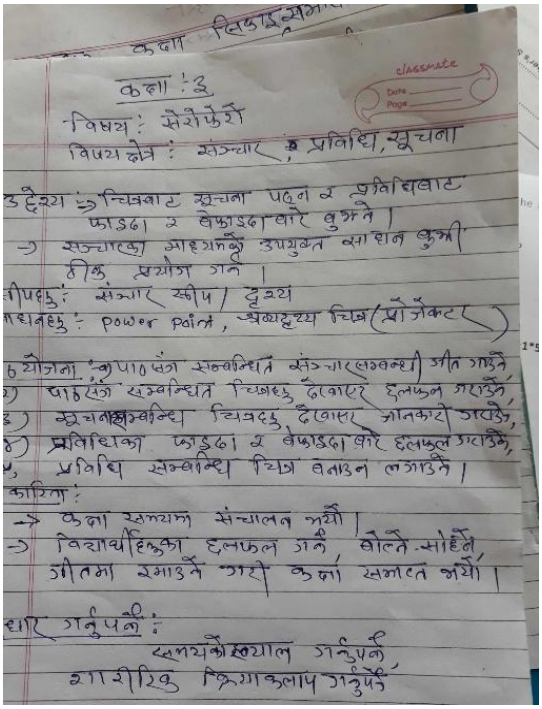
Intervention Plans in Cycle One

Scratch plans









Subject: Math
Lesson: Communication and technology
Objectives: At the end of the class,

- **Learning outcomes:** Students will be able to read the bar diagram and draw it.
- **Soft skills:** collaboration(S 3.2), visual literacy (s 4.3)

Materials: power point, worksheet, colours
Introduction :

- Teacher and students will sing a rhymes (5 little snowman) together.
- Teacher will check the pre-knowledge test of students what they know about bar diagram and what they know about communication and technology?
- Teachers will show a slide to the students and describe about the bar diagram and its properties .
- Then, teacher will show a bar diagram and tell them how to know the topic, scales and label of the bar diagram and how can we identify it and how can we read it .
- Then, teacher will ask them the following questions showing the picture of bar diagram from the slide
    1. Which is the most popular social media?
    2. How many people use tiktok?
    3. How many more people use messenger than tiktok?
    4. Which is the least favorite social media?
- Teacher will divide students into five groups and provide each group a survey paper of social media users and ask them to discuss it in a group.
- Teacher will tell the result of survey as a whole to the students.
- Then, Teacher will provide each individual a worksheet for tracing bar diagram and coloring it.
- Teacher will acknowledge their work.
- Then at last teacher will make the student play a game related to social media apps.

Subject: English

Lesson: Communication and technology

Objectives: At the end of the class:

Students will learn to find out key words and also know about the good and bad impact of

The technology.

Soft skills: S2.2 Collaboration S3.1 Communication skill

Materials: PowerPoint,worksheet,A4paper

Introduction:

- Teacher and students will play the game
- Teacher will check their pre-knowledge test: by asking questions like(What is communication and technology)
- In class discussion teacher will drill some questions like:
    1. What is communication?
    2. What is communication technology?
    3. How do we communicate with others?
    4. What are the tools we use for communication?
- Teacher will show the slide related to communication and technology to make it clear and also listen to their opinions about the related topic.
- Role-play(doing communication by using technology)
- Teacher will show a video about the good and bad use of technology and their impacts
- (Group work)Teacher will give a worksheet and students will have to find out the key information from the video and write their answers.
- Each group will share their answers
- Teacher will provide a A4 paper for drawing a means of technology they mostly use.

Revised plans

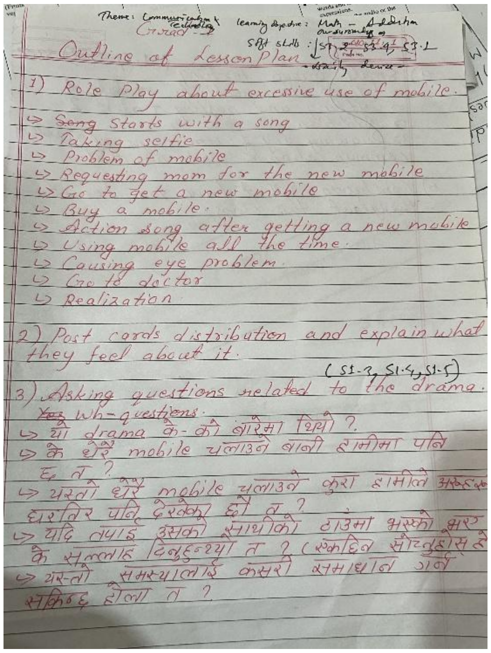
Grade: 1			Theme: Our School
Discipline	**Learning achievement from curriculum**	**Soft skills**	**Teaching process**
Our surroundings	• Tell name and address of school, friends and teacher. • Tell the name of things in school. • Take care of the plants in school	• Application skill • Learning skill • Communication skill • Awareness & respect for the environment	• Place the name of school and address in table/group • Teach the name of teachers and friends through song • Students to draw things in class and color them • Visit garden and Interview gardener • Role play about cleanliness
English	• Talking about school through picture cards • Ask short questions about school using simple sentences. • Read sentences & short paragraph from textbook	• Visual literacy • Creative thinking skill	• Students will share idea related to picture of school • Students will draw picture of school and write few sentences in brief. • Reading comprehension and solve problem accordingly
Nepali	• Write name of things in school in Nepali • Explain about the things found in school in Nepali	• Learning skill	• Students write name of things in school in Nepali • Students explain the observed things • Find similarities and differences showing pictures of different schools
Math	• Count the things in the playground – trees, swing, ladder, people, fallen leaves	• Learning skill	• Students in group to count the objects in the playground o Group 1 – Count big trees and write o Group 2 – Count small trees and write o Group 3- Count doors and write o Group 4 – Count shoe racks and write

Grade: Two		**Theme:** My community	
Discipline	**Learning achievement from curriculum**	**Soft skills**	**Teaching process**
Our surroundings	• Tell names of communicable and non-communicable disease • How do they transmit • Sanitation of surroundings • Proper use of toilet	• Collaboration skill • Co-operation & Empathy • Take turn	• Storytelling • Stations rotation o Table 1 – Free play o Table 2 – Table game o Table 3 – Taking turn to read o Table 4 – Writing • Drama
Math	• Identify three digits odd and even numbers	• Communication skill	• Rhymes • Concept of odd even with pencil and marker • Relate odd even with communicable and non-communicable disease • Coloring worksheet • Survey – Number game
Nepali	• React based on experience and guessing	• Learning skill	• Game • Students share their experience about what they learn throughout the day

Grade: Three		**Theme:** Communication Information & Technology	
Discipline	**Learning achievement from curriculum**	**Soft skills**	**Teaching process**
Our surroundings	• Read information, symbol, pamphlet, poster and traffic signals • Obey the information, symbol, pamphlet, poster and traffic signals in public place • Use computer and mobile for learning and communication • Be aware of harms of computer and mobile	• Communication skill •	• Picture show and connection with daily communication • Teacher and students sing song of communication information technology • Teacher displayed the picture of ICT tools through projector • Teacher sing the song again and connected the lyrics of songs with benefits and harmfulness of mobiles
English	• Good and bad impact of technology	• Communication skill • Collaboration skill	• Game - Pre-knowledge test – communication and technology • Teacher explained about communication and technology using slides in english • Roleplay by students in pair • Video show about good and bad use of technology and impact • Group work in worksheet to find out key information from video and write answers & Group presentation • Students to draw the means of technology they are using in their daily life
Math	• Read the information from bar diagram • Draw the bar diagram	• Collaboration skill • Visual literacy	• Rhymes and pre-knowledge test • Teacher explains bar diagram using slide • Picture of bar diagram of social media and reflection • Students in group conduct survey on social media and share to the class • Students trace the bar diagram and color • Game related to social media apps

Intervention Plans in Cycle Two

Scratch plans



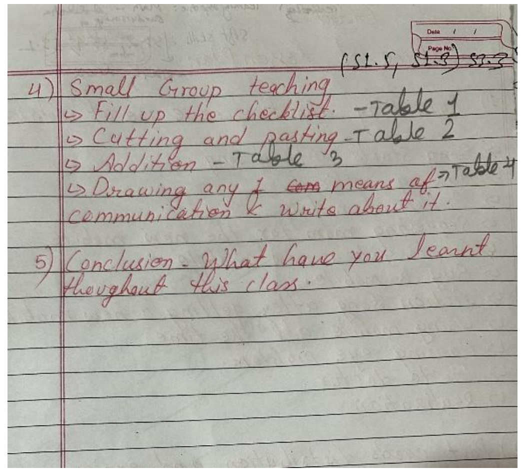
Outline of Lesson Plan

1) Role Play about excessive use of mobile.
↳ Song Starts with a song
↳ Taking selfie
↳ Problem of mobile
↳ Requesting mom for the new mobile
↳ Go to get a new mobile
↳ Buy a mobile.
↳ Action song after getting a new mobile
↳ Using mobile all the time.
↳ Causing eye problem.
↳ Go to doctor
↳ Realization

2) Post cards distribution and explain what they feel about it.

(S1-3, S1-4, S1-5)

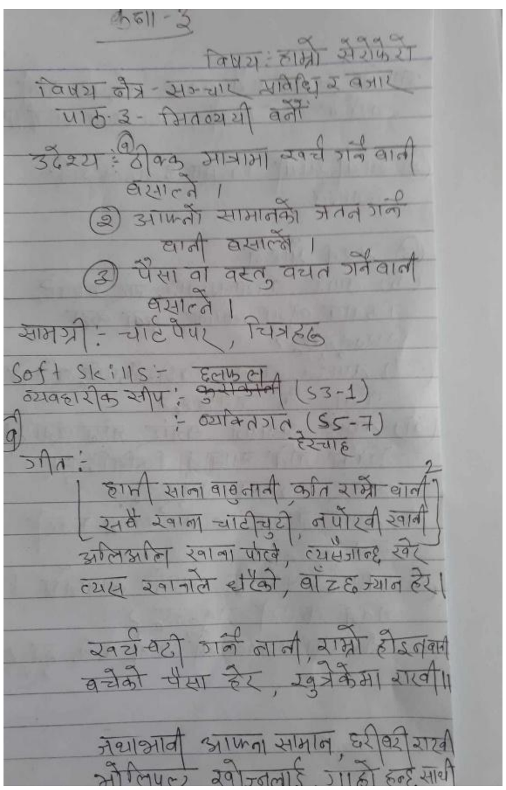
3) Asking questions related to the drama.
Wh-questions.
↳ यो drama के-को बारेमा थियो ?
↳ के धेरै mobile चलाउने बानी हामीमा पनि छ त ?
↳ यस्तो धेरै mobile चलाउने कुरा हामीले आफ्नो घरतिर पनि देखेका छौं त ?
↳ यदि तपाईं उसको साथीको ठाउँमा भएको भए के सल्लाह दिनुहुन्थ्यो त ? (एकछिन सोच्नुहोस है)
↳ यस्तो समस्यालाई कसरी समाधान गर्न सकिन्छ होला त ?



(S1.5, S1.3, S3.3)

4) Small Group teaching
↳ Fill up the checklist. - Table 1
↳ Cutting and pasting - Table 2
↳ Addition - Table 3
↳ Drawing any of means of communication & write about it. → Table 4

5) Conclusion - What have you learnt throughout this class.



कक्षा - ३

विषय: हाम्रो सेरोफेरो

विषय क्षेत्र - सञ्चार प्रविधि र बजार

पाठ ३ - मितव्ययी बनौं

उद्देश्य: (१) ठीक मात्रामा खर्च गर्ने बानी बसाल्ने ।
(२) आफ्नो सामानको जतन गर्ने बानी बसाल्ने ।
(३) पैसा वा वस्तु बचत गर्ने बानी बसाल्ने ।

सामग्री: चार्टपेपर, चित्रहरु

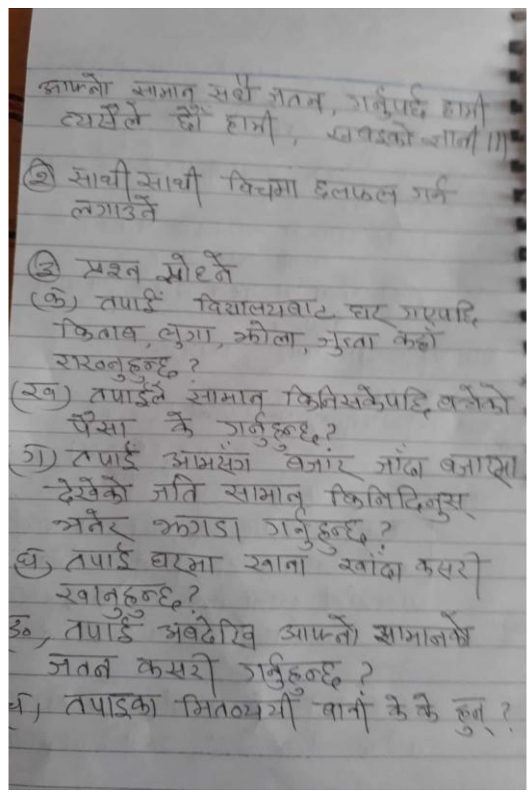
Soft Skills - व्यवहारीक सीप: छलफल (S3-1)
: व्यक्तिगत (S5-7) हेरचाह

(१) गीत:

हाम्रो सानो बाबुनानी, कति राम्रो बानी
सबै खाना चाटीचुटी, नपोखी खानी
अलिअलि खाना पोख्दै, त्यसै जान्छ खेर
त्यस खानाले धेरैको, बाँच्छ ज्यान हेर ।

खर्च घटी गर्ने नानी, राम्रो होइन बानी
बचेको पैसा हेर, खुत्रुकेमा राख्नी ॥

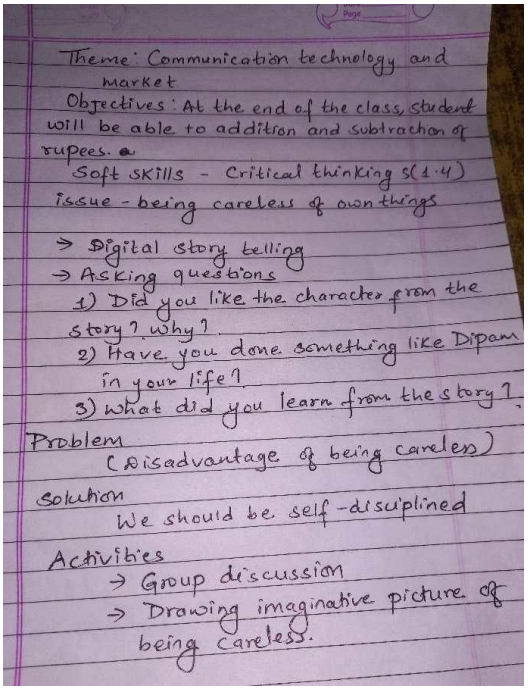
जथाभावी आफ्ना सामान, छरीछरी राख्नी
मौलिपल्ट खोज्नलाई गाह्रो हुन्छ साथी



आफ्नो सामान सधैं जतन, गर्नुपर्छ हाम्रो
त्यसैले हो हाम्रो, जनइको बानी ॥

(२) साथी साथी बिचमा छलफल गर्न लगाउने

(३) प्रश्न सोध्ने
(क) तपाईं विद्यालयबाट घर गएपछि किताब, लुगा, झोला, जुत्ता कहाँ राख्नुहुन्छ ?
(ख) तपाईंले सामान किनिसकेपछि बचेको पैसा के गर्नुहुन्छ ?
(ग) तपाईं आमासँग बजार जाँदा बजारमा देखेको जति सामान किनिदिनुस् भनेर झगडा गर्नुहुन्छ ?
(घ) तपाईं घरमा खाना खाँदा कसरी खानुहुन्छ ?
(ङ) तपाईं अबदेखि आफ्नो सामानको जतन कसरी गर्नुहुन्छ ?
(च) तपाइका मितव्ययी बानी के के हुन् ?


Theme: Communication technology and market
Objectives: At the end of the class, student will be able to addition and subtraction of rupees.
Soft skills - Critical thinking s(1.4)
Issue - being careless of own things
→ Digital story telling
→ Asking questions
1) Did you like the character from the story? why?
2) Have you done something like Dipam in your life?
3) what did you learn from the story?
Problem
(Disadvantage of being careless)
Solution
We should be self-disciplined
Activities
→ Group discussion
→ Drawing imaginative picture of being careless.

Revised Plans

Grade: One	Theme: Communication and Technology			
Discipline	**Learning Achievements**	**Soft Skills**	**Form of Arts**	**Teaching and Learning Process**
Our Surroundings	• Tell the name of communication devices • Use of mobile in day-to-day life	Communication Skill(S3.1) Collaboration skill(S3.2)	Roleplay	• Instruct about roleplay • Perform roleplay • Reflection after roleplay – problem • Explore solutions • Rethink the solutions
Maths	• Addition of two-digit numbers	Critical thinking skills(S1.4)	Role Play	• Station activity follow up activity of roleplay • Worksheet – Addition of two-digit numbers

Grade: Two	**Theme: Our Immediate world**			
Discipline	**Learning Achievements**	**Soft Skills**	**Form of Arts**	**Teaching and Learning Process**
Our Surroundings	• Identify the weathers • Take care of themselves in different weathers	Communication Skill(S3.1) Collaboration skill(S3.2)	Storytelling	• Instruct about storytelling • Narrate story • Reflection after story • Identify problem • Explore solutions • Rethink the solutions
Maths	• Represent data in graph	Critical thinking skills(S1.4)	Storytelling	• Follow up activity of storytelling • Students survey and graph

Grade: Three	**Theme:** Communication Information & Technology			
Discipline	**Learning Achievements**	**Soft Skills**	**Form of Arts**	**Teaching and Learning Process**
Maths	• Add & subtract rupees	Critical Thinking Skills(S1.4)	Digital Storytelling	• Digital story show • Reflection after the show • Students identify problem • Worksheet activity about add & subtract rupees • Students identity solutions • Connection with real life – finance skills
Our Surroundings	• Develop habit of spending money in limit • Develop habit of taking care of belongings • Develop habit of saving money or things	Communication skills(S3.1) & Taking care of self(S5.7)	Song	• Insruction about song about taking care of belongings • Teacher and students sing song • Reflection from the song • Identify issue in the song • Students explore the solutions • Students rethink on solutions