Open Access

Check for updates

Journal of Transformative Praxis
Vol. 4, No. 1, 2023, pp. 68- 83
https://doi.org/10.51474/jrtp.v4i1.670

Received: Jan 12, 2022; Revised: March 23, 2023; Accepted: July 30, 2023

Original Article

Autoethnographic Reflections on Navigating the Path to Empower Teachers' Transversal Skills

Rajendra Dahal*

Kathmandu University School of Education, Lalitpur, Nepal

Email: rajendra@kusoed.edu.np

Abstract

This inquiry portrays my experiences in enhancing teachers' transversal skills. As our national curriculum changed in 2019, my primary concern shifted to developing learners' transversal skills, but I was not aware of the way towards it. While working as a teacher educator, I could find teachers and teacher educators neglecting learners' transversal skills. Somehow, I have observed similar practices in my facilitation as well. As per the national curriculum on school education, teachers need to facilitate learners in such a way that contributes to developing learners' transversal skills (CDC, 2019, 2020, 2021a, 2021b). But without developing the transversal skills of teachers, can we develop the transversal skills of students? This question led me to observe my practices and practices of teachers. While going to my flash bag, I found that I primarily used a teacher-centered facilitation method similar to other teachers.. Studying STEAM at University became a turning point in my professional career where I felt a shift in my profession and this event became a pathway to shift my paradigm. I have used a multi-paradigmatic research design to present my shift and unfold my experiences. I have extended the investigation agenda using autoethnography and have introduced a sequence of lived experiences and discussions to highlight significant changes. I have completed my inquiry using the theory of transformative learning, constructivist learning, and STEAM-based pedagogical lens. The finding of this inquiry reveals that transversal skills can be developed through following the lens of STEAM education. We can create innovative pedagogy like "3C-R," which I have started by adding theories into practices.

Keywords: Transversal Skills. 3C-R Pedagogy. Innovative. STEAM Education.

*Corresponding

ISSN: 2717-5081 (Print); 2738-9529 (Online)
Journal Webpage:
1. http://www.kusoed.edu.np/journal/index.php/jtp

Published by Kathmandu University School of Education, Hattiban, Lalitpur, Nepal.

Origin of the Research

Since 1999, I have been in the education field and working with teachers as a teacher educator for the last ten years. I regularly guide, facilitate, discuss, and reflect on my practices with teachers. Every time, I consult with teachers for common benefit. Critical, creative reflection is the central part of my sessions, where I allow teachers to share their feelings and thoughts. In similar practices, I often request teachers to share their critical reflections. Sometimes they write on paper and some of them communicate their reflection verbally. I listen and read those comments and try to improve my practices. These days I am surprised due to teachers' comments, reflections, and recommendations. I am finding the teacher's voice becoming very positive towards my facilitation in every session. They are modeling my sessions, developing transversal skills, and using those skills in their classrooms. After a regular visit to one of the schools, one of the teachers said, *"Your facilitation has encouraged us to implement the concept in our classroom, so we are regularly implementing 3C-R pedagogy, which is helping us to focus on multiple student skills"*. The statement in front of all the teachers made me happy and other teachers' appreciation surprised me. I regularly get similar feedback from multiple teachers and school leaders. As per their similar statements, I have realized that teachers have found 3C-R supportive in their professional growth. It enabled them to achieve better learning outcomes in the classroom and can address learners' transversal skills.

I was pleased with this kind of statement, but one day while returning to my residence from one of the schools of Kapan Kathmandu, various questions arose. Do I conduct the workshop ideally? Do all the activities I have performed become an example to teachers? Did they apply their learning in the classroom? Were my input and process able to bring better outcomes? How did it happen? What made my facilitation better? Does my 3C-R instructional model work? These kinds of questions forced me to remember my last ten years of activities working as a teacher educator.

While working in the field of teacher education, some of the initial years of my facilitation made me happier because I enjoyed sessions by sharing experiences and ideas that I had experienced. My facilitation, coordination, and support made teachers closer to me. But for many years, I was unaware of the transversal skills of myself, teachers and learners. After some years of working in teacher education, I became confused about what I was doing and for what purposes. I started asking myself what I was doing and what I needed to do. How am I working? How do I need to work? Which part do I need to address to update myself and my profession? I started searching different websites. However, I could not find knowledge and skills that could satisfy my desires. These events made me depressed. I wanted to develop context-specific models for different schools so that teachers could reflect the concept in their context. Many questions were in my mind, like, how can I improve my facilitation? What makes learners learn new knowledge? What are the qualities of good teacher educators? What is the role of the teacher educator in making learners effective? How can I create an environment where teachers can transform? Which instructional model will be better for teacher education? What can be an effective instructional model for classroom facilitation at school? How can I develop the skills of teachers and learners? What to do to get answers to my inquiry? Many questions were in my mind that challenged me on my profession and area of interest.

To cope with those challenges, I updated myself through self-learning. I developed my classroom management model, handling differently able learners, facilitating the classroom differently, keeping the environment active, using some tools and techniques to manage learners, etc. While implementing the ideas, I faced some challenges as well. While implementing concepts and minimizing challenging situations, I felt that I became respected by teachers and cared for by school management. Knowingly or unknowingly, I tried my best

to facilitate teachers from the heart. Schools liked my facilitation, so they awarded me multiple awards, but still, many questions were on my mind. Am I doing what I need to do? Do I appropriately facilitate teachers? How can I conduct activities for teachers and learners so that teachers focus on the inner quality of the child? I was happy with my profession but not satisfied with my knowledge, facilitation, and teacher guidance procedure. How can an individual spend a longer time lying to oneself? But what could I do? There was no way out. I tried my best but found no alternatives to overcoming the ongoing challenges. So, I decided to study further formally. For that, I joined a one-year professional course and, after completing it, started my journey toward my Ph.D. journey in STEAM Education at Kathmandu University. While studying, I realized some hidden truths about learning and facilitation, which convinced me of the gap between theory and my practices. This realization became the turning point in my professional career. Realizing the gap has opened the ways forward and helped me to reflect on my emergent practices on navigating the path to empower teachers' transversal skills and promote my practices.

Problem I Encounter

While going through my flashback, I find that most teachers primarily focus on teacher-centered delivery in their classrooms. In my case, I could also manage some sessions only to focus on the learner's interest and skills in my facilitation. At my level, I was utterly unaware of the transversal skills of teachers and teacher educators. But when I go through some of life's important events, like joining the STEAM Education course at the university, I realize some of the components that help me explore my potential and reflect on my practices. While incorporating my prior learning and study, I have learned that schools are less aware of providing opportunities for inquiry and reflective approaches to learners for innovation and creativity for skill development. I have come across that many school founders/leaders are running schools for financial benefits and addressing parents' short-term demands rather than conducting activities to support learners' transversal skills for holistic learning. Here holistic education refers to learners actively participating in knowledge construction which meets the needs of different types of learners and supports the emotional, social, ethical, and academic needs of learners in an integrated learning format (Grimes, 2007). Next, I have found a few school founders/leaders showing eagerness to develop the abilities and skills of their students from the perspective of facilitation. In this regard, very few schools actively involve learners in investigating knowledge independently. However, after spending more than ten years as a teacher educator's role in schools, I saw a glimpse of a tiny light to address schools from a better lens to improve pedagogical activities to support them.

In this journey, I have worked for transversal skill development by adopting an appropriate pedagogical model/s. However, while going through my flashback, I have not found any events that encourage me to use any pedagogy that enhances students' transversal skills. If my situation was like that, then I can imagine the condition of other teachers and teacher educators like me who are working with learners similar to me. While thinking about these things, many questions crept into my mind. Do school leaders understand the importance of skills and their significance in facilitation? Do they provide a chance to learn, unlearn and relearn thorough investigation? Do they get to reflect on their perception and practices while learning? Do they address transversal skills prescribed in our national curriculum while facilitating? Do they have awareness regarding transversal skill development? These questions led me to search for answers to my inquiry.

While searching the literature, I found Lamsal (2009) discussing an enormous amount of investment in developing teachers from the dimension of their profession in Nepal. However, they can still not positively change teachers' understanding of professional

development. Teachers and school leaders, school management committees, and non-teaching staff need changes, but the situation in the country is still pathetic (Dahal, 2018). I have perceived facilitators' effort without adopting new changes in pedagogical concepts is like keeping milk in a bottle with a hole. Reflect learners' learning, thoughts, and feelings only cannot transform learners. All stakeholders, such as parents, teachers, and school leaders, must be transformed. I have found literature on pedagogy that focuses on reflective learning, addressing thoughts and feelings for personal inner development for skill development. But do I create an environment to make learners realize the importance of reflective learning? Do my practices encourage active learning and reflective practice? Do my practices promote contemplative practices in my facilitation? Do I have the capacity to enhance the transversal skills of a teacher educator? I have explored my journey to navigate my path to empower teachers' transversal skills. In this journey, I have found research on teachers' professional development, leaders' self-development, teacher educator's development, 21st-century skill development, etc. Still, I have not found an inquiry exploring enhancing teachers' transversal skill development in the Nepali context. I have made this inquiry to fill this gap and explore my development.

The purpose of this inquiry is to explore my lived experiences navigating my path to empower teachers' transversal skills. I am guided by the research question, "How have I navigated my path to empower teachers' transversal skills?". As a researcher, I directly benefit from this inquiry because it critically reflects my understanding and practices. Similarly, it is helpful to teacher educators and teacher education programs because this inquiry is connected with teacher educator, teacher education and their practices. My professional experience in navigating my path to empower teachers' transversal skills may guide other teacher educators and teacher education programs in similar contexts. This inquiry will be helpful to policymakers as well because this inquiry provides contextual practice on the transversal skill development of teachers and teacher educators.

STEAM Education for Transversal Skill Development

The word STEAM is not new to me. While listening to it for the first time, I understood it as a water steam I observed daily. But, after going through the literature, I began to understand that STEAM is a combined form of science, technology, engineering arts, and mathematics (Kim & Park, 2012). As I understood, science (S) guides learners to inquiry and raises questions about things around them. The technology (T) uses the answer of why and creates it in the simplest form. Engineering (E) guides learners to develop portable and sustainable structures to be used by the knowledge generated by science and technology for maximum utilization. Similarly, arts (A) value the things created together with a feeling of sustainability and explore the inner depth of learners through critical reflection. And mathematics (M) gives a lens to calculate, measure, estimate, and evaluate knowledge based on different things. Through STEAM-based activities, students can develop their problem-solving, creative thinking, collaborative, critical leadership, argumentation, and information and literacy skills (Hadinugrahaningsih et al., 2017). As per this idea, STEAM education can develop multiple transversal skills of learners.

I have perceived transversal skills as skills that can be developed while involved in the task and which can be transferred from one person to another. CDC (2019) added that transversal skills are known as soft skills, transferable skills, 21st century skills, etc. Those skills are skills useful in multiple situations of our daily work (Ashonibare, 2022; Dochevska, 2021) which develop in one condition and can be used in numerous other similar contexts (Tilea, 2015). Thinking skills (critical thinking, creative thinking, decision-making skills, problem-solving skills, etc.), intrapersonal skills (self-management, time management, honesty, etc.),

interpersonal skills (collaboration, communication, empathy, etc.), information communication and multiliteracy skills (basic literacy, technical literacy, visual literacy, etc.), and citizenship skills (civic responsibility, sense of belongness, respect for diversity, respect for environment etc.) are the major transversal skills prescribed by our national curriculum (CDC, 2019). These skills can be developed by following the concept of STEAM education because as per Ge et al. (2015), STEAM education supports and creates an opportunity to develop 21st-century skills.

I found STEAM education supportive of individuals' overall development, which was also considered an educational pedagogy that can integrate with a transdisciplinary epistemology (Psycharis, 2018). I have found it a highly integrated pedagogy where emancipatory interest is addressed (Perignat & Katz-Buonincontro, 2019) and from this dimension, STEAM-based pedagogy encourages active learning, addressing cognitive, psychomotor, and affective learning domains. Korea has also developed an integrated curriculum as per the principle of STEAM to bring innovation to education and to develop skills (Kim & Bolger, 2017). I have found STEAM-based pedagogical methods can be utilized in practices in five ways: transdisciplinary, interdisciplinary, multidisciplinary, cross-disciplinary, and arts integration (Perignat & Katz-Buonincontro, 2019) which means, STEAM education can be utilized in any disciplinary system and can integrate art easily. As per multiple literature, I have found STEAM education capable of addressing multiple skills in the process of facilitation. As per Hadinugrahaningsih et al. (2017), it can develop skills like critical thinking, collaboration, creativity, etc. From this dimension, STEAM education supports developing the transversal skills of individuals like me and the teachers with whom I am working.

My Shift as per Constructivist Learning

As I understood, constructivist learning is a learning process to construct knowledge to reflect learning. This concept focuses on creating new knowledge based on individual experiences (Lishchinsky, 2014). For Piaget (2003), learning is discovery and discovery reflects our learning and understanding, which helps to reflect our environment (Hoover, 1996) around us. This theory has allowed me to discover reality by reflecting on my prior learning, emergent learning and the current climate where I am working. As per this, I have understood that Piaget's ideas originated from individuals' psychological stages of development, where the basis of learning is discovery.

As I understood, Piaget's ideas on constructivism focused on the individualization of learning and believed that human inquiry is attached to individuals and their surroundings. While reviewing the literature, I found that the constructivist theory demands participants to construct new knowledge based on their lived experiences (Lishchinsky, 2014). I have understood that I can create understanding based on my lived experiences through interaction with people and activities (Vygotsky, 1986) around me. For me, constructivist learning has opened the door to go to my flashback and write my lived experiences with society, and culture and interaction with others to make meaning and to explore possibilities to enhance the transversal skills of myself and the teachers around me.

Transformative Learning Theory and My Possible Shift

Initially, the constructive ideas of Dewey (1923), Schubert (1986), and Habermas (1972) generated the perspective of transformative learning for me. I have found it as a shift in paradigm (Brookfield, 2003) and it changes assumptions and transformation of a model for viewing reality (MacKeracher, 2004). In literature, I found the word transformation is different from the word change because change is about traveling "from the old to the new, leaving

yesterday behind in exchange for the new tomorrow" (De Jager, 2001, p. 24). But the idea of Transformation is a change in one's inner personality from its foundation (Boyd & Myers, 1988). It is double-loop learning as a form of reflection on long-held assumptions (Argyris & Schon,1992). According to Mezirow (1991, 1994), transformation is possible following its ten steps. Those ten steps are categorized as a disorienting dilemma to reintegrate into one's life.

Following those ten steps prescribed by Mezirow (1994), individuals can accomplish their Transformation through involvement in reflection as per radical discourses and the ground reality of individuals. As per him, individuals need to focus on three levels of awareness and action. Those three levels are content, process, and critical thinking (Mezirow, 1991). Here subject-based content reflection is defined as it belongs to what one observes, thinks, feels, or performs. Similarly, the process is how one achieves meaning, observe, sense, think, or act. Likewise, reflecting critically means presenting how and why individuals notice, reflect, feel, and perform as they do. I have found this perspective suitable for individuals involved in an educational field like me. In this regard, this perspective helped me to reflect on my own stories and judge my knowledge within myself by knowing and meaning-making by observing my understanding and its effect on my practices. I have perceived transformative learning as a deepened learning process based on critical self-reflection (Wilhelmson, 2006), which helps me critically analyze step-by-step. In this regard, I have used an individual psychological lens of transformative learning to explore my perception and practices.

As I have understood, the individual psychological lens of transformative learning believes that Transformation occurs when previous understanding is unclear and individuals reformulate the beliefs that influence their lived experiences. For this reason, individuals take more active actions that can change thoughts or new ways of solving issues or generate new points of view. I have realized that transformative learning is a process that reviews previously integrated perceptions, expectations, values, and standpoints. They are often questioned and become more open and better validated (Cronton, 2005). In my case, my questions regarding my development are, how am I working? Am I in the correct direction? How can I make my facilitation better? Do I have a practice of self and critical self-reflection? Do I practice the concept of crucial self-reflection among learners? Do I have a habit of listening to reflections? How do I need to work? These questions, on a personal and professional level, led me to open the doors of opportunities. These questions are the primary reason transformative learning became applicable in my inquiry to present my lived experiences (Dahal, 2018), as I have investigated and critically assessed my beliefs towards teaching, curriculum, and assessment. In my case, I see my understanding and its effect on my journey through this theory in this inquiry.

Here, transformative learning opened the door to see my Transformation through a transformative process and make meaning from my understandings and lived experiences. Similarly, STEAM Education explores the doors to explore things from dimensions like inquiry, usefulness, maximum usefulness, value, prediction, estimation, calculation, etc. It allows me to reflect on my perception and practices from the theoretical lens of transversal skill development from STEAM Education.

Roadmap of My Inquiry

Here, I have used autoethnography as a research method. I explored myself through multi-paradigmatic research design (Taylor, 2014), which better navigated me and my realities. Within the multi-paradigmatic research design, interpretivism has allowed me to access substantial descriptive details that are imperative to contextual understanding (Pant, 2015). Self-questioning, like the finger-pointing to self of Luitel (2009), is the concept of criticalism. This concept critically challenged and stressed the reflective assessment and analysis of

thoughts in my inquiry. Similarly, integralism provided me with a lens to see things as a whole, which enabled me to realize the importance of holistically looking at my research agenda to complete it rather than observing only one part of it. Here initially, I became clear regarding my reality, the process I have followed and the priority I have given while conducting inquiry.

In this research, my reality (ontology) is subjective and relativist. Philosophically, ontology deals with the nature of being/reality that explains the process of being and becoming (Mautner, 1996). For me, knowledge is created through self-interaction, interaction with others, or within a self through perception, thoughts, feelings, and thinking on different situations in the form of narrative (Dahal, 2018). So, my lived experiences and learning are valuable to me. As an educator, I may transfer knowledge to others but that depends on contextual situations and circumstances. So, my perception, understanding, and emergent ability are valuable to me, and I have given value to my experiences and emerging insights.

Here my experiences with perception and practices are the primary data sources. I have used my daily diary writings, flashbacks, etc., in different periods. Likewise, I have presented my lived experiences and practices in the form of a narrative. I have perceived writing as a constructive force that is continuously helping me to communicate with others creating a particular view of reality (Dahal, 2018). I have used self-questioning, which has given me insight into my doings while questioning myself to reflect my understanding as a process of meaning-making.

To regulate my overall inquiry process, I have used transferability to describe the process for applying the inquiry result from one situation to another (feasibility). For that, I have presented in-depth information regarding context and process. I used critical reflection by questioning my actions without discriminating against my thoughts and feelings. Also, I used verisimilitude by managing writing to make, give, feel, and sense value for readers. In pedagogical thoughtfulness (Van-Manen, 1991), I tried to reflect my stories on the ground of my reality. To maintain the gap between perspective and truth, I have critically examined different agendas raised in my research based on theoretical references.

In terms of the ethical consideration of my inquiry, I abided by the notion of non-maleficence and beneficence. I have maintained confidentiality with each person, events and place whose names are presented in the form of narratives in this inquiry.

Data Presentation, Analysis, and Interpretation: Possible Shift

This section presents data presentation, analysis, and interpretation of the inquiry. I have presented my sections as my conventional practices, current practices from theory to practice, my pedagogical shift into 3C-R, navigating the path to empower teachers' transversal skills, my potential direction and possibilities and possibilities.

My Conventional Practices

> *It was an excellent opportunity to transform the profession from teacher to teacher educator. I was pretty confident in conducting training sessions with teachers. Visiting different schools, conducting various trainings, and implementing ideas in the classroom were my daily activities. Every week, a minimum of four to five sessions were completed by myself. I was pretty happy with the situation and with the organization where I used to work. While conducting sessions, sessions were lived and activity-based. I tried to engage learners in different activities like brainstorming, and games and tried to engage them on the content. I prepared for the training and explained the content perfectly. Every evening I evaluated the whole day's work and improved as per the learning from the day. As per my understanding, most of the schools were ready to*

transform their teaching and learning activities and practices as per the teachers rather than the system in the school. By knowing this psychology, I designed sessions as per their demand rather than designing lessons to transform their teaching. Combinedly with a team, I have realized that if we create some forms, formats, and subject-based documents, the current school issues will be solved. Teachers teach the lesson as per our understanding. This work benefits teachers. In one part, teachers do not need to think and prepare their content-based plan and in another part, they get materials for activity-based facilitation. As per this understanding, I started guiding professionals to create documents and became confident about solving teachers' issues, especially in the pedagogical part.

After completing documents from preschool to primary school (grades ECD to 5), I started to distribute those forms, formats and plans to schools. I thought all the documents developed under my guidance would solve issues for schools and teachers. While working, it became easy to facilitate and guide teachers based on readymade documents. There were some difficulties like not understanding the text, difficulty implementing in the classroom, demanding specific subject trainers' time, etc. After giving a readymade plan to teachers, in some cases, those plans still did not work because the project made by my professional team became complex for teachers while implementing. It was hard to manage the developers' time with the teachers because only five developers worked in five major subjects and we were working in more than 200 schools all over Nepal. At that moment, we did not have any plan for pedagogical practices. We were not aware of innovative pedagogues, but we focused on learners-centered techniques. In the follow-up session, I would clarify the doubts of teachers, and leaders and guide them on those readymade plans and questions per teachers and school leaders.

One day, while providing service to one of the schools in Kathmandu (The western part of Kathmandu), one of the participants asked in an informal setting, "Sir, you are providing us everything from your side like a lesson plan, materials, etc. and guiding us to use them in the classroom. It is excellent to get these materials but do you think these lesson plans and materials are the best? Do these materials and activities transform our learning and facilitation? Please do not mind, but sometimes I feel paralyzed by following this set of activities and materials. Is it necessary to follow and conduct all the activities and use all the materials you have provided?" These questions were unexpected to me, which made me think about the service we have provided. I answered his question in my way, saying that this is the first year, so you need to follow all the instructions as prescribed and facilitated, but you will be given space to create your own from the second year. After listening to my answer, he did not ask any questions, but my mind was not silent.

I started asking questions myself. Do my activities encourage teachers to find solutions to their problems or am I giving readymade answers? Why am I giving everything to the teacher? Does my idea of providing materials and facilitation paralyze them? Do I make teachers paralyzed? How can I make them able to explore and investigate for their facilitation and make the classroom live? Am I doing the right thing? This event made me think and review my work from the beginning. I was blank because I started seeing things from the teacher's Transformation rather than making them a comfortable environment. I discussed the matter with the team. Team members realized the issue but could not figure out the solution. The same event led me to leave an organization to

make like-minded individuals in a team and start up with something new. I was in search of something that could help me solve teachers' issues to transform themself. As a plan, I resigned from my job, giving time of three months and registered a new organization to work with teachers and schools as per my understanding. But still, I had no proper plan to move ahead to address the teacher's questions.

My Current Practices

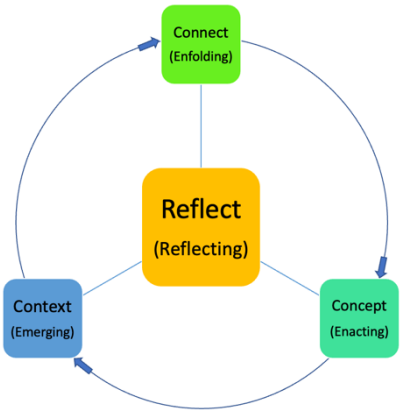
In India, the story of Tenali Rama is famous. I got the life stories of Tenali Rama (Indian sage) on the internet. Tenali Rama gives the secret of his success to the public in one of his stories. It was a fantastic concept and formula from his life experiences. His procedure was "keeping water into the root of the plant to get fruits." While analyzing different individuals around me, I found the statement correct. From this analysis, I concluded, "I need to invest my time in learning," but what to learn? What are the roots of my professional life? I was confused, but in the meantime, I learned about STEAM Education through some of my friends; this word gave me hope for developing myself in my profession. I thought joining STEAM would allow me to keep water at the root of my development.

I joined the course and started learning. While going through different classes and areas offered by the university, I realized that various activities can increase learners' quality and potential strengths. I realized that the implemented curriculum could give justice to the national curriculum if executed from the STEAM pedagogical perspective to develop transversal skills. It is because STEAM pedagogy in education can develop students' problem-solving skills, creative thinking skills, collaborative skills, critical thinking skills, argumentation skills, and literacy skills, etc. (Hadinugrahaningsih et al., 2017), which is also the primary goal of our national curriculum.

I started learning the different perspectives of curriculum, pedagogy and international practices. I planned lessons from some of the instructional models like design thinking, steepling inquiry mode, etc., incorporating STEAM education with the help of facilitators in the university. This task helped me to understand curriculum and pedagogy briefly. I started organizing online training for teachers on curriculum and pedagogy from the dimension of transversal skill development. This task helped me to realize the context and interest of teachers/school leaders in innovative pedagogy and its relation to the curriculum. At the same time, I was going through textbooks, facilitator facilitation, and training/workshops. I realized that this could transform teaching inside the classroom. While conducting training and seminars, I have seen the hope that traditional teaching can be transformed by applying innovative pedagogy and can develop transversal skills within teachers and learners. However, there was doubt about transforming teaching and learning activities inside the physical classroom. I was convinced theoretically and practically in online teachers' sessions that I could improve my session by planning as per innovative pedagogy for developing skills. I was confident because I applied the theory into practice by designing my own facilitation as per the innovative instructional model. As per the model, I involved learners in finding out their prior learning and encouraged them to understand. While doing those, my focus was on learning outcomes, emphasis and curiosity. In the investigation, I divided them into multiple groups and requested them to find additional information regarding content through different activities to investigate content. Their findings were presented at the introduction level and further exploration of their

usefulness and innovation was done in the innovate stage. Likewise, I evaluated every participant's understanding through different activities from the initial phase. While doing this, I used science to inquire or find the truth. I used technology to find the usefulness of my workshop content and the use of technology in the training session. I used the engineering concept to find out the maximum utilization of facilitated content. Arts help to explain their understanding in different forms, and mathematics was used to predict, calculate, and measure various training components and content.

I was clear on some models for the first time and amazingly found some standard components in different modules. I found prior learning of learners, investigation activities, presentation and application-based activities in every model. As per this, I set it as per my understanding and practiced differently in the classroom. After practicing and trying from different dimensions, it came in the shape of 3C-R. Here 1st C is "connect," where the enfolding of prior learning is investigated. 2nd C refers to "concept" where learners actively generate concepts through hands-on and mind-on activities. Here 3rd C refers to "context," where learners use developed knowledge in their context. And R refers to "reflect," which is the central part of 3C-R. In reflection, learners reflect their perceptions, practices and emergent learning with each other. This module is developed with the help of different practical models. While designing this, I took reference from the 5E instructional model, design thinking, steepling inquiry model, stripling inquiry model, facilitation model followed by the International primary curriculum (IPC), STEAM education, etc. In 3C-R, connect is developed as the engagement stage of 5E, emphasizing the stage of design thinking, wonder, and connect stage of the strip link inquiry model. It is the activity of the STEAM component where science, technology, engineering, arts and mathematics will be involved. Integrated science from STEAM education because the process of inquiry is the part of science where other components of STEAM can be integrated as per the need while facilitating. This level can be described here by the word enfolding, which means from the group of learners and their living. Content is introduced only by issue, event, or story and enfolds the similar experiences of the learners on the circumstances. Learners will be connected through their lived experiences and their thoughts on the occasion, issue, or content/topic. The second step "concept" is derived from the ideas of exploration from 5E, defined from design thinking, investigation from the stripling inquiry model, and inquiry from science.



In the second stage/step, learners investigate issues, content, or themes on the basis of their prior learning from the connect stage. This stage can be explained by the word enacting, which means putting into practice. Third C or context is somehow similar to the elaboration of the 5E instructional model. Still, in this stage, learners develop a prototype similar to design thinking, reflect and connect as similar to the stripling inquiry model, and can use any component of STEAM. Emerging work can clarify this stage, which means growing and developing. In this stage, learners utilize their learning and use the knowledge for their own and social benefits. The last component, "reflect," is connected with each step, reflecting on learners' understanding in sharing form. Here learners present their emergent knowledge in every stage, but the

presentation will be in reflection. Reflection on their knowledge shows learners emergent understanding after their work in every step. This stage is similar to the explanation of 5/7E, feedback and taste of design thinking, making the conclusion of the inquiry cycle, an exit point of IPC, and from the dimension of STEAM, it reflects the arts primarily. I have used the word reflection rather than explain or introduce it is because as per Luitel et al. (2022) critical reflection is the process of deeply acknowledging, interrogating and assessing our fundamental assumptions regarding our own perception and practices and this can bring transformation on what we think and do. So, integrating reflection and critical reflection here in the pedagogy can deeply evoke the individuals' perceptions and practices and can question their own assumptions and beliefs. In this process, reflection helps to evaluate activities from beginning to end as well. Evaluation is done by observing all the activities in all the stages of 3C-R. This is a participatory generative model so participants or learners and facilitators generate knowledge and share their understandings after each step. The detailed integrated idea of 3C-R is presented in the picture below.

Figure 1: 3CR integrated pedagogy

3C-R	5E	7E	Design Thinking	Stripling Inquiry Model	Inquiry Cycle	STEAM	IPC	Focus
Connect	Engage	Elicit Engage	Emphasize	Wonder connect	Tuning in	STEAM	Entry point Knowledge harvest	Prior learning False conscious Curiosity Learning outcome KW from KWL chart
Concept	Explore	Explore	Define Ideate	Investigate Construct	Finding out Sorting out	S	Big picture Research activity	Active engagement Freedom wit-limitation Learning outcome
Context	Elaborate	Elaborate Extend	Prototype	Construct	Going further	STEAM	Recording activities Exit point	Inquiry Usefulness Maximum utilization Aesthetic value Prediction / calculation / pattern / formula
Reflect	Explain	Explain	Taste	Reflect Express	Making conclusion	A	Exit Point	Present emergent understanding Use of art
	Evaluation / Assessment							Reflection and Assessment process

I regularly conduct workshops, guide teachers using the same model, and request that teachers use it in their classrooms. While presenting feedback and the conclusion of workshops, teachers have concluded that my facilitation is adequate for active engagement and can quickly reflect learners' learning. Teachers have agreed that this model can develop learners' transversal skills because this module actively involves individual discussion, brainstorming, group work and contextualizes learning and gives a chance to reflect learners' perceptions, practices and outcomes. By this model, learners can develop thinking skills, interpersonal skills, intra-personal skills, etc. While making this conclusion, I requested them to review the session and provide me with some of the inputs to improve. They have suggested that I need to increase time in group work and allocate more time for reflection and critical reflection. While using it in the school classrooms, they have found it effective from the dimension of developing learners' transversal skills, but physical size, structure, and furniture are not friendly in the schools.

> *While studying participants' written feedback, I felt that teachers were happy with my facilitation using the 3C-R model and were trying their best to adopt it. As per my understanding, it is because they got a chance to explore themselves rather than get readymade answers. In most of the feedback, they often write, "The best part of this model is making learners engage in investigating on their own."*

Me and 3C-R Pedagogy

Physically, I am similar to earlier, but I am not what I used to think at present. I usually know more than others, but I have realized that my understanding of education and processes differs from earlier. It was possible only after comparing my past experiences with the knowledge of this movement. Through this inquiry, I have realized that I need to compare myself and my sense of Transformation rather than comparing myself with others. While remembering past and present, I have learned that my past understanding became helpful in designing new pedagogical models to achieve learners' transversal skills through classroom-based activities. I have realized that the door to developing transversal skills is open to me to transform my profession and classroom activities to build skills. I am more confident about the agenda of classroom activities and this inquiry has given me a chance to realize the truth "*Transformation never ends*." While completing this study, I have learned that 3C-R pedagogy can be one of the transformative tools to uplift learners, and teachers, and transform schools. This is because studying in university, regularly conducting online/physical workshops, and linking new understanding on regular facilitation have given me the confidence and strength to correct my previous weakness minutely. Now I have realized that I can reflect on my own and other learners' reflections to transform from their thoughts and practices through 3C-R.

I am generating confidence regarding 3C-R regularly due to its implementation and its effect in the classroom. At this movement, seven schools regularly practice classroom activities as per 3C-R in Kathmandu Valley and outside. Teachers' reflection shows that they are developing transversal skills through practicing these practices. As per their reflection, their learners are more engaged, cheerful, and active and developed sharing habits in the classroom and outside. Teachers found being close with students and students have started sharing their ideas. As per this feedback and my regular practices of 3C-R pedagogy in the workshop, I have realized that my realization and knowledge will update regularly if I regularly practice critical reflective techniques. It is because whatever I learned and realized has changed and may change over time due to different circumstances in the future. For now, I am convinced that 3C-R pedagogy, can change our classroom and make learners engage in comparison with conventional practices. And those engagements develop the transversal skills of learners. I have realized that it is a process of the journey of being and becoming, which never ends. But I am not sure what my new realization will be in the future regarding 3C-R.

Meaning Making: Navigating the Path to Empower Teachers' Transversal Skills

While reflecting on my practices and discussing my professional journey on navigating the path to empower teachers' transversal skills, I have realized that I have updated myself and updated into another level of realization. As per my understanding, this is possible due to my study, personal reflection and discussion with my study and trying to reflect learning into practice. I come to realize that personal and professional reflections can improve our practices and it can contribute to social transformation (Qutoshi, 2021; Wagle, 2023). For this, I conducted multiple sessions as per 3C-R pedagogy and I came to realize that teachers' learning has become more effective. It is due to learners' (teachers') participation, involvement, and interaction being maximized (Fallows &Ahmet, 1999) as per 3C-R. I have also come to realize

that 3C-R is an activity-based pedagogy because it needs the active participation of learners and as per McGrath (2011), "in activity-based learning student becomes more actively involved in the learning process through acts of 'doing', 'being' and 'critically reflecting' than in traditional, didactic education that is more centered around the passive act of' knowing" (p. 23). Inquiry-based, project-based and context-based pedagogy was not new to me; however, incorporating different components together with STEAM and conducting sessions keeping transversal skills in the center in the 3C-R model has given me the strengths to see things transforming on a personal and professional level.

Transformation is not an easy task. However, the entire process of 3C-R reminded me of the statement of Mezirow (1994) "Learning can be accomplished through reflection and rational discourse and attending the ground for one's beliefs" (p. 223). As per him, transformation occurs when previous understanding is unclear and the individuals reformulate the beliefs that influence lived experiences. I can reformulate a new sense of what I know and what I need to accomplish further. I have also realized that new knowledge is constructed based on individual experiences (Lishchinsky, 2014), as my previous experiences and current learning lead me to generate something special for school education. While facilitating learners, I have realized that if the facilitator designed a lesson focusing on STEAM and transversal skills, it becomes interesting, interactive, and engaging rather than planning randomly. 3C-R has integrated all the components of STEAM. Here inquiry to find out reality in 2nd step “concept” and the entire process of 3C-R is the component of science. Reflection is the form of art (A), the context in 3C-R represents technology, engineering and mathematics components and in the first step, "connect” connects all the elements of STEAM while reflecting prior learning and the things they want to discover. Here, Technology in STEAM guides learners to utilize knowledge found through inquiry and multiple technological tools. Engineering guides learners to find a way to maximize the usefulness of inquired knowledge with effective and sustainable design. Arts give an attractive design, outlook, and effect on nature, try to explore creativity by thinking into tangible objects and understanding others. Similarly, Mathematics in STEAM gives limitations, rules, and patterns. Facilitating learners including STEAM components develop their creative thinking, problem-solving, collaboration, argumentation, critical leadership, and information and literacy skills (Hadinugrahaningsih et al., 2017). From this dimension, 3C-R can develop the transversal skills of learners and educators. It can be considered an educational pedagogy that integrates into a transdisciplinary epistemology (Psycharis, 2018) because it can be utilized in any content and situation.

My Potential Directions and Possibilities

While completing this study, I have found myself being critical, observing things from multiple dimensions, seeing something like a birds’ eye view, and seeing things from close up, like zooming objects. I facilitated many teachers of numerous schools, and I have reached the point that 3C-R pedagogy including components of STEAM education can make facilitation live, engage learners actively and develop transversal skills. Following the pedagogical model, the chain of activity one after another in sequence guide facilitators to explore a prior understanding of learners, gives opportunity to investigate knowledge, and encourages learners to present their emergent experience together with the application of emergent learning in real-life situations. This realization has given me the confidence to explore pedagogical possibilities suitable to our teachers and schools. Observing different pedagogical models, I have worked with 3C-R and included multiple components of STEAM.

I am continuously conducting workshops based on 3C-R model and requesting teachers to use it in the classroom. I have found it effective to facilitate teachers and teachers have found

it more effective than conventional practices to develop transversal skills. Very few schools are aware of inquiry-based, project-based, and problem-based learning incorporating STEAM education components. In this context, my focus will be to update the concept and make the 3C-R holistic model to make learning effective in a contextual situation. I have set the 3C-R model as my personal and instructional model to transform the instructional activities of different schools. While doing these things, I have realized that when we make a continuous observation in our professional practice and modify our approach based on observation, it is likely that our methods are continuously improved and transversal skills enhanced.

ORCID

Rajendra Dahal https://orcid.org/0009-0005-8036-8132

List of References

Argyris, C., & Schön, D. (1992). *Organizational learning: A theory of action perspective.* Addison Wesley.

Ashonibare, A. A. (2023). Doctoral education in Europe: Models and propositions for transversal skill training. *Studies in Graduate and Postdoctoral Education, 14*(2), 164-170.

Boyd, R., & Myers, J. (1988). Transformative education. *International Journal of Lifelong Education, 7*(4), 261-284.

Brookfield, S. (2003). Putting the critical back into critical pedagogy: A commentary on the path of dissent. *Journal of transformative education, 1*(2), 141-149.

Cranton, P. (2005). Transformative learning. In L. M. English (Ed.), *International encyclopedia of adult education* (pp.630-637). Palgrave Macmillan.

Curriculum Development Centre (CDC). (2019). *Curriculum of Basic Level (Grades 1-3), 2019*. CDC, Sanothimi, Bhaktapur

Curriculum Development Centre (CDC). (2020). *Curriculum of Basic Level (Class 6-8)*. CDC, Sanothimi, Bhaktapur

Curriculum Development Centre (CDC). (2021a). *Curriculum of Basic Level (Class 4-5)*. CDC, Sanothimi, Bhaktapur

Curriculum Development Centre (CDC). (2021b). *Curriculum of Basic Level (Class 9-10)*. CDC, Sanothimi, Bhaktapur

Dahal, R. (2018). *Journey towards transformative teacher educator: An Auto-ethnographic inquiry* [M Phil Dissertation]. Kathmandu University School of Education, Dhulikhel, Nepal.

De Jager, P. (2001). Resistance to change: A new view of an old problem. *The Futurist, 53*(3), 24-27.

Dewey, J. (1923). *Democracy and education: An introduction to the philosophy of education*. Macmillan.

Dochevska, Y. (2021). Defining Transversal skills: Perspectives and development. *Trakia Journal of Sciences, 19*(1), 621-625.

Fallows, S. J., & Ahmet, K. (1999). *Inspiring students: Case studies in motivating the learner*. Psychology Press.

Ge, X., Lfenthaler, D., & Spector, J. M. (2015). Moving forward with STEAM education research. In *Emerging technologies for STEAM education* (pp. 383-395). Springer.

Grimes, B. (2007). *Multidimensional classroom: development a comprehensive research base for Holistic education*. University of Cambridge.

Habermas, J. (1972). *Knowledge and human interests*. Heinemann.

Hadinugrahaningsih, T., Rahmawati, Y., & Ridwan, A. (2017, August). Developing 21st century skills in chemistry classrooms: Opportunities and challenges of STEAM integration. In *AIP Conference Proceedings* (Vol. 1868, No. 1, p. 030008). AIP Publishing LLC.

Hoover, W. (1996). The practice implications of constructivism. *SEDL Letter, 9*(3).

Kim, D., & Bolger, M. (2017). Analysis of Korean elementary pre-service teachers' changing attitudes about integrated STEAM pedagogy through developing lesson plans. *International Journal of Science and Mathematics Education*, *15*(4), 587-605.

Kim, Y., & Park, N. (2012). The effect of STEAM education on elementary school student's creativity improvement. In *Computer applications for security, control and system engineering* (pp. 115-121). Springer.

Lamsal, H. P. (2009). *Local understanding and practices on scholarship management* [Unpublished M Phil dissertation]. Kathmandu University School of education, Nepal.

Lishchinsky, O. S. (2014), Simulation-based constructivist approach for education leaders. *Journal of Educational Management Administration & Leadership,* 1–17. https://doi.org/10.1177/1741143214543203

Luitel, B. C. (2009). *Culture, worldview and transformative philosophy of mathematics education in Nepal: A cultural-philosophical inquiry* [Unpublished doctoral thesis]. Curtin University, Perth, Australia.

Luitel, B. C., Dahal, N., & Pant, B. P. (2022). Critical pedagogy: Future and hope. *Journal of Transformative Praxis, 3*(1), 1 - 8.

MacKeracher, D. (2004). *Making sense of adult learning.* University of Toronto Press.

Maeda, J. (2013). Stem+ art= steam. *The STEAM journal*, *1*(1), 34.

Mautner, T. (1996). *A dictionary of philosophy*. Blackwell Reference.

McGrath, J. R. (2011). Linking pedagogical practices of activity-based teaching. *International Journal of Interdisciplinary Social Sciences*, *6*(3).

Mezirow, J. (1991). *Transformative dimensions of adult learning*. Jossey-Bass.

Mezirow, J. (1994). Understanding transformation theory. *Adult Education Quarterly, 44*, 222-232.

Pant, B. P. (2015). *Pondering on my beliefs and practices on mathematics, pedagogy, curriculum and assessment* [Unpublished M Phil Dissertation]. Kathmandu University School of Education, Nepal.

Perignat, E., & Katz-Buonincontro, J. (2019). STEAM in practice and research: An integrative literature review. *Thinking Skills and Creativity*, *31*, 31-43.

Piaget, J. (2003). Part I: Cognitive Development in Children-Piaget Development and Learning. *Journal of Research in Science Teaching*, *40.*

Psycharis, S. (2018). STEAM in education: A literature review on the role of computational thinking, engineering epistemology and computational science. computational steam pedagogy (CSP). *Scientific Culture*, *4*(2), 51-72.

Qutoshi, S. B. (2021). Journeying through informing, reforming, and transforming teacher education: Reflections on curriculum images. *Journal of Transformative Praxis, 2*(1), 8-18.

Schubert, W. H. (1986). *Curriculum prospective, paradigm and possibilities*. Macmillan

Taylor, P. C. (2014). *Transformative education for sustainable future*. Keynote paper presented at the 5th international ERT symposium on education for rural Transformation (September 17-19), Kathmandu University, Nepal.

Tilea, M. (Ed.). (2015). *Transversal skills development in modern teaching practice: A good practice guide*. Pro Universitaria.

Van Manen, M. (1991). *The fact of teaching: The meaning of pedagogical thoughtfulness*. Althouse Press.

Vygotsky, L. S. (1986). Thought and language-Revised edition. *Massachusetts Institute of Technology*.

Wagle, S. K., Luitel, B. C., Krogh, E. (2023 in press). Exploring possibilities for participatory approaches to contextualized teaching and learning: A case from a public school in Nepal. *Educational Action Research.* https://doi.org/10.1080/09650792.2023.2183874

Wilhelmson, L. (2006). Transformative learning in joint leadership. *Journal of Workplace Learning*, *78*, 495-507. https://doi.org/101108/13665620610693042

Suggested Citation:

Dahal, R. (2023). Autoethnographic reflections on navigating the path to empower teachers' transversal skills. *Journal of Transformative Praxis*, *4*(1), 68-83. https://doi.org/10.51474/jrtp.v4i1.670