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Creativity in Indian Classrooms: Can Design Thinking Help in Fostering Creativity?

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Abstract

Creativity is an essential component for effective teaching and learning. It encourages curiosity, exploration and experimentation. It also plays a very important role in Design thinking process enabling learners to generate innovative solutions to complex problems. Design thinking is a human-centered approach to innovation that emphasizes on understanding of the human and their needs, redefining problems, challenging the existing solutions and working towards a novel outcome. When applied correctly, design thinking provides a structured approach among educators to teach future generations. At the core of design thinking lies creativity, which is vital for generating innovative solutions and fostering an environment where ideas can flourish. By integrating creativity into teacher training, we can create a generation of educators equipped with tools for every student.

This paper examines the significance of creativity through design thinking as it pertains to education with focus on its role in using innovative teaching strategies in Indian classrooms and thus improving student outcomes. Through a review of relevant literature and case studies, we highlight how design thinking practices can enhance creativity and vice versa. This paper explores the significance of creativity within the design thinking framework, examining its impact on problem-solving, collaboration by the teachers as well as students.

Keywords: Creativity, Design Thinking, Teaching-Learning, Innovative Teaching.

Introduction

Traditional teaching methods often fail to engage learners meaningfully. The methods and strategies used in teacher education are constantly evolving, influenced by technological advancements and changing societal needs. In response, design thinking has emerged as a transformative approach that prioritizes creativity and innovation in education. Design thinking has emerged as a powerful methodology for tackling the challenges across various fields like education, business management and social innovation. At its core, design thinking emphasizes empathy, ideation, and iterative prototyping. Creativity is the lifeblood of this methodology, providing the tools necessary for divergent thinking and innovative problem-solving.

Creativity can be defined as the ability to generate novel and valuable ideas (Runco & Jaeger, 2012). This paper explores the importance of creativity within the design thinking framework for education, emphasizing how it empowers educators to develop effective, student-centered teaching practices. It investigates the importance of creativity within the design thinking framework asserting that it is essential for cultivating innovative solutions and meaningful learning experiences for learners.

Design thinking comprises five stages: Empathize, Define, Ideate, Prototype, and Test (Brown, 2009). Each stage requires a different set of skills but creativity is present and used throughout the process. Empathy involves understanding user needs through creative exploration, while ideation focus on brainstorming and conceptual thinking. Prototyping and testing benefit from experimentation. Design thinking has also been described as a single idea having pre-defined steps even though they can be adjusted according to problem (Choudhary & Sharma 2024). In design thinking, creativity is not just about generating idea but also includes the exploration of multiple solutions. Design thinking prepares the teachers to be flexible and engage in reflective practices so that they can adapt in the classroom. (Kahn & D'Ambrosio (2018).

Steps of Design Thinking

Design Thinking consists of five steps:

1. **Empathy**: Understanding the perspective and using compassion of students.
2. **Definition**: Clearly defining the problem or issues to be addressed.
3. **Generating Ideas**: Getting a wide range of ideas and solutions.
4. **Prototype**: Creating a prototype on the basis of ideas.
5. **Test**: Testing of prototype based on the feedback to refine solutions.

Even though the steps are not followed in a straight line, each step is equally important. The creativity of the student shines when during generating idea, leading to formation of a prototype that can show the innovative skills. For teachers, these steps encourage them to adopt a creative mindset, essential for developing innovative teaching methods.

Role of Creativity in Design Thinking

- Creativity allows teachers to understand their students' perspectives, fostering empathy. By using techniques like student interviews and observations, preservice teachers can explore diverse learning experiences, enhancing their ability to tailor instruction.
- Creativity helps in providing definition for the problem at hand to uncover new thoughts. This reframing process can lead to more relevant teaching strategies.
- Creativity is most crucial during idea generating phase. Brainstorming sessions, collaborative workshops, and creative thinking exercises can help teachers generate innovative instructional strategies that address learning needs of every learner.
- Creativity in prototyping encourages teachers to experiment with lesson plans and teaching materials. Prototyping allows students to create and test ideas in a low-stakes environment, leading to improvement in creativity. Techniques such as sketching, 3D modelling, and digital simulations allow for rapid iteration. (Razzouk & Shute, 2012).
- In the testing phase, teachers can creatively assess their solutions by using feedback from peers, mentors, and students. This process allows for refinement and enhancement of teaching methods. Creativity in testing methods such as storytelling can yield deeper insights into interactions and preferences.

Impact of Design Thinking on Education

Innovative Teaching Practices.

Creativity in design thinking promotes the development of innovative teaching practices that can increase student engagement and learning. Research indicates that teachers who incorporate creative approaches into their instruction are more likely to foster higher-order thinking skills among students (Craft, 2005). By encouraging teachers to embrace creativity, teacher education programs can cultivate educators who are interested in designing and using engaging teaching practices to provide better learning experiences.

Collaboration

Collaboration is very important for effective teaching and learning. Creativity nurtures a collaborative spirit among teachers as well as students enabling them to work together to solve problems and share ideas. Design thinking workshops and group projects encourage communication and the exchange of differing perspectives. Studies have shown that collaborative learning environments lead to enhanced problem-solving skills and improved academic performance (Johnson & Johnson, 1999).

Encouraging Self Reflection and Feedback

- Creative design thinking encourages teachers to critically assess their teaching methods and student interactions. By engaging in self-reflection and peer feedback, teachers can identify areas for improvement and develop a broad mindset. Reflective practice is crucial for professional development and lifelong learning, equipping teachers to adapt to the ever-changing educational landscape (Schön, 1983).
- Creativity in design thinking allows teachers to develop inclusive teaching strategies that address the diverse needs of the students. By understanding and empathizing with students from various backgrounds, educators can create specific learning experiences for every learner according to their needs. Research shows that differentiated instruction, driven by creative teaching practices, leads to better outcomes for all learners (Tomlinson, 2014).

Critical Thinking and Problem-Solving

Creativity encourages students to think critically and engage in problem-solving. By using design thinking steps in their classrooms, teachers can create learning environments that promote inquiry-based learning. This approach not only enhances students' critical thinking skills but also prepares them for real-world challenges.

Risk-Taking and Experimentation

Creativity promotes a culture of experimentation. In a design thinking context, this means to explore ideas without the fear of failure. This encourages a mindset where learning is more valued over perfection, leading to groundbreaking innovations.

Emotional Engagement

- The first step of Design Thinking is empathy which often evoke emotional responses, enhancing learner engagement. Incorporating elements of storytelling and aesthetics can create memories for the learner. Research indicates that emotionally engaging products tend to have higher user satisfaction and retention rates (Norman, 2004).
- Creativity in teaching encourages students to explore new ideas and pursue knowledge outside of the classroom. By modelling creative problem-solving and innovation, teachers inspire their students to become lifelong learners. This intrinsic motivation is essential for success in the real world.
- Creativity is synonymous with innovation. In design thinking, a creative atmosphere encourages learners to move beyond obvious solutions. Research shows that learners that embrace creative thinking are more likely to produce innovative products and services (Page, 2007). By leveraging

different perspectives, one can explore unconventional solutions that may not arise in traditional environments.

Design Thinking and NEP (2020)

Indian education system has gone through major changes over the years. Though the previous education policies have focussed on the creativity, it has been the heart of the latest one as the pandemic gave a much needed jolt to the education system. The technology integration has been accelerated by the COVID-19 pandemic. National Education Policy (NEP) 2020 advocates for the holistic development with special focus on the problem-solving skills and innovative solutions. It emphasizes the importance of critical thinking and experiential learning. This has led to the introduction of Design Thinking as a subject by NEP in the year 2020 at the school level. Design thinking emphasizes on the creativity and innovation which align with the goal of NEP 2020. NEP 2020 also encourages the learners to work towards gaining experiential learning so that they are well equipped for the real world.

How can Design Thinking help the Teachers?

1. **Encouraging Empathy**: Encouraging educators to prioritize empathy in their teaching. This can involve activities that require students to consider the perspectives of others, understanding and encouraging understanding of diverse viewpoints which can lead to students developing stronger interpersonal skills and learn to approach problems with broad mindset.
2. **Promote Collaboration**: Design Thinking teaching involve group work, brainstorming sessions, and peer feedback. Structure assignments that require teamwork and collective problem-solving leads to collaboration which in turn enhances communication skills and prepares students for teamwork.
3. **Encourage Flexibility/ No fear of failure**: Educators can create a classroom culture where failure can be seen as a learning opportunity. Encourage students to creatively work on their ideas and solutions, and refining them based on feedback. Teach students about the growth mindset and the value of perseverance.
4. **Integrate Real-World Problems**: Teachers can develop projects that address real-world issues relevant to students' lives and communities. This can involve partnerships with local organizations where students see the relevance of their learning while also developing practical problem-solving skills.
5. **Utilize Diverse Assessment Methods**: Moving beyond traditional assessments to include project-based evaluations, portfolios, and self-assessments. Using formative assessments to guide student learning provides a more comprehensive view of student understanding and increases creativity.
6. **Professional Development for Educators**: Encourage ongoing professional development focused on design thinking methodologies. Workshops, training sessions, and collaborative planning can enhance educators' skills. Teachers become more equipped to implement design thinking effectively, benefiting student learning experiences.

How can students benefit from Design Thinking?

1. **Enhanced Problem-Solving Skills**: Students develop a systematic approach to tackling complex problems, learning to break issues down into parts and explore various solutions. Design thinking encourages students to analyze problems empathetically and evaluate solutions. They can develop

stronger analytical skills, preparing them for higher-level thinking required for future careers. They become more adept at addressing real-world challenges.

2. **Increased Creativity and Innovation**: Exposure to design thinking can encourage students to think outside the box and explore unconventional solutions. Students take a more active role in their education by engaging in hands-on, inquiry-based learning processes. Students become more like self-learners, taking charge of their education and continuously improving. This fosters a sense of ownership and responsibility for their learning journey, motivating them to seek knowledge actively. Design thinking creates a mindset of innovation, where students can generate original solutions and contribute creatively to projects.
3. **Collaboration and Teamwork**: Working on design thinking projects requires students to collaborate with peers which in turn leads to enhancing their ability to work effectively in teams. They build valuable comradrie and communication skills that are essential in both professional as well as personal situations.
4. **Greater Empathy and Understanding**: Engaging in empathy-driven activities can help students to develop a deeper understanding of diverse perspectives and the needs of others. This provides with a sense of social responsibility and being more inclusive, encouraging them to design solutions that consider various viewpoints. Students become more resilient and adaptable, better equipped to handle challenges and changes.
5. **Adaptability**: **D**esign thinking teaches students to view setbacks as opportunities for growth and learning. Establish a classroom atmosphere where students feel safe to express their ideas and take risks without fear of judgment. A supportive environment promotes creativity and experimentation, essential components of the design thinking process. They become more resilient, able to adapt their strategies and approaches in response to feedback and changing circumstances.
6. **Real-World Applications**: Projects rooted in real-world issues help students to apply theoretical concepts to practical situations bridging the gap between classroom learning and real-world issues. Students gain a clearer understanding of the relevance of their education, enhancing motivation and engagement.

Conclusion

Creativity and design thinking are closely related. Creativity drives innovation, enhances collaboration and teamwork in learners. In a world where challenges are increasing everyday, increasing creativity is essential for everyone who is seeking to thrive in the face of change. By embracing creative approaches, teachers can unlock new possibilities and deliver solutions that truly meet the needs of students. The integration of creativity in design thinking is essential for effective teacher education. Creativity based teacher education programs can equip future educators with the skills and mindset necessary to navigate the modern classrooms. Through innovative teaching, collaboration and reflective practices, teachers can cultivate a love for learning in the learners. The importance of creativity in design thinking will remain a critical factor in preparing the next generation. By embracing design thinking in their education, students get equipped with essential skills and mindsets that prepare them for the complexities of the real world. The implications for students highlight not only the academic benefits but also the personal growth that comes from engaging in a creative and collaborative learning process.

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