

Original Article

Breaking cognitive boundaries: A conceptual framework for Out-of-the-Box thinking and idea generation among college students

Dr. Suryakant Pandit

Associate Professor, KIT's Institute of Management Education and Research
(Affiliated to Shivaji University)

Abstract

Creativity and innovation are increasingly recognized as essential competencies for success in the twenty-first century. Despite possessing substantial disciplinary knowledge, many college students struggle to generate original ideas due to examination-oriented learning, fear of failure, cognitive rigidity, and limited opportunities for experimentation. This conceptual paper examines the factors influencing creative thinking among college students and proposes a five-stage framework for idea generation. Drawing upon the theoretical foundations of divergent thinking, lateral thinking, creative cognition, experiential learning, and growth mindset, the study synthesizes existing literature into a practical model comprising Observation, Questioning, Exploration, Experimentation, and Reflection. The framework offers educators a systematic approach to nurturing creativity and innovation in higher education. The paper also discusses the framework's relevance to India's National Education Policy (NEP) 2020 and suggests directions for future empirical research. The study concludes that creativity is not an innate trait but a developable capability that can be cultivated through targeted educational interventions.

Keywords: Creativity, Innovation, Idea Generation, Divergent Thinking, Higher Education, Out-of-the-Box Thinking, NEP 2020

Address for correspondence: Dr. Suryakant Pandit, Associate Professor, KIT's Institute of Management Education and Research (Affiliated to Shivaji University)

Email: sbpandit@gmail.com

Submitted: 23 June 2024 **Revised:** 30 June 2024 **Accepted:** 16 July 2024 **Published:** 31 July 2024

INTRODUCTION

The contemporary world is marked by rapid technological advancement, global competition, and complex social and economic challenges. In this environment, the ability to generate innovative ideas has become a critical competency for graduates across disciplines. Employers increasingly seek individuals who can identify problems, think creatively, and develop novel solutions. Traditional educational systems, however, have long emphasized memorization, standardization, and examination performance. While these approaches support knowledge acquisition, they often discourage experimentation, questioning, and divergent thinking. Consequently, many students excel at reproducing existing knowledge but face difficulties when required to generate original ideas. Out-of-the-box thinking refers to the ability to transcend conventional assumptions and explore alternative perspectives to

develop innovative solutions. This paper analyzes the barriers that hinder creative thinking among college students and proposes a practical conceptual framework to enhance idea generation.

Objectives of the study:

The study aims to:

1. Examine the concept and significance of out-of-the-box thinking in higher education.
2. Identify psychological and environmental barriers to idea generation among college students.
3. Review major theoretical perspectives on creativity and innovation.
4. Develop a conceptual framework for enhancing creative thinking and idea generation.
5. Suggest practical educational interventions for fostering creativity in college classrooms.

Review of literature:

The proposed framework is grounded in five influential theories of creativity and learning.

1. **Divergent thinking theory** Guilford (1950) conceptualized creativity as involving divergent thinking—the ability to generate multiple possible solutions to a problem. Divergent thinkers exhibit fluency, flexibility, originality, and elaboration.

Quick Response Code:	Access this article online	This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms How to cite this article: Pandit, S. (2024). Breaking cognitive boundaries: A conceptual framework for Out-of-the-Box thinking and idea generation among college students. Royal International Global Journal of Advance and Applied Research, 1(1), 76–79. https://doi.org/10.5281/zenodo.21232582
	Website: https://rlgjaar.com	
	Website: https://www.doi.org DOI: 10.5281/zenodo.21232582	

2. Lateral thinking theory De Bono (1970) introduced lateral thinking, which emphasizes the deliberate challenging of habitual reasoning patterns. Creative breakthroughs often occur when individuals move away from conventional logical pathways.

3. Creative cognition theory Finke, Ward, and Smith (1992) argued that creativity emerges from ordinary cognitive processes. Their work demonstrated that idea generation is a systematic mental activity rather than a mysterious talent.

4. Experiential learning theory Kolb (1984) proposed that learning occurs through cycles of concrete experience, reflective observation, abstract conceptualization, and active experimentation. These cycles create fertile conditions for creativity and innovation.

5. Growth mindset theory Dweck (2006) suggested that individuals who believe abilities can be developed through effort are more likely to embrace challenges, persist through setbacks, and engage in creative risk-taking.

Methodology

This study adopts a conceptual research design. A systematic review of literature on creativity, innovation, divergent thinking, lateral thinking, experiential learning, and growth mindset was conducted using books, journal articles, and scholarly publications. The selected theories were analyzed and synthesized to identify common themes related to creative idea generation. Based on this synthesis, a practical framework was developed to support creativity enhancement among college students.

As a conceptual study, this paper does not involve primary data collection. Instead, it integrates established theoretical perspectives to provide a foundation for future empirical research.

Key factors influencing idea generation

The literature highlights five important factors that facilitate creative thinking.

1. Curiosity Curiosity drives exploration, questioning, and the pursuit of new knowledge. It serves as the foundation of creative thinking.

2. Freedom to experiment Students are more likely to generate innovative ideas when they can test possibilities without excessive fear of evaluation.

3. Acceptance of failure Creative processes inherently involve uncertainty and repeated attempts. Viewing failure as a learning opportunity fosters innovation.

4. Interdisciplinary exposure Engagement with diverse disciplines promotes the synthesis of seemingly unrelated concepts, often resulting in novel insights.

5. Reflection Reflection allows learners to analyze experiences, recognize patterns, and refine ideas for future application.

Barriers to creative thinking:

Several factors may inhibit idea generation among students.

1. Functional fixedness

Individuals often perceive objects and concepts only in their conventional roles, thereby limiting alternative applications and solutions. For example, students may view a mobile phone solely as a communication device rather than as a tool for learning, content creation, or problem-solving. Such fixed patterns of thinking restrict the generation of novel ideas.

2. Fear of criticism

Concerns about judgment from peers and instructors may discourage students from sharing unconventional ideas. Even when students possess original thoughts, the fear of appearing incorrect, unrealistic, or uninformed often prevents them from expressing those ideas openly.

3. Examination-Oriented learning

An excessive focus on examinations restricts opportunities for exploration and experimentation. When success is measured primarily through correct answers and grades, students tend to prioritize memorization and reproduction of knowledge rather than creative inquiry and risk-taking.

4. Disciplinary silos

In education, a disciplinary silo means subjects are taught and learned in isolation. Students remain confined within their own academic discipline and have very little interaction with ideas, methods, or knowledge from other fields. As a result, they miss opportunities to combine diverse perspectives and create innovative solutions through interdisciplinary thinking.

5. Cognitive rigidity

Entrenched habits of thought diminish openness to alternative perspectives. Individuals often rely on familiar assumptions, routines, and problem-solving approaches, making it difficult to consider new possibilities or challenge established ways of thinking.

Proposed conceptual framework for Idea Generation:

The framework consists of five iterative stages:

Stage 1: Observation Students carefully observe their environment to identify unmet needs, inefficiencies, or opportunities for improvement.

Stage 2: Questioning Students challenge assumptions by asking questions such as “Why?”, “Why not?”, and “What if?”

Stage 3: Exploration Information is gathered from multiple sources and disciplines to deepen understanding of the identified problem.

Stage 4: Experimentation Ideas are tested through prototypes, simulations, projects, discussions, and pilot initiatives.

Stage 5: Reflection Students evaluate outcomes, identify lessons learned, and refine their ideas before restarting the cycle.

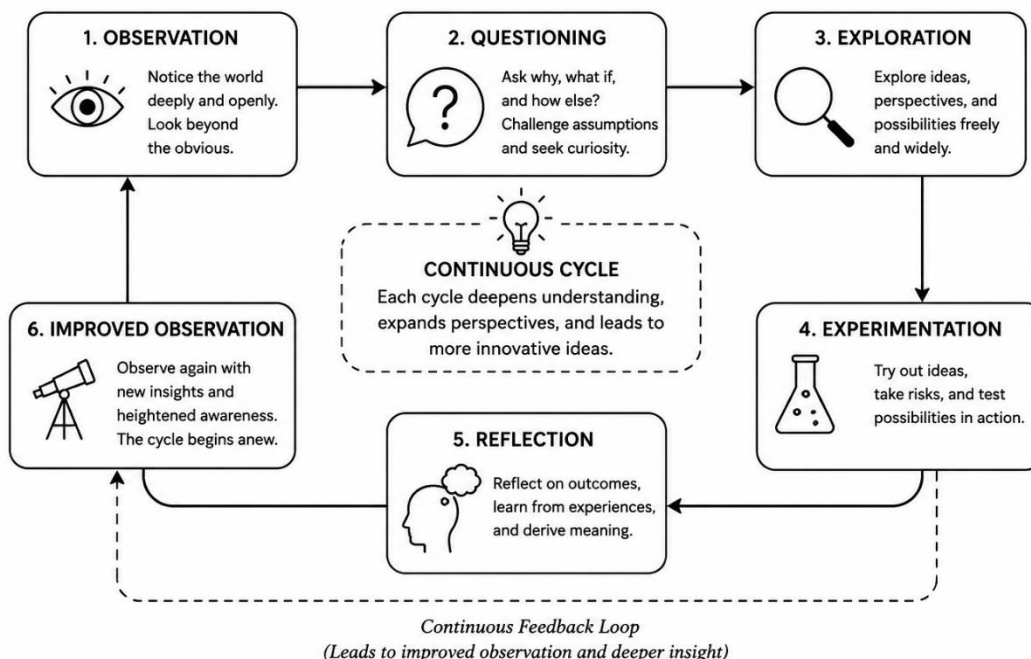
Conceptual model:**Figure 1. Conceptual Model***Breaking Cognitive Boundaries: A Continuous Cycle for Out-of-the-Box Thinking and Idea Generation***Figure 1 Interpretation**

Figure 1 illustrates the proposed conceptual framework for out-of-the-box thinking and idea generation. The model depicts creativity as a continuous cycle beginning with observation and progressing through questioning, exploration, experimentation, and reflection. Insights gained through reflection lead to improved observation, initiating a new cycle of learning and idea generation. The framework suggests that creativity develops through repeated practice of these interconnected stages rather than through isolated moments of inspiration.

Conceptual propositions

To articulate the expected relationships within the proposed framework, the following conceptual propositions are advanced:

Proposition 1: Observation of everyday problems stimulates idea generation among college students.

Proposition 2: Questioning established assumptions promotes divergent thinking.

Proposition 3: Exploration of interdisciplinary knowledge enhances creative thinking.

Proposition 4: Experimentation strengthens innovation capability through practical validation of ideas.

Proposition 5: Reflection improves the effectiveness of future idea-generation efforts.

Educational implications

The framework can be implemented through the following strategies:

1. Creativity workshops and innovation laboratories.
2. Design-thinking and hackathon-based activities.
3. Project-based and experiential learning approaches.
4. Assessment systems that reward originality and effort.
5. Interdisciplinary collaboration among students.

6. Classroom environments that encourage questioning and risk-taking.

Discussion and relevance to NEP 2020

India's National Education Policy (NEP) 2020 emphasizes critical thinking, creativity, multidisciplinary learning, and innovation. The proposed framework directly supports these objectives by promoting observation, inquiry, exploration, experimentation, and reflection.

By bridging established creativity theories with practical classroom application, the framework helps higher education institutions create learning environments that foster risk-taking and innovation, thereby preparing graduates to address complex societal and professional challenges.

Conclusion

Creativity has become a fundamental requirement for success in modern society. However, many students remain constrained by educational practices that prioritize conformity over innovation. This paper identifies key barriers to creative thinking and proposes a five-stage framework for idea generation grounded in established theories of creativity and learning.

The framework equips educators with a practical tool for fostering out-of-the-box thinking. Future research should empirically examine its effectiveness across different academic disciplines and institutional contexts.

Acknowledgment

The author expresses sincere gratitude to all the scholars and researchers whose valuable contributions in the fields of creativity, innovation, divergent thinking, experiential learning, and higher education have provided the theoretical foundation for this conceptual study.

Financial support and sponsorship

Nil.

Conflicts of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

References

1. De Bono, E. (1970). *Lateral thinking: Creativity step by step*. Harper & Row.
2. Dweck, C. S. (2006). *Mindset: The new psychology of success*. Random House.
3. Finke, R. A., Ward, T. B., & Smith, S. M. (1992). *Creative cognition: Theory, research and applications*. MIT Press.
4. Guilford, J. P. (1950). Creativity. *American Psychologist*, 5(9), 444–454.
5. Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.
6. Runco, M. A. (2014). *Creativity: Theories and themes: Research, development, and practice* (2nd ed.). Academic Press.
7. Sternberg, R. J. (2006). The nature of creativity. *Creativity Research Journal*, 18(1), 87–98.