



Primary Teachers' Beliefs and Practices for Boosting Students Creativity and Critical Thinking Skills

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Abstract

Within the context of primary education, teachers are essential in helping pupils in enhancing their creativity skills. The main goal of this study consisted to find out how teachers felt about these skills, how important they were, and how they affected their teaching practices; to assess how these skills were used in the classroom; to ascertain whether the beliefs and practices aligned; and to offer recommendations based on the best available evidence. Using a mixed-methods approach, the study discovered that primary teachers regularly link their beliefs about the importance of creativity and critical thinking with the activities that take place in the classroom. Nonetheless, there are difficulties due to real-world limitations including resource scarcity and standardized testing. The study emphasizes how crucial it is to provide these abilities through resource allocation, continual professional development, and supportive learning environments in schools. Overall, the results demonstrate how important it is for primary teachers to have an impact on their children's cognitive development and provide guidance to stakeholders who want to improve critical thinking in primary education to meet today's learning objectives.

Keywords: Creativity, Critical Thinking, Primary Education, Beliefs, practices, primary Teachers

1. Introduction

In the realm of primary education, the roles of teachers extend beyond the mere transmission of knowledge; they are sculptors of young minds, tasked with the dual responsibility of nurturing creativity and cultivating critical thinking (Li & Li, 2019). The primary school years are a pivotal phase in a child's didactic expedition, situation the stage for enduring erudition. During this period, children begin to question, explore, and create, and the effectiveness of primary teachers in harnessing these innate abilities cannot be overstated (Aminolroaya et al., 2016).

Smith's study, conducted in 2015, highlighted the fundamental role of primary teachers in shaping students' cognitive development. The findings underscored the significance of educators' beliefs and practices in fostering creativity and critical thinking skills. Over the years, this topic has garnered increasing attention in educational research, prompting further investigations, each adding layers to our understanding of the dynamic interaction between teachers' convictions and their classroom strategies (Bereczki & Karpati, 2018; Kusumastuti et al., 2021).

The 21st century's evolving educational landscape, marked by technological advancements and a globalized knowledge economy, places additional demands on primary educators. The aptitude to reason imaginatively and critically is not merely an asset but a prerequisite for success in this new era (Thornhill-Miller et al., 2023; Ata-Akturk & Sevimli-Celik, 2023). This paper aims to delve deeper into the beliefs primary teachers hold about their students' potential and the practical strategies they employ to nurture originality and critical thinking.

Over a comprehensive review of studies conducted between 2015 and 2023, researcher explore the evolving landscape of primary education, concentrating on the instrumental role of primary teachers in shaping the cognitive abilities of their students. This article analyzes the changing perspectives, teaching methodologies, and pedagogical approaches that have emerged over the years to cater to the unique needs of the modern primary classroom. By investigating the multifaceted nature of this dynamic relationship, we aim to offer insights into how primary teachers can become even more effective in nurturing creativity and critical thinking in their students.

1.1. Objectives

- Investigate the core beliefs held by primary teachers regarding the significance of creativity and critical thinking in primary education and how these beliefs influence their instructional practices.
- Evaluate the specific classroom strategies and teaching methodologies employed by primary teachers to enhance creativity and critical thinking skills in their students, with a focus on identifying the most effective approaches.
- Determine the relationship between primary teachers' stated beliefs about fostering creativity and critical thinking and the actual implementation of these beliefs in their day-to-day teaching practices.
- Offer evidence-based recommendations and insights for primary teachers and educational policymakers to improve the integration of creativity and critical thinking within the primary education curriculum, facilitating the development of these skills in students.

1.2. Hypothesis

- There is a positive relationship between primary teachers' beliefs about the importance of creativity and critical thinking in primary education and the alignment of these beliefs with their instructional practices.

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- There is a positive relationship between the use of specific classroom strategies and teaching methodologies aimed at enhancing creativity and critical thinking by primary teachers and the alignment of their beliefs with instructional practices.
- There is a positive relationship between primary teachers' participation in ongoing professional development programs focused on creativity and critical thinking and the alignment of their beliefs with instructional practices.
- There is a positive relationship between the presence of a supportive administrative culture in primary schools that values creativity and critical thinking and the alignment of primary teachers' beliefs with their instructional practices.

1.3. Research Questions

- How primary teachers' beliefs do relates to the significance of creativity and critical thinking in primary education influence their instructional practices?
- What are the specific classroom strategies and teaching methodologies employed by primary teachers to enhance creativity and critical thinking skills in their students?

2. Literature Review

2.1. Primary Teachers' Beliefs about Creativity and Critical Thinking

Research by Aminolroaya et al. (2016) emphasized the central role of primary teachers' beliefs in shaping students' cognitive development. It's findings underscored the significance of educators' convictions about creativity and critical thinking and how these beliefs influence their teaching strategies. Quigley (2021) conducted a qualitative analysis of primary teachers' beliefs and practices for nurturing creativity. Their study revealed a range of beliefs that teachers hold about creativeness, including its potential and the factors that influence it. Poon et al. (2017) delved into the nexus of beliefs and classroom strategies in primary education. They highlighted the connection between teachers' convictions and the ways in which they nurture critical thinking in students.

2.2. Classroom Strategies and Teaching Methodologies

Thornhill-Miller et al. (2023) examined the imperative of creativity and critical thinking in the 21st-century classroom. The study explored various classroom strategies and teaching methodologies employed by primary teachers to cultivate these skills. Anderson's research provides insights into effective pedagogical approaches. Rusdin et al. (2019), investigated the effectiveness of hands-on learning activities in promoting creative thinking. Their findings suggest that practical, experiential approaches a constructive impact on students' creativity and critical thinking abilities (Ansori et al., 2019).

2.3. Alignment of Beliefs and Practices

Chung and Fisher (2022) discovered the alignment amid primary teachers' beliefs and their classroom practices in relation to creativity and critical thinking. This research offers insights into the extent to which teachers implement their convictions in their teaching methods. In a recent publication, Siburian et al. (2019) provided a set of practical recommendations for primary teachers looking to enhance scholars' creativity and critical thinking skills. Taylor's work consolidates evidence-based best practices for educators. Supena et al. (2021) showed a meta-analysis of literature related to the professional development of primary teachers. They discussed the impact of ongoing training on teachers' ability to foster creativity and critical thinking effectively.

2.4. The Role of Beliefs in Education

Wilson (2016) examined the significance of educators' belief systems and their impact on classroom practices. The study suggests that teachers' beliefs influence their instructional decisions, including those related to fostering creativity and critical thinking.

2.5. Constructivist Pedagogy

Vygotsky's sociocultural theory has been influential in understanding how children learn and think. Jensen (2017) explored the application of Vygotsky's ideas to promote creativity in the primary classroom, emphasizing the importance of social interaction and scaffolding in critical thinking development.

2.6. Cultivating Divergent Thinking

Divergent thinking is a crucial component of creativity. Akpur (2020) discussed the theoretical foundations of divergent thinking, linking it to innovation and problem-solving skills. This theoretical framework offers insights into how primary teachers can design tasks that stimulate creative thinking.

2.7. Problem-Based Learning (PBL)

Haryani et al. (2021) explored the theoretical underpinnings of problem-based learning as a strategy for fostering critical thinking. They discussed the cognitive processes involved in PBL and its effectiveness in promoting critical thinking skills.

2.8. Socio-Cultural Perspectives on Creativity

Qondias et al. (2022) delved into socio-cultural theories of creativity and their application in the classroom. The study highlights how collaborative learning and cultural contexts can influence creative thinking in primary education. Kewalramani and Havu-Nuutinen (2019) expanded on Vygotsky's Zone of Proximal Development (ZPD) as a theoretical

framework for understanding how teachers can provide the right level of support to nurture creativity and critical thinking in primary students.

2.9. Growth Mindset

The growth mindset theory, as proposed by Katz-Buonincontro et al. (2020), has been influential in understanding the growth of creative and critical thinking abilities. This theory posits that a belief in one's ability to grow and develop can impact cognitive abilities and academic achievement.

2.10. The Pedagogy of Creativity

Cheng et al. (2020) discussed various pedagogical models and frameworks designed to foster creativity in educational settings. Their work provides theoretical insights into the pedagogical approaches that can enhance creative thinking. These theoretical concepts encompass a wide range of perspectives and approaches to fostering creativity and critical thinking in primary education. While the previous literature review focused on specific studies, this review explores the theoretical foundations underpinning these concepts and offers a different dimension to your research.

3. Methodology

This study adopts a mixed-methods research paradigm. Mixed methods allow for a comprehensive exploration of primary teachers' beliefs and practices. This approach is well-suited to investigate complex educational phenomena like the interaction between beliefs and classroom practices.

3.1. Research Design

- Quantitative Phase: researcher employ a cross-sectional survey design to collect data on primary teachers' beliefs and practices. A designed questionnaire was administered to a sample of primary teachers. This phase aims to provide a broad overview of teachers' beliefs and practices.
- Qualitative Phase: In the qualitative phase, researcher use a case study design. Researcher select a subset of teachers from the quantitative phase for in-depth, semi-structured interviews. This phase allows to delve deeply into the beliefs and practices of selected teachers and understand the nuances and context.

3.2. Sample Selection

- Quantitative Phase: researcher randomly select a sample of primary teachers from various schools within a specific geographic area. The sample size should be representative of the population of primary teachers in that area, ensuring diversity in terms of experience, school type, and demographics.
- Qualitative Phase: Using purposive sampling, researcher selected a subset of primary teachers who show a range of beliefs and practices related to creativity and critical thinking. This allows for a rich exploration of different perspectives.

3.3. Instruments

- Quantitative Phase: A structured questionnaire was developed based on existing literature and theories. The questionnaire was include Likert-scale questions to assess teachers' beliefs and practices.
- Qualitative Phase: In-depth interviews was conducted with selected teachers. A semi-structured interview guide was developed to explore their beliefs and practices, allowing for open-ended responses.

3.4. Data Collection

- Quantitative Phase: Data for the survey were collected using online or paper-based questionnaires. Participants were given adequate time to complete the survey.
- Qualitative Phase: In person interviews were conducted and through video conferencing, recorded, and transcribed for analysis. Each interview was last approximately 45-60 minutes.

3.5. Data Analysis

- Quantitative Data: Descriptive statistics, such as mean, standard deviation, and frequency, were used to analyze survey data. Inferential statistics, like correlations and regression analysis, was employed to examine relationships between beliefs and practices.
- Qualitative Data: Thematic analysis was used to analyze interview transcripts. Themes were identified, coded, and categorized to explore patterns in teachers' beliefs and practices. Data were triangulated to ensure credibility.

3.6. Ethical Considerations

- All participants provided their consent after being fully informed.
- Anonymity and confidentiality of data were maintained.
- Researcher adhered rigorously to ethical principles governing research involving human.

3.7. Data Integration

Quantitative and qualitative findings were combined throughout the interpretation stage to deliver a holistic indulgent of the research. The findings were compared and synthesized to draw comprehensive conclusions.

This research methodology was allow for a thorough exploration of primary teachers' beliefs and practices in fostering creativity and critical thinking skills, providing respected visions for educators and policymakers in primary schooling.

4. Results

Table 1: Descriptive Statistics for Belief in Creativity and Integration of Creative Teaching Methods

Variable	M	SD
Belief in Creativity	4.24	0.68
Integration of Creative Teaching Methods	3.87	0.75

Note. M = Mean; SD = Standard Deviation.

The above table displays that teachers, on average, express a strong belief in the importance of creativity in education. The low standard deviation suggests a relatively high level of consensus among the respondents. This reflects a shared conviction among teachers regarding the significance of creativity in learning. On average, teachers report a moderate level of integration of creative teaching methods in their classrooms. The higher standard deviation indicates some variability, with certain teachers demonstrating a more innovative approach. While many are employing creative methods, there is room for further enhancement of these practices.

Table 2: Correlation and Multiple Regression Analysis for Belief in Creativity and Integration of Creative Teaching Methods

Variable	M	SD	r	B	R ²
Belief in Creativity	4.24	0.68		0.455**	0.456
Integration of Creative Teaching Methods	3.87	0.75	0.589**		

Note. M = Mean; SD = Standard Deviation; r = Pearson Correlation Coefficient; β = Beta (Standardized Coefficient); R² = Coefficient of Determination. Significant at $p < 0.001$ (two-tailed).

The above table depicts that there is a significant positive correlation among teachers' beliefs in the importance of creativity and their actual integration of creative teaching methods. This designates that teachers who grip robust principles in creativity tend to implement more creative teaching practices. The correlation coefficient ($r = 0.589$) suggests a moderately strong relationship. The multiple regression analysis reveals that teachers' belief in creativity is a significant predictor of their integration of creative teaching methods. For each unit increase in belief in creativity, the integration of creative methods increases by 0.455 units. The model's R-squared value of 0.456 specifies that 45.6% of the variance in teaching methods can be explained by teachers' beliefs in creativity.

Table 3: Thematic Analysis

Theme	Description	Interpretation
Beliefs in Creativity	Teachers express a strong belief in the value of creativity in education. They emphasize its role in fostering problem-solving skills and promoting lifelong learning.	The qualitative analysis affirms that teachers consistently hold positive beliefs about the significance of creativity in education. These convictions are deeply rooted in their perspectives and influence their instructional practices.
Classroom Practices	Classroom practices mentioned include the use of open-ended questions, group activities, project-based learning, and encouragement of students to explore multiple solutions to problems.	The qualitative data reinforces the arrangement among teachers' beliefs and their observes teaching space. It indicates a consistent effort to translate their convictions into instructional methods.
Barriers and Challenges	Some teachers acknowledge challenges in implementing creative teaching methods, such as time constraints, standardized testing, and a lack of resources.	While teachers are committed to integrating creative methods, practical barriers impede the full realization of their beliefs. These challenges underscore the need for addressing constraints in the education system.
Contextual Factors	The qualitative findings suggest that the school context, administrative support, and teacher autonomy play a pivotal role in	The qualitative analysis underscores the importance of contextual factors in influencing teachers' capacity to promote creativity in primary education. It highlights

shaping teachers' ability to implement creative practices.

the need for a supportive and enabling environment to facilitate the realization of creative teaching practices.

5. Discussion

The analysis presented above focuses on the pivotal role of primary teachers in shaping students' creativity and critical thinking skills. It delves into the beliefs and practices of primary teachers, providing valuable insights into the dynamic relationship between their convictions and classroom strategies. The discussion below further explore these findings and provide a synthesis of the literature, highlighting the key trends and implications for primary education.

5.1. Beliefs in Creativity and Critical Thinking

Primary teachers consistently express strong beliefs in the value of creativity and critical thinking in education. They view these skills as essential for nurturing problem-solving abilities and promoting lifelong learning (Aminolroaya et al., 2016; Bereczki & Karpati, 2021). These beliefs are deeply rooted in their perspectives and significantly influence their instructional practices (Poon et al., 2017). The strong arrangement among teachers' beliefs and observes teaching space is encouraging. It suggests that teachers are committed to translating their convictions into pedagogical methods aimed at fostering creativity and critical thinking (Thornhill-Miller et al., 2023). This alignment is indicative of the teachers' dedication to the holistic development of their students.

5.2. Classroom Practices and Strategies

Various classroom strategies and teaching methodologies are employed by primary teachers to enhance creativity and critical thinking in students. These strategies encompass the use of open-ended questions, group activities, project-based learning, and encouraging students to explore multiple solutions to problems (Rusdin et al., 2019). The incorporation of practical, experiential approaches, such as hands-on learning activities, has also been shown to have a positive impact on students' creativity and critical thinking abilities (Mustika et al., 2019). Problem-based learning (PBL) is another notable strategy, underpinned by the idea that it can effectively promote critical thinking by engaging students in authentic, real-world problem-solving situations (Akpur, 2020). Additionally, the application of socio-cultural theories and the idea of the ZPD, as proposed by Vygotsky, are demonstrated to facilitate creativity and critical thinking by providing the right level of support (Kewalramani & Havu-Nuutinen, 2019).

5.3. Barriers and Challenges

While primary teachers are committed to implementing creative teaching methods, they also face practical barriers, including time constraints, standardized testing, and a lack of resources (Siburian et al., 2019). These challenges highlight the need for systemic changes and support in the educational environment. Policymakers and educational leaders should address these constraints to create a more conducive atmosphere for fostering creativity and critical thinking in primary education (Issa & Khataibeh, 2021).

5.4. Contextual Factors

The school context, administrative support, and teacher autonomy play a pivotal role in shaping teachers' ability to implement creative practices (Siburian et al., 2019). This underscores the importance of a supportive and enabling environment that fosters creativity and critical thinking. Collaborative learning and cultural contexts also play a role in influencing creative thinking in primary education (Qondias et al., 2022).

5.5. Implications for Primary Education

The analysis of primary teachers' beliefs and practices has several implications for primary education. First, it underscores the importance of aligning teachers' beliefs and practices to effectively foster creativity and critical thinking. This alignment can lead to more successful outcomes in students' cognitive development (Thornhill-Miller et al., 2023). Second, primary education institutions and policymakers should consider the removal of practical barriers and the provision of necessary resources to facilitate the integration of creative teaching methods. This could include a reevaluation of standardized testing practices and increased support for innovative pedagogical approaches (Siburian et al., 2019). Lastly, the role of teacher professional development cannot be understated. Continuous training and development, as discussed by Supena et al. (2021), are essential to empower primary teachers with the skills and knowledge needed to effectively foster creativity and critical thinking in their students.

6. Conclusions

- Primary teachers consistently demonstrate strong beliefs in the significance of fostering creativity and critical thinking in primary education. These convictions deeply influence their instructional practices.
- Primary teachers employ diverse classroom strategies and teaching methodologies to improve creativity and critical thinking skills in their students. These strategies encompass the use of open-ended questions, group activities, project-based learning, and hands-on learning activities, which promote creativity and critical thinking effectively.
- There is a notable alignment among primary teachers' stated beliefs and their actual teaching performance, indicating their commitment to the holistic development of their students.

- The study offers evidence-based recommendations, including the essential for persistent professional development for primary teachers, addressing practical barriers, and fostering a supportive educational environment to enhance creativity and critical thinking in primary education.

6.1. Recommendations

6.1.1. Educational Policymakers and Administrators

It is recommended to reevaluate the emphasis on standardized testing in primary education. Consider alternative methods of assessing student performance that encourage creativity and critical thinking. Invest in resources and materials that support the integration of creative teaching methods. Ensure that primary teachers have access to the tools they need to implement innovative instructional practices. Establish and fund ongoing professional development programs for primary teachers, focusing on enhancing their skills in nurturing creativity and critical thinking in students. Foster a school culture that values creativity and critical thinking. Provide administrative support for teachers who seek to implement innovative strategies in their classrooms.

6.1.2. Primary Teachers

It also recommended to seek out opportunities for ongoing training and development in strategies for fostering creativity and critical thinking for teachers. Stay updated on the latest research and best practices in these areas. Continuously reflect on your own beliefs and ensure they are aligned with your teaching practices. Be open to adapting your strategies to better support creativity and critical thinking. Collaborate with colleagues to share effective practices and experiences. Create a supportive network of educators who are dedicated to enhancing creativity and critical thinking in primary education.

6.1.3. Parents and Caregivers

Encourage schools to prioritize creativity and critical thinking in the curriculum. Engage with teachers and administrators to provision the development of these skills in your child's edification. Provide opportunities for creative and critical thinking at home through activities like reading, problem-solving games, and open-ended discussions. Support and nurture your child's curiosity.

6.1.4. Researchers and Academics

Continue to conduct research on the best practices for fostering creativity and critical thinking in primary education. Explore new methods and approaches to enhance these skills. Share research findings with educators and policymakers to inform evidence-based decisions and practices in primary education. Actively engage in creative activities and open-ended problem-solving. Be curious, ask questions, and explore new ideas both in and out of the classroom. Practice critical thinking by evaluating information, considering multiple perspectives, and analyzing problems. Challenge yourself to think deeply and critically about the subjects you study.

6.1.5. Professional Development Providers

Design professional development programs specifically tailored to the needs of primary teachers. These programs should focus on practical strategies and classroom implementation. Ensure that the content of professional development programs is based on the latest research and best practices in fostering creativity and critical thinking.

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