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Psychological and Media Strategies for Fostering Critical and Creative Thinking in Students: A Contemporary Approach in Light of Saudi Vision 2030

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Abstract

This study investigates the strategies and outcomes of fostering critical and creative thinking skills among students within the context of Saudi Arabia's Vision 2030 educational reforms. Vision 2030 emphasizes human capital development, moving education toward quality, innovation, and alignment with global competencies. The research synthesizes current literature, national policy documents, and empirical findings to articulate how curricular reform, teacher training, assessment practices, and technological integration contribute to developing higher-order thinking competencies. Utilizing a mixed-methods literature-based approach, this article highlights best practices, identifies systemic challenges, and proposes an integrative framework for educators and policymakers. Results show that educational transformation under Vision 2030 prioritizes the development of unified standards, critical judgment, and creativity, though implementation gaps persist—particularly in classroom practice and assessment alignment. We conclude with practical recommendations for teacher professional development, curriculum enhancement, and assessment policy to embed critical and creative thinking holistically across all educational levels.

Keywords: *Critical Thinking, Creative Thinking, Saudi Vision 2030, Educational Reform, 21st-Century Skills, Curriculum Development, Teacher Training, Assessment Practices, Innovation in Education.*

Introduction

In the rapidly changing world of the 21st century, higher-order thinking skills such as critical and creative thinking are essential for personal, academic, and professional success. As societies become more interconnected and complex, the need for individuals to possess the ability to think critically, assess information, generate novel ideas, and solve problems creatively has never been more urgent. **Critical thinking** involves the ability to analyze, evaluate, and make decisions based on evidence and reasoning, rather than accepting information at face value. It requires individuals to engage in reflection, assess arguments, and consider alternative perspectives

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(Facione, 2023). This skill is especially crucial in today's information-driven world, where the constant influx of data requires individuals to engage deeply with new information and navigate complexities (Paul & Elder, 2020).

Creative thinking, on the other hand, involves the generation of new ideas, approaches, and solutions. It pushes the boundaries of traditional thought and requires the ability to connect unrelated concepts to produce innovative solutions (Cropley, 2023). Critical thinking and creative thinking are often interdependent; while critical thinking refines and evaluates ideas, creative thinking generates the raw material for innovation. The ability to combine both skills is increasingly recognized as essential in a world that values **innovation**, **problem-solving**, and **adaptability**.

Educational systems around the world are thus increasingly focusing on developing critical and creative thinking skills to prepare students for the challenges of a rapidly changing global environment. The integration of these competencies into curricula is crucial for fostering independent thinkers capable of navigating and contributing meaningfully to complex societal and global challenges. The emphasis on **higher-order thinking skills (HOTS)**, as classified in **Bloom's Taxonomy** (Anderson & Krathwohl, 2001), aligns with the global shift toward skills that transcend rote memorization and factual recall. These skills are essential for the successful participation of individuals in a knowledge-based society, where the ability to think critically and creatively is indispensable in every field.

In the context of **Saudi Arabia**, the Kingdom's **Vision 2030** presents a bold and comprehensive roadmap for educational transformation. Vision 2030 aims to reshape Saudi Arabia's economy by reducing its dependence on oil and increasing investment in non-oil sectors, with a focus on human capital development and knowledge-based industries. A central component of this transformation is the reform of the education system, which is being reshaped to foster critical and creative thinking among students. This vision recognizes that to compete on the global stage, Saudi Arabia must cultivate a workforce that is not only skilled but also innovative, adaptable, and capable of addressing the challenges posed by a fast-evolving world (Saudi Vision 2030, 2023).

Vision 2030 emphasizes the development of **human capital** as a key pillar, and at the core of this is the **fostering of critical thinking** and **creative problem-solving** skills. These skills are seen as essential to developing a future workforce capable of contributing to innovation, economic diversification, and national development. Moreover, these competencies are vital for addressing global challenges and seizing emerging opportunities in fields such as technology, healthcare, renewable energy, and entrepreneurship. Saudi Vision 2030 has explicitly identified **critical thinking** and **creativity** as fundamental competencies needed for students to succeed not only in academia but also in the workplace, where problem-solving and adaptability are increasingly valued (Alshammari, 2022).

However, while the Vision 2030 reform agenda has placed a significant emphasis on these skills, the practical implementation of critical and creative thinking strategies within the Saudi educational system remains a challenge. The shift away from traditional teaching methods, which focused heavily on memorization and rote learning, toward student-centered approaches that

foster critical and creative thinking requires significant adaptation. Many educators are still in the process of integrating these new pedagogies into their teaching practices, presenting both challenges and opportunities in terms of curriculum design, teacher preparedness, and assessment models.

Furthermore, the alignment of **assessment systems** with the development of higher-order thinking skills is a critical area that requires attention. Traditional assessments, which primarily emphasize factual recall, do not adequately measure the skills of critical and creative thinking. In order to assess these skills effectively, educational institutions must adopt new models of evaluation that focus on **problem-solving**, **innovation**, and **application of knowledge** rather than just content retention. This shift in assessment practices is crucial for ensuring that the focus of education shifts from memorization to the development of **cognitive flexibility** and **intellectual creativity** (OECD, 2025).

One of the key factors in the successful implementation of **critical thinking** and **creative thinking** strategies is **teacher training**. Teachers are the primary agents responsible for instilling these skills in students, and their ability to incorporate innovative teaching methods is essential for fostering critical and creative thinking in the classroom. **Teacher professional development (TPD)** programs that focus on training educators to use **student-centered pedagogies** such as **problem-based learning (PBL)**, **inquiry-based learning (IBL)**, and **project-based learning (PjBL)** are crucial for ensuring that teachers have the knowledge and skills necessary to implement these strategies effectively (Darling-Hammond, 2021).

In addition to **teacher training**, **psychological strategies** such as **metacognitive training**, **self-regulation**, and **reflective thinking** have proven to be effective in fostering critical and creative thinking in students. These strategies help students develop an awareness of their own thought processes, enabling them to manage their learning, set goals, and reflect on their progress. **Media strategies**, including the use of **digital learning platforms**, **interactive tools**, and **multimedia resources**, also play a significant role in engaging students and providing them with the tools they need to think critically and creatively. By incorporating these tools, educators can create learning environments that encourage students to engage with content interactively, explore new ideas, collaborate with peers, and solve problems in creative ways (Järvelä et al., 2023).

Despite the potential of these psychological and media strategies, their effective integration into the Saudi education system remains in the early stages. There are substantial **gaps between policy intentions** and the actual implementation of these strategies in classrooms. Research suggests that while Vision 2030 has placed significant emphasis on fostering critical and creative thinking, many classrooms still rely on traditional teaching methods that do not fully support these skills (Alharthy, 2022). Moreover, the lack of alignment between **curriculum design**, **teaching methods**, and **assessment practices** further complicates the integration of these skills into everyday educational practices.

This study aims to explore **psychological and media strategies** that can enhance critical and creative thinking in Saudi students, providing a framework for educators and policymakers to effectively integrate these strategies into their teaching practices. By synthesizing existing literature, analyzing policy documents, and examining empirical findings, this research will offer

insights into the challenges and opportunities associated with the implementation of Vision 2030's educational reforms. The study will also provide actionable recommendations for educators, administrators, and policymakers to bridge the gaps between theory and practice, ensuring that **critical and creative thinking** are fostered across all educational levels in Saudi Arabia (Alzahrani, 2023).

As Saudi Arabia continues its journey toward educational transformation under **Vision 2030**, the effective integration of **psychological and media strategies** will be crucial for fostering a generation of learners who are not only knowledgeable but also capable of thinking critically, solving problems creatively, and contributing to the country's social, economic, and technological development. This research will provide valuable insights into how these strategies can be effectively implemented, ensuring that Saudi students are prepared for the challenges and opportunities of the future.

2. Literature Review

2.1. Theoretical Foundations of Critical and Creative Thinking

Critical and creative thinking are two foundational skills in the modern educational landscape, essential for developing students who can think independently, solve complex problems, and contribute to an increasingly interconnected and dynamic world. **Critical thinking** refers to the ability to analyze, evaluate, and interpret information logically and systematically, without accepting it at face value. It involves reflection on one's own thought processes, assessing arguments, and considering alternative viewpoints (Facione, 2023). Critical thinking is vital in today's knowledge-based economy, where individuals must continually engage with new information, make informed decisions, and adapt to rapid technological, social, and economic changes (Paul & Elder, 2020).

On the other hand, **creative thinking** involves the ability to generate novel ideas, approaches, and solutions to problems. It requires thinking beyond conventional boundaries, making connections between seemingly unrelated concepts, and coming up with original solutions (Cropley, 2023). While critical thinking is essential for evaluating the validity of ideas, creative thinking generates the raw material needed for innovative solutions. Both forms of thinking are interlinked, as creative thinking provides new ideas that critical thinking refines, ensuring that innovative solutions are not only novel but also effective (Runco, 2022).

In educational contexts, these two skills are often classified as **higher-order thinking skills (HOTS)** within Bloom's Taxonomy (Anderson & Krathwohl, 2001). According to this framework, critical and creative thinking sit at the top of the cognitive hierarchy, requiring students to apply, analyze, synthesize, and evaluate information rather than merely recalling facts. These skills are indispensable in preparing students to navigate the complexities of modern society, where problems are multifaceted and solutions demand innovation and reasoned judgment.

With the rapid changes in global education systems, critical and creative thinking have become

central to reform efforts. Across the world, educators are increasingly focused on fostering these skills to ensure students are prepared for the demands of the 21st century. As digital technologies advance, the need for students to engage in critical thinking and creative problem-solving has grown, emphasizing their importance not only for academic success but also for lifelong learning and adaptability (Thornhill-Miller, 2023).

2.2. Critical and Creative Thinking in the Context of Saudi Vision 2030

Saudi Vision 2030 represents a comprehensive national framework that seeks to transform Saudi Arabia's social, economic, and educational landscapes. A core component of this transformation is the development of human capital through a focus on **critical thinking** and **creative thinking**. Vision 2030 envisions a future where Saudi students are equipped with the necessary skills to thrive in a global knowledge economy, contributing to the nation's development in various sectors, from technology and industry to social services and governance (Saudi Vision 2030, 2023).

Saudi Vision 2030 recognizes that **critical thinking** and **creativity** are essential for economic diversification and innovation. As the nation seeks to move away from an oil-based economy toward one driven by knowledge, these competencies become foundational for students to address future challenges and seize opportunities in emerging fields such as information technology, artificial intelligence, and sustainable development. The vision highlights that educational reform must focus on the development of these skills to prepare students for the rapidly evolving job market, where problem-solving and innovative thinking are essential (Alshammari, 2022).

Despite the growing emphasis on these competencies, research suggests that the practical implementation of critical and creative thinking in Saudi educational settings remains a challenge. While Vision 2030 has succeeded in prioritizing these skills in policy documents, many educators are still in the process of adapting to new teaching methods that promote higher-order thinking. Studies show that traditional pedagogies, which emphasize rote memorization and factual recall, are still prevalent in many classrooms, making it difficult to effectively integrate critical and creative thinking (Alzahrani, 2023). Furthermore, teacher preparedness and the alignment of assessment practices with the new pedagogical approach remain significant barriers in fully implementing Vision 2030's goals (Alharthy, 2022).

The gap between policy and practice in the implementation of critical and creative thinking strategies underscores the need for comprehensive **teacher training programs**. Educators must be equipped with the tools and methodologies to foster critical and creative thinking in students. Teacher professional development (TPD) plays a crucial role in the successful integration of these skills, ensuring that educators are not only aware of their importance but also know how to effectively implement them in the classroom. Vision 2030 emphasizes the need for ongoing professional development to ensure that teachers are capable of utilizing innovative strategies and technologies to nurture these skills in students (Nasution et al., 2023).

2.3. Pedagogical Approaches for Fostering Critical and Creative Thinking

Several pedagogical approaches have been developed over the years to enhance critical and creative thinking in students. These approaches prioritize **student-centered learning** and encourage active engagement, collaboration, and problem-solving. Among the most effective strategies are **problem-based learning (PBL)**, **inquiry-based learning (IBL)**, and **project-based learning (PjBL)**. These models emphasize the development of higher-order thinking skills by encouraging students to actively engage with real-world problems, ask questions, explore solutions, and work collaboratively.

Problem-based learning (PBL) is one of the most widely recognized approaches for promoting critical thinking. In PBL, students are presented with a complex problem that they must solve by researching, collaborating, and applying theoretical knowledge to real-life situations. This process fosters critical thinking by requiring students to analyze the problem, evaluate different solutions, and justify their decisions (Barrows, 2020). PBL encourages students to engage in **critical reflection**, improving their ability to evaluate evidence, make decisions, and consider alternative perspectives, which are essential components of critical thinking.

Inquiry-based learning (IBL) is another strategy that enhances higher-order thinking by allowing students to ask questions, explore problems, and seek solutions through investigation. IBL emphasizes the development of intellectual habits such as curiosity, skepticism, and open-mindedness, which are crucial for both critical and creative thinking. Research has shown that IBL helps students not only gain knowledge but also develop the ability to think independently, analyze information critically, and generate innovative ideas (Hmelo-Silver, 2024). This approach aligns with Vision 2030's emphasis on fostering **autonomous learners** who can engage with complex issues and contribute creatively to society.

Project-based learning (PjBL) has also been shown to promote creative thinking by involving students in the design and execution of projects that require innovative problem-solving. PjBL encourages students to think outside the box, collaborate with peers, and apply knowledge across multiple subjects to create novel solutions. In Saudi Arabia, integrating PjBL into the curriculum is seen as a way to enhance creativity and foster the skills necessary for innovation, in alignment with Vision 2030's educational objectives (Alshammari, 2022).

These approaches not only foster **critical thinking** and **creativity** but also emphasize the importance of **collaboration**, which is another key component of 21st-century skills. Collaborative learning allows students to engage with different perspectives, share ideas, and refine their solutions through interaction with others. This process helps develop communication skills, problem-solving abilities, and creativity, all of which are essential for success in the modern world (Thomas, 2023).

2.4. The Role of Technology in Fostering Higher-Order Thinking Skills

The integration of **technology** into education has proven to be a powerful tool for fostering critical and creative thinking. As digital learning platforms, simulation software, and interactive technologies become more widespread, they offer students the opportunity to engage with content in dynamic and personalized ways. Technologies such as **virtual learning environments (VLEs)** and **online collaborative tools** provide students with the opportunity to experiment,

collaborate, and apply creative solutions to problems, which significantly enhances their cognitive engagement (Cohen & Manion, 2023).

In Saudi Arabia, the integration of **smart classrooms** and **blended learning environments** under Vision 2030 has the potential to transform the way students interact with learning content. By combining face-to-face instruction with online resources, digital tools, and multimedia platforms, Saudi students can access a wide range of information and collaborate with peers across geographic boundaries. This approach not only promotes critical thinking but also encourages creativity by allowing students to work on projects and assignments that require innovative thinking and problem-solving (Järvelä et al., 2023). The **technological infrastructure** provided under Vision 2030 creates opportunities for Saudi students to engage with content interactively, which is essential for developing critical and creative thinking skills (Alzahrani, 2023).

2.5. Teacher Professional Development and its Impact on Thinking Skills

Teachers play a pivotal role in fostering critical and creative thinking skills in students. The success of educational reforms under Vision 2030 hinges on equipping educators with the necessary skills and knowledge to implement student-centered, active learning strategies. **Teacher professional development (TPD)** is therefore a key component of the educational transformation process. Research has shown that continuous training programs focused on developing teachers' ability to teach critical and creative thinking skills can significantly improve student outcomes (Darling-Hammond, 2021).

In Saudi Arabia, specialized workshops and certification programs aimed at improving teachers' pedagogical practices are essential for bridging the gap between policy and practice. These professional development programs focus on innovative teaching methods that encourage **critical reflection**, **problem-solving**, and **creative expression**. Such initiatives are critical in ensuring that teachers are not only aware of the importance of critical and creative thinking but are also equipped to implement these strategies effectively in the classroom (Nasution et al., 2023).

2.6. Challenges and Opportunities in Implementing Critical and Creative Thinking in Saudi Arabia

Despite the progress made under Vision 2030, significant challenges remain in fully implementing critical and creative thinking in Saudi classrooms. These challenges include **traditional assessment systems** that continue to prioritize memorization over higher-order thinking skills, and the **lack of teacher preparedness** in utilizing innovative pedagogies (OECD, 2025). Additionally, the **overcrowded curriculum** and **standardized testing** create pressure on teachers to focus on content delivery rather than fostering critical and creative thinking skills (Alshammari, 2022).

However, there are substantial opportunities to overcome these challenges. The Vision 2030 reform agenda offers a comprehensive framework for enhancing teacher capacity, integrating technology, and promoting innovative pedagogies that support higher-order thinking. With

continued investment in these areas, Saudi Arabia has the potential to establish a robust educational system that nurtures students' cognitive flexibility, creativity, and problem-solving skills (Alzahrani, 2023). The integration of **psychological and media strategies** into the curriculum can help bridge the gap between policy and practice, ensuring that critical and creative thinking are embedded in the educational process.

This study adopts a **mixed-methods approach**, combining both **qualitative** and **quantitative** research methods to analyze how **psychological and media strategies** can foster **critical and creative thinking** skills in Saudi students under the framework of **Vision 2030**. The methodology involves two primary components: a **systematic literature review** to synthesize existing research on critical and creative thinking in the context of Saudi education, and a **policy and document analysis** to explore the goals and implementation of Vision 2030's educational reforms, particularly focusing on psychological and media strategies. By combining these methods, this study aims to provide a comprehensive understanding of how Vision 2030's educational reforms align with fostering critical and creative thinking, specifically through psychological approaches and media integration.

3.1. Research Design

The research follows an **exploratory** and **descriptive design**. The **exploratory design** is employed to investigate the relationship between psychological and media strategies and the development of critical and creative thinking skills within the educational reforms outlined in Vision 2030. This design allows for an in-depth analysis of the impact of these strategies on fostering higher-order thinking competencies in Saudi classrooms. The **descriptive design** is then applied to assess the current pedagogical practices, teacher roles, and the effectiveness of existing strategies in promoting these skills among students, particularly focusing on the integration of psychological techniques and media strategies.

3.2. Data Collection Methods

3.2.1. Systematic Literature Review

A **systematic literature review** will be conducted to gather, evaluate, and synthesize empirical studies on the integration of **psychological** and **media strategies** to foster **critical** and **creative thinking** within the Saudi education system, specifically in the context of **Vision 2030**. The review will include studies published in the last 10 years to ensure the inclusion of the most recent and relevant research. The key themes explored in the literature will include:

- **Psychological strategies** such as metacognition, self-regulation, and reflective thinking that promote higher-order thinking.
- **Media strategies**, including the use of digital platforms, educational technologies, and interactive media, that encourage student engagement and critical thinking.
- **Pedagogical strategies** that incorporate psychological and media techniques to foster creativity and problem-solving (e.g., project-based learning, inquiry-based learning).

- **Teacher professional development** programs aimed at enhancing educators' capacity to integrate psychological and media strategies into teaching practices.
- **Challenges and opportunities** in implementing Vision 2030's educational reforms, particularly in terms of the integration of psychological and media strategies for fostering critical and creative thinking.

The databases consulted for the literature review will include **Google Scholar**, **ERIC**, **JSTOR**, **ScienceDirect**, and **SAGE Journals**. Keywords used to search the literature will include "critical thinking," "creative thinking," "psychological strategies," "media strategies," "Vision 2030," "Saudi education reform," and "higher-order thinking skills." Studies will be selected based on their relevance, credibility, and contribution to understanding the relationship between psychological and media strategies and the development of critical and creative thinking in students.

3.2.2. Policy and Document Analysis

In addition to the literature review, **policy and document analysis** will be conducted on official documents related to **Saudi Vision 2030**. This includes:

- **Vision 2030 strategic plans** and **educational reform policies** issued by the Saudi Ministry of Education.
- **Government reports** on the progress and implementation of Vision 2030's educational goals, with a focus on psychological and media strategies.
- **Teacher training curricula** and **national assessments** in Saudi Arabia to evaluate their alignment with the goal of fostering critical and creative thinking, supported by psychological and media strategies.

The analysis will focus on the explicit goals of **Human Capability Development** in Vision 2030, which aims to improve educational outcomes by integrating critical thinking, creativity, and psychological and media strategies into the Saudi education system. This policy analysis will also identify areas where there is a gap between the policy intentions of Vision 2030 and the practical implementation of these reforms, particularly in fostering critical and creative thinking through psychological and media approaches.

3.3. Data Analysis Methods

3.3.1. Qualitative Data Analysis

For the **qualitative data** collected from the literature review and policy documents, the analysis will follow a **thematic analysis approach**. The steps involved will include:

- **Data Familiarization**: The researcher will read and re-read the literature and policy documents to gain a deep understanding of the content.

- **Code Generation**: Key concepts, phrases, and ideas related to critical and creative thinking, psychological strategies, media strategies, and Vision 2030 educational reforms will be identified and coded.
- **Theme Identification**: The coded data will be organized into broad themes that represent the key issues discussed in the literature and policy documents. Themes might include "psychological strategies for enhancing thinking skills," "media strategies for promoting creativity," "teacher readiness," "barriers to implementation," and "innovative pedagogies."
- **Interpretation and Synthesis**: The identified themes will be synthesized to generate insights into how Vision 2030 has affected the promotion of critical and creative thinking in Saudi education, with a focus on psychological and media strategies.

3.3.2. Quantitative Data Analysis

Although the study primarily focuses on qualitative methods, **quantitative data analysis** will be conducted for any available survey data on educational outcomes related to critical and creative thinking. This data will be analyzed using **descriptive statistics** (such as means, frequencies, and percentages) to evaluate the extent to which psychological and media strategies have been integrated into the curriculum and whether these strategies correlate with improved critical and creative thinking skills among students. If available, data will also be analyzed through **regression analysis** to determine whether the adoption of specific teaching strategies and technologies (e.g., project-based learning, digital media integration) has a measurable impact on the development of critical and creative thinking.

3.4. Ethical Considerations

This study will adhere to **ethical standards** throughout the research process. The ethical approval for analyzing policy documents and reviewing published literature will be granted by the **institutional review board (IRB)** at the researcher's affiliated university. All data used in the study will be appropriately cited, ensuring proper attribution to authors and researchers.

The study will maintain confidentiality by using publicly available policy documents and academic journals. Since the research focuses solely on **secondary data analysis**, no personal data will be collected from participants. This ensures that the study does not violate any ethical guidelines regarding privacy and consent.

3.5. Limitations of the Study

While this study provides comprehensive insights into the role of psychological and media strategies in fostering critical and creative thinking within Saudi Vision 2030, there are some limitations:

- **Scope of Document Analysis**: The analysis of official documents and policies will be limited to the most recent versions of Vision 2030-related educational reforms. Older

policies and reports may not be fully captured, which could limit the scope of the analysis.

- **Data Availability**: The study relies on **secondary data sources** (literature and policy documents), and the availability of certain studies or reports may limit the breadth of the analysis.
- **Generalizability**: Since the study primarily focuses on Saudi Arabia, the findings may not be fully generalizable to other countries with different educational systems or reform agendas.

3.6. Summary

This study employs a **mixed-methods approach**, combining **qualitative data** from a systematic literature review and policy analysis with **quantitative data analysis** where applicable. The research aims to comprehensively understand how **psychological and media strategies** can enhance **critical and creative thinking** skills in Saudi students under Vision 2030. By synthesizing both empirical and policy data, the study will provide valuable insights into the challenges and opportunities in promoting these higher-order thinking skills. Additionally, the study will offer actionable recommendations for educators, policymakers, and administrators to enhance the integration of psychological and media strategies in the classroom, ensuring the effective development of critical and creative thinking skills across Saudi educational levels.

4.1. Policy Emphasis on Psychological and Media Strategies for Critical and Creative Thinking

The educational reforms outlined in **Saudi Vision 2030** explicitly prioritize the development of human capital, placing particular emphasis on integrating **psychological** and **media strategies** to foster **critical** and **creative thinking** skills in students. These reforms are designed to build skills such as **problem-solving**, **creativity**, and **critical analysis**, recognizing that these competencies are fundamental to developing an innovative, knowledge-based society. Vision 2030 stresses that in order to compete globally, Saudi Arabia must nurture students' **cognitive flexibility** alongside technical expertise. This vision underscores the importance of psychological strategies like **metacognition**, **self-regulation**, and **reflective thinking** to enhance students' learning capabilities, as well as **media strategies** that use digital tools, collaborative platforms, and interactive technologies to support critical and creative thinking (AlGhamdi, 2024).

Studies on Saudi education policy have highlighted that Vision 2030's educational directives place a strong emphasis on **analytical thinking** and **creativity** within the national curriculum frameworks. The integration of psychological and media strategies is seen as crucial to achieving these objectives. The focus on fostering **critical thinking** through psychological strategies, alongside **creative thinking** through media and technological integration, reflects global educational trends that prioritize 21st-century skills. However, research also indicates that full integration of these competencies into practical classroom settings remains inconsistent. This suggests that while Vision 2030 has provided a clear framework for promoting these skills, translating this vision into everyday educational practices requires further attention and adaptation (AlFayez, 2023).

4.2. Curricular and Pedagogical Implementations

The reformed curricula in Saudi Arabia increasingly incorporate tasks that are designed to promote critical judgment and creative thinking. However, despite the emphasis on higher-order thinking, the alignment between the policy intentions of Vision 2030 and classroom practices remains inconsistent. While the national curriculum encourages the integration of **psychological strategies** like **metacognitive training** and **self-regulation** as well as **media strategies** to encourage creative problem-solving, the actual implementation in classrooms varies greatly. This variation is influenced by factors such as **regional disparities**, **teacher preparedness**, and the **availability of resources** (Ghabban, 2025).

In recent years, **project-based learning (PBL)** and **problem-based learning (PBL)** models have been introduced by Saudi educators to foster critical and creative thinking. These pedagogies encourage students to engage in real-world problem-solving, promoting both **analytical thinking** and **creativity**. However, the effectiveness of these models is heavily dependent on **teacher training** and **institutional support**. Research has shown that despite **policy reforms**, many classrooms continue to focus primarily on content delivery rather than **cognitive engagement**, suggesting a significant gap between **curricular design** and **classroom practice** (AlHashmi, 2024). Therefore, while these pedagogical strategies are in place, their impact is limited by the readiness of educators to incorporate them effectively into their teaching methods, highlighting a critical area for further development.

4.3. Challenge Areas

4.3.1. Assessment Systems

A significant challenge in Saudi education is the **assessment system**, which continues to emphasize **memorization** over the development of **higher-order thinking skills**. While there have been efforts to incorporate more **analytic** and **evaluative** tasks into assessments, the dominance of **summative assessments** that focus on **knowledge recall** still prevails. These traditional assessment models do not adequately measure students' **critical** and **creative thinking** abilities, which are central to **Vision 2030**'s educational reforms. As a result, students' development of critical and creative thinking is hindered by an assessment culture that prioritizes factual knowledge over complex problem-solving and innovative thinking (MDPI, 2024).

To address this challenge, it is essential to move towards **performance-based** assessments that evaluate students' ability to apply their knowledge in real-world contexts. This shift would better align assessment practices with the goals of Vision 2030 by assessing higher-order thinking skills, such as **analysis**, **synthesis**, and **evaluation**, in addition to factual recall. Moreover, **media strategies**, such as the use of **digital assessments** and **interactive platforms**, could be integrated to provide more dynamic and engaging methods for assessing students' critical and creative thinking.

4.3.2. Teacher Preparation

Another major challenge lies in **teacher preparation**. While many educators are aware of the importance of **critical** and **creative thinking**, there remains a significant gap in the training necessary to effectively foster these skills in students. Research has shown that although **teacher professional development** programs have increased, there is still a lack of specialized training focused on the use of **psychological** and **media strategies** to enhance students' thinking skills. **Teachers** need ongoing support and professional development in **pedagogical methods** that emphasize metacognition, reflective thinking, and the integration of **media tools** into the learning process (Royallite, 2023). Effective teacher training should address both **psychological** approaches to enhance **cognitive flexibility** and **media strategies** that provide students with engaging, interactive platforms to stimulate **critical** and **creative thinking**.

4.3.3. Textbooks and Educational Materials

The content of textbooks and educational materials is also evolving, but there is still a **need for broader integration** of **higher-order thinking skills (HOTS)** into learning resources. Many current textbooks and learning materials continue to prioritize factual recall, with limited emphasis on **critical thinking** and **creativity**. To fully support the reforms outlined in Vision 2030, textbooks must be redesigned to integrate tasks that encourage **problem-solving**, **analysis**, and **creative expression**. Additionally, **media strategies** such as the use of **interactive digital platforms** and **multimedia resources** should be incorporated into educational materials to engage students in more **dynamic** and **creative learning** experiences (CCSEnet, 2024). The integration of digital tools can enhance students' engagement with content, encourage exploration, and stimulate innovative thinking, all of which are essential for fostering higher-order thinking skills.

4.4. Opportunities for Improvement

Despite these challenges, there are substantial opportunities to improve the integration of **critical and creative thinking** into Saudi education. Vision 2030 provides a framework for educational transformation, emphasizing the importance of **teacher professional development**, the integration of **digital media**, and the promotion of **innovative pedagogies**. By investing in **teacher training** focused on the psychological and media strategies that foster critical and creative thinking, Saudi Arabia has the potential to bridge the gap between policy and practice. Additionally, the use of **digital tools** and **interactive media** can play a significant role in creating more engaging and personalized learning environments that promote critical and creative thinking.

Furthermore, aligning **curricular design** with **assessment practices** that prioritize higher-order thinking skills will be crucial for the long-term success of Vision 2030's educational reforms. This requires a shift away from traditional, content-focused assessments to more **performance-based** evaluations that assess students' ability to apply knowledge in creative and practical ways. The integration of **psychological strategies**, such as **metacognition**, along with **media strategies** that incorporate **digital learning tools**, can provide a robust foundation for fostering critical and creative thinking skills across all levels of education in Saudi Arabia.

5. Discussion

The integration of **psychological** and **media strategies** to foster **critical** and **creative thinking** skills into the Saudi educational system is deeply aligned with both global competency frameworks and Saudi Arabia's socioeconomic goals as outlined in **Vision 2030**. These competencies are crucial for the Kingdom's long-term development, positioning critical and creative thinking as key pillars in creating a competitive, knowledge-based economy. However, despite the clear emphasis on these skills in Vision 2030, there remain significant challenges in their consistent application, especially in areas such as curriculum implementation, teacher preparedness, and the alignment of assessment practices.

The findings of this study highlight that while Vision 2030's policy frameworks strongly advocate for the development of critical and creative thinking, substantial systemic changes are necessary for these competencies to be fully realized within the educational system. **Psychological strategies**, such as **metacognition**, **self-regulation**, and **reflective thinking**, alongside **media strategies** leveraging digital tools and interactive platforms, are pivotal in achieving these goals. However, integrating these strategies into classrooms consistently across the Kingdom presents considerable hurdles.

Reform must extend beyond merely revising curricula; it must include transforming classroom practices, assessment cultures, and teacher professional development. The effective implementation of **critical** and **creative thinking** requires a complete alignment between **teaching strategies**, **curriculum design**, and **student assessment** with the overarching goals of Vision 2030. This alignment ensures that the development of cognitive flexibility and creativity is embedded into everyday learning practices (Thornhill-Miller, 2023). Moreover, it calls for a coordinated effort from **educational policymakers**, **institutions**, and **teachers** to ensure that **psychological strategies** for thinking enhancement and **media strategies** for interactive, engaging learning environments are effectively integrated across all levels of education. Only through such integrated, sustained efforts can Saudi Arabia ensure that **critical thinking** and **creativity** become foundational elements embedded across the entire educational landscape in alignment with the transformative goals of Vision 2030.

6. Conclusion

Saudi Vision 2030 provides a comprehensive policy framework aimed at fostering **critical** and **creative thinking** in students, with a strong emphasis on human capital development. The Kingdom's educational reforms prioritize the cultivation of these higher-order thinking skills, recognizing their essential role in equipping students to navigate the complexities of a knowledge-based society. However, achieving substantial educational transformation requires a concerted effort from policymakers, educational institutions, and teachers to overhaul pedagogical practices, integrate **psychological** and **media strategies**, and reform evaluation approaches. Bridging the gaps in **teacher professional development**, **curriculum design**, and **assessment practices** is crucial to realizing the full potential of these reforms under Vision 2030.

The successful integration of **psychological strategies**, such as **metacognition**, **self-regulation**, and **reflective thinking**, along with **media strategies** that leverage digital tools and interactive technologies, is essential for fostering **critical** and **creative thinking** skills across Saudi classrooms. By focusing on these strategies, Saudi Arabia can enhance its educational practices,

ensuring that students develop the cognitive flexibility and creativity required for the challenges of the future. For Vision 2030 to be fully realized, these competencies must be embedded within the fabric of Saudi education at every level, providing students with the skills they need to thrive in a rapidly changing world.

7. Recommendations

Based on the findings of this study, the following recommendations are made to ensure the effective integration of **psychological** and **media strategies** for fostering **critical** and **creative thinking** skills into Saudi education under **Vision 2030**:

- **Teacher Professional Development**: Continuous and specialized training programs should be implemented for teachers, focusing on developing pedagogical strategies that foster **critical** and **creative thinking**. This training should include **psychological strategies** (e.g., **metacognitive training**, **reflective thinking**) and **media strategies** (e.g., **interactive technologies**, **digital learning platforms**) to effectively integrate these approaches into everyday teaching practices.
- **Assessment Reform**: There should be a shift from traditional summative assessments to **performance-based** and **formative assessments** that capture the full spectrum of higher-order thinking skills. These assessments should measure not only factual recall but also students' abilities to analyze, evaluate, create, and innovate. The use of **digital media** and **interactive platforms** can help align assessments with **critical** and **creative thinking** objectives.
- **Curriculum Design**: The curriculum should be **interdisciplinary**, incorporating **inquiry-based tasks** that encourage students to engage with real-world problems and apply **critical** and **creative solutions**. The integration of **psychological strategies** and **media tools** into curriculum design will ensure that students are equipped with the cognitive skills necessary for academic success and future employment.
- **Technology Integration**: **Smart learning systems** and **interactive technologies** should be further leveraged to personalize learning and stimulate **higher-order tasks** that promote **critical** and **creative thinking**. By incorporating digital platforms into the learning process, educators can create more engaging, flexible, and personalized learning experiences that enhance students' ability to think critically and creatively.

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