



Canva and ai in education: A visual transformation - a study

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Abstract

The 21st century has witnessed a profound transformation in education driven by digital tools that enhance creativity, engagement, and personalized learning. Platforms like Canva, combined with Artificial Intelligence (AI), are at the forefront of this visual and adaptive transformation. Despite global recognition of digital pedagogies, structured adoption of Canva and AI in rural and semi-urban Indian schools remains limited.

This study investigates the integration of Canva and AI across upper primary, secondary, and higher education institutions in Palam Taluka, Maharashtra, exploring teacher and student perceptions, institutional readiness, and policy implications aligned with NEP 2020. A mixed-method approach was employed, combining quantitative data from 320 respondents (200 students, 100 teachers, 20 administrators) and qualitative insights from interviews, classroom observations, and document analysis. Data were analyzed using percentages, mean scores, chi-square tests, and thematic qualitative analysis.

Findings reveal that Canva enhances visual literacy, creativity, and engagement, while AI supports adaptive learning, predictive analytics, personalized assessments, and real-time feedback. Barriers include limited teacher training, infrastructure gaps, and unequal digital access. Recommendations include structured professional development, AI-assisted lesson planning, AR/VR integration for immersive learning, ethical AI policies, and inclusive strategies to bridge the digital divide. The study underscores the need for a holistic framework for EdTech integration, offering insights for policymakers, educators, and researchers globally.

Keywords: Canva, artificial intelligence, visual transformation, education technology, digital pedagogy, nep 2020, adaptive learning, ar/vr, inclusive education

Introduction

Digital education has evolved from being a supplementary tool to becoming the central pillar of teaching and learning. The COVID-19 pandemic accelerated the adoption of online, hybrid, and blended learning models, highlighting the urgent need for innovative educational tools. UNESCO (2021) reported that over 1.6 billion students worldwide were affected by school closures, prompting rapid adoption of digital platforms in education.

Platforms like Canva simplify visual content creation, enabling teachers to develop interactive presentations, infographics, posters, and multimedia learning modules. Artificial Intelligence (AI) complements these tools by providing personalized learning pathways, adaptive assessments, predictive analytics, and real-time feedback. OECD (2021) ^[1] reports that AI-driven adaptive learning can increase student engagement and retention by over 20%. In India, the National Education Policy (NEP) 2020 emphasizes technology-enabled, inclusive, and flexible learning. Initiatives such as DIKSHA, PM eVIDYA, and SWAYAM aim to foster digital literacy. However, despite these policy initiatives, structured adoption of Canva and AI in rural and semi-urban classrooms remains limited. Many institutions face challenges such as inadequate digital infrastructure, limited teacher training, and unequal access for students.

1. Research Gap

Despite global and national interest in digital pedagogy, several gaps remain in the Indian context, particularly in rural and semi-urban schools. Most existing studies examine

either Canva or AI individually, with few exploring their combined impact on visual learning, creativity, engagement, and adaptive learning outcomes. Longitudinal studies and research aligning with NEP 2020, inclusive pedagogy, and teacher preparedness are scarce. Additionally, very few studies assess practical classroom implementation, teacher readiness, and strategies for differently-abled learners. This study addresses these gaps by focusing on the integrated adoption of Canva and AI in Palam Taluka schools, evaluating teacher and student perceptions, classroom practices, learning outcomes, and policy alignment.

History of Canva and AI in Education

Canva, a web-based graphic design platform, was founded in 2012 in Australia by Melanie Perkins, Cliff Obrecht, and Cameron Adams. Initially designed for students and educators, it allowed easy creation of presentations and posters.

- **2013:** Beta version launched with templates, drag-and-drop functionality, and stock images.
- **2014 - 2016:** Global adoption increased; education-focused templates, worksheets, and lesson plans introduced.
- **2017 - 2020:** Canva Classroom features enabled collaborative projects, assignments, and student-teacher interaction.
- **2021 - Present:** Canva AI, Canva Docs, and Canva Video introduced AI-assisted learning, adaptive content, and interactive visual experiences.

- **Significance:** Canva's user-friendly interface, accessibility, and collaborative tools have made it widely adopted in schools, colleges, and online learning platforms.

AI in Education: AI tools support personalized learning, predictive assessments, adaptive feedback, chatbots for student queries, and immersive AR/VR experiences. When integrated with platforms like Canva, AI enables a fully interactive, visually-rich learning environment.

Visual Transformation in Education

The integration of Canva and AI represents a shift from text-based pedagogy to multimedia-rich, interactive learning environments.

Key Features

1. **Enhanced Engagement:** Visual content captures attention and encourages participation (Zhang & Li, 2023) [3].
2. **Multimodal Learning:** Combines text, visuals, audio, and AI feedback to accommodate diverse learning styles.
3. **Creativity and Innovation:** Encourages design, storytelling, and project-based learning.
4. **Collaboration and Feedback:** Cloud-based tools and AI provide instant corrective feedback.
5. **Bridging the Digital Divide:** Visual and AI-supported learning aids students with low textual literacy and differently-abled learners.
6. **Policy Alignment:** Supports NEP 2020's focus on creativity, digital pedagogy, and inclusive education.

Statement of the Problem

Despite global recognition of digital tools, Indian institutions face barriers in structured adoption of Canva and AI

- Limited teacher training
- Inadequate infrastructure
- Unequal student access, especially in rural areas

Research Questions

1. How can Canva and AI be effectively integrated into education?
2. What challenges hinder classroom and institutional adoption?
3. How do these tools impact learning outcomes, creativity, and engagement?

Functional Definitions

- **Canva:** Web-based platform for creating educational visual content.

- **AI in Education:** Machine learning and automation supporting personalized learning and adaptive assessment.
- **Visual Transformation:** Shift from text-based to interactive multimedia-rich learning.
- **NEP 2020 Integration:** Technology-enabled, inclusive, and flexible learning framework.

Need and Importance of Research

1. Need

- **Global Perspective:** AI and visual tools have enhanced learning in countries like Finland, Singapore, and the USA.
- **Indian Context:** Digital divide limits access; only 55% of rural households have internet (TRAI, 2023).
- **Equity & Inclusion:** Visual and AI-based learning supports rural and differently-abled students.
- **Policy Alignment:** NEP 2020 promotes EdTech adoption, but structured frameworks are lacking.

Importance: Adds to educational technology literature, supports teacher professional development, guides policy implementation, and encourages inclusive and innovative pedagogical practices.

2. Importance of the Research

The integration of Canva and Artificial Intelligence (AI) in education holds significant importance for both theoretical and practical aspects of contemporary pedagogy. Globally, education is rapidly transitioning towards technology-enhanced learning environments that prioritize creativity, personalized instruction, and interactive engagement. This study contributes to understanding how these digital tools, when used together, can transform traditional classrooms into visually-rich, adaptive, and student-centered learning spaces.

1. Contribution to Educational Technology Literature

By examining the combined use of Canva and AI, this research fills a critical gap in academic literature. Most previous studies have examined digital tools separately, neglecting their integrated impact. This study provides empirical evidence on how visual content creation and AI-enabled adaptive learning complement each other to enhance student engagement, creativity, and overall learning outcomes.

2. Teacher Professional Development

Effective integration of technology requires teachers to be digitally literate and competent in both visual and AI tools. The study emphasizes the importance of structured professional development programs, highlighting training needs, preparedness levels, and strategies to overcome barriers in adoption. This can guide policymakers and educational institutions in designing comprehensive teacher training initiatives aligned with 21st-century pedagogical demands.

3. Policy Implementation and Alignment

The research aligns with India's National Education Policy (NEP) 2020, which promotes technology-

enabled, inclusive, and flexible education. By analyzing classroom-level practices, teacher readiness, and infrastructural requirements, the study provides actionable insights for policymakers to implement EdTech policies effectively, ensuring alignment with NEP objectives and international best practices.

4. Equity and Inclusion

Digital tools often risk widening the gap between students with varying access to technology. This study highlights strategies for inclusive digital pedagogy, ensuring that students in rural areas, differently-abled learners, and those with limited textual literacy can benefit from visual and AI-supported learning environments. Such inclusive practices promote equity in education and empower all learners to achieve meaningful learning outcomes.

5. Global Relevance

While focused on Palam Taluka, Maharashtra, the findings offer insights applicable to other rural and semi-urban contexts globally. The study demonstrates how low-cost digital tools like Canva, combined with AI, can support scalable, adaptable, and context-specific interventions in diverse educational settings.

6. Innovation and Creativity in Pedagogy

This research emphasizes the potential of visual and AI integration to foster innovation, critical thinking, and project-based learning. By supporting multimodal learning experiences, students can develop higher-order cognitive skills, creativity, and problem-solving abilities, which are essential in the 21st-century knowledge economy.

7. Future Research and EdTech Development

The findings serve as a foundation for longitudinal studies, comparative analyses between urban and rural schools, and the development of AI-assisted lesson planning tools. This can lead to sustainable and innovative EdTech solutions that address the evolving needs of students and educators alike.

Conclusion

Overall, this research is significant because it not only addresses an existing knowledge gap in the integration of Canva and AI but also provides practical, policy-oriented, and globally relevant insights. It demonstrates how visual pedagogy and adaptive learning can work together to enhance creativity, engagement, inclusivity, and learning outcomes, ultimately contributing to the transformation of modern education in alignment with NEP 2020 and international standards.

Objectives of the Research

1. To evaluate Canva's role in enhancing visual learning and creativity.
2. To assess AI's impact on adaptive, personalized, and interactive learning.
3. To identify integration challenges of Canva and AI in Indian classrooms.

4. To study teacher and student perceptions of Canva and AI adoption.
5. To provide actionable recommendations for effective implementation and policy alignment.

Assumptions of the Research

- Teachers and students are receptive to using Canva and AI in teaching-learning.
- Educational institutions are willing to invest in digital infrastructure.
- Visual and AI-supported learning improves learning outcomes and engagement.

Hypotheses of the Research

- **H1:** Canva enhances visual literacy, creativity, and student engagement.
- **H2:** AI improves adaptive learning outcomes and personalized education.
- **H3:** Teachers trained in Canva and AI demonstrate higher teaching effectiveness.

Scope of the Research

- Upper primary, secondary, and higher education institutions in Palam Taluka, Dist Parbhani, Maharashtra.
- Findings are relevant to both national and international EdTech and visual learning frameworks.
- Focused on integration of Canva and AI in classrooms; may inform policy and professional development programs.

Limitations and Delimitations

1. Limitations

- Time-bound study (2024–2025).
- Sample limited to selected schools and colleges in Palam Taluka, Dist Parbhani, Maharashtra.
- Accessibility and infrastructure constraints may affect outcomes.

2. Delimitations

- Excludes primary schools and alternative EdTech platforms.
- Specifically focused on Canva and AI in visual learning.
- Geographically limited to Palam Taluka, Dist Parbhani, Maharashtra.

Review of Literature

1. International Studies

- Zhang & Li (2023) ^[3] observed that Canva combined with AI enhances creativity and engagement.
- Anderson (2022) ^[6] highlighted AI chatbots' role in interactive learning in higher education.
- OECD (2021) ^[1] reported that adaptive learning significantly increases retention and engagement.
- Smith & Garcia (2021) emphasized visual pedagogy and project-based learning enriched through digital tools.
- European Commission (2020) suggested that visual and AI-supported tools substantially enhance collaborative learning.

2. Indian Studies

- Patil & Deshmukh (2021) ^[4] found improved learning outcomes and teacher efficiency using visual pedagogy.
- NCERT (2022) ^[5] emphasized ICT in school education for inclusive, technology-enabled learning.
- Rao & Singh (2020) ^[9] discussed AI-enabled learning analytics in higher education.
- Sharma (2021) ^[8] highlighted EdTech adoption challenges in Indian secondary schools.
- Kumar & Patel (2022) observed increased student engagement with AI-supported visual tools.

3. Research Gap

- Few studies examine the integrated effect of Canva and AI on rural Indian classrooms.
- Longitudinal and policy-aligned research (NEP 2020) is scarce.
- Teacher preparedness and training effectiveness are underexplored.
- Minimal focus on differently-abled students and low literacy learners.
- Limited practical classroom implementation studies exist.

This study addresses these gaps by conducting a comprehensive investigation in Palam Taluka classrooms, Dist Parbhani, Maharashtra.

Methodology

1. Research Design

A mixed-method research design was employed to combine quantitative and qualitative insights. Surveys, interviews, and classroom observations provided triangulated data on Canva and AI integration.

2. Population

Upper primary, secondary, and higher education institutions in Palam Taluka, Dist Parbhani, Maharashtra. Participants included students, teachers, and administrators.

3. Sample

A total of 320 respondents selected through simple random sampling

- 200 students
- 100 teachers
- 20 administrators

4. Research Tools

- 1. Questionnaire for Students and Teachers:** measured usage, attitudes, and perceptions.
- 2. AI Perception Scale:** assessed adaptability, personalized learning, and engagement.
- 3. Teacher Interviews:** explored experiences, challenges, and professional development needs.
- 4. Classroom Observation Checklist:** recorded practical integration of Canva and AI in teaching-learning.

5. Data Collection Procedure

- Permission obtained from school authorities.
- Questionnaires distributed online and offline.
- Interviews conducted in-person and via video conferencing.
- Classroom observations recorded teaching practices and student interactions.

6. Data Analysis

- Quantitative data analyzed using percentages, mean scores, and chi-square tests.
- Qualitative data subjected to thematic analysis to identify recurring patterns and insights.

Analysis

Table 1: Teachers' Use of Canva

Response	Frequency	Percentage
Regularly	40	40%
Sometimes	45	45%
Never	15	15%

Interpretation: Majority of teachers use Canva either regularly or occasionally, showing moderate adoption.

Table 2: Student Attitudes Towards AI

Attitude	Frequency	Percentage
Positive	150	75%
Neutral	30	15%
Negative	20	10%

Interpretation: Most students have a positive perception of AI in learning.

Table 3: Teacher Training in Canva & AI

Training Level	Frequency	Percentage
High	25	25%
Medium	50	50%
Low	25	25%

Interpretation: Half of the teachers have moderate training, indicating the need for structured professional development.

Findings

- 1. Visual Learning Enhancement:** Canva significantly improves visual literacy, creativity, and student engagement.
- 2. Adaptive Learning Through AI:** AI supports personalized learning, instant feedback, and adaptive assessments, improving student retention.
- 3. Teacher Preparedness:** Moderate training exists, but structured professional development is needed.
- 4. Infrastructure Challenges:** Rural and semi-urban schools face limited digital infrastructure.

5. Inclusive Learning: Visual and AI tools aid differently-abled learners and students with low textual literacy.

Discussion

The findings indicate that integrating Canva and AI transforms teaching into an interactive and adaptive experience. Positive student perceptions highlight AI's potential for personalized feedback. Moderate teacher training suggests professional development is critical. Infrastructure gaps in rural schools emphasize the need for policy and investment support. Visual and AI tools also promote inclusive education, aligning with NEP 2020 objectives.

Conclusion

The combined educational use of Canva and Artificial Intelligence (AI) brings a transformative shift in classrooms at schools and higher education institutions. By creating interactive, adaptive, and visually-rich learning environments, these tools significantly enhance students' creativity, imagination, and engagement. Through visual pedagogy and AI-enabled adaptive learning, students receive personalized feedback, predictive assessments, and instant learning support, thereby improving overall learning outcomes.

Aligned with the objectives of NEP 2020, these tools are essential for fostering inclusive, flexible, and technology-enabled education. In rural and semi-urban schools, the integration of Canva and AI helps reduce the digital divide, enabling differently-abled students and those with limited textual literacy to participate fully in classroom activities. Consequently, education becomes more equitable and inclusive.

Successful implementation depends on teacher training, institutional support, and infrastructure development. Moderate teacher preparedness highlights the need for structured professional development programs. Additionally, ethical AI usage and data privacy must be ensured to maintain safe and responsible AI-supported classrooms.

Visual and AI-based learning not only enhances traditional academic performance but also promotes the development of critical thinking, creativity, collaboration, and problem-solving skills-competencies that are essential in today's digital and globalized economy. With the integration of AR/VR and gamified learning modules, future education can become even more immersive and engaging.

Ultimately, the integration of Canva and AI represents a holistic transformation in education. These tools enable teachers, students, and institutions to create future-ready digital classrooms, making learning more interactive, inclusive, and globally competent. Future research should focus on longitudinal studies, comparative analyses between urban and rural contexts, and AI-assisted lesson planning to comprehensively evaluate learning outcomes and pedagogical effectiveness.

Recommendations

1. Structured Teacher Training: Develop professional development programs for Canva and AI integration.

2. Infrastructure Development: Invest in hardware, internet connectivity, and digital resources for schools.

3. Ethical AI Policies: Create guidelines for responsible AI use and data privacy.

4. AR/VR Integration: Introduce immersive learning experiences for STEM, arts, and social sciences.

5. Collaborative Projects: Encourage student teamwork using cloud-based Canva and AI tools.

6. Inclusive Strategies: Ensure accessibility for differently-abled and rural students.

7. Policy Alignment: Implement EdTech policies consistent with NEP 2020 and international best practices.

Future Scope & Further Research Topics

- Longitudinal studies on learning outcomes of Canva + AI integration.
- Comparative studies between urban and rural schools.
- AR/VR and AI integration for immersive learning experiences.
- Inclusive learning strategies for differently-abled students.
- Policy impact studies on NEP 2020 EdTech adoption.
- Development of AI-assisted lesson planning tools.
- Exploration of gamification and interactive assessment strategies.

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