



Artificial Intelligence Has Interfered with Creativity: A Case Study

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Abstract

In recent years, Artificial Intelligence (AI) has entered classrooms not only as a learning aid but also as a silent substitute for students' own thinking. With the easy availability of AI-based writing and project-making tools, many secondary school students now prefer ready-made perfection over personal effort. This shift, while improving accuracy and presentation, has raised a serious concern about the gradual loss of originality and creative thinking among young learners.

This case study focuses on understanding how secondary-level students are engaging with AI while preparing school projects and assignments. The study observes that although students achieve flawless results, their individual style, analytical skills, and self-expression are diminishing. The findings suggest that students often use AI beyond its intended purpose not for support or verification, but for complete dependence.

During the data collection process, a noticeable pattern emerged. A comparison was made between project submissions from previous academic years and this year's submissions, which were created during the widespread availability of AI tools. Earlier projects reflected mixed levels of creativity, uneven language, and personal touches that revealed genuine student effort. In contrast, the recent submissions displayed near-identical structure, polished grammar, and impressive formatting yet these improvements did not correspond to any visible increase in conceptual clarity or depth of understanding. This sudden jump in linguistic refinement, without a matching growth in subject comprehension, strongly indicated the influence of AI-generated material.

Classroom interactions added further insight. When asked to explain certain sections of their projects, several students hesitated or were unable to elaborate, suggesting that those parts were not independently constructed. Many openly admitted that they relied on AI because it "saved time," "looked perfect," or "felt safer than writing on their own." Such responses reveal a shift in mindset where learning is becoming secondary to convenience.

The purpose of this study is not to criticize technological progress but to highlight the urgent need for balanced integration. AI can certainly enhance learning, but without guided use, it may also erode the creative confidence of learners. The study concludes that teachers and parents must play an active role in teaching responsible AI use where technology becomes a tool for exploration, not imitation. Encouraging originality, reflective thinking, and creativity must remain at the heart of education, even in this age of intelligent machines.

Introduction

The rapid growth of Artificial Intelligence has reshaped the learning environment in secondary schools. Students who once relied primarily on textbooks, classroom discussions, and their own reasoning are now turning to digital tools for quick and seemingly perfect solutions. While AI undoubtedly supports research and improves linguistic accuracy, its misuse often replaces the essential process of independent thinking. Classrooms today are witnessing a shift where many learners show greater interest in completing tasks flawlessly than in understanding them deeply. This case study arises from a growing educational concern: whether secondary students are learning to think creatively or simply learning to depend on machines for intellectual shortcuts.

Theoretical Background

Education in the digital age is increasingly enriched by technological assistance. Artificial Intelligence, theoretically, is designed to support human learning, enhance analytical engagement, and improve understanding through guided interactions. At the secondary level, however, this same supportive technology is frequently used as a shortcut to obtain perfect results with minimal effort. The theoretical conflict lies between experiential learning where students grow through exploration and assisted learning, where the machine provides ready-made outcomes. This shift raises critical questions about what education aims to nurture: refined presentation or genuine intellectual growth.

Literary Background

Existing discussions in educational forums, research articles, and teacher narratives highlight the rising influence of AI on students' writing habits. Many educators have expressed concern that digital tools, though beneficial, are slowly reducing the need for original thinking. While literature acknowledges these challenges, very few studies present ground-level experiences from school settings. This paper attempts to address that gap by presenting observations from regular classroom interactions, project evaluations, and direct communication with students. The aim is to offer a realistic picture of how secondary learners are currently using AI not in theory, but in the everyday academic practices found within school corridors.

Delimitation

The study is delimited to the secondary level students of ICSE Board schools West Bengal. This population was chosen because these schools have comparatively greater access to digital resources, faster exposure to emerging technologies, and a growing tendency among students to experiment with AI-based academic assistance.

The study does not attempt to generalize the findings to all school systems or boards, nor does it extend its focus beyond the secondary level. Higher-secondary students, primary learners, and institutions following regional-medium instruction have been kept outside the boundary of this research. The delimitations were set consciously so that the investigation could remain closely connected to a single, clearly defined demographic, making the observations more reliable and contextually meaningful.

Sample

For the purpose of this study, the sample was selected through a convenient and random-access approach. Instead of following a structured sampling frame, the respondents were chosen from the group that was naturally available during the period of data collection. In this process, students from Calcutta Public School, Barasat, were selected as the working sample.

The secondary-level learners of this institution—spanning classes VI to X—formed the core sample population. They represent a diverse mix of academic abilities and technology exposure, making them suitable for exploring the emerging patterns of AI usage in school project work. The choice of this particular school was based on accessibility and the practical feasibility of collecting detailed written responses, interview data, and classroom observations within an authentic learning environment.

Collection of Data

The data for this study were collected through a combination of structured tools and practical techniques designed to ensure authenticity and depth of observation. The objective was to understand the extent to which secondary-level students depend on Artificial Intelligence for preparing their project work, especially in science subjects.

Tools Used

1. Questionnaire

A detailed questionnaire consisting of twenty carefully prepared questions was distributed among students of classes VI to X. The questions were designed to explore their method of gathering information, their understanding of project preparation, their reliance on technological sources, and their awareness of ethical boundaries in using AI-generated content.

The questionnaire included both open-ended and close-ended items so that students could freely express their views while also providing measurable responses. Anonymity was maintained to encourage honesty. Some sample questions included:

- How do you usually begin your project work by reading books, searching online, or using AI tools?
- Have you ever used platforms such as ChatGPT or Google Bard to prepare your project?
- Do you feel that using AI affects your understanding or creativity?
- What percentage of your submitted project is entirely your own writing?

The responses provided valuable insights into students' habits and mindset. A considerable number of learners admitted that AI tools felt "easy," "time-saving," and produced "better English" than they could write naturally.

2. Interviews

Short interviews were conducted with selected students representing different academic levels. These interactions aimed to uncover the thought process behind their project preparation. Some students admitted that they often copied AI-generated text with minimal changes to avoid being noticed. Others claimed to use AI only for grammar correction or fact checking. These candid conversations added qualitative depth to the data, helping to understand how differently students interact with AI.

Techniques Applied

1. Observation

Observation played a significant role in verifying the collected information. Over several weeks, project submissions were examined closely. A remarkable similarity was noticed in sentence construction, vocabulary, and overall presentation even among students with distinctly different academic performance levels.

During classroom discussions, many students struggled to explain certain parts of their own project work. This inability to interpret or justify their content suggested that the material was not fully understood or personally prepared. Such observations strongly supported the possibility of AI-generated assistance being used inappropriately.

Data Interpretation

The collected data indicate a notable rise in AI dependence among secondary-level students. Their project submissions, though refined and well-structured, often lacked the originality and spontaneity expected from learners of this age group. Uniform vocabulary and repetitive expression patterns suggested that many students relied on similar digital tools.

Few students openly admitted using AI for generating entire sections, while others used it to modify and refine their writing. Instead of viewing project work as an opportunity to think creatively, many learners approached it as a task requiring quick perfection. This pattern reflects a shift from learning through exploration toward learning through ready-made results.

The interpretation highlights the need for guided AI usage. Students require clear direction so that AI becomes a reference tool instead of a substitute for personal thought and creativity.

Research Questions

This study was guided by the following research questions:

1. To what extent are secondary school students using Artificial Intelligence while preparing their project work?
2. How does AI usage influence originality and creative thinking among young learners?
3. What patterns of similarity can be observed in AI-assisted project submissions?
4. What measures can encourage responsible AI usage to preserve individuality and creative expression?

Findings

1. Student Behaviour

A significant number of students preferred using AI-generated content for their projects. Many believed AI saved time and produced polished work that felt “safer” to submit. This shift reflects a preference for convenience over genuine learning.

2. Teacher Observation

Project submissions appeared unusually similar in structure, expression, and presentation. Even students with different academic capabilities produced work of the same quality, indicating technological involvement. Individual writing style and natural thought process were largely missing.

3. Impact on Creativity

Regular dependence on AI resulted in reduced brainstorming, less experimentation, and weakened analytical skills. Students showed less interest in exploring ideas independently and more interest in submitting perfect-looking material.

Overall, the findings reveal that while AI improves presentation, it gradually suppresses independent thinking—an essential objective of education.

Recommendations for Remediation

The study clearly shows that Artificial Intelligence, though a powerful educational resource, is significantly influencing the natural creativity of secondary school students. In their pursuit of flawless results, many learners are unintentionally losing touch with their own thinking abilities. Technology should guide education, not dominate it.

The present challenge is to help students maintain a balance between intelligence and imagination. Schools should promote originality even when work appears imperfect. Parents must also understand that meaningful learning requires time, effort, and reflection.

Therefore, providing consistent guidance, simplified explanations, and personalised help can play a crucial role in enhancing their understanding of the subject matter.

Additionally, a few further steps may strengthen the remedial process:

1. Individual Learning Profiles

Each student learns differently. Preparing a simple learning profile for every student highlighting their strengths, weaknesses, and preferred learning style can help teachers plan remedial sessions that are better suited to individual needs.

2. Short, Continuous Reinforcement Sessions

Instead of long, irregular extra classes, brief reinforcement sessions (10–15 minutes) after regular lessons can help students revisit difficult concepts before they forget them. This builds confidence and prevents learning gaps from widening.

3. Activity-Based Support for Difficult Topics

Topics that students frequently struggle with can be taught again using small hands-on activities, simple demonstrations, or peer-explaining methods. These alternative approaches often make abstract concepts far more relatable.

AI can support education, but it cannot replace the human spark of curiosity. The broader goal must be to nurture a generation capable of thinking, questioning, and creating beyond the boundaries of algorithmic assistance.

