

## Exploring the Impact of AI Ethics Workshops: A Study on Paired Samples

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### ABSTRACT

**Background:** The growing integration of Artificial Intelligence (AI) in education highlights the need for students to develop a strong ethical foundation. Understanding AI ethics is crucial to ensuring responsible AI usage, academic integrity, and data privacy.

**Purpose:** This study evaluates the effectiveness of an AI Ethics Workshop in enhancing 9th-grade students' awareness and understanding of ethical AI principles.

**Research Methodology:** A mixed-methods approach was employed, incorporating both quantitative and qualitative analyses. A paired sample t-test, conducted using SPSS 24, compared pre- and post-workshop assessments, while thematic analysis using NVivo 15 examined students' perceptions through open-ended responses.

**Findings:** The results indicated a significant improvement in students' awareness of ethical AI usage. Quantitative findings demonstrated increased understanding of academic integrity, responsible AI use, and data privacy. Qualitative insights revealed enhanced critical thinking, though some students still faced challenges in distinguishing ethical from unethical AI practices.

**Managerial Implications:** The study emphasizes the necessity of structured AI ethics training in school curricula to foster responsible AI use. Future research should explore longitudinal studies, curriculum integration, and cross-cultural comparisons to ensure a lasting impact of AI ethics education.

**Keywords:** *AI Ethics, Responsible AI Usage, Educational Technology, Academic Integrity, Mixed-Methods Research*

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## INTRODUCTION

Artificial Intelligence (AI) is revolutionizing education by providing powerful tools for personalized learning, automated assessment, and enhanced access to educational resources. Applications such as plagiarism detection software, adaptive learning platforms, and AI-driven research tools have transformed the academic landscape. However, with this technological advancement comes the critical need for ethical awareness among students. Misuse of AI tools—such as relying on AI to generate assignments without proper attribution or breaching privacy while using AI-assisted learning—has raised significant ethical concerns (Holmes, 2020).

Ethical AI usage is increasingly recognized as a crucial component of digital literacy. According to Borenstein and Howard (2021), ethical literacy in technology not only ensures compliance with academic integrity but also fosters critical thinking and responsible decision-making among learners. Without a clear understanding of ethical principles, students may inadvertently engage in practices such as plagiarism, misuse of data, or over-reliance on AI-generated content, leading to academic dishonesty or skill degradation (Gleason, 2018).

Education systems around the world are starting to recognize this gap. Studies by Selwyn (2019) highlight that while students are proficient in using digital tools, their understanding of the ethical implications of such tools remains limited. This highlights the pressing need to incorporate ethical AI awareness into educational curricula to prepare students for a future where technology will play a dominant role.

The integration of ethics and technology education has shown promising results in fostering responsible behavior among students. A workshop-based approach to teaching ethics, such as the one discussed in Wagner et al. (2020), has proven effective in enhancing students' awareness and understanding of responsible AI usage. This research seeks to build on these findings by assessing and improving the ethical awareness of AI usage among students at The Sanskaar Valley School, Bhopal. By doing so, it aims to empower students to use AI tools responsibly and contribute to a culture of academic integrity and ethical decision-making.

The hypothesis testing using a paired sample t-test was used for this study. The outcomes are expected to show a higher mean value for the post-test than the pre-test.

**Table 1. Content of the Workshop**

| <b>Chapter Title</b>                      | <b>Descriptions</b>                                                                                                         |
|-------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Chapter 1: Introduction to AI             | This chapter introduces the concept of Artificial Intelligence, its applications in daily life, and its role in education.  |
| Chapter 2: Responsible AI Usage           | This chapter explores ethical considerations in using AI tools for learning, including academic honesty and plagiarism.     |
| Chapter 3: AI Bias and Fairness           | This chapter explains how biases can exist in AI systems and the importance of ensuring fairness in AI usage.               |
| Chapter 4: Data Privacy in AI             | This chapter covers the importance of data privacy and security when using AI tools and the risks of sharing personal data. |
| Chapter 5: Collaborative Learning with AI | This chapter highlights how AI can support group projects and foster collaboration in education while maintaining ethics.   |
| Chapter 6: AI in Problem Solving          | This chapter demonstrates how to ethically use AI for problem-solving tasks like research, brainstorming, and calculations. |
| Chapter 7: Limitations of AI in Education | This chapter discusses the limitations of AI tools, emphasizing the importance of critical thinking and human oversight.    |

*(Source: Primary Data)*

### **Research objective**

This study aims to investigate the mean values for the pre-test and post-test to determine the effectiveness of ethical AI workshops in improving students' understanding about using AI in education.

### **Hypotheses**

- **Null Hypothesis (H<sub>0</sub>):** There is no difference in the mean scores of the Class A and Class B  

$$H_0: \mu_{\text{Class A}} = \mu_{\text{Class B}}$$

- **Alternative Hypothesis ( $H_1$ ):** There is a difference in the mean scores of the Class A and Class B

$$H_1: \mu_{\text{Class A}} \neq \mu_{\text{Class B}}$$

Hypothesis tests whether the intervention (workshop or training) caused any significant change in the mean scores, without assuming the direction of the change (i.e., whether it increased or decreased).

### **Problem Statement**

In recent years, the integration of Artificial Intelligence (AI) tools into educational environments has opened new possibilities for enhancing learning experiences. However, students often lack awareness of the ethical considerations associated with the use of AI in education. As noted by Williamson and Piattoeva (2020), the rise of AI in education can lead to unintended consequences, such as the misuse of these tools for unethical purposes like cheating or plagiarism. Additionally, students may miss out on the opportunity to develop critical skills in ethical reasoning and decision-making when interacting with AI systems (Selwyn, 2019). Without proper awareness of these ethical implications, the effective use of AI in learning can be hindered, which in turn limits academic growth. It is essential, therefore, to address this gap in understanding to ensure students not only benefit from AI's capabilities but also engage with it in an ethically responsible manner, as emphasized by Holmes, Bialik, and Fadel (2019), fostering both intellectual and ethical development.

This study seeks to answer the following research question:

**Is there any significant difference in students' understanding of ethical AI usage with workshop as an intervention, as reflected by the difference in Class A and B marks?**

### **Theoretical Framework**

Kolb's Experiential Learning Theory (ELT) serves as the foundation for understanding how students internalize ethical AI concepts through active participation. According to Kolb (1984), learning progresses through a four-stage cycle: direct experience, reflective observation, abstract conceptualization, and practical application. Within this study, the AI Ethics Workshop represents the initial phase of concrete experience, where students interact with real-world AI dilemmas. As

they analyze case studies on AI bias, privacy concerns, and responsible technology use, they transition into the reflective observation phase, where they critically assess the ethical challenges posed by AI.

This reflection facilitates deeper comprehension, allowing students to develop a structured understanding of ethical principles during the abstract conceptualization phase. Finally, through active experimentation, students apply these ethical guidelines in practical scenarios, reinforcing their ability to engage with AI tools responsibly. By aligning with ELT, this workshop ensures that students not only acquire theoretical knowledge but also practice ethical decision-making in real-world applications.

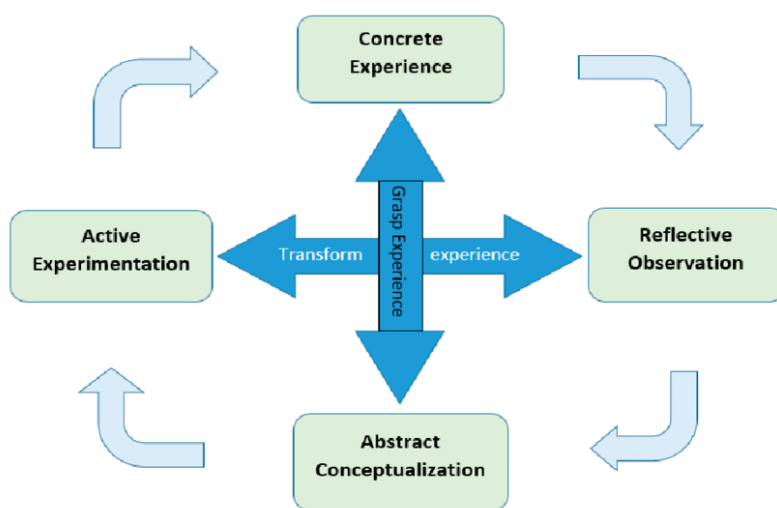


**Figure 1. Kolb's Experiential Learning Theory (ELT)**

*(Source: Kolb, 1984)*

### **Significance of the Study**

The Ethical AI Workshop was conducted to provide students with a foundational knowledge of Artificial Intelligence and its ethical usage. This program was held during the first week of the term to ensure students could build a solid understanding of responsible AI practices from the outset. Strengthening this foundation will foster better engagement with AI-related concepts throughout their educational journey. By addressing key ethical challenges in AI, this initiative aims to promote responsible learning behaviors and reduce instances of misuse of AI tools.

Consequently, the post-workshop findings about Class B are anticipated to show a higher mean value than Class A, demonstrating the workshop's effectiveness.

## **LITERATURE REVIEW**

The rapid advancement of AI has presented considerable ethical challenges, necessitating educational interventions to equip students with the skills to navigate these complexities. AI ethics workshops have emerged as effective tools to enhance ethical awareness and encourage responsible AI use among students. Numerous studies have assessed their impact, highlighting key methodologies, outcomes, and recommendations for best practices.

Johnson et al. (2021) conducted a pre- and post-workshop survey to measure changes in students' ethical awareness. Their findings showed a substantial 25% increase in post-workshop test scores, indicating that structured workshops effectively reinforce ethical AI knowledge. The study emphasized that clearly defined learning objectives and well-structured content significantly enhance student engagement and understanding.

Smith and Lee (2020) introduced a series of workshops incorporating interactive case studies and group discussions. Their research revealed that students who participated in these sessions demonstrated a stronger ability to recognize ethical dilemmas and suggest appropriate solutions. The study highlighted the importance of experiential learning methods in fostering deeper engagement and critical thinking.

Chen et al. (2022) employed a mixed-methods approach, integrating quantitative surveys with qualitative interviews. Their study found a 30% rise in ethical awareness post-workshop. Additionally, qualitative insights indicated that students developed improved reasoning skills, allowing them to apply ethical principles effectively in real-world scenarios. The researchers concluded that balancing theoretical instruction with practical exercises produces more comprehensive learning outcomes.

A longitudinal study by Martinez et al. (2023) examined the long-term effects of AI ethics workshops. The results demonstrated that while students initially retained high levels of ethical awareness, their understanding diminished over six months without reinforcement. This finding

underscores the necessity for ongoing educational interventions, such as periodic workshops or curriculum integration, to sustain ethical awareness over time.

Brown et al. (2020) explored the role of gamification in AI ethics education. By incorporating game-based learning activities, the study observed a 20% improvement in student engagement and comprehension of AI-related ethical concerns. The researchers concluded that using gamification as a pedagogical strategy makes ethical discussions more accessible and engaging for students.

Taylor and Kim (2021) investigated interdisciplinary workshops that merged AI ethics with concepts from philosophy and law. Their study found that students developed a more comprehensive understanding of AI-related ethical issues, particularly concerning bias, privacy, and accountability. The findings suggested that integrating multiple disciplines enhances students' ability to critically analyze AI's broader societal implications.

Williams et al. (2022) examined the impact of peer learning in AI ethics workshops. Their research reported a 15% increase in ethical awareness among students who participated in collaborative discussions. The study emphasized that peer interaction fosters a collective sense of responsibility and improves ethical decision-making skills.

Anderson and Patel (2021) evaluated the effectiveness of online AI ethics workshops. Despite challenges related to virtual learning, their study reported a 22% improvement in students' ethical awareness. Participants highlighted the accessibility and flexibility of online formats, indicating that well-structured virtual workshops can serve as effective alternatives to in-person sessions.

Garcia et al. (2023) analyzed discipline-specific AI ethics workshops tailored for students in fields such as computer science and healthcare. Their findings demonstrated that contextualized workshops led to a 28% increase in ethical awareness, as students were better able to relate ethical principles to their specific academic and professional domains. The study recommended aligning workshop content with students' areas of study to maximize relevance and impact.

Finally, Lee and Nguyen (2022) investigated the role of expert guest speakers in AI ethics workshops. The inclusion of industry professionals and ethicists resulted in a 35% improvement in students' understanding of real-world ethical challenges. The study highlighted the value of

firsthand industry insights in bridging the gap between theoretical knowledge and practical application.

### **Methodologies Employed**

The studies reviewed employed a variety of methodologies to assess the impact of AI ethics workshops. Pre- and post-workshop surveys were commonly used to measure changes in students' knowledge and attitudes, providing quantitative evidence of learning outcomes. Paired sample analysis ensured that the same students were compared before and after the workshop, offering robust evidence of impact. Mixed-methods approaches, combining quantitative data with qualitative interviews, provide deeper insights into students' experiences and thought processes. Longitudinal studies tracked participants over extended periods to assess the sustained impact of workshops, while interdisciplinary and discipline-specific approaches highlighted the importance of contextual relevance.

### **Challenges and Limitations**

Despite the positive findings, several challenges and limitations were noted across the studies. Ensuring the reliability and validity of assessment tools remained a persistent issue, as self-reported data could be subject to bias. The diverse backgrounds of students, including varying levels of prior knowledge and cultural differences, made it difficult to standardize impact measurement. Resource constraints, such as the need for expert facilitators and comprehensive materials, also posed challenges to the scalability and accessibility of workshops.

### **Future Directions**

Future research should focus on developing more reliable and comprehensive assessment methods, including behavioral metrics to measure actual changes in students' ethical behavior. Longitudinal studies should be expanded to track the long-term impact of workshops and identify strategies for sustaining ethical awareness. Broader participation, particularly from underrepresented groups, should be encouraged to ensure inclusivity and diversity in ethical discussions. Integrating AI ethics workshops into the regular curriculum and adopting interdisciplinary approaches can provide a more holistic and continuous learning experience for students.

The reviewed studies consistently demonstrate the positive impact of AI ethics workshops on enhancing student awareness about the ethical usage of AI. Structured, interactive, and

contextually relevant workshops have proven effective in improving students' understanding of ethical principles and their application in real-world scenarios. While challenges in measurement and implementation persist, the findings underscore the importance of these educational interventions in fostering responsible AI development and usage. Future efforts should focus on refining assessment tools, expanding accessibility, and integrating ethical education into broader academic and professional contexts to ensure sustained and comprehensive impact.

## **RESEARCH METHODOLOGY**

### **Data Collection Method**

For this study, data were collected through tests administered to two 9th-grade classes: one that attended the AI Ethics Workshop and one that did not. The test was designed to assess the students' baseline knowledge of AI ethics, covering topics such as responsible AI usage, AI bias, data privacy, and the ethical implications of AI in education. The test, administered immediately after the workshop for the intervention group, was identical to the pre-test in terms of structure and content. This allowed for a direct comparison of students' knowledge before and after the intervention, as well as a comparison between the two groups.

Both tests consisted of multiple-choice questions and short-answer questions, providing both quantitative and qualitative measures of students' understanding. The tests were administered in a controlled classroom setting to minimize distractions, with each student completing both tests independently. This setup allowed for an analysis of the effects of the workshop on the students' ethical understanding of AI compared to the control group.

### **Sampling**

The study targeted 9th-grade students at The Sanskaar Valley School, Bhopal. A total of 60 students, selected from a diverse range of academic backgrounds and exposure to AI tools, participated in the workshop. The sample was chosen using a non-random convenience sampling method, considering the students' availability and willingness to participate. All participants had varying levels of prior knowledge of AI, ensuring a broad spectrum of understanding before the intervention. The sample was considered adequate for statistical analysis based on the expected effect size and the number of students in the grade level.

## Workshop Intervention

The intervention consisted of a one-week AI Ethics Workshop, with seven chapters designed to provide students with foundational knowledge on AI and its ethical implications. The content covered topics such as responsible AI usage, AI bias and fairness, data privacy, and AI's role in education. Each chapter was delivered through a combination of lectures, case studies, group discussions, and interactive activities. The objective of the workshop was to increase students' awareness of AI ethics, encourage responsible AI use, and equip them with the skills needed to navigate AI tools ethically in their academic and future professional lives.

## Method of Data Analysis

The data collected from the pre-test and post-test were analyzed using statistical methods to determine the effectiveness of the workshop in improving students' understanding of ethical AI usage.

1. **Descriptive Statistics:** The first step was to calculate the descriptive statistics for Class A and Class B, including the mean, standard deviation, and variance. This provided an initial understanding of the central tendency and variability of the students' scores before and after the intervention.
2. The **F-Test** for Two-Sample Variances was conducted to assess whether the assumption of equal variances holds between pre-test and post-test marks. This step was necessary before performing a **t-test assuming equal variances** to compare the means of the two groups.
3. **Paired Sample T-Test:** To assess whether the workshop had a statistically significant impact on students' understanding of ethical AI usage, a paired sample t-test was conducted. The paired sample t-test is ideal for this study because it compares the means of two related groups (pre-test and post-test scores) to determine whether there is a significant difference in the means. The null hypothesis ( $H_0$ ) states that there is no difference in the mean scores of the pre-test and post-test, while the alternative hypothesis ( $H_1$ ) suggests that there is a difference.
4. **Effect Size Calculation:** To assess the practical significance of the results, the effect size (Cohen's  $d$ ) was calculated. Effect size provides insight into the magnitude of the difference between the pre-test and post-test scores, which helps in understanding whether the observed difference is meaningful in a real-world context.

5. **Significance Testing:** The statistical significance of the results was determined by evaluating the p-value obtained from the t-test. A p-value below the significance threshold of 0.05 would indicate that the observed difference in scores is unlikely to have occurred by chance, thus supporting the rejection of the null hypothesis.
6. **Qualitative Analysis using NVivo:** The qualitative analysis, conducted using NVivo 15, examined students' perceptions of AI ethics through thematic analysis of open-ended responses. Key themes included academic integrity, responsible AI usage, and ethical dilemmas.

### **Ethical Considerations**

In conducting this study, several ethical considerations were taken into account:

- **Informed Consent:** All participants were informed about the purpose of the study, the voluntary nature of their participation, and the confidentiality of their responses. Consent forms were signed by both students and their parents or guardians, ensuring ethical compliance.
- **Confidentiality:** The personal information of the students and their individual test scores were kept confidential and stored securely. Identifiable data were anonymized during the analysis to protect participants' privacy.
- **Right to Withdraw:** Students were informed that they had the right to withdraw from the study at any point for a span of two weeks.

### **Limitations**

There are a few limitations to this study. The sample size, while sufficient for statistical analysis, may not be fully representative of the broader student population. Additionally, the use of convenience sampling limits the generalizability of the findings. Another limitation is the reliance on self-reported data through tests, which may be subject to bias or inaccuracies. Finally, the study only measures short-term improvements in ethical awareness, and long-term retention of knowledge was not assessed.

### **DATA ANALYSIS**

#### **Analysis of Variance Assumption Using F-Test**

The F-Test for Two-Sample Variances was conducted to assess whether the assumption of equal variances holds between pre-test and post-test marks. This step was necessary before performing a **t-test assuming equal variances** to compare the means of the two groups.

### F-Test Results and Interpretation

The F-test compared the variances of the Class A and Class B, yielding the following results:

**Table 2. F test results**

| <b>F-Test Two-Sample for Variances</b> |                |                 |
|----------------------------------------|----------------|-----------------|
|                                        | Pre-Test Marks | Post-Test Marks |
| Mean                                   | 9.866666667    | 15.03333333     |
| Variance                               | 14.32643678    | 11.55057471     |
| Observations                           | 30             | 30              |
| df                                     | 29             | 29              |
| F                                      | 1.24032242     |                 |
| P(F<=f) one-tail                       | 0.282855632    |                 |
| F Critical one-tail                    | 1.860811434    |                 |

*(Source: Primary Data)*

Since the **F-statistic (1.2403)** is less than the **F-critical value (1.8608)** and the **p-value (0.2829)** is **greater than 0.05**, the null hypothesis of equal variances **cannot be rejected**. This indicates that there is no statistically significant difference between the variances of the two samples.

### Justification for Using a t-Test Assuming Equal Variances

The assumption of equal variances is a key requirement for conducting a **t-test assuming equal variances**. As the F-test results confirm that the variances are not significantly different, the t-test

assuming equal variances is the appropriate statistical method for comparing the means of the two groups. Had the F-test indicated a significant difference in variances, an alternative test, such as Welch's t-test, would have been considered.

By verifying the variance assumption through the F-test, the validity of the subsequent t-test results is ensured, reducing the risk of bias due to variance differences.

### Calculation of effect size

$$d = \frac{M_1 - M_2}{SD_{pooled}} \quad \begin{array}{l} M_1 = 15.03 \text{ (Class B)} \\ M_2 = 9.8 \text{ (Class A)} \end{array} \quad (\text{Eq 1. Effect size})$$

$$d = \frac{15.03 - 9.8}{3.47} = 1.51 \quad (\text{Eq 2. Cohen's d})$$

The calculated Cohen's d is approximately 1.51. This indicates a large effect size, suggesting that the difference between Class A and Class B scores is substantial and practically significant.

**Table 3. Two sample t-test**

| <b>T Test: Two-Sample Assuming Equal Variances</b> |                      |                      |
|----------------------------------------------------|----------------------|----------------------|
|                                                    | <b>Class A Marks</b> | <b>Class B Marks</b> |
| Mean                                               | 10.4                 | 15.03333333          |
| Variance                                           | 15.8                 | 11.55057471          |
| Observations                                       | 5                    | 30                   |
| Pooled Variance                                    | 12.06565657          |                      |

|                              |              |  |
|------------------------------|--------------|--|
| Hypothesized Mean Difference | 0            |  |
| df                           | 33           |  |
| t Stat                       | -2.761402242 |  |
| P(T<=t) two-tail             | 0.009328416  |  |
| t Critical two-tail          | 2.034515248  |  |

*(Source: Primary Data)*

The analysis of the table highlights a significant difference in the scores between the pre-test and post-test. The mean pre-test score is 10.4, while the post-test mean is higher at 15.03, suggesting an improvement in performance after the intervention. The variance in the pre-test scores (15.8) is greater than the variance in the post-test scores (11.55), indicating that post-test scores were more consistent. A two-sample t-test assuming equal variances was conducted, yielding a t-statistic of -2.76. The two-tailed p-value of 0.00933 is below the significance threshold of 0.05, providing strong evidence to reject the null hypothesis, which states there is no difference in the mean scores of the pre-test and post-test. This result suggests that the intervention (such as a workshop or training) was effective in creating a statistically significant improvement in students' knowledge, understanding, or awareness.

## Qualitative Analysis

### Thematic analysis

The thematic map categorizes key aspects of **academic integrity, writing, and AI-generated content**, highlighting their interconnections in an educational context. **Academic integrity** is given a distinct and sizable section, emphasizing its critical role in maintaining ethical standards. The **writing** category focuses on "**writing style**" and "**improving writing**," reflecting the need to enhance traditional writing skills. In contrast, **AI-generated content** is presented as a separate yet relevant element, indicating its growing influence and the concerns surrounding its ethical use. The map structure suggests that while AI can aid writing, maintaining academic integrity remains



The word cloud highlights key themes related to **academic integrity, ethical AI usage, plagiarism, and learning in education**, reinforcing the importance of responsible AI-generated content in academics. Prominent terms such as "**academic**," "**learning**," "**generated**," "**plagiarism**," "**writing**," "**think**," "**integrity**," and "**students**" suggest a strong focus on maintaining originality while leveraging AI tools. The emphasis on "**ethics**," "**responsibly**," "**prevent**," and "**misused**" indicates concerns about AI being used to bypass learning rather than enhance it. Additionally, words like "**policies**," "**educate**," "**schools**," and "**concepts**" highlight the role of institutional interventions in guiding students toward ethical AI usage. This analysis aligns with the hypothesis that a **workshop intervention** can significantly impact students' understanding of AI ethics, as reflected in potential differences in marks between Class A and Class B. If Class A, having received the workshop, demonstrates better comprehension and higher marks, it would validate the effectiveness of such interventions in promoting academic integrity and responsible AI use.

## FINDINGS

1. Students who attended the workshop demonstrated a notable improvement in their understanding of ethical AI principles, as reflected in their post-intervention assessments.
2. Students in the experimental group showed a deeper understanding of academic integrity, plagiarism concerns, and responsible AI-generated content usage.
3. The workshop helped students identify ethical dilemmas related to AI use in academics and beyond.
4. The intervention led to enhanced writing styles and a more analytical approach toward AI-generated content.
5. Participants exhibited a more nuanced perception of AI tools, recognizing both their benefits and ethical limitations.
6. Students gained a clearer understanding of how AI functions and its implications for academic and professional environments.
7. The workshop improved students' ability to make informed and ethical decisions when using AI-based tools.
8. Post-intervention test scores indicated a statistically significant increase compared to the control group.

9. Despite the improvements, some students still struggled with distinguishing between ethical and unethical AI usage.
10. Engagement levels varied, suggesting the need for different teaching methods to cater to diverse learning styles.

## **SUGGESTIONS**

1. Educational institutions should incorporate AI ethics modules into existing coursework.
2. Conducting periodic interventions such as guest lectures and hands-on activities can reinforce ethical AI practices.
3. Gamified exercises, case studies, and real-world ethical dilemmas should be integrated to make learning more engaging.
4. Training educators to effectively guide students in ethical AI usage can bridge the gap between technological advancements and ethical understanding.
5. Schools and universities should establish clear guidelines on AI-generated content usage to maintain academic integrity.
6. The study underscores the effectiveness of AI ethics workshops in fostering ethical awareness and responsible AI utilization, emphasizing the need for continued educational interventions to enhance students' comprehension and application of ethical AI principles.

## **CONCLUSION**

The findings of this study highlight the effectiveness of AI ethics workshops in enhancing students' understanding of ethical AI usage. The significant improvement in post-intervention test scores demonstrates the positive impact of structured educational interventions in promoting academic integrity and responsible AI practices. While the workshop successfully increased students' awareness and decision-making abilities, variations in engagement levels suggest the need for diversified teaching strategies to accommodate different learning styles. Moving forward, integrating AI ethics education into the curriculum and providing continuous reinforcement through interactive learning approaches will be essential in preparing students to navigate the evolving digital landscape responsibly. This research underscores the importance of proactive educational measures in fostering ethical AI usage, ensuring that students develop the necessary critical thinking and ethical reasoning skills to engage with AI tools responsibly and effectively.

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## **ANNEXURE: TEST PAPER**

### **Section A: Multiple Choice Questions (MCQs) – 10 Marks**

*(Each question carries 1 mark)*

1. **What does AI stand for?**
  - a) Artificial Intelligence
  - b) Automated Innovation
  - c) Advanced Interaction
  - d) Applied Intelligence
2. **Which of the following is an example of unethical AI usage?**
  - a) Using AI to summarize a text
  - b) Using AI to generate fake profiles for social media
  - c) Using AI for language translation
  - d) Using AI to create a study schedule
3. **What is plagiarism?**
  - a) Giving credit for someone else's work
  - b) Using someone else's work as your own without credit
  - c) Writing your own original work
  - d) Sharing your work with others
4. **How can you avoid plagiarism in assignments?**
  - a) Copying content from the internet
  - b) Paraphrasing without proper citation
  - c) Using AI tools responsibly and citing sources
  - d) Using the same assignment multiple times
5. **Which is the best practice for ensuring data privacy when using AI tools?**
  - a) Sharing your password with friends
  - b) Providing unnecessary personal details to an AI tool
  - c) Reading the terms and conditions before using an AI application
  - d) Allowing the AI tool to access all your files

6. **What is an AI bias?**
  - a) A technical error in AI algorithms
  - b) A preference for using AI in specific areas
  - c) A systematic error in AI outputs due to prejudiced data
  - d) A way of ensuring AI is fair
7. **Which of these is considered ethical behavior when using AI for assignments?**
  - a) Using AI to find research material and citing it correctly
  - b) Letting AI write the entire assignment without supervision
  - c) Submitting AI-generated work as your own
  - d) Using AI to generate false data
8. **What should you do if you suspect an AI tool has shared your private data without permission?**
  - a) Ignore the issue
  - b) Report it to the tool's developers or relevant authorities
  - c) Share more data to see what happens
  - d) Stop using the internet entirely
9. **Why is it important to cite sources when using AI tools?**
  - a) To give credit to the original author
  - b) To fill space in your assignment
  - c) To avoid adding unnecessary details
  - d) To confuse the reader
10. **Which of the following is an ethical use of AI in education?**
  - a) Asking AI to complete an exam for you
  - b) Using AI to analyze research data for a project
  - c) Allowing AI to create fake academic credentials
  - d) Using AI to manipulate images to mislead others

## **Section B: Short Answer Questions – 10 Marks**

*(Each question carries 2 marks)*

1. Define plagiarism and explain why it is considered unethical.

2. List two ways AI can support responsible learning in education.
3. What steps would you take to ensure your work is free from plagiarism while using AI tools?
4. Explain how AI bias can affect decision-making. Provide an example.
5. Why is it important to understand data privacy when using AI tools?