



Student's Perceived Impact of Artificial Intelligence on Their Academic Assignment Behaviors: A Qualitative Study Among Electronics Engineering Students

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Abstract

In higher education, the rapid advancement of Artificial Intelligence (AI) technology has significantly transformed the way students approach learning and finish their assignments. Students are increasingly relying on AI-powered tools such as ChatGPT, Gemini, and other generative AI applications to assist with tasks like gathering information, developing ideas, solving problems, and completing assignments. While these devices offer numerous educational benefits, concerns have emerged regarding their potential impact on students' academic honesty, ability to think critically, and study habits. The aim of this study is to explore how students studying Electronics Engineering view the impact of artificial intelligence on their approach to completing academic assignments. To fully understand students' perspectives and experiences regarding the use of AI in academic environments, a qualitative research approach was employed. Six students majoring in Electronics Engineering took part in semi-structured interviews to collect data. The gathered information was then analyzed using thematic analysis, a process that involved reducing the data, organizing it into patterns, and preparing the final conclusions. Four key themes came up from the analysis: AI as a tool to support learning, the boost in productivity and efficiency when completing tasks, concerns about becoming too dependent on AI and losing critical thinking skills, and ethical issues related to academic honesty and the originality of work. The findings indicate that students generally see AI as a helpful tool that enhances learning effectiveness, helps finish assignments more quickly, and makes course content easier to grasp. Participants knew about the potential risks of depending too much on AI, including reduced motivation for independent learning and challenges in maintaining proper ethical standards in academic work. The study concludes that AI significantly and intricately influences how students approach their academic assignments. It raises important ethical and responsible usage concerns while simultaneously providing considerable educational advantages. Therefore, to ensure that AI functions as a supportive learning aid that boosts rather than diminishes students' critical thinking and ability to learn independently, higher education institutions must establish clear guidelines and promote digital literacy.

Keywords: Artificial Intelligence, Generative AI, Academic Assignment Behaviors, Student Perceptions, Qualitative Study, Electronics Engineering Students, Higher Education.

1. Introduction

The past few years, digital technology has advanced quickly and driven significant transformations in various sectors of life, including higher education. A technological innovation currently receiving widespread attention is Artificial Intelligence (AI), particularly Generative Artificial Intelligence (GenAI), which can automatically generate images, text, program code, and various other forms of information. The emergence of AI-based platforms such as ChatGPT, Gemini, Claude, and various similar applications has transformed the way students access information, complete academic assignments, and understand learning materials [1], [2]. Since the advent of big language models, artificial intelligence has become more prevalent in higher education, which allow students to obtain academic assistance quickly and efficiently. Numerous studies have shown that AI can assist students in searching for references, compiling reports, explaining complex concepts, and supporting independent learning processes [3], [4]. AI technology can also enhance student interaction in learning by personalizing learning experiences according to individual needs [5], [6].

The use of AI in academic environments has grown and become a global phenomenon that can influence various aspects of student learning behavior. Research shows that many students use AI to assist with assignments, report writing, and even exam preparation [7], [8]. This access and ability to generate information instantly has led to AI technology becoming increasingly accepted by students as an effective learning tool. In fact, numerous studies have shown that students perceive AI as a tool that can increase their productivity and efficiency in completing daily academic activities [9], [10]. However, the use of AI has also sparked debate regarding its impact on the quality of academic learning. Several studies have suggested that excessive reliance on AI may reduce students' critical thinking skills, creativity, and

problem-solving skills [11], [12]. When students choose to use AI without evaluating or even deeply understanding the information obtained, the student learning process, which should be active, can become passive [13], [14].

In fact, the use of AI in completing academic assignments can also raise challenges regarding plagiarism and academic honesty. The ability of AI to create text that resembles human writing concerns the authenticity of students' work [15], [16]. Many higher education institutions are starting to implement AI policies and guidelines to ensure that the technology can be used ethically and responsibly [17], [18]. Therefore, it is increasingly important for students to understand how to view the use of AI and how this technology influences student behavior in completing academic assignments. Many students' perceptions of AI are a determining factor in the technology's utilization. According to technology acceptance theory, perceptions of ease of use and usefulness significantly influence students' intention to use a technology [19]. In the context of higher education, students who view AI as beneficial have higher adoption rates than students with negative perceptions of AI itself [20]. Therefore, student perceptions of AI can be an important indicator in understanding changes in academic behavior that occur as a result of using this technology.

Several studies indicate that students generally have a positive view of the use of AI in academic activities. AI is considered to enhance the efficiency of assignments, facilitate understanding of learning material, and accelerate information retrieval [21], [22]. However, other studies also indicate that students are aware of the risks involved, such as decreased independent thinking skills, the emergence of technological dependency, and the potential for misuse in completing academic assignments [23]. These differing perceptions indicate that further in-depth study is needed. Student behavior in completing academic assignments is a crucial aspect of the learning process in higher education. This behavior encompasses how students seek information and references, work on projects, and complete various assignments assigned by lecturers. The emergence of AI has the potential to significantly change all of these stages [24]. Currently, students can receive immediate assistance to generate ideas and even generate assignments automatically. This situation can have negative impacts if used without understanding and supervision [25]. Based on this background, this study aims to analyze student perceptions regarding the impact of the use of Artificial Intelligence technology on academic assignment completion behavior. It is hoped that this study will offer a more thorough comprehension of the advantages and challenges of using AI in higher education. The results are also expected to serve as a basis for higher education institutions in formulating policies and learning strategies that can optimize the use of AI effectively and responsibly.

2. Literature Review

2.1. Artificial Intelligence in Higher Education

Artificial Intelligence (AI) has become a key part of today's education system. Recently, the creation of Generative Artificial Intelligence (GenAI), like ChatGPT, Gemini, and other big language models, has started to change how teaching and learning happen in colleges and universities. Unlike regular educational tools, these AI tools can create text that looks like it was written by a person, summarize content, answer questions, and help with solving problems, which makes them helpful for students to use in learning.

AI is being used more in college and university settings because it helps students get information quickly, offers tailored explanations, and creates engaging learning activities. Based on earlier research, a lot of students see AI as a useful study buddy that helps them learn on their own and do better in school. Researchers have also discovered that universities everywhere are starting to use AI because it helps make learning easier to access and more adaptable.

Research indicates that using AI in education can help in several ways, like giving tailored learning experiences, providing quick feedback, helping with writing tasks, and helping students understand and learn things more effectively. It also helps students learn on their own by providing explanations that fit their personal needs and the way they best learn. These features are really helpful in subjects that are hard to understand, because students usually need to hear explanations again and get quick answers when they don't get something.

The increasing use of AI is also because there are many simple apps that are easy to use. Studies show that students usually enjoy using ChatGPT because it's easy to use, talks like a person, and explains things in a straightforward way. These characteristics support the Technology Acceptance Model (TAM), which states that individuals are more inclined to use a technology if they believe it to be beneficial and simple to use.

In addition, new studies show that AI is now a key part of digital learning environments. Many university students use generative AI to look up information, come up with ideas, write content, and help with their assignments. Because of this, AI is becoming more and more viewed not just as a new teaching tool but also as a common resource for learning in college and university settings.

2.2. Student Perceptions Toward Artificial Intelligence

Student views on artificial intelligence are very important because they can greatly affect how well AI technologies are used and accepted in schools and classrooms. Perception refers to what students think, feel, and believe about how useful, effective, and impactful using AI is in their learning [21]. Many studies have shown that students generally have a positive view of AI in education. Chan and Hu [1] discovered that students like how AI can make hard topics easier to understand, give quick answers, and help with schoolwork in a fast and effective way. Similarly, Abdullah and others [21] found that most university students see AI as a helpful tool for learning that can improve their academic results and how well they learn. Rahman and Watanobe [22] also showed that students think AI is a good helper in education, as it can help them understand better, make learning easier, and feel more confident when doing their work. Similarly, Chan [25] found that students often use AI to come up with ideas, check their answers, make their writing better, and understand the course material more deeply. But not all students have positive views about it. Some research has pointed out problems with how accurate and dependable AI can be, as well as the risk of it being used in harmful ways [8], [23]. Farrokhnia and their team [8] did a SWOT analysis and found some weaknesses and dangers of using AI, like spreading false information, depending too much on AI, and worries about ethics. Students also worry about whether AI-generated content is reliable and if they might get wrong information [3]. Even with these worries, most students agree that AI can help with learning if used the right way. Studies show that students usually see AI as an extra tool to help with learning, not as something that would take the place of regular teaching methods [1], [22]. This fair view shows how important it is to teach students about using AI in a responsible way.

2.3. AI and Academic Assignment Behaviors

The way students approach and finish assignments like essays, reports, projects, lab work, and tests is referred to as academic assignment behavior. These habits have been greatly impacted by the growing usage of AI, which facilitates information collection, idea formulation, research summarization, and writing enhancement [14].

Research indicates that students employ AI at several phases of the assignment completion process, including as topic selection, drafting, editing, and revision [25]. AI also makes academic activities more effective and accessible by organizing data, clarifying difficult ideas, and offering individualized learning aids [6], [7].

AI helps students grasp difficult concepts and solve technical issues in engineering education [3]. However, when students accept AI-generated content without assessing its accuracy or dependability, an over-reliance on AI may diminish their capacity for independent thought and critical problem-solving [3], [8].

2.4. Benefits of Generative AI in Learning

The educational benefits of generative AI have been widely documented in recent literature. One of the most frequently cited advantages is improved learning efficiency. AI enables students to obtain information quickly and receive immediate responses to academic questions [1], [6]. According to Tlili et al. [2], AI-based chatbots can function as intelligent tutoring systems that provide explanations, answer questions, and guide students through learning processes. Similarly, Kasneci et al. [3] argued that AI has the potential to democratize education by increasing access to high-quality learning support regardless of geographical or socioeconomic constraints.

Another important benefit is personalized learning. AI systems can adapt explanations according to students' learning needs and levels of understanding [7]. This feature allows learners to revisit concepts repeatedly until comprehension is achieved. Such adaptability is particularly valuable in technical disciplines where students often encounter abstract and complex material.

Research also indicates that AI can stimulate creativity and idea generation. Chan [25] reported that students frequently use AI as a brainstorming tool when developing assignments and projects. Rather than replacing creativity, AI may encourage students to explore alternative perspectives and innovative approaches when used appropriately.

Furthermore, AI contributes to increased student engagement and motivation by providing interactive learning experiences [22]. The conversational nature of generative AI encourages active participation and self-directed learning, thereby fostering greater learner autonomy.

2.5. Challenges and Ethical Concerns of AI Usage

Despite its educational benefits, the increasing use of AI has generated significant ethical and pedagogical concerns. One major concern involves academic integrity. Researchers have questioned whether AI-generated content may facilitate plagiarism, unauthorized assistance, or academic dishonesty [4], [15], [16]. Cotton et al. [4] highlighted concerns that students may submit AI-generated assignments without demonstrating genuine understanding of the subject matter. Similarly, Eaton [15] argued that generative AI challenges traditional definitions of authorship, originality, and academic integrity within higher education.

Another concern involves the potential decline of critical thinking and creativity. Several studies suggest that excessive reliance on AI may reduce students' motivation to engage in independent analysis and problem-solving [8], [11]. Rudolph et al. [11] argued that AI-generated responses may encourage superficial learning if students accept outputs without critical evaluation.

Issues related to accuracy and misinformation have also been reported. Although AI systems generate coherent responses, occasionally, they could generate false or falsified information, which is known as "hallucinations." [3], [23]. As a result, students who rely too much on AI without double-checking facts may face academic dangers.

Recognizing these challenges, UNESCO [17] and the Office for Students [18] have emphasized the need for institutional policies and ethical guidelines governing AI usage in education. These organizations recommend that educational institutions promote AI literacy, transparency, accountability, and responsible usage practices among students and educators.

2.6. Theoretical Framework: Technology Acceptance Model

This study is supported by the Technology Acceptance Model (TAM) developed by Davis [19]. According to TAM, perceived utility and perceived ease of use are the two main elements influencing users' acceptance of technology. Perceived usefulness refers to the degree to which individuals believe that a technology can improve their performance, while perceived ease of use refers to the degree to which technology is perceived as effortless to use [19]. Users' attitudes and behavioural intentions about the use of technology are greatly influenced by these factors.

The Unified Theory of Acceptance and Use of Technology (UTAUT) further extends this perspective by emphasizing performance expectancy, effort expectancy, social influence, and facilitating conditions as determinants of technology acceptance [20]. Regarding university students' embrace of AI, perceived usefulness is reflected in students' beliefs that AI can improve learning efficiency, assignment completion, and academic performance. Perceived ease of use is demonstrated through the accessibility and user-friendly interfaces of applications such as ChatGPT and Gemini. Consequently, TAM and UTAUT provide an appropriate theoretical foundation for understanding students' perceptions regarding the impact of AI on academic assignment behaviors.

3. Research Method

3.1. Research Design

This study investigated Electronics Engineering students using a qualitative descriptive research design' perceptions regarding the impact of Artificial Intelligence (AI) on their academic assignment behaviors. Because the study aimed to obtain a comprehensive knowledge of students' experiences, opinions, and attitudes regarding the employment of AI in academic situations, a qualitative method was deemed

appropriate. Qualitative research places more emphasis on participant interpretation than quantitative methods, which concentrate on numerical measures and statistical analysis' perspectives and experiences concerning a particular phenomenon.

The study focused on understanding how students view the advantages, difficulties, and ramifications of using AI to complete academic tasks. Through qualitative inquiry, the investigator discovered recurrent trends and themes that emerged from participants' responses and to develop a comprehensive understanding of AI's influence on academic behaviors.

3.2. Participants

Six students who were enrolled in the Electronics Engineering investigation Programme participated in this investigation. Purposive sampling, a non-probability selection strategy frequently employed in qualitative research to find people with pertinent knowledge and experience regarding the research issue, was utilised to select participants.

The inclusion criterion required participants to have experience using Artificial Intelligence applications such as ChatGPT, Gemini, Gamma AI, or other AI-based tools for academic purposes. All participants reported using AI to support various academic activities, including searching for references, understanding learning materials, generating ideas, checking answers, solving academic problems, and completing assignments.

To ensure confidentiality and anonymity, participants' identities were replaced with participant codes (P1–P6) throughout the research process.

Table 1: Participant Profile

Participant	Study Program	AI Tools Used
P1	Electronics Engineering	ChatGPT, Gemini, Gamma AI
P2	Electronics Engineering	ChatGPT, Gemini
P3	Electronics Engineering	AI-Based Tools
P4	Electronics Engineering	AI-Based Tools
P5	Electronics Engineering	ChatGPT
P6	Electronics Engineering	ChatGPT, Gamma AI

3.3. Data Collection

Semi-structured online interviews with written responses were used to gather data. Because they enable participants to freely express their thoughts while guaranteeing that all research objectives are met, semi-structured interviews were selected. The interview protocol consisted of several guiding questions related to:

1. Frequency of AI usage in academic activities.
2. Types of AI applications used.
3. Benefits of AI for academic assignments.
4. Influence of AI on creativity and critical thinking.
5. Utilising AI in higher education in an ethical and acceptable manner.

Participants were encouraged to provide detailed responses based on their personal experiences. The interview data were subsequently compiled and prepared for analysis.

3.4. Data Analysis

The interactive model created by Miles and Huberman, which has three interrelated stages—data reduction, data display, and conclusion formulation and verification was the basis for the thematic analysis of the gathered data. This analytical approach was selected because it enables researchers to methodically find themes, patterns, and interpretations that arise from qualitative data.

3.4.1. Data Reduction

Data reduction was conducted immediately after the interview process. All interview responses were carefully reviewed, organized, and transcribed into a structured format. The researcher repeatedly read the interview data to gain a comprehensive understanding of participants' perspectives regarding the use of Artificial Intelligence (AI) in academic assignments. During this stage, relevant statements related to the research objectives were identified and assigned initial codes. Similar responses were grouped into broader categories. For example, responses related to understanding difficult concepts, obtaining explanations, and accessing information were categorized under learning support. Responses concerning time efficiency, faster assignment completion, and productivity were categorized under efficiency and productivity. This coding process helped reduce the complexity of the data while retaining essential information relevant to the study.

3.4.2. Data Display

Following the coding process, the categorized data were organized into thematic displays in the form of tables and narrative descriptions. Data display enabled the researcher to compare participant responses and identify recurring patterns across interviews. The researcher examined similarities and differences among participants' perceptions regarding AI usage. Responses with similar meanings were grouped together, allowing broader themes to emerge. Through this process, the data became more organized and easier to interpret. The thematic display also facilitated the identification of relationships between categories and the overall research objectives.

3.4.3. Conclusion Drawing and Verification

Interpreting the themes that were found was the last step and drawing conclusions based on the analyzed data. The researcher continuously reviewed the coded responses and thematic categories to ensure that the findings accurately reflected participants' experiences and perspectives

Verification was conducted by comparing the emerging themes with the original interview responses to maintain consistency and credibility. Themes were refined through repeated examination of the data until clear and meaningful interpretations were obtained. This iterative process helped ensure that the conclusions were firmly grounded in the participants' actual statements. Based on the thematic analysis, four major themes emerged from the interview data:

1. AI as a Learning Support Tool – Participants perceived AI as a helpful tool for understanding learning materials, obtaining explanations, and accessing academic information.
2. Improved Productivity and Efficiency – AI was viewed as a technology that saves time, improves efficiency, and accelerates assignment completion.
3. AI as a Source of Ideas and Problem-Solving Assistance – Participants mentioned employing AI to come up with concepts, verify answers, and support problem-solving activities.
4. Concerns Regarding Dependency and Academic Integrity – Students expressed concerns about excessive reliance on AI, reduced critical thinking, and ethical issues related to originality and academic honesty.

The identification of these themes provided a comprehensive understanding of how Electronics Engineering students' perceptions of how AI affects their academic assignment practices. Thematic analysis was used to examine the gathered data in accordance with Miles and Huberman's approach. This analytical approach was selected because it facilitates the methodical process of finding, classifying, and interpreting patterns in qualitative data. The analysis consisted of three stages:

4. Result and Discussion

4.1. Results

Table 2. Presents the major advantages and disadvantages

No	Advantages	Disadvantages
A	AI supports understanding of learning materials and complex concepts.	Excessive AI usage may reduce critical thinking and creativity.
B	AI improves efficiency and saves time in completing assignments.	Students may become dependent on AI-generated answers.
C	AI assists idea generation and problem-solving activities.	Some students may use AI without fully understanding the material.
D	AI provides accessible learning assistance anytime and anywhere.	Improper AI usage may raise concerns regarding academic integrity.

A. AI as a Learning Support Tool

The results showed that participants thought AI was a useful tool for learning help. Codes such as *understanding difficult concepts*, *obtaining explanations*, *simplifying learning materials*, and *accessing information quickly* formed this theme. Participants explained that AI helps them understand topics that are difficult to comprehend through conventional learning resources. In addition, AI allows students to ask questions repeatedly until they fully understand the material. Participants generally viewed AI as an educational assistant that facilitates independent learning and supports their academic development. These findings indicate that AI has a significant impact on kids' ability to overcome learning challenges, particularly when dealing with complex technical subjects.

"AI can help explain lessons that I do not understand and make them easier to learn." (P1)

"I can ask AI repeatedly until the explanation becomes clear and easy to understand." (P2)

"If there is a difficult question, AI can provide a detailed explanation." (P4)

This finding supports previous studies suggesting that AI can enhance learning effectiveness by providing immediate and personalized academic assistance.

B. Improved Productivity and Efficiency

The second theme highlights students' perceptions regarding the efficiency benefits of AI. Codes such as *saving time*, *faster assignment completion*, *quick information retrieval*, and *efficient reference searching* contributed to this theme. Participants consistently reported that AI allows them to complete academic tasks more quickly and efficiently. The data suggest that students value AI primarily because it reduces the time required to search for information and obtain explanations. This advantage is particularly important in higher education environments where students frequently face multiple academic responsibilities and deadlines.

"AI helps me search for data and references more quickly." (P1)

"One of the biggest advantages is efficiency because AI provides information directly and quickly." (P2)

"AI is very helpful for final-year students because it simplifies problem-solving in final project proposals." (P3)

These findings demonstrate that perceived usefulness is a major factor influencing students' acceptance and continued use of AI technologies in academic contexts.

C. AI as a Source of Ideas and Problem-Solving Assistance

Another important theme identified in the data relates to AI's role in supporting idea generation and problem-solving activities. Codes such as *brainstorming*, *new perspectives*, *answer verification*, and *technical guidance* formed this theme. Participants reported that AI not only provides answers but also helps generate ideas and alternative approaches for completing assignments. Several participants emphasized that AI serves as a discussion partner rather than a direct replacement for their own thinking processes. In practical and technical assignments, AI was frequently used to verify procedures, confirm answers, and provide guidance during problem-solving activities.

"AI often provides suggestions, ideas, and different perspectives when working on assignments." (P2)

"I usually use AI to check whether my answers are correct before submitting them." (P5)

"When assembling electronic circuits, AI helped me verify whether the wiring connections were correct." (P6)

These findings suggest that students perceive AI as a complementary tool that supports creativity and problem-solving when used appropriately.

D. Concerns Regarding Dependency and Academic Integrity

Although participants acknowledged numerous benefits of AI, they also expressed concerns regarding excessive dependence and ethical issues. Codes such as *copying answers*, *reduced creativity*, *lack of understanding*, *dependency*, and *academic dishonesty* formed this theme. The data showed a strong consensus that AI should be used as a supporting tool rather than a substitute for independent thinking. Participants emphasized that problems arise when students simply copy AI-generated responses without understanding or evaluating the content. Several participants also warned that excessive reliance on AI could reduce creativity, critical thinking, and problem-solving abilities.

"AI can reduce students' creativity if it is used excessively and only for copying answers." (P1)

"Students should use AI as a learning tool, not as a substitute for thinking." (P1)

"The most important thing is not to copy and paste directly. We still need to understand the material ourselves." (P5)

"AI should be treated as a discussion partner, not as a tool for cheating." (P5)

Overall, participants agreed that responsible AI usage requires students to critically evaluate AI-generated information and maintain active engagement in the learning process. These results emphasise how crucial it is to advance ethical consciousness and digital literacy in order to guarantee that AI enhances students' academic growth.

4.2. Discussion

The results of this investigation show that Artificial Intelligence (AI) has become an important educational tool that significantly influences students' academic assignment behaviors. Overall, Electronics Engineering students perceived AI positively due to its ability to facilitate learning, improve efficiency, and support problem-solving activities. However, participants also expressed concerns regarding excessive dependence on AI and its potential impact on critical thinking, creativity, and academic integrity. These findings indicate that AI has a multifaceted influence on students' academic experiences. AI was recognised as a learning assistance tool in the first theme. Participants reported that AI helps them understand difficult concepts, obtain simplified explanations, and access academic information more efficiently. This finding is consistent with previous studies by Chan and Hu [1] and Kasneci et al. [3], which found that AI technologies can provide personalized learning support and enhance students' understanding of academic content. Similarly, Tlili et al. [2] argued that generative AI systems function as intelligent educational assistants capable of providing immediate explanations and learning guidance. The findings suggest that AI contributes positively to independent learning by enabling students to seek clarification whenever needed.

The second theme revealed that students perceive AI as a tool that enhances productivity and efficiency. Participants emphasized that AI reduces the time required to search for references, generate ideas, and complete assignments. This finding aligns with previous research indicating that students adopt AI technologies primarily because of their perceived usefulness in improving academic performance and reducing workload [21], [22]. According to the Technology Acceptance Model (TAM), the results indicate that students' positive perceptions of AI are strongly influenced by its perceived usefulness. The ability of AI to provide rapid access to information and academic assistance encourages its continued use among university students. The third theme highlighted AI's role in supporting idea generation and problem-solving. Participants reported using AI to verify answers, obtain alternative perspectives, and assist with technical assignments. These findings support the work of Chan [25], who found that students frequently utilize generative AI as a brainstorming and idea-development tool. Likewise, Lo [6] suggested that AI can support self-directed learning by assisting students in organizing information and exploring different approaches to solving problems. For Electronics Engineering students, AI appears to function as a supplementary resource that enhances learning rather than replacing the learning process itself.

Despite these benefits, the fourth theme revealed concerns regarding dependency and academic integrity. Participants expressed the view that relying too much on AI could impair one's capacity for autonomous problem-solving, creativity, and critical thinking. These findings are consistent with studies by Rudolph et al. [11] and Farrokhnia et al. [8], which identified overreliance on AI as one of the major challenges associated with its educational use. When students accept AI-generated responses without evaluation or reflection, opportunities for critical engagement with learning materials may be diminished. This finding highlights the importance of balancing technological assistance with active cognitive participation. Furthermore, participants emphasized that AI should not be used as a substitute for personal effort and understanding. Concerns regarding copying AI-generated content and submitting assignments without modification reflect broader issues of academic integrity. These findings support the arguments of Cotton et al. [4] and Eaton [15], who noted that generative AI raises

significant questions regarding authorship, originality, and ethical academic practices. The participants generally agreed that AI is acceptable when used as a learning aid but becomes problematic when it replaces students' own intellectual contributions. The findings can also be interpreted through the lens of the Technology Acceptance Model (TAM) [19]. Participants' positive attitudes toward AI were largely influenced by perceived usefulness, particularly in relation to learning support and efficiency improvement. At the same time, concerns regarding dependency and ethical issues indicate that technology acceptance is accompanied by awareness of potential risks. Therefore, while students generally accept AI as a beneficial educational technology, they also recognize the need for responsible and ethical usage practices. Overall, this study suggests that AI has both positive and negative implications for students' academic assignment behaviors, that relying too much on AI could impair one's capacity for autonomous problem-solving, creativity, and critical thinking. Consequently, higher education institutions should develop clear policies and guidelines regarding AI usage while promoting digital literacy and ethical awareness. Such measures can help ensure that AI serves as a complementary learning tool that enhances, rather than replaces, students' intellectual engagement in the learning process.

5. Conclusion

This study explored Electronics Engineering students' perceptions regarding the impact of Artificial Intelligence (AI) on their academic assignment behaviors through a qualitative research approach. Thematic analysis of the information gathered from six participants' interviews, four major themes emerged: AI as a learning support tool, improved productivity and efficiency, AI as a source of ideas and problem-solving assistance, and concerns regarding dependency and academic integrity. The findings indicate that students generally perceive AI as a beneficial technology that supports learning by facilitating access to information, simplifying complex concepts, generating ideas, and improving efficiency in completing academic assignments. Participants reported that AI helps them save time, enhance understanding of course materials, and obtain academic assistance whenever needed. These findings suggest that AI has become an important educational resource that can positively contribute to students' learning experiences and academic performance. However, the study also revealed several concerns regarding the excessive use of AI. Participants agreed that an excessive dependence on AI could impair critical thinking, creativity, self-directed learning, and problem-solving skills. Furthermore, issues related to academic integrity and originality of work emerged as important considerations, particularly when students use AI-generated content without sufficient understanding, evaluation, or personal contribution. Overall, the study concludes that AI has a substantial and multifaceted influence on students' academic assignment behaviors. While AI offers significant educational benefits, its effectiveness depends largely on how students utilize the technology. Therefore, AI should be used as a complementary learning tool that supports, rather than replaces, students' intellectual engagement and independent thinking. Higher education institutions are encouraged to develop clear guidelines, strengthen digital literacy initiatives, and promote ethical AI practices to maximize the benefits of AI while minimizing potential risks. Future studies may involve larger and more diverse participant groups and employ mixed-method approaches to provide a broader understanding of the long-term impact of AI on students' academic behaviors and learning outcomes.

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