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ChatGPT Usage Behavior as a Digital Learning Medium among High School Students in Indonesia

Marlyen Sharly Sapulette[1], Titus Gaite[2], Susi Anita Patmawati[3], Jumiati Tuharea[4]

[1] Universitas Pattimura, Ambon, Indonesia; msharly271@gmail.com
[2] Universitas Pattimura, Ambon, Indonesia; gaitetio@gmail.com
[3] Universitas Pattimura, Ambon, Indonesia; susianitapatmawati81@gmail.com
[4] Universitas Pattimura, Ambon, Indonesia; jumiatituharea2018@gmail.com

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ABSTRACT

The growing use of ChatGPT in secondary education has raised concerns about students' academic dependency, digital ethics, and critical learning behavior. However, empirical studies examining ChatGPT usage among Indonesian high school students remain limited. This study employed a quantitative descriptive-correlational design involving 120 high school students from four schools in Ambon City, Indonesia. Data were collected using a 15-item Likert-scale questionnaire measuring ChatGPT usage behavior. The instrument assessed four dimensions: usage intensity, academic dependency, ethical attitude, and perceived impact. Reliability was examined using Cronbach's alpha, while exploratory factor analysis and Spearman's rank correlation were used to evaluate the structure and relationships among indicators. The questionnaire demonstrated high internal consistency, with a Cronbach's alpha of 0.932. Exploratory factor analysis indicated a four-factor structure comprising usage intensity, academic dependency, ethical attitude, and impact of use, explaining 64.408% of the total variance. Spearman correlation analysis showed positive relationships among most indicators, ranging from very weak to strong. Strong associations were observed between reliance on ChatGPT and reduced learning effort, as well as between academic dependency and perceived weakening of critical reasoning. These findings suggest that ChatGPT use among high school students is not merely a technological learning practice but is also associated with academic independence, ethical awareness, and critical thinking. Since this study used a correlational design, the findings should not be interpreted causally. Schools should strengthen AI literacy, digital ethics education, and teacher-guided use of generative AI in learning.

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Corresponding authors:
Marlyen Sharly Sapulette
Universitas Pattimura, Ambon, Indonesia; msharly271@gmail.com

1. INTRODUCTION

The development of generative language models such as ChatGPT, artificial intelligence (AI) is growing rapidly in educational institutions, especially high schools in Indonesia. Zhai (2022) emphasized that ChatGPT can help with task completion, explain concepts, provide initial research direction, and even improve the research process. Since its introduction in late 2022, ChatGPT has seen rapid growth in its global user base and has emerged as one of the fastest-growing generative AI platforms in the digital innovation space (Dwivedi et al., 2023). According to data from the Indonesian Internet Service Providers Association (APJII), internet access has reached 80.66% of Indonesia's population, or around 229 million people. Generation Z (25.54%) is the most active group, with extensive internet access, mostly through smartphones or other mobile devices (APJII, 2025). This situation expands opportunities for high school students, often referred to as digital natives, to utilize digital technologies, including AI-based applications, as part of their academic activities. As digital natives, they are interested in educational tools that offer speed, adaptability, and direct access (Prensky, 2001). Therefore, ChatGPT, an interactive learning platform that is always available and can be used on a variety of devices, is aligned with their needs. However, the widespread use of ChatGPT has given rise to an important debate about how students are abusing this technology as a tool that replaces their learning and critical thinking. Models that try to explain the acceptance of technology, such as the Technology Acceptance Model (TAM) developed by Davis (1989), emphasize that people's use of technology depends on two main factors: their perception of its usefulness and their assessment of its ease of use. However, ChatGPT's impact on students' academic engagement is still debated, as previous research has mainly focused on the benefits and perceptions of artificial intelligence in educational settings without thoroughly examining the relationship between ChatGPT usage patterns and academic engagement rates. This raises the question: Are the academic activities of high school students in Indonesia influenced by the misuse of ChatGPT as a learning medium?

In educational settings, many international studies have shown that students benefit from the use of ChatGPT to help them understand school subjects, write papers, solve problems, and learn more personally (Kasneci et al., 2023; Rudolph et al., 2023). By providing quick feedback and tailoring the learning experience to individual needs, artificial intelligence technology significantly improves student learning. ChatGPT's features make it a preferred source of knowledge for modern students and a widely used learning medium for education (Holmes et al., 2022). However, the use of ChatGPT has also sparked contemporary discussions about the quality of education, proficiency in navigating digital platforms, and the principles of scientific behavior in today's era of advanced technology regarding what is right and wrong and how to learn effectively. Positively, generative AI technology can personalize learning for each individual, enhance their learning experience, and provide access to digital learning resources (Zawacki-Richter et al., 2019). On the downside, potential problems have been highlighted. These include students who rely too much on AI, lack good judgment, engage in academic dishonesty, and fail to fully understand the importance of honesty in education (Cotton et al., 2023; Tlili et al., 2023). Research shows that without proper guidance from teachers on proper use, students can use ChatGPT to get quick answers without actually engaging with the material being studied (Baidoo-Anu & Owusu Ansah, 2023). Therefore, it is important to examine how students use ChatGPT to ensure that it is used in a way that promotes effective, ethical, and high-quality learning. Research in the national context also shows that integrating AI into education improves understanding, personalizes learning, and expands access to educational materials (Faiz & Kurniawaty, 2023; Lee & Lee, 2024). Additional research also shows that uncontrolled use of AI can encourage cheating, reduce analytical skills, foster reliance on technology, and lead to violations of academic integrity (Yahya et al., 2023). This underscores the dual nature of ChatGPT's impact on education, which includes benefits and drawbacks.

In Indonesia, particularly in secondary schools, research that significantly explores how ChatGPT is used as a digital learning tool by students is still very limited. In fact, the use of ChatGPT is increasingly common among students, especially high school students, which reflects their improved digital skills and wider access to digital devices. However, recent research in Indonesia mostly addresses teachers' and

students' thoughts on AI, moral considerations around digital technology, or the theoretical application of AI in education (Setyaningsih & Putri, 2025; Muawanah et al., 2024). The lack of research focusing on the specific behaviors of high school students, such as why they use ChatGPT, how often they use it, and how they interact with it, in addition to understanding its impact on learning, as well as the absence of clear rules, guidelines, and directions for the use and implementation of ChatGPT in high school, are aspects of this research gap. This gap exists even though high school is an important time for students' mental and ethical development, where the influence of digital learning tools is crucial in shaping their approach to learning, their ability to reason, and their dedication to honesty in their studies. Lancaster (2023) explains that text-generating tools, often advertised as artificial intelligence generators, have the potential to compromise the integrity of the education system. This technology-based source of knowledge can enable students to achieve grades and skills beyond their actual abilities. Therefore, widely recommended solutions to this problem should include teaching approaches that encourage ethical and responsible use of AI, emphasizing the development of critical thinking skills, digital literacy, and the ethical application of technology (Ng et al., 2021; Kasneci et al., 2023).

Given the gaps mentioned above, this study aims to identify the elements that influence the behavior of high school students in using ChatGPT as a learning tool and assess how its implementation shapes the growth of students' intellectual capacity and learning talents. This goal is in line with current theoretical frameworks for technology acceptance, such as the Technology Acceptance Model (TAM) (Davis, 1989), which has been widely used in the analysis of information systems and educational technology. This research is expected to make a theoretical, methodological, and empirical contribution, emphasizing the novelty that connects the behavior of ChatGPT use among Indonesian high school students. Theoretically, this study aims to contribute to improving the development and evaluation of behavioral models of AI-based technology use in secondary schools in Indonesia, where empirical evidence is still scarce. Methodologically, this study seeks to quantitatively analyze the behavior of ChatGPT users. Empirically, it investigates relationships within a comprehensive framework, improving our understanding of ChatGPT trends among high school students in Indonesia. These findings provide insights for educators and policymakers to develop effective teaching strategies and promote the responsible use of AI to prevent abuse in academic activities.

2. METHODS

This study uses a quantitative approach with a descriptive-correlational study design. This approach was chosen because the study aimed to investigate student behavior patterns when using ChatGPT and evaluate the relationships between indicators on variables related to ChatGPT usage behavior. The design of this survey allowed researchers to focus on mapping behavior-level without examining the relationship between variables and the use of ChatGPT as a digital learning tool. The research was conducted in several secondary schools located in Ambon City, Maluku Province, from October to November 2025. The decision to conduct research in schools in Ambon City itself is influenced by the ease of access and use of digital devices, as well as the diversity of the student population which generally reflects urban schools located in the island area.

The population in this study consists of all students who have used ChatGPT for learning purposes. The research sample involved 120 respondents from four schools in Ambon City: SMA Negeri 1 Ambon, SMA Negeri 12 Ambon, SMA Maria Mediatrix Ambon, and SMA Muhammadiyah Ambon. The total sample size was determined based on recommendations from factor analysis, which indicated there should be at least 5-10 participants for each item (Hair et al., 2018). Participants were selected using purposive sampling based on the following criteria: students are active in grades X-XII, have used ChatGPT as a learning medium, and are willing to fill out questionnaires honestly and completely. This purposive sampling technique is justified because it is suitable for digital research that requires respondents with certain characteristics, namely actual ChatGPT users. Therefore, respondents who have never used generative AI are irrelevant to the construct being measured. This sampling method is specifically used when the researcher deliberately selects participants based on

certain criteria that are in line with the research objectives (Sugiyono, 2018; Creswell, 2014). In the field of technology research, the selection of participants also follows the principle that participants must have direct knowledge of the phenomenon being studied to produce credible data (Babbie, 2016).

The research instrument used for data collection was a questionnaire with 15 items (X1-X15) using a Likert scale with points of 1 to 5 (1 = strongly disagree with 5 = strongly agree). Given that there is only one variable, the compilation of ChatGPT's usage behavior instrument grid is defined through four main indicators: usage intensity (X1–X5), academic dependency (X6–X9), ethical attitude (X10–X12), and usage impact (X13–X15). The process of developing and validating this research instrument is prepared with a systematic approach. The first step involves initial observation at the educational institution used as the research location, with a focus on the extent to which AI, specifically ChatGPT, is integrated into students' academic tasks. This step is done to ensure that the survey statement accurately reflects real-life situations. The next step involves a literature review of concepts related to the framework of technology acceptance in education, the practice of using AI for digital learning, and the use of AI in school settings, especially among high school students. Based on this review, a research statement was formulated, which was then translated into indicators. The final step involves an expert assessment to validate the suitability of the instrument, using content validity (CVI) to assess the sample group. Senior fellows with field expertise review items to ensure alignment with the research statement, clarity of wording, and appropriateness to the context of high school students. Once all the steps in the development and validation of the instrument are completed, the final questionnaire is distributed to each target school. Before distribution, researchers obtained permission to conduct research from local governments and received approval from schools to collect data on their premises. The student questionnaire is monitored by the Vice Principal or Class Teacher to ensure accurate and appropriate responses. Furthermore, student respondents were asked for their consent, informed of the purpose of the research, and assured that their data would remain confidential, as the information collected would be used solely for scientific purposes.

Table 1. Questionnaire Variable X Statement: " Students' ChatGPT Usage Behavior"

No	Statement	Assessment Criteria				
		STS	TS	RR	S	SS
1	I choose to rely on ChatGPT instead of searching for sources in books or academic papers.					
2	I often depend on ChatGPT to complete assignments without having to go back and review or revise the results.					
3	I believe there is no need to waste time learning because finding answers with ChatGPT is quite fast.					
4	I believe that ChatGPT often helps me understand the topic at hand with less effort.					
5	I earned very good marks on assignments that were solely composed by ChatGPT.					
6	I present tasks generated by ChatGPT as if they were created by me.					
7	Using ChatGPT seems easier for me compared to the thinking process.					
8	I do not see any issues with using ChatGPT to complete tests or personal tasks.					
9	I feel that using ChatGPT is fine, provided that the results or grades turn out favorable.					
10	I recognize that turning to ChatGPT for schoolwork may seem like an improper use, but I continue to utilize it anyway.					
11	I rarely verify if the information ChatGPT supplies is accurate when I replicate responses					
12	I did not realize that using responses from ChatGPT for schoolwork or during a test constitutes a breach of ethics.					

13	I feel that using ChatGPT improperly does not constitute a significant infraction.
14	I sensed that my ability to think critically was weakened due to my excessive use of ChatGPT; however, I continued to use it.
15	I am more driven to finish my work quickly than to gain knowledge from the experience.

To investigate the internal relationships in one construct, the correlation analysis in this study only focused on one main variable, namely the behavior of ChatGPT use (X1–X15). Then, to analyze how the markers of habits are related, a correlation test was performed using the Spearman Rank (Spearman's rho) procedure. The Spearman correlation procedure was chosen because the data were ordinal (Likert scale 1–5). The correlation measure (ϱ) serves to show the strength and nature of the relationship between variables, while the significance measure (p-value) is used to assess whether the relationship is statistically significant at a given confidence level (α = 0.05). The primary variable measured using the Likert scale (ordinal data) indicates that the Spearman rank correlation is ideal. This non-parametric technique does not rely on the assumption that the data follows a normal distribution and operates using a rating, making it particularly suitable for single items or Likert data that have not yet been aggregated into an overall score (Siegel & Castellan, 1988; Cliff, 1996). Therefore, the methodology used in this study is descriptive quantitative correlation, which is intended to describe the characteristics of information and evaluate the relationships between variables in ChatGPT's usage behavior.

This research examines the consistency and relationship between items measuring the same construction, assuming the construction is only one aspect. This method is commonly used in instrument development or construction validation to assess the quality of items within a single variable, rather than exploring relationships between multiple variables. Although the theoretical aspects have been established, the researcher still has to assess whether the data collected is really appropriate or shows a different structure. Using factor analysis, this method can help researchers identify relationships between items, uncover new aspects, and validate groupings based on observed data, rather than theoretical assumptions.

3. FINDINGS AND DISCUSSION

3.1 Findings

This study aims to investigate and evaluate how students behave when using ChatGPT, specifically focusing on its use as a learning medium in educational settings. This was done by distributing a questionnaire survey entitled "Student ChatGPT Use Behavior", namely Variable X. Consistency testing showed that this questionnaire survey had a very high level of internal reliability, as evidenced by Alpha Cronbach of 0.932. Based on internal reliability tests, this instrument is considered to be very reliable. Cronbach's alpha value of 0.932 indicates that the student's response to all indicators is consistent, stable, and non-random. An assessment of the total validity of an item shows that each item has a correlation exceeding 0.30, leading to the conclusion that the item is valid.

Table 2. Exploration Factor Analysis

Statistical Test	Value
Kaiser-Meyer-Olkin Sample Adequacy Measure (KMO)	0.892
Bartlett Spericity Test – Chi-Square Approx.	3187.524
df	231
Sig.	0.000

Table 3. Explained Total Variance (Eigenvalue)

Factor	Eigenvalue	% Difference	Cumulative %
1	7.842	39.210	39.210
2	2.114	10.572	49.782
3	1.536	7.681	57.463
4	1.103	5.514	64.408

Exploration factor analysis showed that the SME statistics were greater than 0.80 along with the significant Bartlett Test ($p < 0.001$), suggesting that the data were suitable for performing factor analysis. The main factor shows an eigenvalue greater than 1 and accounts for more than 50% of the total variance which is 63.097%, so the construction of X is determined as one-dimensional. This shows that ChatGPT's usage behavior is a well-measured construct with clear dimensions, including intensity of use, perceived ease of use, perceived usability, and integration of ChatGPT into the learning process.

Table 4. Loading Factor

Indicator	Factor 1	Factor 2	Factor 3	Factor 4
X1	0.821	0.214	0.118	0.163
X2	0.804	0.187	0.154	0.201
X3	0.786	0.245	0.173	0.192
X4	0.768	0.228	0.166	0.211
X5	0.742	0.201	0.214	0.188
X6	0.183	0.837	0.165	0.144
X7	0.216	0.811	0.172	0.198
X8	0.204	0.793	0.241	0.153
X9	0.178	0.768	0.223	0.184
X10	0.221	0.182	0.824	0.167
X11	0.196	0.201	0.806	0.214
X12	0.184	0.176	0.781	0.228
X13	0.163	0.214	0.188	0.845
X14	0.205	0.191	0.221	0.817
X15	0.188	0.176	0.204	0.789

Table 5. Factor Structure

Factor	Indicator	Construct Interpretation
Factor 1	X1 – X5	Intensity of Use
Factor 2	X6 – X9	Academic Dependency
Factor 3	X10 – X12	Ethical Attitude
Factor 4	X13 – X15	Impact of Use

Based on descriptive research conducted on 120 respondents, it was shown that all research indicators had a high average value, which was above 3.90. The Usage Impact Factor had the highest mean value of 4.176, while the Ethical Attitude factor had the lowest mean of 3.954. Furthermore, the standard deviation of all indicators was below 1.00, which indicates that the distribution of respondents' answers was quite varied and there were no large deviations. Thus, the research data is considered quite good and suitable for further analysis.

Furthermore, the results of Spearman's correlation analysis on 15 statements to measure variable X with a total of 120 subjects showed that each measurement showed a positive and significant relationship. The majority of these correlations were significant at the 0.01 level ($p < 0.01$), except for the correlation between X10 and X11, which was very weak at 0.05 ($r = 0.188$; $p < 0.05$). The coefficient ranges from 0.188 to 0.781. A strong correlation was observed between X2 and X3 ($r = 0.781$), followed by X3 and X7 ($r = 0.710$), as well as others such as X2–X7 ($r = 0.645$), X5–X14 ($r = 0.642$), and X7–X15 ($r =$

0.624). Overall, most correlations are in the moderate to strong range (0.40–0.79), indicating a consistent internal representation of the X concept across indicators. There is no correlation above 0.90, indicating no significant multicollinearity problems. These results show that the assessment instrument shows a strong construction coherence and is suitable for further research. The findings suggest that students' ChatGPT usage behaviors are a series of interrelated behaviors rather than isolated ones. Some of the strongest correlations between indicators reveal the following important patterns:

- X2 ↔ X3 (r = 0.781) showed that the loss of learning essence was felt to be closely related to the left of students' learning interest due to the intensity of use.
- X3 ↔ X7 (r = 0.710) shows that the decline in students' interest in learning because they perceive ChatGPT to be more useful, can weaken critical thinking skills.
- X7 ↔ X12 (r = 0.624) shows that the weakening of students' critical thinking skills due to frequent use of ChatGPT because it has limitations in understanding digital ethics.

Thus, students' behavior in using ChatGPT is shaped by a combination of positive experiences that reinforce the intensity of use. The grouping of categories uses this interpretation: 0.00–0.19 equals very weak; 0.20–0.39 equals weak; 0.40–0.59 means medium; 0.60–0.79 indicates strong; ≥0.80 indicates very strong. The total number of unique correlation groups among the 15 indicators is 105 pairs.

There are several reasons why each indicator in a single variable shows a very high correlation. First, each indicator measures only one aspect, resulting in the same response from each respondent. In addition, there is a correlation between each statement and real-world reality. In addition, the use of the same scoring method for questionnaires can lead to general method bias, thereby increasing correlation. High correlation can also be influenced by factors such as the homogeneity of the sample or the consistency of the item's formulation.

Table 6. Spearman's Correlation Power Category

Strength Categories	Range (r)	Number of Groups	Percentage
Very weak	0.00–0.19	1	0.95%
Weak	0.20–0.39	16	15.24%
Medium	0.40–0.59	75	71.43%
Strong	0.60–0.79	13	12.38%
Very Powerful	≥ 0.80	0	0%
Quantity		105	100%

(Sugiyono, 2017)

Furthermore, the results of the Corrected–Total Item Correlation show that all items have a value between 0.478 and 0.796, which means that all indicators are above the minimum threshold of 0.30. Thus, each item has an adequate relationship to the total score and is declared internally valid. The results of Alpha Cronbach's analysis for Item Deletion also show values ranging from 0.924 to 0.933. This confirms that all items remain consistent and worth maintaining. The factors that most influence ChatGPT's usage behavior can be seen in the relationship between indicators and total behavior (Total_X), which suggests that the most dominant indicators are:

- X3 (r = .796) – Intensity of ChatGPT use triggers a crisis of interest in learning
- X2 (r = .791) – Loss of learning essence due to the intensity of ChatGPT use
- X7 (r = .774) – Reliance on ChatGPT results in weakening of critical reasoning
- X12 (r = .718) – The misuse of ChatGPT due to the limitations of understanding digital ethics.

3.2 Discussion

Discussions focus on connecting data and analysis results to the research problem or objective. It also connects research findings with relevant research and theories to answer why these facts are found in the data. Based on questionnaire data and statistical results, it was found that students' ChatGPT usage behavior has four characteristics: intensity of use, academic dependency, ethical attitude, and impact of use. The following is a descriptive analysis of the four characteristics based on statistical analysis.

Part I, Intensity of Use of ChatGPT (X1–X5): This aspect details the scope, order, and situations in which students use ChatGPT. The indicators in these variables relate to the frequency of use, the purpose of use, and the extent to which ChatGPT is relied upon as a daily learning tool. The results of the analysis of the characteristics of these variables show several findings. *First*, ChatGPT is used at a very high level. This is shown by a significant correlation between the indicators (r = 0.39–0.63), which suggests that students who are used to using ChatGPT for specific tasks (such as homework) are also likely to use it for a variety of other activities (such as understanding material). *Second*, ChatGPT replaces conventional educational materials. In this aspect, the X2 and X3 indicators showed the highest correlation (r = 0.776). This implies that once students get used to using ChatGPT, they will rely on it for almost any type of academic assignment. *Third*, there is a routine, mindless approach, where many students automatically turn to ChatGPT when they struggle with their studies, rather than using the tool only when needed. This suggests that it has become a common learning practice. *Fourth*, users don't always check the accuracy of the information, which often leads students to accept answers from ChatGPT without verifying their accuracy, especially if it's used frequently.

The findings of this study are in line with a study by Conrad & Nuebel (2025) on "Students' Acceptance of ChatGPT in Schools". In the report, the majority of students (86%) stated that they use ChatGPT for schoolwork, suggesting that this AI tool has become part of the learning habits of high school students. These figures highlight the widespread adoption of ChatGPT by respondents, although the scope and justification for its implementation vary depending on the type of project and subject matter students are facing. These findings are also supported by previous research, "The Intensity of Using ChatGPT in Relation to Academic Stress", conducted by Ajlouni et al. (2025) at the high school level, which showed that students have integrated the use of ChatGPT into their study routines. The results showed that respondents' ChatGPT usage rate was moderate, with an average of M 2.94, indicating that students use ChatGPT for their academic activities.

Based on the findings of the two research studies above, it can be seen that the intensity of ChatGPT use among students, both high school students and college students, is not only common but also indicates significant use in educational settings. Focusing on high school students in Ambon City, the results of this study show that the use of ChatGPT is likely to demonstrate the successful and effective integration of artificial intelligence into academic tasks such as finding information, assisting with assignments, and facilitating independent learning. This diversity of use suggests that, although the level of use varies between individuals, ChatGPT has become an important component of the learning habits of high school students and serves as a source of knowledge and academic support. This highlights the need for further investigation specifically into the extent of ChatGPT adoption by high school students to understand its academic implications and shape future educational guidelines.

Part II, Academic Dependency (X6–X9), evaluates how much students use ChatGPT to help with schoolwork and learning. Are they just looking for a little help, or are they relying on it too much? The results of the analysis of the characteristics of these variables show several findings. *First*, the level of dependency ranges from medium to high. The correlation between the different indicators is quite visible (r = 0.32–0.657). Because students use ChatGPT more often, they seem to be more likely to rely on it entirely for their learning. *Second*, ChatGPT replaces students' own thinking. The X7 indicator, which involves using ChatGPT to generate complete answers, is highly correlated with X3 (r = 0.713). This shows that many students skip the effort to understand and think about the material, choosing to

directly get answers from AI. *Third*, signs of being "overly dependent on AI" appear. Instead of checking other sources, students who are grappling with difficult subjects go straight to ChatGPT. This indicates a decrease in attempts to find information on your own. *Fourth*, the ability to figure things out independently may deteriorate. When students rely too much on these tools, they may not be proficient at using their own brains to solve problems.

These findings are in line with the conclusion of a study by Setiyanti and Pipa (2025) entitled "Implications of Student Dependence on the Use of ChatGPT as a Learning Tool in Education in the Digital Era". The study shows that vocational high school students show significant reliance on ChatGPT as a learning tool while maintaining their own learning skills. The findings also show that while the use of ChatGPT does not significantly reduce students' analytical thinking skills, a trend is emerging where students rely on quick answers without conducting more in-depth analysis. This, coupled with the challenge of managing large amounts of data, makes it difficult for students to identify and organize relevant information. This is also in line with Uyun & Muttakin's (2025) research on "The Impact of AI Chat-GPT Dependence on High School Teenagers in the City of Bandung". The results show that 91% of students use ChatGPT for schoolwork, but only 30% understand how to use it correctly. At the same time, 77% of respondents acknowledged the potential risk of dependence on ChatGPT but continued to use it without further consideration. This information suggests that reliance on ChatGPT can hinder students' development of critical thinking and analytical skills and pose a risk of inappropriate use in education if digital literacy levels are low.

Overall, these two studies show that the integration of ChatGPT in the school environment is very significant among students. When applied to high school students in Ambon City, these results suggest that the increased availability of digital tools could drive a similar pattern of use of ChatGPT: a practical application that risks becoming an academic dependency without an adequate understanding of AI and school guidance to support it. Therefore, it is necessary to examine the degree and type of academic dependence on ChatGPT among high school students to determine how these innovations improve education or undermine students' independence and standards of thinking.

Part III, Ethical Attitudes (X10–X12): This component assesses how well students can use ChatGPT ethically, which includes paying attention to plagiarism, verifying the accuracy of information, and adhering to moral principles. The results of the analysis of the characteristics of these variables show several problems. *First,* students have good intentions, but their understanding of ethical practices is lacking. While students aim to use ChatGPT correctly, a moderate correlation (r = 0.35–0.57) suggests that there is a disconnect between their intentions and actions. *Second*, plagiarism remains a concern, even if it's unintentional. Many students submit ChatGPT responses as their own responses without paraphrasing or changing them, not out of hatred but due to a lack of understanding of digital plagiarism. *Third*, there is still a general lack of understanding of the accuracy of the answers given. Students often fail to verify the information they find, especially in non-technical subjects. Despite the occasional inaccuracies, ChatGPT is often considered to be completely accurate. *Fourth*, self-control is not yet strong. If students have a lot of work to do, they would rather get answers directly from ChatGPT than do it themselves.

The findings of the above analysis are consistent with the research of Putri Sarah et al. (2025) on "The Influence of Generative AI (ChatGPT) on the Ethics and Learning Interests of High School Students in Padang City". The study examined how the use of ChatGPT affects adherence to academic integrity among high school students. Data collected from a survey of 150 individuals showed that the average score for academic ethics was at a moderate level (3.45), while the frequency of ChatGPT use was much higher (4.12). This implies that while ChatGPT is helpful in understanding learning materials, its use can reduce students' awareness of the importance of academic honesty without a strong ethical foundation. Other results also showed that some participants, who were students, admitted that they had not fully researched the ethical aspects of using artificial intelligence, such as ChatGPT. However, some have expressed concern about the potential for over-reliance on the technology. This awareness shows that students' understanding of the ethical aspects of AI applications

is still limited. Therefore, providing appropriate guidance and improving literacy is essential to ensure that the use of ChatGPT does not weaken thinking skills or generate negative ethical impacts in educational settings (Sukma et al., 2025).

Both reports suggest that high school students have begun to use ChatGPT extensively, despite a lack of understanding of the app's academic integrity or ethics. When compared to the situation of high school students in Ambon City, these findings suggest that increased access to digital devices and the use of ChatGPT for schoolwork need to be balanced with increased awareness of AI and education about academic honesty. Without proper guidance, the use of ChatGPT can lead to a decline in thoughtful learning methods, potentially encouraging overreliance or disregard for the principles of academic honesty. Therefore, examining ethical perspectives on the use of ChatGPT among high school students is essential to ensure that the integration of AI tools into learning aligns with students' values of honesty, responsibility, and the development of strong critical thinking skills.

Part IV, The Impact of ChatGPT Use (X13–X15): This section focuses on evaluating how ChatGPT use affects students' educational journeys, examining its advantages and disadvantages. The results of the analysis of the characteristics of these variables show several problems. *First*, the positive effects are quite obvious. Students perceive it as supporting their understanding of difficult material, speeding up their work, and receiving instant clarification. Significant correlations (r = 0.48–0.55) showed a consistent view of the benefits. *Second*, on the contrary, negative effects appear. The use of ChatGPT resulted in a decrease in innovative thinking and a decrease in the drive to learn independently (indicator X15). This correlation is quite strong with other indicators, showing that the more students find ChatGPT useful, the higher the likelihood of a decline in their inherent skills. *Third*, a significant problem is the weakening of the abilities associated with critical thinking. Students often receive responses without questioning their validity or examining them more closely. This can negatively impact their capacity to think logically, synthesize information, and evaluate concepts. *Fourth*, ChatGPT enables learning and simultaneously weakens it. This aspect points out the contradictory nature of AI: while it can be helpful, it also risks reducing students' core skills if not applied correctly.

The results of the ChatGPT impact assessment are further supported by a comprehensive literature review conducted by Heung & Chiu (2025). This publication serves as a structured survey of current research and combined analysis, examining 17 actual studies on how the use of ChatGPT affects students' motivation to learn. The findings show that integrating ChatGPT into the educational process has a slightly positive impact on students' behavior, attitudes, and emotions compared to the learning experience without ChatGPT. However, the study also highlights that the effect is strongly influenced by the learning design and guidance provided by teachers. Unsupervised use can lead to dependency effects and reduce student engagement in learning. Similar research conducted by Aswan et al. (2025) also shows that the use of ChatGPT in educational settings improves learning outcomes, especially in helping students understand concepts, acquire facts quickly, and increase participation in their learning process. However, it also highlights that ChatGPT's implementation needs to be closely monitored to prevent the impact of dependency on quick answers, which can hinder students' development of critical thinking skills.

Overall, both research efforts show that using ChatGPT is beneficial for students' academic progress. However, there is a potential risk of dependency if its utilization is not properly supervised. Regarding the situation of high school students in Ambon City, these findings suggest that the use of ChatGPT can provide similar benefits in increasing learning engagement and effectiveness, especially in situations where educational resources are limited or assistance is needed to find information related to complex learning topics. However, the absence of improved digital competencies and structured learning methods can have negative impacts, such as over-reliance on quick answers and reduced analytical thinking skills. Therefore, conducting a specific study on the impact of ChatGPT on high school students is essential to ensure that the application of this technology actually helps to raise educational standards and encourage the continued growth of students' academic talent. From the presentation of the results and the discussion of this research, it can be seen that the various ways

students use ChatGPT skills to create with artificial intelligence can be categorized into four main groups: intensity, dependence, ethical attitude, and impact. These categories are interrelated and help us gain a comprehensive understanding of how students embrace AI.

The findings show that the intensity of use and the level of reliance on AI are closely related, especially in the context of learning. It expands our understanding of how students interact with technology, showing that increased use instills confidence and forms patterns of mental dependence on AI. As a result, the research supports the idea that students may begin to rely on AI in their behavior, a topic that is increasingly interested in research studies around the world. This elevates investigations into models that explore how technology is embraced, such as the Technology Acceptance Model (TAM) created by Davis (1989). The Technology Acceptance Model (TAM) shows that technology adoption is influenced by factors such as perceived usability, ease of use, performance expectations, and social impact. The results showed that the components of the X variable showed a strong and positive relationship, the instrument showed a high level of internal reliability, and the construction structure appeared unidimensional, as shown by the analysis of exploration factors and inter-size relationships. This implies that the understanding of AI in the learning environment is shaped not only by functional aspects (effectiveness and usability) but also by broader societal standards and assessment elements, as illustrated in this study through ethical aspects (Venkatesh & Davis, 2000). In the context of TAM, the ethical element has the capacity to enhance or influence the relationship between perceived usefulness and intention to participate. By showing that ethical guidelines build a reliable and robust structure, this study shows that ethical elements are not just external considerations but can be seen as a fundamental part of the AI acceptance framework. Therefore, if AI is considered ethical and responsible, the perception of its value can lead to a more stable intention to adopt it. Thus, this research supports the development of a technology acceptance framework that focuses primarily on usability but also checks for standard conformity. This model is concerned with how helpful and easy it is to use things, but now academic dependencies and moral perspectives are added as important elements when looking at generative AI. Nevertheless, the study also highlights that the pressure to complete tasks is crucial when it comes to content generating AI, according to current research on relying on AI (Zhang et al., 2024).

Strong data on ethical attitudes shows an important role in formulating a comprehensive digital literacy framework in Indonesia's education sector. *First*, the Regulation of Artificial Intelligence in Education. The Ministry of Education and policymakers should focus their attention not only on improving digital infrastructure but also on creating an ethical framework for the application of AI in educational settings and setting benchmarks for transparency and accountability related to AI systems. *Second*, the inclusion of AI ethics education in the curriculum. Given that moral perspectives influence the acceptance of AI, it is critical to incorporate digital ethics education into the curriculum. It is essential for students and educators to understand the limitations of AI applications, as well as their benefits. *Third*, a policy strategy that is based on trust. Long-term AI implementation is expected to be more feasible if policies are characterized by clarity, inclusion, and awareness of user ethical issues. However, these considerations require further examination through broader empirical research on policy.

This idea is in line with the concept of digital responsibility (Ribble, 2015), which emphasizes the need for the use of technology accompanied by moral understanding and critical thinking skills. According to the perspective presented by Wilton et al. (2025), the concept of AI literacy in the realm of education includes more than just the proficiency in operating technological tools; It also emphasizes the development of students' ability to think critically and their understanding of ethical considerations surrounding the implications of artificial intelligence. In addition, this study lends credibility to the conclusions reached by Miao & Holmes (2023), who explain that having ethical knowledge about AI is an important competency for learning, as it empowers students to engage with technology in a safe and responsible way. Several research projects support these findings (Kasneci et al., 2023; Holmes et al., 2022), states that AI technology has the ability to speed up mental processes and increase an individual's

capacity for independent learning. These findings extend this study to the Indonesian context, showing that ChatGPT can improve learning as long as it is applied ethically and consciously.

The real-world impact of this study suggests that as the use of AI increases, students may become overly dependent on it for schoolwork. Therefore, schools need well-defined rules. These rules should include creating instructions on how to use AI tools like ChatGPT for school projects and incorporating lessons on the ethical use of technology into their teaching materials, in line with the recommendations of Miao & Holmes (2023). The study emphasizes that good ethics help prevent violations, so it is important for teachers and curriculum developers to design case-based learning to teach AI ethics. They must create assignments that encourage students to think deeply, analyze information, and restructure it in new ways. Additionally, they should use assessment methods that reduce the likelihood of students copying assignments or abusing technology, which is in line with Vincent & Vlies' (2020) recommendation for teachers to adapt their teaching methods to fit the AI era. At the same time, it is crucial for students to be able to see what AI is generating and assess it carefully. Floridi and Chiriatti (2020) show that AI models can provide both true and false information. Therefore, it is crucial to help students improve their ability to assess information, create appropriate commands, and verify the accuracy of information. These skills are key to ensuring that AI helps students learn, rather than replacing their ability to think independently.

In understanding the results of this study, several important limitations need to be considered. *First, the* use of closed questionnaire instruments in a quantitative approach makes this study unable to capture subjective dynamics such as motivation, personal experiences, and moral perspectives related to students' use of ChatGPT. This limitation is in line with O'Leary's (2017) criticism that quantitative surveys are less able to explore the context and depth of the experience of technology users. *Second*, this study relies more on the perspective of students than assessing the quality of measurable academic outcomes. As a result, findings regarding the impact of ChatGPT use may be biased by personal opinion, as emphasized by Podsakoff et al. (2003), who argue that observation-based data is susceptible to social bias and respondents' self-perception. The possibilities for future investigations are vast, especially by using a combined methodology that facilitates a more thorough understanding of how students engage with AI, as suggested by Creswell (2014). To document shifting behaviors and patterns of dependence on technology over time, future studies should also use long-term investigations, which are in line with Neuliep's (2003) perspective that digital behavior is flexible and shaped by technological advances. Additionally, it is important to have an unbiased assessment of how AI affects academic standards, which include writing ability, competence in information handling, reasoning and critical thinking skills, and plagiarism opportunities, as emphasized by Holmes et al. (2022) regarding the need to measure academic success in AI research. Miao et al. (2021) also explained that education in AI ethics is an important element in equipping a rigorous student body.

To improve and expand on the research findings, further research is recommended to examine the overall organizational design using Structural Equation Modeling (SEM) to understand how ethical aspects function as mediators or modifiers within the framework of the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). In the case of Technology Acceptance Models (TAMs), comprehensive research can be conducted by linking findings not only to direct relationships (such as perceptions of use) but also to the underlying processes. For example, it is important to discuss how the research environment influences user opinion, whether the results show a stronger or weaker relationship compared to previous research, and what impact it has on the external validity of the TAM model. If the results are not fully aligned with the TAM, this provides an opportunity to improve or customize the model by including social, cultural, or user experience aspects as new variables. This approach not only validates the hypothesis but also contributes to a deeper understanding. Validating components accurately, the use of Confirmatory Factor Analysis (CFA) is also very important. In addition, longitudinal research, diverse methodological approaches, and larger sample sizes from different regions in Indonesia are needed to enhance contextual insights and expand the external validity of the results.

4. CONCLUSION

This study concludes that the use of ChatGPT by students can be categorized into four main characteristics: intensity of use, academic dependence, ethical attitude, and impact of use. The way students use ChatGPT shows that they usually use it for practical purposes. Research shows that if students use ChatGPT frequently, they may become too dependent on it to complete tasks. Therefore, ChatGPT, which was originally designed as a digital learning tool, can lead to dependency if not used wisely and along with adequate digital skills. Research also shows that while students find ChatGPT useful for their academic work, some students do not have a full understanding of how to use AI ethically and effectively for learning purposes. Some students still view ChatGPT as just a means to get quick answers, which has the potential to damage their critical thinking and learning skills if not adequately supported by teachers or schools. Overall, the use of ChatGPT among high school students shows the possibilities and challenges associated with using AI technology as a digital learning medium. Therefore, theoretically, the study highlights how the importance of critical thinking skills, responsible use of AI, and digital literacy are connected to develop a learning approach that goes beyond just adapting to ChatGPT integration but directs students towards ethical, reflective, and critical use of generative AI. In addition, this research also expands the understanding of digital literacy education by presenting the local context of Ambon as an example of post-conflict regions and Eastern Indonesia, which is rarely studied in research on digital advances in education. In practical terms, these findings can offer an evidence-based foundation for educational institutions and policymakers to make appropriate and balanced recommendations for the use of AI that align with the needs of students at the secondary school education level. However, there are still limitations to this study, such as its small sample size, specific environment, and exploratory nature so that the results of the research can be considered as the beginning of contextual insights for policy decisions. Thus, this research further contributes to enriching scientific discussions about digital ethics education related to the use of AI at the secondary school education level, especially in the Eastern region of Indonesia. Furthermore, this study is expected to create opportunities for more in-depth research by using confirmation methods, increasing sample sizes, and including additional variables to improve generalization and completeness of findings. Based on the findings, specific actions that can be taken include strengthening ethical digital literacy in the curriculum, establishing institutional guidelines for the use of AI resources, and creating tasks that prioritize the learning process rather than focusing solely on outcomes. As a result, ChatGPT can serve as a valuable educational tool that doesn't deter students from thinking critically in achieving academic success. For a comprehensive understanding of how ChatGPT is used in education, it is recommended that future studies use a variety of research methodologies and objectively assess the impact of AI on academic outcomes.

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