



Understanding the Academic Resilience of Students in Managing Coursework Responsibilities and The Rationale behind The Usage of ChatGPT

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Highlights

- Previous studies showed the usage of ChatGPT in education and also discussed the relationship between the usage of ChatGPT and its potential impacts on academia and scholarly research and publishing.
- In this study, the researchers measured the academic resilience of graduate students and linked it to their decision to use ChatGPT.

Abstract

Background: The application of technology in this digital era is diverse, especially in the academic field. Students use AI tools to complete academic assignments for a variety of reasons. ChatGPT is one of the AI tools used. **Study aims:** The purpose of this study is to measure the academic resilience of graduate students and to investigate the rationale behind the decision of ChatGPT usage. **Method:** The mix-method was used in this study. The sample was determined using simple purposive sampling with criteria determined by the researchers. The quantitative data of this study was by distributing questionnaires about academic resilience using ARS-30 and analyzed it using SPSS 26.00. And for the qualitative data, the researchers used forum group discussion to investigate the rationale behind the decision of ChatGPT usage. **Results:** The findings showed that Academic Resilience affects how student manage their coursework responsibilities and how they use ChatGPT. **Conclusion:** The usage of ChatGPT has for academic purposes must be encouraged by emphasizing ethical and responsible manner.

Keywords: ChatGPT; Academic Resilience; Motivation; Graduate Students

INTRODUCTION

Since the COVID19 pandemic, the advances in information and technology have been increased the benefits of programs (Renu, 2021). In the academic sector, there are numerous ways for students to complete their academic responsibility. On November 2022, OpenAI came out with chatbot called ChatGPT (Generative Pre-trained Transformer). ChatGPT is a conversational artificial intelligence interface that uses natural language processing (NLP), which interacts in a realistic way and even “answers follow-up questions, admits its mistakes, challenges incorrect premises, and rejects inappropriate requests” (OpenAI, 2022).

The development of ChatGPT is a new challenge in education. This raises the pros and cons of using ChatGPT among students. ChatGPT is capable of much more than just answering simple questions. ChatGPT has the potential to enhance the accessibility of review reports by suggesting solutions based on the contents of articles. The collaborative review process, which involves pooling reviews from peer reviewers, editors, and other contributors to offer authors a comprehensive set of recommendations, plays a crucial role in defining and shaping a cognitive community (Woods et al., 2022). The positive role of ChatGPT in the process may have a positive impact on the academic community, the research environment, and society (Thigpen & Funk, 2019). When used responsibly, ChatGPT can certainly benefit authors. ChatGPT should not be used to replace one's knowledge of a topic, but it can be used to save time and money by composing findings descriptions and structuring a paper in accordance with various journal style guidelines (Lund et al., n.d.).

In this study, the researchers investigate the relationship between the academic resilience of students and the rationale behind the usage of ChatGPT. Resilience is the ability to withstand adversity, such as academic failure, personal problems, or social pressures, and come out on top and is a highly valued characteristic of humanity. Academically resilient students are able to persevere in dealing with significant adversity that may interfere with their educational development and achievement (Martin, 2013). Previous research has examined the use of ChatGPT in academic settings (Kasneci et al., 2023; Susnjak, 2022; Yadava, 2023), however, no study has examined the relationship between academic resilience and the use of ChatGPT.

The purpose of this study is to understand the academic resilience of master's students in managing academic responsibilities. Also, the relationship between academic resilience and the rationale behind the usage of ChatGPT. This study contributes to a better understanding of the significance of academic resilience in the context of using ChatGPT. Academic resilience refers to students' ability to survive and overcome difficulties throughout their learning process. Understanding its impact allows us to analyze how and why students with certain levels of academic resilience could possibly use ChatGPT to support their learning. Furthermore, by understanding the impact of academic resilience on ChatGPT use, this research may contribute to the development of more effective strategies and interventions to optimize the advantages of using ChatGPT in an educational setting.

METHOD

Study design

This study used a sequential explanatory strategy in the mixed methods approach. According to (Ngulube & Ukwoma, 2021), mixed methods research can provide a more comprehensive image of study problems in Library and Information Science (LIS) than either technique itself. The first stage of this strategy is to collect and analyze quantitative data, followed by qualitative data collection and analysis.

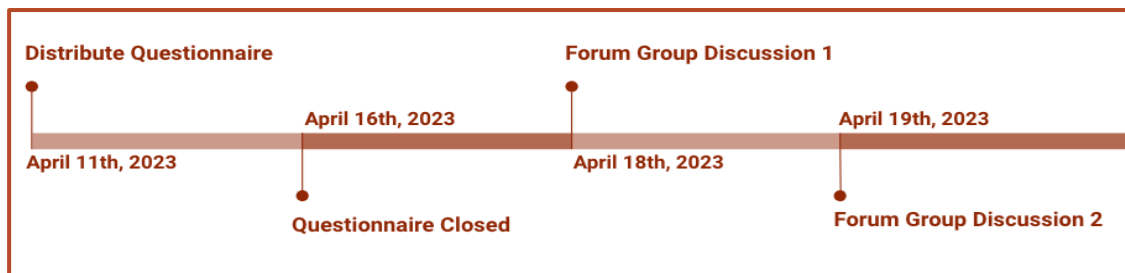


Figure 1. Timeline of the research

Quantitative data was collected by distributing questionnaires online via Google Forms. Random purposive sampling is used to determine the sample size. Purposive sampling was used, so that the data gathered is expected to be representative of the scenario (Sugiyono, 2019). The data collection period runs from 11 April 2023 to 19 April 2023. There were 32 respondents collected. The questionnaire employs closed statements; the respondents only select the response that best fits their circumstances. Questionnaires were distributed using a 6-point Likert scale (Chomeya, 2010). According to Azwar (2008), the Likert scale modification is meant to exclude neutral responses by respondents so that the data acquired does not accumulate in the middle scale and the inclination to choose answers is uncertain. The available response options range from 1 (strongly disagree) to 6 (strongly agree). This questionnaire is to identify between respondents with higher and lower academic resilience.

For the qualitative data, 14 respondents were chosen from the 32 who completed the questionnaire to participate in the Focus Group Discussion (FGD). The FGD was conducted in two stages, on 18 April 2023 for eight respondents with lower academic resilience and on 19 April 2023 for six respondents with higher academic resilience. The FGD was conducted to investigate how different students perceive the use of ChatGPT in managing their coursework responsibilities.

Participant

The population of this study consisted of all Master of Management students from Diponegoro University's Faculty of Economics and Business in Semarang. Random purposive sampling is used to determine the sample size (Sugiyono, 2019). This study's sample consists of students who have used ChatGPT (at least one month) for academic purposes. 66 questionnaires were returned from the total population. Only 32 of the total responses claimed the use of ChatGPT, which could be used for analyzing the data. Because ChatGPT was still not widely used at the time of data collection as evidenced by many students in Master of Management program at Diponegoro University who were unaware of ChatGPT, therefore the researchers applied a purposive sampling method.

Instruments

The instrument used in this study is the Academic Resilience Scale 30 (ARS-30) developed by Cassidy (2016). The scale has 3 domains with 30 items: Perseverance (items), reflecting and adaptive-help-seeking (items), and negative affect and emotional response (items). In this study, we used a 6-point Likert Scale (Chomeya, 2010), 1 indicates strongly disagree and 6 indicates strongly agree. The score range between 30 and 180, with a higher score indicating higher academic resilience.

In this study, ARS-30 was translated into the Indonesian language. Brislin's model of translation was used for the questionnaire of this study. The ARS-30 was translated from the original language (English) to the target language (Indonesian) in five steps. The first step was a forward translation (from English to Indonesian language) by three Indonesian native speakers. Following that, one native Indonesian language speaker who was not involved in the forward translation performed the reconciliation. The reconciled version was then back-translated from Indonesian to English by a native English speaker who was fluent in Indonesian and was not involved in the previous steps. The translated version was then compared to the original English language version (Sharour, 2021).

Procedure



Figure 2. Procedure of the research

In this study, the researchers used Cassidy's (2016) ARS-30 to measure Academic Resilience. The Brislin translation method is then used to translate the questions into Indonesian (Sharour, 2021). The first step was for three Indonesian native speakers to do a forward translation (from English to Indonesian). Following that, a reconciliation was performed by a native Indonesian language speaker who was not involved in the forward translation. The reconciled version was then back-translated from Indonesian to English by a native English speaker who was fluent in Indonesian and had not been involved in any of the prior steps. After that, the translated version was compared to the original English language version.

The next step was distributing the questionnaire, which included a question that classified participants as ChatGPT users or not. Users of ChatGPT proceed to the next section and complete the questionnaire to measure their academic resilience. Then at the end of the section, the researchers provide options for each respondent to be willing or not to take part in the focus group discussion. Data collection was anonymous in order to improve the validity of responses.

The data is then processed to measure academic resilience. The researchers divide respondents who are willing to participate in the FGD into two groups: lower resilience and higher resilience.

Following that, the researchers held separate focus groups for people with lower and higher levels of academic resilience. The researcher asked seven questions during the FGD, which were delivered one by one openly via the Zoom meeting platform. At this stage, we accommodate and develop the responses provided by respondents as necessary. This procedure is followed for both respondents with a low level of resilience and those with a high level of resilience.

After getting the results of the FGD, the researcher analyzed the results. Content analysis, one of the common techniques for analyzing textual materials, was used to analyze the collected interviews (Flick, 2009). The steps proposed by Erlingsson and Brysiewicz (2017) served as the foundation for the analysis. Two coders, in particular, read the given interview results before beginning to code them using the developed coding scheme in Table 1.

Table 1.*Definition of codes*

Code	Definition
Study Motivation	Use this code when users talk about what motivates them to study
Facing Demotivation	Use this code when users talk about how they face study demotivation
Easiness	Use this code when users talk about how easy it is to use ChatGPT to help them complete their academic responsibilities
Efficiency	Use this code when users talk about how ChatGPT helped them complete their academic responsibilities in terms of time
Usefulness	Use this code when users talk about how ChatGPT helped them academically
Usage	Use this code when users talking about how they use ChatGPT for academic purposes

Data Analysis

For quantitative data, the researchers used SPSS version 26.0. Multiple linear regression analysis was employed to analyze the quantitative data, using two independent variables and one dependent variable. The researcher used multiple linear regression to determine the association between the independent variables and the dependent variable (Sugiyono, 2019). Before performing the regression analysis, the data will be tested with the classical assumption test, which includes multicollinearity, heteroscedasticity, autocorrelation, and normality tests. The standard assumption test is a statistical test that verifies that the data is normally distributed and that the model has no multicollinearity and heteroscedasticity (Alita et al., 2021). For the qualitative data, the researchers conducted interview (FGD) analysis to investigate how different students perceive the use of ChatGPT for academic purposes (Dilshad & Latif, 2013).

RESULT*Participant's characteristics*

The majority of the 32 respondents were male, with first-semester students dominating. Furthermore, the majority of respondents were first-semester students, both full-time and part-time. It's worth noting that, while the majority of respondents were full-time students, several also worked full-time and studied part-time.

Table 2.*Participant's Characteristics*

Respondents Profile	N	%
<i>Gender</i>		
Female	10	31.3%
Male	22	68.8%
<i>Study Period</i>		
1 Semester	22	68.8%
2 Semesters	3	9.4%
3 Semesters	2	6.3%
4 Semesters	3	9.4%
>4 Semesters	2	6.3%
<i>Study Status</i>		
Full-time student	16	50%
Full-time student, Part-time working	5	15.6%
Full-time working, Part-time student	11	34.4%

The fact that first-semester students dominated the respondent pool could indicate a few things. Perhaps the questionnaire was distributed early in the academic year, and thus first-semester students were the only ones available to participate. Alternatively, it's possible that first-semester students were more eager or willing to participate in the questionnaire than students who had been attending the institution for a longer period of time.

Overall, this information provides a general overview of the questionnaire's respondents' demographics and may be useful in analyzing the survey results.

Data analysis

Questionnaire Analysis

In this study, the researchers used SPSS version 26.0. Multiple linear regression analysis was employed to analyze the quantitative data. Before performing the regression analysis, the data will be tested with the classical assumption test, which includes multicollinearity, heteroscedasticity, autocorrelation, and normality tests. The standard assumption test is a statistical test that verifies that the data is normally distributed and that the model has no multicollinearity and heteroscedasticity.

Validity Test

The results obtained are all the points asked to get a significance value of less than 0.05. This proves that all of these questions are valid and have met the validity test.

Reliability Test

Table 3.

Reliability Test

Cronbach's Alpha	N of Items
.891	30

The results obtained are the Cronbach's alpha value in this questionnaire of 0.891 with 30 questions. This proves that all of these questions are reliable and have met the reliability test.

Normality Test

Table 4.

Normality Test Table - One-Sample Kolmogorov-Smirnov Test

		Unstandardized Residual
N		33
Normal Parameters ^{a,b}	Mean	.0000000
	Std. Deviation	1.11846201
Most Extreme Differences	Absolute	.122
	Positive	.076
	Negative	-.122
Test Statistic		.122
Asymp. Sig. (2-tailed)		.200 ^{c,d}

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

d. This is a lower bound of the true significance.

The result obtained is the asymp value. Sig (2-tailed) in this questionnaire is 0.200. asymp value. Sig (2-tailed) is higher than 0.05 so the data obtained is normally distributed.

Autocorrelation Test

Table 5.

Normality Test - One-Sample Kolmogorov-Smirnov Test

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.995 ^a	.989	.988	1.175	2.523

a. Predictors: (Constant), Perseverance, Reflecting & Adaptive Help-Seeking, Negative Affect & Emotional Response

b. Dependent Variable: Academic Resilience

The results obtained are the Durbin Watson value in this questionnaire of 2.523. It is known that $n = 33$ with a dL value of 1.2511 and a 4-dL value of 2.7424. The value of d in this questionnaire is $1.2511 < 2.523 < 2.7424$. The conclusion that can be drawn is that the data obtained does not contain autocorrelation.

Heteroscedasticity Test

Table 6.

Heteroscedasticity Test

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	.634	1.169		.542	.592
Perseverance	.031	.025	.255	1.234	.227
Reflecting & Adaptive-Help-Seeking	-.040	.025	-.330	-1.613	.118
Negative Affect & Emotional Response	-.020	.015	-.233	-1.296	.205

a. Dependent Variable: Academic Resilience

The results obtained are sig. on the persistence variable of 0.227; the assistance variable is 0.118 while the sig. on a negative variable of 0.205. The two sig values. more than 0.05. The conclusion that can be drawn is that the data obtained does not contain heteroscedasticity.

Multicollinearity Test

The results obtained are the VIF value on the persistence variable of 1.437; the VIF value on the assistance variable is 1.406; and the VIF value on the negative variable is 1.090. The VIF value obtained is < 10.00 . The conclusion obtained is that the data obtained does not contain multicollinearity.

Table 7.

Multicollinearity Test

Model		Collinearity Statistics	
		Tolerance	VIF
1	Perseverance	.696	1.437
	Reflecting & Adaptive-Help-Seeking	.711	1.406
	Negative Affect & Emotional Response	.918	1.090

a. Dependent Variable: Academic Resilience

Multiple Linear Regression Test

Table 8.

Multiple Linear Regression Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2.444	1.965		1.244	.223
	Perseverance	.995	.042	.551	23.754	.000
	Reflecting & Adaptive Help-Seeking	1.099	.042	.601	26.221	.000
	Negative Affect & Emotional Response	.065	.026	.051	2.526	.017

a. Dependent Variable: Academic Resilience

The results obtained are sig. for the assistance variable of 0.000; sig. for negative variables of 0.017; and for the persistence variable of 0.000. All sig. less than 0.05. The conclusion that can be drawn is that all variables affect Academic Resilience variables.

Focus Group Discussion – Interview Analysis

The content analysis of interviews revealed that higher academic resilience and lower academic resilience have significant differences in how they are responsible for their academics and ways of using ChatGPT. Their views are structured according to the six themes shown in Table 1.

Study Motivation

The majority of respondents claim they will be motivated to learn about a topic or course if they are interested in it. Nonetheless, responses from participants with higher and lower AR were quite different. For instance, one participant with lower AR reported:

“If I’m interested in a topic, I’ll look into it. But, for academic purposes, it all depends on the course; if I like it, I’ll study more about it. If I lack interest in it, I’ll only study when really needed”

Another participant with lower AR further elaborated on how she/he was motivated to study, saying:

“When I have little interest in a subject or a topic, but my friends are knowledgeable about it, I will try to get to know more about it. I don't want to be the one left behind among my peers”

While participants with lower AR tend to study when they interested in a topic or a course and feeling of missing out from their friends, participants with higher AR stated:

“If I am interested in a topic, I will automatically learn more about it. But to better myself, I make studying a need. My ambition is to pursue a master's degree as a way to strengthen my skills and explore my potential for growth. And I have to take responsibility for what I have decided”

Facing Demotivation

Students may become drowsy or bored while studying. Demotivation can happen for a variety of reasons (Albalawi & Al-Hoorie, 2021), but the most important of which is how to cope with it. Most of the participants with lower AR stated that they will just let it be. One participant reported:

“I'll let it be when I'm too lazy to study. I don't make studying a habit; I only study when I have an assignment or if there is an exam the next day”

One participant with lower AR then added:

“Yet when it's exam time and I'm still unmotivated and didn't study at all, I'll attempt to write the answers in whatever way I can, as long as it stays relevant to the topic”

Participants with higher AR deal with demotivation in various ways than those with lower AR. One participant stated:

“Experiencing learning boredom is natural, and I'll leave it at that. But just for a short while, and I intend to use it to boost my mood and refresh my mind. So that when I have to return to studying, the boredom I feel has reduced or disappeared and learning becomes more enjoyable”

Another participant with a higher AR added:

“Me too, but I generally use my time to workout. Perhaps because I exercise, my body's circulation improves, allowing me to absorb knowledge quicker when studying”

Furthermore, participants with higher AR tended to cope by returning to their initial goals. One participant explained:

“I'll think about the initial commitment and aims for studying. For example, when I decide to pursue a master's degree, I will think back on why I made that decision in the first place. So I have to get up right away and figure out a strategy to avoid being lazy while studying”

Easiness

ChatGPT is well-known for its ease of use (Tarantola, 2023). All you need is an internet connection and an access device, such as a computer or smartphone. Simply enter your message or query and wait for a reply. ChatGPT is a user-friendly tool that might be useful to anyone looking for information. One participant stated:

“There is no need to think much about how to utilize it because of its very simple appearance. It would respond simply by asking a question”

The majority of the participants agreed that utilizing ChatGPT was easy. One participant with higher AR elaborated, stating that even though the answers were not always correct, it's understandable and then just simply modify the instructions.

"However, there are situations when the answer from ChatGPT does not match what I am looking for. Then I'll tweak the question, staying on the same topic but with different instructions, until I get what I'm looking for. So, in my opinion, the instructions need to be more precise for ChatGPT to respond properly. But it does easy to use"

Efficiency

Responses from a majority of the participants suggest that ChatGPT is efficacious in increasing the chances of academic success by finishing their coursework responsibilities faster. Additionally, ChatGPT was recognized by the participants as efficient in collecting a lot of basic data in a short time, so there is no need to open multiple references. One participant with lower AR reported:

"I would use ChatGPT to complete assignments because I can get what I'm looking for quickly and ChatGPT provides a lot of information so I don't have to open a lot of websites to get what I need"

Participants with higher AR added:

"ChatGPT allows me to finish assignments at a quicker pace, even though I still need to double-check the information and browse for other references. This makes it easy for me to find additional references and reduces the time spent processing"

Usefulness

ChatGPT's presence may help in the resolution of a variety of issues, particularly in education. The presence of ChatGPT has been beneficial to many students (Tlili et al., 2023). According to one participant with a lower AR:

"It's useful, especially when I'm on a tight deadline. My stress level is manageable thanks to ChatGPT, and I can do my assignments quickly"

One participant with a high AR agreed with this opinion, however, he also expressed concern and stated:

"Obviously incredibly useful, but I have a feeling that if I rely too heavily on ChatGPT, my ability to think will be affected. As a result, I have the principle that ChatGPT is merely a starting point for ideas, not the primary source for learning or accomplishing assignments"

Usage

In the Usage of ChatGPT, participants with low AR typically use ChatGPT as is. According to one participant:

"When I'm pressed for time, I depend more on ChatGPT and no longer double-check its accuracy if I think the answer is relevant to the topic I'm looking for"

Then another participant with lower AR added:

"I have enough trust in ChatGPT's responses. As a result, I mainly use it as is. I only used other sources on a couple of occasions when I felt I needed additional information"

In contrast to those with low AR, participants with high AR tend to use ChatGPT only to come up with an idea. One participant explained:

“I only use ChatGPT for brainstorming and gathering general information on a topic. After that, I'll start looking for more reputable sources, such as official websites or journal papers”

Another participant with a higher AR elaborated on the fact that ChatGPT cannot be completely trusted because misinformation might occur, reported:

“I once asked ChatGPT a question and referenced a journal article. After extra digging, it was discovered that the journal article did not exist, meaning that it was a fictitious journal article. So it's crucial that we double-check before applying the ChatGPT response”

DISCUSSION

In this study, researchers measured the academic resilience of master of management students at Diponegoro University. Cassidy (2016) created the ARS-30 technique, which was used in this investigation. The results then linked to the usage of ChatGPT for academic purposes.

The findings suggest that academic resilience impacts students' ability to manage academic responsibilities and their use of ChatGPT for academic purposes. The motivation of participants with lower AR and higher AR appears to be different. Participants with lower AR show a lack of motivation and are more likely to simply give up. Participants with higher AR are driven and have distinct targets. Participants with lower AR do not attempt to restore their learning motivation as much as individuals with higher AR do. Participants with higher AR are likely to try to boost their mental state and find ways to regain their motivation to learn.

The usage of ChatGPT for academic purposes reveals significant differences based on participants' academic resilience (AR). Individuals with lower AR tend to use ChatGPT as their primary source of information, in contrast to those with higher AR who use ChatGPT to generate thoughts and supplement their studies with other sources. Furthermore, people with higher AR are more cautious and attentive concerning it verifying the accuracy of information provided by ChatGPT. They also consider the potential outcomes of using ChatGPT and actively explore solutions to avoid potential adverse consequences.

ChatGPT has received substantial attention in the field of education in recent years, with some encouraging for how it is utilized as a tool to improve teaching and learning processes. However, concerns have been raised about its potential misuse for cheating on school homework and assignments or even exams, leading to its recent ban in New York City schools.

While the decision to ban the use of ChatGPT in schools is reasonable it is important to note that students may still find ways to cheat and manipulate the system in some way even if it is not allowed. Furthermore, the advantages of ChatGPT in education cannot be neglected. It has the possibility of revolutionizing education by offering a variety of benefits to both teachers and students, such as facilitating the making of education resources and engaging quizzes.

As with any technology, ChatGPT has advantages and disadvantages, and rather than simply banning it, it is necessary to conduct a more in-depth analysis and discussion on how to implement it in schools and universities. The banning of something doesn't always imply that people will not be able to reach it in other ways, and it may potentially impede the adoption of possible educational possibilities.

Finally, it is critical to consider the potential advantages of its use in education. As a result, a more nuanced approach is required to establish how to use ChatGPT in education, including discussions on ethical concerns, privacy concerns, and how to ensure that its use aligns with educational objectives.

While the results of this study show important insights into the use of ChatGPT for academic purposes, some limitations must be acknowledged. First, the study was limited to one study program at Diponegoro University, limiting the generalizability of the findings. In order to provide a more thorough knowledge of the factors that drive ChatGPT use in academic settings, future studies should examine expanding the scope of observation to include multiple universities and disciplines.

Second, the study's small sample size and limited scope made it difficult to collect enough data to support definitive findings. Researchers would be able to collect more solid and reliable information if they had a larger sample size and a broader range of participants. Furthermore, conducting comparative studies across different fields or professions could provide valuable insights into ChatGPT's potential applications outside of academic settings.

In conclusion, while this study shed light on the usage of ChatGPT in academic settings, there include several limitations which require further investigation in the future. Researchers may gain a more comprehensive understanding of the factors that influence ChatGPT usage and its possible advantages as well as disadvantages by expanding the area of investigation, increasing the sample size, and performing comparative studies. Such kind of research may help to provide appropriate recommendations for the responsible and ethical usage of ChatGPT in academic and professional settings.

CONCLUSION

This study found that students' academic resilience influences how effectively they're able to manage their academic responsibility and how they use ChatGPT to support their academics. Students with higher academic resilience, like those with lower academic resilience, both use ChatGPT to manage their coursework responsibilities. However, there are significant differences in how it is used and the dependability of using ChatGPT.

Students can utilize ChatGPT to change the way they learn and enhance their academic performance over time. ChatGPT can be used to generate ideas for assignments, provide feedback on writing, and help with research. However, students should be cautious not to rely solely on ChatGPT to complete assignments, as it can lead to a passable assignment without reading a book, writing a word, or thinking. As a result, students should utilize ChatGPT as a supplement to their learning rather than as a replacement for traditional kinds of evaluation, and they should do it in a responsible and ethical manner.

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