Exploring the Influence of Personality Traits on Students' Adoption of Artificial Intelligence for Literature Appreciation

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ABSTRACT

Learning literature requires deep and creative analysis to support an in-depth understanding of a literary work. However, most current students are challenged by that idea because their dependency on technology is extremely high, which invites Artificial Intelligence (AI) into the picture. As students' demographic backgrounds and psychological experiences shape their personality traits, their perceptions and reliance on AI may vary accordingly. Therefore, this study intends to investigate the potential relationship between students' personality traits; introversion, extroversion, ambiversion, and omniversion and their adoption of artificial intelligence in completing their literature appreciation assignments. A quantitative approach was used to obtain the data; questionnaires. The study used purposive sampling of 36 Diploma in English for Professional Communication (LG120) UiTM Cawangan Johor (UiTMCJ) students who had taken the Literature (ALS103) subject in Semester 1. Data were collected through a structured questionnaire comprising eight sections, including a declaration of personality traits. The quantitative data obtained from the questionnaires were analysed using SPSS; the Chi-square and One-Way ANOVA tests were applied to assess the relationship between personality traits and students' perception and dependency on AI in completing their literature appreciation assignments. Since previous literature revealed a significant relationship between roughly comparable variables, this study anticipates uncovering parallel findings within the present context. Findings are expected to provide insights into how personality differences influence AI adoption in literary studies, contributing to pedagogical strategies that balance technological support with critical and creative engagement in literature learning.

Keywords: Personality traits, Artificial Intelligence, Literature appreciation

INTRODUCTION

The landscape of higher education in Malaysia has significantly witnessed the adoption of technological assistance particularly Artificial Intelligence (AI) in the teaching and learning process. AI is a technology that was developed to assist people in experiencing easier life in certain situations (Gansser & Reich, 2021). With the rapid advancement of cybernetic technologies, AI has become integrated into nearly every aspect of life (Kaya, et. al., 2024). In this research context, the appreciation of literary texts which has long been recognised as a discipline requiring profound analytical and creative engagement is one of the scenarios included. Therefore, to sustain such engagement, students are prone to be highly dependable on AI in their literary analysis. The proliferation of AI tools in academic environments has further complicated this dynamic, raising questions about the extent to which technological reliance reshapes students' approaches to literary analysis.

In understanding individual differences in learning behaviours and technology adoption, it is important to highlight the personality traits which are believed to be connected to demographic and psychological factors. As mentioned by Haris (2024), beside other contributing factors, personality spectrum of an individual could be shaped by family dynamics, cultural norms, societal expectations and psychological mechanisms. Traits such as

introversion, extroversion and ambiversion have been shown to influence cognitive styles, social interactions, and academic preferences, suggesting that they may also mediate students' perceptions of and reliance on AI in educational scenarios. As studied by Mustoip et. al., (2024) introverted students prefer solitary learning and experience higher levels of anxiety compared to extroverted students who prefer group activities and show more enthusiasm in learning English. Likewise, a study by Ozbey and Yasa (2025) revealed that the perceptions and attitudes of dentistry students towards AI vary based on personality traits. In addition, Mubashir, Altaf and Kainaat (2025) presented a significant positive relationship between personality traits and attitude towards AI.

Despite the growing integration of AI into higher education, limited research has examined how personality differences intersect with AI adoption in the specific domain of literature learning, where critical and creative engagement remains paramount. This study addresses this gap by investigating the relationship between students' personality traits and their adoption of AI in completing literature appreciation assignments.

Research Objectives

The research objectives are:

1. To investigate the significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and students' adoption of AI in completing their literature appreciation assignments.

2. To investigate the significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and their perceptions and dependency on AI in completing their literature appreciation assignments.

Research Questions

The research questions are:

1. Is there any significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and students' adoption of AI in completing their literature appreciation assignments?

2. Is there any significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and their perceptions and dependency on AI in completing their literature appreciation assignments?

Research Hypotheses

The research objectives are:

H_0: There is no significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and students' adoption of AI in completing their literature appreciation assignments.

H_1: There is a significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and students' adoption of AI in completing their literature appreciation assignments.

LITERATURE REVIEW

Literature learning and critical engagement.

The importance of critical thinking in education lies in the recognition that students are active participants in the learning process. In a literature class, students are expected to develop higher-order thinking skills in producing good literature appreciation rather than just memorising notes (Baddane & Ennam, 2024).

Artificial Intelligence (AI) in academic contexts

According to Băiceanu, Bădoi-Hammami, and Popa, (2025), AI has undoubtedly offers extensive potential to elevate learning efficiency and academic performance. Nonetheless, ensuring equitable, meaningful, and accountable learning experiences in educational environments supported by AI demands a balanced and thoughtful approach. Other than that, the application of AI in academic contexts is closely related to the issues of academic fraud, data privacy, and other relatable issues. These immense potential issues have also resulted in different perceptions and attitudes towards AI among different individuals (Stein, et. al., 2024),

Personality traits, learning behaviours and technology adoption.

According to Sadeghi, et. al., (2012) as cited in Bakar, et. al., (2021), personality traits refer to introversion, extroversion and ambiversion. Meanwhile, personality types refer to intovert, extrovert, ambivert and omnivert. Nevertheless, there is no clear distinctions between traits and types, thus these two terms are used interchangeably in the study. Based on a study by Chang and Sun, (2024), AI significantly offers alternative way for learning language while encouraging independent critical thinking. Therefore, educators are encouraged to effectively use AI in their teaching process to provide empowering experience to students' learning process (Son, et. al., 2025). In addition, a study by Du, et.al., (2025) presented a significant role of personality traits in shaping university students' acceptance of technology particualrly ChatGPT as their language learning assistance. Besides, a study by Riedl (2023) suggested that the emphasis on trust in AI has coincided with a growing recognition that user personality influences levels of trust, thereby shaping the acceptance and adoption of the technology.

Pedagogical implications of AI integration

Referring to a study by Alqahtani and Wafula (2025), there are alarming challenges faced by the educational institutions in embracing AI tools to elevate teaching efficiency and student engagement. The main challenges include academic integrity and data privacy. Even though the implementation of AI can encourage innovation and creativity, it could lead to discrepancy in students' learning experiences caused by lack of standardisation.

METHODOLOGY

A quantitative approach was used to obtain the data; questionnaires. The sample (n) chosen for the study were 36 Diploma in English for Professional Communication (LG120) UiTM Cawangan Johor (UiTMCJ) students who had taken the Literature (ALS103) subject in Semester 1. A purposive sampling method was used to identify the group of students from the same course (LG120) who have completed ALS103 subject.

Data were collected through a structured questionnaire comprising eight sections, including a declaration of personality traits. Section A: Demographic and personality trait declaration, Section B: Exposure to AI and General Use, Section C: Perceptions of using AI in Learning Literature, Section D: Factors Affecting Use of AI, Section E: Frequency of AI use, Section F: Accuracy & Trust in AI interpretations, Section G: Academic Integrity & Guidance, Section H: General Feedback. The personality trait section can be filled according to their existing personality test result or the result prompted through the personality test link provided in the questionnaire (https://www.quotev.com/quiz/15908246/Are-you-a-introvertextrovertambivertor-a-omnivert)

The quantitative data obtained from the questionnaires were analysed using SPSS; the Chi-square and One-Way ANOVA tests were applied to assess i) the relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and students' adoption of AI in completing their literature appreciation assignments, ii) the relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and their perceptions and dependency on AI in completing their literature appreciation assignments.

Findings and Discussion

Is there any significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and students' adoption of AI in completing their literature appreciation assignments?

A Chi-Square test of independence was conducted to examine the significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and students' adoption of AI in completing their literature appreciation assignments.

Table 1 Chi-Square Tests

		PERSONALITYTRAIT
AI_Reasons	Chi-square	9.411
	df	15
	Sig.	.855[a,b]

The relationship between these variables was not statistically significant, **$\chi^2(15) = 9.411$, $p = .855$**. Consequently, the study fails to reject the null hypothesis; H_0: There is no significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and students' adoption of AI in completing their literature appreciation assignments.

Table 2 Multiple Response Crosstabulation

			PERSONALITYTRAIT				Total
			INTROVERT	EXTROVERT	AMBIVERT	OMNIVERT	
AI_Reasonsnew[a]	DUT	Count	15	4	7	2	28
		% within PERSONALITYTRAIT	88.2%	80.0%	87.5%	100.0%	
	DEADLINE	Count	10	3	5	0	18
		% within PERSONALITYTRAIT	58.8%	60.0%	62.5%	0.0%	
	HIGHMARKS	Count	3	0	2	0	5
		% within PERSONALITYTRAIT	17.6%	0.0%	25.0%	0.0%	
	PEERS	Count	1	0	0	0	1
		% within PERSONALITYTRAIT	5.9%	0.0%	0.0%	0.0%	
	FREEAITOOLS	Count	2	0	1	1	4
		% within PERSONALITYTRAIT	11.8%	0.0%	12.5%	50.0%	
Total		Count	17	5	8	2	32
Percentages and totals are based on respondents.							
a. Dichotomy group tabulated at value 1.							

The crosstabulation table for multiple responses for reasons of AI adoption by 4 different personality traits (introversion, extroversion, ambiversion, omniversion) reveals that AI adoption is overwhelmingly intrinsically and functionally motivated across all personality traits, rather than being motivated by social or academic pressure. There were 80% to 100% for every single personality trait which influenced by difficult literary text for them to adopt AI. In the meantime, majority of respondents (introverts, extroverts, ambiverts, omniverts)

recorded roughly 60% in choosing deadline as their reasons for AI adoption. Consequently, almost all personality traits were not influenced by their peer influence or high marks aimed as the reasons to adopt AI with the lowest percentage (below 10%).

Is there any significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and their perceptions and dependency on AI in completing their literature appreciation assignments?

A One-Way analysis of variance (ANOVA) test was conducted to examine the significant relationship between students' personality traits (introversion, extroversion, ambiversion, omniversion) and their perceptions and dependency on AI in completing their literature appreciation assignments.

Table 3 Descriptives

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean		Minimum	Maximum
						Lower Bound	Upper Bound		
C1	INTROVERT	18	3.5556	.85559	.20166	3.1301	3.9810	3.00	5.00
	EXTROVERT	5	3.8000	.83666	.37417	2.7611	4.8389	3.00	5.00
	AMBIVERT	10	3.5000	.84984	.26874	2.8921	4.1079	2.00	5.00
	OMNIVERT	3	3.0000	1.00000	.57735	.5159	5.4841	2.00	4.00
	Total	36	3.5278	.84468	.14078	3.2420	3.8136	2.00	5.00
C2	INTROVERT	18	3.1667	.78591	.18524	2.7758	3.5575	1.00	4.00
	EXTROVERT	5	2.8000	1.09545	.48990	1.4398	4.1602	1.00	4.00
	AMBIVERT	10	3.4000	.84327	.26667	2.7968	4.0032	2.00	5.00
	OMNIVERT	3	3.0000	1.00000	.57735	.5159	5.4841	2.00	4.00
	Total	36	3.1667	.84515	.14086	2.8807	3.4526	1.00	5.00
C3	INTROVERT	18	3.4444	.85559	.20166	3.0190	3.8699	2.00	5.00
	EXTROVERT	5	3.4000	1.34164	.60000	1.7341	5.0659	2.00	5.00
	AMBIVERT	10	3.0000	1.24722	.39441	2.1078	3.8922	1.00	5.00
	OMNIVERT	3	3.0000	1.00000	.57735	.5159	5.4841	2.00	4.00
	Total	36	3.2778	1.03126	.17188	2.9289	3.6267	1.00	5.00
C4	INTROVERT	18	3.4444	.85559	.20166	3.0190	3.8699	2.00	5.00
	EXTROVERT	5	3.4000	.54772	.24495	2.7199	4.0801	3.00	4.00
	AMBIVERT	10	3.7000	.82327	.26034	3.1111	4.2889	3.00	5.00
	OMNIVERT	3	3.3333	.57735	.33333	1.8991	4.7676	3.00	4.00
	Total	36	3.5000	.77460	.12910	3.2379	3.7621	2.00	5.00
C5	INTROVERT	18	3.0556	1.21133	.28551	2.4532	3.6579	1.00	5.00
	EXTROVERT	5	3.2000	1.48324	.66332	1.3583	5.0417	1.00	5.00
	AMBIVERT	10	2.9000	1.10050	.34801	2.1127	3.6873	1.00	5.00
	OMNIVERT	3	3.3333	.57735	.33333	1.8991	4.7676	3.00	4.00
	Total	36	3.0556	1.14504	.19084	2.6681	3.4430	1.00	5.00
C6	INTROVERT	18	3.5000	.70711	.16667	3.1484	3.8516	3.00	5.00
	EXTROVERT	5	3.8000	1.09545	.48990	2.4398	5.1602	2.00	5.00
	AMBIVERT	10	3.3000	1.05935	.33500	2.5422	4.0578	1.00	5.00
	OMNIVERT	3	3.6667	.57735	.33333	2.2324	5.1009	3.00	4.00
	Total	36	3.5000	.84515	.14086	3.2140	3.7860	1.00	5.00
C7	INTROVERT	18	4.5556	.85559	.20166	4.1301	4.9810	2.00	5.00
	EXTROVERT	5	4.0000	.70711	.31623	3.1220	4.8780	3.00	5.00
	AMBIVERT	10	4.6000	.69921	.22111	4.0998	5.1002	3.00	5.00
	OMNIVERT	3	5.0000	.00000	.00000	5.0000	5.0000	5.00	5.00
	Total	36	4.5278	.77408	.12901	4.2659	4.7897	2.00	5.00
C8	INTROVERT	18	2.7222	.82644	.19479	2.3112	3.1332	2.00	5.00
	EXTROVERT	5	2.4000	.54772	.24495	1.7199	3.0801	2.00	3.00
	AMBIVERT	10	2.6000	.96609	.30551	1.9089	3.2911	1.00	4.00
	OMNIVERT	3	2.6667	.57735	.33333	1.2324	4.1009	2.00	3.00
	Total	36	2.6389	.79831	.13305	2.3688	2.9090	1.00	5.00

Table 4 One-Way ANOVA

ANOVA

		Sum of Squares	df	Mean Square	F	Sig.
C1 Helps literary understanding	Between Groups	1.228	3	.409	.552	.651
	Within Groups	23.744	32	.742		
	Total	24.972	35			
C2 Helps generate ideas	Between Groups	1.300	3	.433	.585	.629
	Within Groups	23.700	32	.741		
	Total	25.000	35			
C3 AI improves writing quality	Between Groups	1.578	3	.526	.472	.704
	Within Groups	35.644	32	1.114		
	Total	37.222	35			
C4 AI saves time	Between Groups	.589	3	.196	.308	.820
	Within Groups	20.411	32	.638		
	Total	21.000	35			
C5 Increase writing confidence	Between Groups	.578	3	.193	.136	.938
	Within Groups	45.311	32	1.416		
	Total	45.889	35			
C6 Help do close reading	Between Groups	.933	3	.311	.414	.744
	Within Groups	24.067	32	.752		
	Total	25.000	35			
C7 AI reduces critical thinking	Between Groups	2.128	3	.709	1.204	.324
	Within Groups	18.844	32	.589		
	Total	20.972	35			
C8 Is AI beneficial	Between Groups	.428	3	.143	.209	.890
	Within Groups	21.878	32	.684		
	Total	22.306	35			

The analysis revealed that there was no statistically significant difference between personality traits across any of the evaluated AI perception and dependency items. Specifically, personality traits did not significantly influence perceptions and dependency of AI as a tool that helps understand difficult literary texts, ***F*(3,32) = 0.55, *p* = .651 (*M* = 3.53, *SD* = 0.86)**, or one that helps generate ideas, ***F*(3,32) = 0.59, *p* = .629 (*M* = 3.17, *SD* = 0.86)**. Likewise, no significant results were found for the beliefs that AI improves writing quality, ***F*(3,32) = 0.47, *p* = .704 (*M* = 3.28, *SD* = 0.86),** AI saves time in completing the assignment, ***F*(3,32) = 0.31, *p* = .820 (*M* = 3.50, *SD* = 0.86)**, and AI can increase literary appreciation writing confidence, ***F*(3,32) = 0.14, *p* = .938 (*M* = 3.06, *SD* = 0.86)**. Moreover, no significant relationship between personality traits and the perceptions and dependency on AI as an assistance for doing close reading, ***F*(3,32) = 0.41 *p* = .744 (*M* = 3.50, *SD* = 0.86)**. Finally, personality traits had no significant impact on the shared perceptions that AI reduces critical thinking, ***F*(3,32) = 1.20, *p* = .324 (*M* = 4.53, *SD* = 0.86)**, or on overall evaluations of whether AI is beneficial, ***F*(3,32) = 0.21, *p* = .890 (*M* = 2.64, *SD* = 0.86)**.

The lack of statistically significant difference ***p* = .855** indicates that the motivation to use AI for understanding difficult literary text transcends basic personality traits. In other words, the reference to personality traits' behavioural theory such as an introverted preference for solitary study or an extroverted preference for collaboration, is not prominent in discussing the findings as their AI adoption serves as a universal academic or functional scaffold. In brief, AI tools are being utilised across the board as a necessary equaliser for complex linguistic comprehension, proving equally valuable to individuals regardless of their primary personality classification.These findings replicate Kaya et. al.,(2024), confirming that introversion and extroversion do not act as gatekeepers to AI adoption when the technology is used for functional or educational tasks.

Ultimately, while individuals universally recognise the utilities of AI in terms of time saving and technical assistance for completing literary appreciation assignments, they foster a collective, profound anxiety that AI dependency undermines critical thinking, leading generally skeptical view of the overall benefits of AI. Nevertheless, considering all the recognised beneficial elements of AI, the significant relationship between personality traits and their perception of and dependency on AI failed to be proven. These findings are

contradicting with the positive relationship between the respondents' attitudes and perceptions and their personality profiles found by Ozbey and Yasa, (2025) and Mubashir, Altaf and Kainaat, (2025).

Even though the overall findings failed to prove the significant relationship between personality traits and their perceptions and adoption of AI, a prominent concern was revealed especially in terms of the risks of critical thinking subversion caused by AI besides the beneficial elements offered to users. Therefore, it is important for the educators or curriculum designers to shift from resisting AI to actively teaching critical AI literacy in their curriculum.

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