



## Who learns more independently? Gender-based perspectives on English learning autonomy in university settings

**ABSTRACT** - This study investigated gender-based differences in English learning autonomy among Indonesian university students enrolled in an English Language Education Department. A total of 108 students (52 males, 56 females) participated in the study. Employing a quantitative research design, data were collected using a validated questionnaire that assessed six dimensions of learner autonomy. Descriptive statistics and an independent-samples t-test were used for data analysis. The findings revealed that male students demonstrated a moderate level of autonomy ( $M = 2.93$ ), which was comparable to that of female students, who also exhibited a moderate level of autonomy ( $M = 2.89$ ). The t-test indicated no statistically significant difference between genders ( $t(106) = 0.454$ ,  $p = 0.650$ ), with a small effect size ( $d = 0.09$ ). These results suggest that gender does not function as a determining factor of learner autonomy within this specific educational context. Rather, learner autonomy appears to be more substantially influenced by individual and contextual variables, including motivation, metacognitive skills, and institutional support. The study highlights the importance of designing inclusive, learner-centered instructional strategies that foster autonomy for all students, irrespective of gender. In general, these findings contribute to the growing body of research emphasizing that learner autonomy is a dynamic, developable construct shaped primarily by educational practices rather than demographic differences.

**Suryanto Suryanto**<sup>1\*</sup>

**Diah Savitri**<sup>2</sup>

**Turki Alsolami**<sup>3</sup>

**Bolormaa Shinjee**<sup>4</sup>

<sup>1,2</sup>English Language Education Department, Universitas Muhammadiyah Yogyakarta, Indonesia

<sup>3</sup>The Applied College, King Abdulaziz University, Jeddah, Saudi Arabia

<sup>4</sup>Foreign Language Center, School of Arts and Sciences, National University of Mongolia, Ulaanbaatar, Mongolia

\*Corresponding email:  
[suryanto@umy.ac.id](mailto:suryanto@umy.ac.id)

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## 1. Introduction

Within English language pedagogy, learner autonomy, described as the capacity to act independently in the context of learning, has become progressively relevant (Basri, 2023; Chong & Reinders, 2022). With instructional paradigms having shifted toward student-centered approaches, autonomy is being recognised as more than an additive skill; rather, it is now viewed as central to any academic and language learning endeavour. This framework advocates for highly reflective, self-directed, and goal-oriented autonomous learning skills to facilitate lifelong learning — a characteristic that is essential for individual and professional development (Swatevacharkul & Boonma, 2021). However, learner autonomy is not an independent development in itself, nor is it merely a reflection of certain classroom methods (Abuhassna et al., 2022). This and other themes used as a variable in educational research, male vs female learners approach autonomy differently. It has been suggested that differences in learning behaviours across genders may originate from sociocultural norms, cognitive biases, and educational experiences that influence student learning management (Beroíza-Valenzuela & Salas-Guzmán, 2024; Chan, 2022). This is important because investigating gender differences toward a specific type of learner autonomy will help teachers and researchers to establish an inclusive learning environment that caters to a diverse cohort.

Within the educational landscape of Indonesia, the fostering of learner self-direction is often shaped by long-standing teacher-centered traditions and structural classroom conditions (Khaerudin & Chik, 2021; Lengkanawati, 2017; Ramadhiyah & Lengkanawati, 2019). Many classrooms, particularly in public and private institutions, still emphasize knowledge transmission, where teachers act as the primary source of information and authority (Marhayani et al., 2026). Additionally, large class sizes commonly ranging from 30 to 40 students or more can limit opportunities for individualized instruction, active participation, and autonomous learning practices (Erlina et al., 2021; Purwaningrum et al., 2025). These contextual constraints may influence how autonomy is fostered and experienced by students, making it essential to interpret learner autonomy within the realities of local educational practices.

In the context of English as a Foreign Language (EFL) instruction, recent studies have tried to explore how gender affects autonomy. Kurt (2024), for example, reported that generally female students utilized more intrinsic motivation and self-directed learning strategies. These learners spend time on independent study activities — self-imposed reading, journaling, or vocabulary-building — because they see proficiency in English as a path to better academic and career opportunities. Male students also showed a preference for more interactive and collaborative learning environments, such as structured discussions or tasks completed with peers, rather than incidental activities. They also depended on their previous program support systems, such as instructors or peers, to stay engaged in learning. This kind of gap highlights the power of gender with respect to matching learning styles and helps understand the role they play in independence on the part of EFL learners. Recognizing these trends should enable facilitators and curricular developers to create more adaptable pedagogical techniques and self-directed collaborative learning practices.

In fact, teaching methods are critical in the independent learning behaviors of students. The studies revealed how alternative teaching modalities like flipped classrooms (Lestari, 2025) or project-based learning provided motivation in learner agency, though differences were more aligned to gender when confronted with these types of environments. For example, Irianti et al. (2021) showed that female students gain more autonomy when they adopt flipped learning as compared to male students. Yet, both groups had positive attitudes about the approach. Although there was a modest improvement in terms of learner autonomy, the study revealed that differences between gender performance in actual learning outcome measures — reading comprehension, for instance — were found with no significance. This indicates possible teaching techniques that facilitate learners' independence, but differences in learning methods adopted by males and females may remain relatively stable (Hwang & Lin, 2023). In Indonesian classrooms, however, the implementation of such student-centered approaches may encounter practical challenges due to limited time, curriculum demands, and large student populations (Andriyati et al., 2025), which can constrain the extent to which autonomy-supportive practices are fully realized.

A recent study challenges the assumption that gender is a major determinant for learning autonomy. Cabugsa (2022) found that male and female pre-service English teachers did not significantly differ concerning their autonomy for learning the English language. The respondents' individual differences regarding their performance of autonomy were not greatly influenced by gender either, suggesting other influential elements apart from that one regarding the positive development of autonomous learning (institutional context, curriculum structure, or pedagogical procedures) (Lestari & Hardiyanti, 2020). In a world where emphasis on the individual is so crucial, and all learning environments are pushing towards inclusivity, those gender-led differences may well become less and less of a meaningful distinction. Such variability in research is, of course, revealing — and goes to show the complexity of autonomy itself. It indicates the need for a wider analytical framework that takes into account intersecting factors such as socio-economic status, cultural background, and digital literacy skills. In Indonesia, these factors are further intertwined with systemic conditions such as centralized curricula and examination-oriented practices, which may indirectly shape students' autonomy development (Amalo & Petraki, 2024).

In addition to gender concerns, there is a necessity for teacher assistance for autonomous learning within EFL settings. Working toward autonomy does not necessarily mean the end of guidance, as it centers on following knowledge independently. For example, autonomy-supportive teaching that appropriately satisfies students' psychological needs will robustly facilitate their self-determined behaviors (Alrabai, 2021). For a while, this is going to make students when the instruction takes place. They will no longer be able to handle their own knowledge processes and will rely too much on the teacher's step-by-step instructions, which leads to self-negation and loss of potential; critical thinking will not develop as it should. In contrast, timely feedback, scaffolding, and clearly defined objectives act as aids for learners to gradually self-regulate their learning. According to ElFalih and Lamrani-Hassani (2024), teachers must be facilitators empowering learners by providing just-in-time guidance whilst

directing them towards self-directed learning tendencies. Similarly, Rahmasari et al. (2025) demonstrated that strategy-based instruction facilitates autonomous learning by planning, organizing, and evaluating one's learning where deemed necessary in EFL reading contexts. In Indonesian settings, this facilitative role becomes particularly crucial as teachers transition from traditional authoritative roles toward more learner-centered approaches (Herawati et al., 2022; Ramadhiyah & Lengkanawati, 2019; Ribahan & Muslimin, 2025).

Autonomy expressed also varies across genders and is affected by social/cultural norms. In many contexts, female students are socialized into being disciplined, organized, and academically minded across many situations—traits that align with those associated with learning autonomously (Qadhi et al., 2024). In contrast, social pressure may limit assertiveness or risk-taking attitudes in students who are women, and this constriction on interest can affect a student's participation overall in self-directed learning missions (Alamanda et al., 2024). Meanwhile, male students may be brought up to be brash or self-dependent yet potentially lack the need for setting the policies necessary to maintain continued self-directed learning (Onah et al., 2021). In the Indonesian cultural context, these gendered expectations are often reinforced through both family and school environments, further shaping students' approaches to autonomy within the classroom (Prasetia et al., 2024; Ramadhiyah & Lengkanawati, 2019).

Comparing both factors discussed above, this study aims to investigate gender differences in learner autonomy among students of the English Language Education Department (ELED) at a private university in Yogyakarta, Indonesia. Using a quantitative procedure, this study seeks to measure levels of autonomy in male and female students and investigate whether any significant differences exist between the two groups. Questionnaires are used as the main data collection tool to determine students' self-reported levels of autonomy within the study. The research findings are intended to offer guidance and insights for teaching professionals, curriculum specialists, and policy stakeholders in designing gender-responsive language education initiatives. Thus, the study responds to and contributes to the wider debate on learner-centered education and equitable language teaching practices by uncovering autonomy-related trends and gaps between genders.

Based on the aforementioned objectives, this study seeks to answer the following research questions:

1. To what extent do male students in the English Language Education Department (ELED) demonstrate learner autonomy in English language learning?
2. To what extent do female students in the English Language Education Department (ELED) demonstrate learner autonomy in English language learning?
3. Is there a statistically significant difference in learner autonomy between male and female students?

## **2. Literature Review**

### *2.1. Conceptualizing learner autonomy within self-determination theory*

A significant milestone in Second Language Acquisition (SLA) research has been the growing emphasis on learner autonomy, which highlights learners' capacity to manage their own

learning processes through goal-setting, strategy selection, progress monitoring, and self-evaluation. In the context of English language learning, autonomy is increasingly recognized as a critical determinant of long-term success and learner engagement. Within this study, learner autonomy is framed through the lens of Self-Determination Theory (SDT), particularly its emphasis on autonomy-supportive teaching. SDT posits that learners become more self-directed when their fundamental psychological needs for autonomy, competence, and relatedness are adequately supported (Deci & Ryan, 2000). Consequently, autonomy is not conceptualized as complete independence from teachers but rather as a guided and socially mediated learning process.

Instructional approaches such as Task-Based Language Teaching (TBLT) have been shown to foster autonomy because they engage learners in meaningful problem-solving, decision-making, and active participation (Aldosari & Alsager, 2023). Similarly, technology and computer-mediated communication can support autonomy by enabling learners to access diverse resources and regulate their own learning pace (Rienties et al., 2014; Rivas & Albertos, 2023). However, research conducted in Indonesian EFL contexts indicates that autonomy is not always explicitly positioned as a teaching-learning objective. Students often remain dependent on teacher direction due to established classroom traditions and limited learner training (Lengkanawati, 2017). This suggests a persistent gap between the theoretical ideal of learner autonomy and its practical implementation in certain educational settings.

Promoting learner autonomy is therefore essential in English language instruction, as it facilitates students' transition from passive reception of knowledge to active, reflective, and self-regulated learning. Al-Khasawneh et al. (2024) classify autonomy-supporting factors into five interrelated categories: resource-based, technology-based, classroom-based, teacher-based, and learner-based perspectives. These factors are theoretically coherent when viewed through the lens of SDT, as each can support students' needs for autonomy, competence, and relatedness. Han (2021) found that autonomy is positively associated with students' learning attitudes, while Sheffler et al. (2022) emphasized that autonomous learners rely on cognitive, metacognitive, and motivational resources to sustain their engagement. Indonesian studies further strengthen this argument. Myartawan et al. (2013) reported a positive association between learner autonomy and English language proficiency among Indonesian EFL college learners. Similarly, Melvina and Julia (2021) found that Indonesian undergraduate EFL students generally demonstrated a moderate level of autonomy, suggesting that autonomy exists but still requires systematic pedagogical scaffolding to reach its full potential.

## *2.2. Dimensions and contextual nature of learner autonomy*

Autonomous learners demonstrate psychological, cognitive, and behavioral capacities that enable them to participate actively in their own learning processes. Cabugsa (2022) identified six distinct domains of learner autonomy: linguistic confidence, information literacy, metacognition, locus of control, social comparison, and self-reliance. These dimensions are particularly useful because they capture both internal learner characteristics (e.g., metacognition, locus of control) and observable learning behaviors (e.g., information literacy, self-reliance).

However, Cabugsa's study has certain limitations that warrant careful consideration. First, it was conducted among prospective EFL teachers in the Philippines, meaning its findings may not be directly transferable to Indonesian EFL university students, as classroom culture, institutional expectations, and teacher-student relationships differ considerably between the two contexts. Second, the study primarily relied on self-reported survey responses, which may not fully represent actual autonomous learning practices due to potential social desirability bias or discrepancies between perceived and actual autonomy.

Therefore, while Cabugsa's multidimensional framework is valuable for measuring learner autonomy, it must be interpreted through a contextual and pedagogical lens. SDT's autonomy-supportive teaching provides this necessary lens by explaining how teacher scaffolding, meaningful choices, constructive feedback, and supportive classroom relationships help learners gradually develop autonomy. This perspective acknowledges that autonomy is not a fixed trait but a dynamic construct that can be cultivated through appropriate instructional design and supportive learning environments.

Recently, gender has emerged as a variable of interest in research on learner autonomy among English language learners. Kurt (2024) found that female students in English preparatory classes tended to demonstrate stronger intrinsic motivation and more consistent independent study habits, whereas male students preferred collaborative and instructor-led learning environments. This finding is valuable as it highlights possible gendered patterns in EFL learning behaviors. Nevertheless, Kurt's study has notable limitations. Its exclusive focus on preparatory-class students limits its applicability to English Language Education Department (ELED) students, who may possess different levels of academic maturity, language-learning goals, and professional orientations. Moreover, the study risks treating gender differences as stable, inherent tendencies, whereas learner autonomy is also substantially shaped by classroom culture, teacher support, motivation, learning resources, and institutional expectations.

Indonesian research supports a more contextual interpretation of gender and autonomy. Irianti et al. (2021) found gender-based variations in levels of learner autonomy within an English flipped classroom context, while Yuliani and Lengkanawati (2017) demonstrated that project-based learning can effectively support the development of learner autonomy in Indonesian EFL classrooms, regardless of gender. These studies suggest that pedagogical interventions may override or modify gender-based tendencies, further emphasizing the importance of contextual factors.

### *2.3. Gendered patterns and the primacy of contextual factors in learner autonomy*

Previous empirical studies reveal that gender differences in learner autonomy remain inconsistent across different educational and cultural contexts. Shen and Bai (2022) reported gender-based differences in preparation, goal-setting, and monitoring behaviors among their sample of language learners. Similarly, Şakrak-Ekin and Balçıkanlı (2019) found higher levels of autonomy among female Turkish EFL learners compared to their male counterparts. In contrast, Cabugsa (2022) found no statistically significant gender difference among pre-service English teachers in the Philippines. These mixed findings suggest that gender alone is

insufficient to explain or predict learner autonomy; rather, autonomy appears to be influenced by a complex interplay of individual, pedagogical, cultural, and institutional variables.

In the Indonesian context, local studies further demonstrate that learner autonomy is shaped more significantly by teacher roles, learner readiness, classroom practices, and broader educational culture than by demographic characteristics such as gender. According to Daflizar and Petraki (2022), Indonesian students' readiness for autonomy highlights the necessity of preparing learners for independent learning through explicit training and scaffolding, rather than assuming that they already possess autonomous learning habits. This finding underscores the developmental and context-sensitive nature of autonomy, which aligns with SDT's emphasis on supportive environments rather than fixed learner traits.

Therefore, this study adopts SDT's autonomy-supportive teaching framework as a coherent theoretical lens for examining learner autonomy. Within this framework, autonomy is conceptualized not merely as a potential site of gender-based difference but as a context-sensitive capacity that is actively supported and developed through motivation, scaffolding, competence-building, and meaningful learner choice. This framework strengthens the rationale for investigating whether male and female ELED students differ in their levels of learning autonomy, while simultaneously acknowledging that autonomy may be more strongly influenced by pedagogical and institutional support than by gender itself. Such a perspective allows for a more nuanced and educationally relevant interpretation of any observed gender differences, moving beyond essentialist views of gender to consider the dynamic interplay between learner characteristics and learning environments.

### **3. Method**

#### *3.1. Research design*

Employing a quantitative descriptive design, this research explores gender-based differences in learner autonomy among ELED (English Language Education Department) students at a private university in Yogyakarta. Likewise, the second research objective is to ascertain the degree of autonomy that male and female students have, and whether a statistically significant dissimilarity exists between them. The quantitative approach is the systematic analysis of all the data collected through statistical procedures (Creswell & Creswell, 2023). The researchers involved in this study have chosen a survey design in order to describe students' behaviours, attitudes, and perceptions of individual autonomous learners. Surveys, when conducted well, enable the efficient collection of data from large samples, making comparisons between groups meaningful (particularly useful for differentiating trends across a few key demographic characteristics, most notably gender). In addition, a survey design that is best suited for studies describing the current status rather than manipulation.

#### *3.2. Research setting*

The study was administered at the Department of English Language Education, a private university in Yogyakarta, Indonesia, in March 2025. This setting was selected for its pertinence to the population of interest and the availability of students who had taken a range of

foundational English language courses. These students are part of an academic ecosystem that offers an interesting setting for a deeper exploration of autonomy in English language learning. The researchers believe that insights from this set may build on the department's teaching practices. Results can also guide teachers in promoting and embedding self-directed learning practices. Conducting this study at this university means that participants have relatively similar educational backgrounds, thereby enhancing internal validity. In general, the research environment helps isolate only the variables in regard to the research questions and minimize outside influence.

### *3.3. Research population, sample, and sampling technique*

The population of the research was ELED active students in 2021 and 2022 batches, divided into those who have taken core English Subjects such as Listening and Speaking, Basic Reading and Writing, and Capita Selecta on Linguistics, totalling 171 students. This makes these students appropriate for this study. A population, as defined by Creswell and Creswell (2023), is a specific group of individuals that contains one or more traits in common. The study involved 108 students, with the sample size determined using the guidelines provided by Cohen et al. (2018) for a 95% confidence interval and a 5% margin of error. Respondents were recruited through convenience sampling, which falls under non-probability sampling methods (the selection of participants depends on availability and willingness to participate). Convenience sampling was utilized since all subjects were at the same university, and it was cost-effective and time-efficient. Even though convenience sampling might not be the best at generalizability, it is the most convenient and manageable way to reach many of those needed for the statistical analysis. This allowed researchers to collect data needed to answer the research questions in a timely manner.

### *3.4. Data gathering technique and instrumentation*

A structured questionnaire was used and distributed online to be applicable to most of the participants who could not attend regular classes. As stated by Cohen et al. (2018), structured questionnaires are best for large-sample quantitative studies because they ensure uniformity and minimal complexity in data analysis. The questionnaire was composed of two parts: the first part, which collected demographic information, and the second part focused on assessing the students' level of autonomy in six aspects: linguistic competence (1), information literacy (2), social comparison (3), locus of control (4), metacognition (5), and self-reliance (6) (Cabugsa, 2022; Dixon, 2011). The order of the items was randomized to avoid order effects, and responses were obtained using a Likert scale ranging from strongly disagree (1) to strongly agree (5). Content validity testing of the questionnaire was carried out using expert judgment by lecturers in English language education with Aiken's V formula before it was administered. To ensure the instrument quality, low validity coefficients below 0.4 were discarded. Furthermore, Cronbach's Alpha was employed to evaluate the reliability of the instrument. For the total sample (N = 108), the coefficient was 0.74, exceeding the 0.70 threshold for adequate reliability. To ensure the instrument's stability across demographic variables, reliability was further

analyzed by gender. The analysis yielded Alpha values of 0.71 for male participants ( $n = 52$ ) and 0.73 for female participants ( $n = 56$ ). Both subgroup coefficients remained above the acceptable limit, confirming that the instrument was interpreted consistently regardless of respondents' gender.

### *3.5. Data collection procedure*

The questionnaires were distributed across five classes within the same department to ensure broad coverage, primarily utilizing WhatsApp groups managed by class representatives. After obtaining permission for ethical and organized dissemination, the researchers posted the survey links and subsequently issued individual follow-up messages to encourage completion among non-respondents. To ensure conceptual clarity and minimize linguistic barriers, the instrument was translated from English into Bahasa Indonesia, the participants' native language. The online administration successfully addressed logistical challenges, such as conflicting student schedules and the difficulties of arranging face-to-face meetings. Participants were instructed to base their responses on their authentic experiences in English language learning, thereby enhancing the credibility of the data. Of the 171 invited students, 108 completed the survey, resulting in a 63.2% response rate. This approach ensured a widely participative data collection process while maintaining streamlined, ethical communication.

### *3.6. Data analysis techniques*

The data were analyzed using descriptive and inferential statistical methods obtained from the questionnaires. Means, medians, modes, ranges, and standard deviations were calculated to provide descriptive statistics for the first two research questions on autonomy levels among male and female students (Cohen et al., 2018). The scores, which indicated the autonomy levels, were considered high (3.01–4.00), moderate (2.01–3.00), and low (1.00–2.00). To address the third research question, an independent-samples t-test was used. Normality and variance homogeneity tests were performed prior to the t-test. If all criteria were satisfied ( $p$ -value  $> 0.05$ ), the independent-samples t-test would determine whether there was a statistically significant difference in autonomy scores between male and female students. A  $p$ -value under 0.05 denotes a significant difference between genders, thereby answering the third research question of this study and how it relates to the Y-chromosomal deficiency in the subjects. The levels and differences in learner autonomy were extensively examined through descriptive and inferential statistics by the researchers.

## **4. Findings and discussion**

This section presents the study's findings and discusses them in relation to the three research questions. The study was conducted to find out (1) the extent to which male ELED students exhibit autonomy in English language learning, (2) the extent of autonomy in the English learning environment by female ELED students, and (3) whether there is a statistically significant difference in learner autonomy between male and female students. A variety of statistical tests were conducted to evaluate the collected data, including calculating average

autonomy scores for both gender groups, testing assumptions (normality and homogeneity), and conducting an independent-samples t-test. Findings are reported in response to the research questions asked and supported with relevant tables. Each main finding is then considered in relation to prior research studies, theoretical frameworks, and contextual factors.

4.1. Male ELED students' autonomy level in English language learning

Male ELED students' level of autonomy was measured by their overall scores on the measure. Descriptive statistics were employed to compute the mean, minimum, maximum, and standard deviation of male students' autonomy scores. Below are the detailed descriptive statistics:

**Table 1**

Descriptive statistics of male students.

N	Min.	Max.	Mean	Std. Dev.
52	2.26	3.88	2.9251	.33720

The results presented in the table above indicate that male ELED students demonstrate a mean autonomy score of 2.9251 for English language learning. The following range table was used to interpret this mean score:

**Table 2**

Range of mean score.

Range	Level
3.01 – 4.00	High
2.01 – 3.00	Moderate
1.00 – 2.00	Low

According to the table, male ELED students' autonomy level is moderate with a mean score of 2.9251. This result corresponds with Alrabai's (2021) findings that most university students still moderately depend on structured learning and pedagogical guidance although they are exposed to self-directed learning environments. Autonomy can be learned; it is not innate (Benson & Voller, 2014). While male students do engage in independent learning to some extent, it largely hinges on external forces and scaffolding to assist them to succeed in education.

This moderate autonomy might stem from learning contexts with institutions. According to Kormos and Csizér (2014), the evolution of autonomy relies on classroom practices, educational policies, and technology use. Some scholars indicated that students possess better access to online tools for self-study (Sabilla & Hartarto, 2024) but are rarely trained in self-directed learning methods (Hasumi & Chiu, 2024). Consequently, targeted interventions are required to promote the development of students' autonomy skills, particularly among male students, who may need more assistance in acquiring these skills (Hasumi & Chiu, 2024). Therefore, this finding emphasizes the role of targeted interventions aimed at developing

autonomy skills, particularly for male students who may benefit from more structure. According to research conducted by Yildiz Durak and Atman Uslu (2024), female students generally exhibit greater self-discipline, goal-setting ability, and metacognitive awareness than male students. The opposite is true for male students, who are generally more inclined towards prescribed learning tasks and require external stimuli as incentives (Stolk et al., 2021), thereby preventing them from reaching a self-reinforcing, autonomous level of study. Yet autonomy is an active capacity that can be developed with motivating strategies (Ryan & Deci, 2017). Technology-enabled learning, project-based approaches, and reflective practices are effective interventions that could enhance male learners' autonomy in English-language education contexts.

#### 4.2. Female ELED students' autonomy level in English language learning

Likewise, descriptive statistics were used to analyze the level of autonomous learning of female ELED learners. The analysis yielded the following results:

**Table 3**

Descriptive statistics of female students.

<b>N</b>	<b>Min.</b>	<b>Max.</b>	<b>Mean</b>	<b>Std. Dev.</b>
56	2.15	3.68	2.8976	.26635

The average autonomy score for female ELED students was 2.8976. Looking at the above table again for interpretation of means, this mean is also moderate. Hence, the autonomy possessed by female ELED students in learning English as a second language is moderate. These results reinforce other findings indicating that, although female students are generally more self-regulated, they benefit from structured educational support (Liu et al., 2021). Jehanghir et al. (2024) also stressed that institutional culture and access to learning resources are external factors that can similarly influence learner autonomy in both male and female students. In modern classrooms, autonomy is an important part of student and teacher engagement — but you cannot find that with conventional classroom space.

Interactive, technology-enhanced learning spaces enable autonomous learning in today's school environments. Nevertheless, Morris and Rohs (2023) argue that merely making digital tools available to students is insufficient; teachers also need to train students' self-directed learning skills. Tao and Yu (2024) added that the socio-cultural landscape strongly influences learners' autonomy, motivation, and engagement. Females across educational levels scored moderately high on autonomy as ELED students, whilst there remains scope for curriculum innovations to foster more profound self-regulation skills.

#### 4.3. The difference between male and female ELED students' autonomy levels

To address the third research question, inferential statistical tests were first conducted to assess normality and homogeneity assumptions required for parametric analysis, after which the data were analyzed using an independent-samples t-test.

#### 4.3.1. Normality test

To ensure the validity of parametric assumptions, data normality was assessed using the Shapiro–Wilk test, which is widely regarded as the most powerful test for small sample sizes ( $n < 50$ ) (Lewis-Beck et al., 2004).

**Table 4**  
Shapiro–Wilk normality test of male students.

Variable	N	Mean	Std. Dev.	Sig.
Male Autonomy	52	2.9251	0.33720	0.200

**Table 5**  
Shapiro–Wilk normality test of female students.

Variable	N	Mean	Std. Dev.	Sig.
Female Autonomy	56	2.8976	0.26635	0.077

The results of the Shapiro–Wilk test indicate that the significance value for male students is 0.200, while for female students it is 0.077. Both results surpassed the 0.05 significance level. This confirms that the data are normally distributed. Thereby, they satisfy one of the key assumptions for parametric testing. Notably, the mean values between Table 1 and 4, as well as Table 3 and 5, ensure internal consistency and strengthen the reliability of the analysis. Although the female group's significance value is relatively close to the threshold, it remains within acceptable limits, and the robustness of parametric tests further supports the validity of subsequent analyses.

#### 4.3.2. Homogeneity test

The assumption of homogeneity of variances was assessed using Levene's Test for Equality of Variances.

**Table 6**  
Test of homogeneity of variances.

Levene Statistic	df1	df2	Sig.
3.283	1	106	0.073

The value of Levene's Test was 0.073 ( $p\text{-value} > 0.05$ ). So, it confirms that the variances of the male and female groups are homogeneous.

#### 4.3.3. Independent samples t-test

An independent-samples t-test was conducted to compare students' levels of autonomy, yielding a two-tailed p-value of 0.650, which exceeds the 0.05 significance level. This shows

that the mean levels of autonomy between male and female ELED students do not differ significantly. This was similar to the findings of Cabugsa (2022), which also found no significant differences in learner autonomy among pre-service English teachers across gender. This outcome suggests that autonomy development may be more determined by factors such as individual learner characteristics, motivation, and learning experiences than by gender itself. Consequently, approaches for promoting autonomy should be a joint effort that emphasizes overall learners' growth rather than a gender-based mechanism.

**Table 7**

The results of the independent sample t-test.

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Students' Equal variances Assumed	3.283	.073	.454	106	.650	.93455	2.05665	-3.14296	5.01205
Students' Equal variances Not assumed			.415	50.341	.680	.93455	2.25313	-3.59024	5.45933

Considering the findings above, a sequence of inferential statistical analyses was conducted to address the research question and determine whether male and female students differ in learner autonomy. This involved assessing normality, homogeneity of variance, and conducting an independent-samples t-test. The application of such sequential statistical procedures is not only methodologically adequate but also ensures that the assumptions upon which the parametric test (t-test) is based, for inference purposes, are adequately verified. Since the significant values (0.200 for the male group and 0.077 for the female group) were higher than 0.05, results indicated that autonomy scores in both males and females followed a normal distribution (Habibzadeh, 2024). This result is consistent with the use of a parametric test for further comparative analysis.

While the p-value for the female group is relatively close to the 0.05 threshold, the strength of t-tests to slight deviations from normality, particularly with large sample sizes, has been well documented in the literature. At this point, it was warranted to run the t-test. Similarly, Levene's Test for Equality of Variances was conducted to assess the assumption of equal variances, with results indicating that the assumption was met ( $p = 0.073 > 0.05$ ). This means the variances of the autonomy scores between male and female students are statistically homogeneous. In addition, the result was confirmed by an independent-samples t-test assuming equal variances.

The independent-samples t-test revealed a non-significant result (2-tailed Sig. = 0.650), well above the 0.05 significance level. This shows no significant difference in the level of ELED students' autonomy based on gender. This indicated very little difference (0.93) and was nonsignificant. That means that how male and female students understand or define autonomy in this academic context remains fully unclear. Such results support Cabugsa (2022), who

mentions that learner autonomy did not significantly vary across gender in pre-service English teachers, emphasizing that autonomy is not conclusively linked to specific gender identity. Although the independent-samples t-test indicated no statistically significant difference in learner autonomy between male and female ELED students ( $p = 0.650$ ), the effect size provides a more nuanced interpretation of the findings.

Although the results of the independent-samples t-test showed no significant difference in learner autonomy between male and female ELED students ( $p = 0.650$ ), the effect size provides a better sense of the magnitude of this difference. Statistical significance does not directly provide guidance on the real-world effect of the observed outcome. Cohen's  $d$  was thus calculated to obtain a better perspective of the practical significance (Cohen et al., 2018). The analysis conducted in this study shows that male ( $M = 2.9251$ ,  $SD = .33720$ ) and female students ( $M = 2.8976$ ,  $SD = .26635$ ) were  $0.0275$ . Cohen's  $d$  using the pooled standard deviation was calculated and yielded a value of approximately  $0.09$ .

$$d = \frac{M_1 - M_2}{SD_{pooled}} = \frac{2.9251 - 2.8976}{\sqrt{\frac{(0.33720^2 + 0.26635^2)}{2}}} \approx \frac{0.0275}{0.3044} \approx 0.09$$

According to Cohen et al. (2018), effect sizes are small ( $0.2$ ), medium ( $0.5$ ), and large ( $0.8$ ). As such, a Cohen's  $d$  for the effect is  $0.09$  (minimal), suggesting that only a small proportion of the variance in learner autonomy scores is dependent on gender ( $M = 86.5$  and  $M = 85.3$  are compared). This strengthens the argument that gender does not substantively determine autonomy in this case. Overall, from a pedagogical perspective, the small effect size supports previous claims that educational strategies seeking to promote autonomy should not assume gender-based differences. Rather than a one-size-fits-all model, they ought to focus on the variability of individual learners: these differences include metacognitive skills, intrinsic motivation, and instructional context.

Additionally, the incorporation of effect size in the analysis is consistent with recent trends in educational and psychological research to focus on transparency and relevance over  $p$ -values alone (Cohen et al., 2018). Unlike statistical testing, reporting effect size provides useful insight about whether an observed difference is educationally significant. This also encourages educators, including policymakers and curriculum developers, to evaluate results not just from the perspective of statistical cutoff points but instead concentrate on means that can result in meaningful, comprehensive, individualized educational value.

This result has both theoretical and practical implications. The finding theoretically challenges long-standing assumptions about how male and female students might approach learning autonomy. Rather, it emphasizes that when designing environments that are autonomy-supportive, other factors inherent to individuals, such as differences in motivation, learning style, their levels of metacognitive awareness, and self-regulation capacity, should be considered. Practically, it entices educators and curriculum developers to steer away from gender-stereotyped interventions and invest instead in strategies that help all students – e.g., scaffolding methods, reflective tasks, and feedback that promotes autonomy. Therefore, learner autonomy can be equally and effectively cultivated among diverse learners.

In the end, these findings lend weight to the growing consensus in the discipline of language education: autonomy is a social way of being that is taught and nurtured over time, rather than simply a biological gift bestowed on one gender or another. And as Benson and Voller (2014) argue, autonomy needs to be systematically nurtured through structured encounters, appropriate guidance, and context. This matches the current study's evidence that students' capacity for autonomy is not significantly affected by gender alone. Hence, interventions to promote learner autonomy should embrace an inclusive pedagogical framework that prioritizes skills development, learner agency, and contextual adaptability over demographic divides.

## 5. Conclusion

This study examined the gendered nature of learner autonomy in English language education among private university students in Indonesia. Employing a quantitative descriptive design, the findings revealed that both male and female students exhibited moderate levels of autonomy, with no statistically significant difference between the two groups. These results align with a growing body of scholarship suggesting that learner autonomy is not exclusively—or even primarily—determined by gender. Rather, autonomy appears to emerge from the complex interplay of institutional environment, instructional practices, learner motivation, and the specific learning strategies employed by students of different genders. Although gender has traditionally been conceptualized as a categorical variable influencing educational engagement, the present study supports an emerging theoretical perspective that frames learner autonomy as a situation-dependent and potentially trainable skill. From this vantage point, autonomy is understood as sensitive to instructional design and contextual stimuli, rather than a fixed attribute tied to demographic characteristics. The study, therefore, concludes that fostering learner autonomy constitutes a broad-based and inclusive pedagogical process that cannot be meaningfully reduced to demographic distinctions. While male and female students may indeed be shaped by differing social and cultural expectations, both groups benefit substantively from structured opportunities for self-regulation, reflective practice, and personalized goal-setting. These findings emphasize the importance of designing autonomy-supportive learning environments that attend to individual learner needs, regardless of gender, and highlight the role of educational practice in cultivating autonomous learning behaviors across diverse student populations.

### Limitation of this study

This study has several limitations that warrant consideration. First, the use of convenience sampling within a single private university limits the generalizability of the findings to the broader population of Indonesian EFL learners. Second, reliance on self-reported questionnaire data may introduce response bias and social desirability effects, creating potential discrepancies between perceived and actual autonomous learning behaviors. Third, the cross-sectional design captures learner autonomy at only one point in time, precluding the examination of its developmental trajectory or causal relationships with variables such as motivation or

instructional practices. Fourth, while gender served as the primary variable of interest, other potentially influential factors—including digital literacy, prior learning experiences, and teacher autonomy-supportive practices—were not accounted for, despite their possible stronger impact on autonomy development. Finally, although the instrument demonstrated acceptable reliability, the moderate Cronbach's alpha values indicate a need for further refinement and triangulation with qualitative data, such as interviews or classroom observations, to enhance the depth and validity of future findings. Collectively, these limitations underscore the necessity for future research employing mixed-methods designs, larger and more diverse samples, and longitudinal approaches to achieve a more comprehensive understanding of learner autonomy in EFL contexts.

### Declaration on the use of AI

During the preparation of this manuscript, the authors utilized ChatGPT and QuillBot to enhance the readability and linguistic quality of the text. Following the use of these tools, the authors carefully reviewed and revised the content where necessary and assume full responsibility for the accuracy, integrity, and final content of the published article.

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