



How does Deep Learning Approach Empowers Extrovert Students to Excel in Writing Communications

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ABSTRACT

Writing skills are a fundamental component of academic and professional success, enabling effective communication, critical thinking, and knowledge construction. Despite their significance, many students, particularly those learning English as a second or foreign language, face challenges in developing proficient writing abilities. These difficulties are often compounded by individual differences, including personality traits such as introversion and extroversion. While previous studies have explored various pedagogical approaches to enhance writing skills, limited research has focused on how these methods interact with students' personality types, especially within the context of higher education. This study aims to investigate how a deep learning approach, a pedagogy emphasizing meaningful, mindful, and joyful learning supports and enhances the writing performance of extroverted students compared to introverted ones. The research was conducted with 23 second-semester students from the Buddhist Communication Science Department at Jinarakkhita Buddhist College in Lampung, Indonesia. A mixed-method design was employed, combining pre- and post-writing tests scored using Heaton's rubric with interviews and personality assessments based on the Eysenck Personality Questionnaire. The findings revealed that the most participants were extroverts, and they demonstrated a significant improvement in overall writing ability after the intervention, particularly in organization and content development. Paired samples t-tests confirmed statistically significant differences between pre-test and post-test scores, indicating the effectiveness of the deep learning strategy for extroverted learners. These results suggest that personality-informed instructional strategies can optimize writing instruction, especially for extroverted students who benefit from interactive and collaborative learning environments. The study contributes to the growing body of research on personalized pedagogy and highlights the importance of aligning teaching methods with students' psychological profiles to maximize learning outcomes.

ARTICLE INFO

Keywords:

Deep Learning Approach;
Extrovert Students; Writing Skills.

Article History:

Received: May 11, 2025
Revised: June 28, 2025
Accepted: June 29, 2025
Published: June 30, 2025

How to Cite in A.P.A. Style:

Wulan et al., (2024). How does Deep Learning Approach Empowers Extrovert Students to Excel in Writing Communications. *Journal of Communication, Religious, and Social Science*, 3 (1), 35-47.

Introduction

Basic language skills enable students to learn the structure of language. Writing is one of these skills and has differences compared to reading, speaking and listening skills. Writing is a skill that requires organizing thoughts in accordance with grammar rules, putting ideas in a logical order and expressing them clearly and effectively (Gautam, 2019). In addition, its close relationship with other basic language skills is remarkable; while the knowledge acquired through reading supports writing skills, listening and speaking skills contribute to the development of written expression. Writing is the last language skill to be acquired and the most difficult to develop because many components such as organizing thoughts in a logical order, appropriate word choice, compliance with grammar rules and spelling/punctuation should be controlled simultaneously in the writing process (Demirel, 2003; Kellogg & Whiteford, 2009 as cited in (Bal & Öztürk, 2025)).

Proficiency in writing is a prerequisite for efficient communication, idea expression, and navigating the complexities of the modern world. It plays a vital role in both academic settings and real-life scenarios (Baharudin, Laily Ramli, Mohd Habali, Azlina Azmi, & Hanim Rahmat, 2023). Writing is more than just conveying messages; it involves a series of processes including initial drafting, brainstorming, revising, and editing (Batubara, Hidayat, Husna, Alek, & Machfudi, 2022; Rahardjo, Didin Nuruddin Hidayat, 2021; Rizki, Hidayat, Husna, & Alek, 2022; Salama, Hidayat, Husna, & Alek, 2022), all enhanced by reflection and discussion. Through writing, complex ideas can be articulated clearly, compelling narratives crafted and nuanced viewpoints presented, making it a means for shaping and sharing one's perspective beyond mere information dissemination.

Writing skills are indispensable in both educational and professional contexts, serving as a foundational tool for effective communication, knowledge construction, and career advancement. In education, writing plays a pivotal role in academic success, enabling students to articulate their understanding of subjects, construct persuasive arguments, and engage deeply with disciplinary practices (Speeches, 2013). However, these skills are not innate; they must be actively cultivated through well-designed, writing-intensive curricula and robust support systems such as writing centers, which address the diverse needs of students from varying educational backgrounds (Göpferich & Neumann, 2016). Furthermore, the importance of writing extends to teacher training, where future educators recognize academic literacy as a critical component of their professional development. Reflective and research-oriented writing skills are emphasized to prepare teachers to foster similar competencies in their students (Amo Sánchez-Fortún, Baldrich, Domínguez-Oller, & Pérez-García, 2024). Thus, writing skills are not only essential for individual growth but also for shaping effective educational. In the professional world, writing skills are a cornerstone of employability and career success, as they are highly valued by employers and essential for job readiness. Effective professional writing whether in emails, reports, or proposals enables clear and impactful communication, which is critical for navigating various workplace contexts (Costeleanu, n.d.). Writing serves as a primary mode of communication in most professions, facilitating seamless interactions and the exchange of information among colleagues, clients, and stakeholders (Klimova, 2014). However, the transition from academic to professional writing requires more than just technical proficiency; it demands a metacognitive and conceptual understanding of writing to adapt these skills to the specific demands of different professional environments (Graham, 2019). Thus, strong writing skills not only enhance individual employability but also contribute to organizational efficiency and success. Therefore, writing skills are indispensable in both academic and professional contexts. They enable effective communication, support knowledge construction, and

enhance employability. Educational systems must actively foster these skills through tailored curricula and support services to prepare students for the diverse writing demands they will face in their careers.

Developing writing skills is a significant challenge for students, particularly for those learning English as a second language (ESL) or a foreign language (EFL). One of the most common obstacles is limited vocabulary and grammar knowledge, which restricts students' ability to express their ideas clearly and accurately. Additionally, many students struggle with organizing their ideas logically and coherently, making their writing appear disjointed or unclear. Basic writing skills, such as constructing short sentences, using proper punctuation, and maintaining correct sentence structure, also pose difficulties for learners (Ahmed, 2019). Beyond these technical challenges, a lack of motivation and limited exposure to diverse reading materials further hinder the development of writing skills, as students often lack the inspiration or resources to improve (Shuvra & Roy, 2022). Specific challenges also arise during the pre-writing stage, where students, particularly at the pre-university level, find it difficult to create outlines and thesis statements, which are essential for structuring their work (Farhanah et al., 2024). Moreover, the influence of students' first language often interferes with their ability to write effectively in English, leading to errors in syntax, grammar, and expression (Ahmed, 2019). Addressing these challenges requires targeted strategies, such as providing ample vocabulary and grammar practice, teaching organizational techniques, and fostering motivation through engaging and diverse reading materials.

Students often encounter significant challenges in developing writing skills, such as limited vocabulary, poor grammar, and difficulties in organizing ideas coherently. To address these issues, a multifaceted approach is essential. First, the use of appropriate teaching materials and methods tailored to students' needs can create a more effective learning environment, helping them grasp complex concepts and improve their writing abilities (Palanisamy & Abdul Aziz, 2021). Second, increasing student motivation and awareness of the importance of writing is crucial, as it encourages active participation and a positive attitude toward learning (Pebrika, Senditia, Salsabila, & Nurkhoeriah, 2023). Finally, providing constructive feedback and corrections allows students to identify and rectify their mistakes, fostering continuous improvement and confidence in their writing skills (Palanisamy & Abdul Aziz, 2021). By combining these strategies effective teaching methods, enhanced motivation, and consistent feedback educators can help students overcome barriers and achieve greater proficiency in writing.

In practice, no one student is able to excel at every language skill. Every student had different levels of their proficiency. However, there are many factors that can affect student achievement, especially in terms of writing. These factors can come from teachers and students. Seen from the teacher's point of view, there are several factors that can affect students' writing skills, such as teacher quality, teacher teaching methods and teacher performance. From the student side, motivation, life background, the environment where students live and student personality can have an influence on their achievement. In this case, the researcher just focuses on the personality factor. Understanding students' personality traits is crucial as it influences teaching methods, shaping the educational experience and the teacher-student relationship (Toker, 2021 as cited in (Prabowo, Hartono, Rukmini, & Saleh, 2024). This understanding is vital in creating an effective learning environment.

Personality is a fundamental characteristic that distinguishes individuals from one another. It encompasses unique patterns of thoughts, emotions, and behaviors. Additionally,

personality refers to a stable yet adaptable set of traits that may vary depending on circumstances (N. N. Husain, 2023). In essence, personality defines how individuals think, feel, and behave in distinct ways, setting them apart from others. (Özbay, Aydemir, & Atasoy, 2017) note that among the most researched personality traits influencing language learning are introversion and extroversion. These traits play a significant role in how individuals interact with their environment and gain energy. Introversion and extraversion are often considered crucial factors in the success of learning a foreign language ((Amirotul Nabila & Joko Wibowo, 2022); (Sahid, Mini Engelina Papua Putri Dasra, & Ruslan Hasyim, 2023); (Sirajuddin, Salija, & Halim, 2023)). Introverts typically favor internal reflection and thought before expressing their ideas in writing, often requiring more time to contemplate and organize their thoughts (Amirotul Nabila & Joko Wibowo, 2022). Extroverts, conversely, may thrive in social settings and prefer discussing ideas verbally over writing (Zaswita, 2022). Activities like group discussions and collaborative tasks can be particularly beneficial for them. Personality also plays a role in shaping a student's writing skills. Research by (Sahid et al., 2023) suggests that while both introverted and extroverted EFL learners have the potential to be proficient writers, extroverted learners may need to concentrate more on the context and content of their writing.

Education in Indonesia is currently undergoing reforms to meet the demands of the 21st century, where critical thinking skills, creativity and the ability to collaborate are becoming increasingly important elements in education. With the aim of preparing young people who are able to face global challenges, Indonesian education needs an innovative approach. Deep learning is one of the curriculum approaches that is gaining more attention in education. This is because education is one of the main pillars in developing individual potential, where teachers have a very significant role in creating a conducive learning atmosphere and supporting student creativity. In this case, the curriculum used by teachers can play a big role in encouraging students' creativity. Deep learning emphasizes deeper and holistic learning, where students become more emotionally and cognitively involved in their learning process. This approach seeks to change the traditional learning paradigm that often focuses on memorization and repetition of information into more constructive and reflective learning (Putri, 2024). Not only that, the deep learning curriculum approach provides space for students to not only memorize information, but also to develop critical, analytical, and creative thinking skills (Mariyah, Firdaus, & Bahasa, 2024).

Deep learning includes three concepts: meaningful learning, mindful learning and joyful learning. These three concepts work synergistically to create a deeper, more relevant and motivating learning experience. The following is an explanation of each of these concepts according to (Adnyana, 2024). Meaningful learning is very important to be implemented in learning. With meaningful learning students relate new knowledge to the knowledge or experience they already have. By linking new knowledge with previous knowledge and experience, students are expected to know what the benefits and relevance of learning materials are to students' lives. However, what is more emphasized in meaningful learning is not the mastery of a concept but how the concept can be related to the reality of students' lives.

Mindful learning, then, is mindful learning, where students engage in the learning process consciously and focus on the material being learned. In mindful learning, students not only focus on the results, but also on the learning process. Students' full awareness in learning is expected to increase their curiosity. The development of curiosity about the material learned will lead students to be active in the learning process. Students involve all senses in learning. The learning process occurs holistically involving emotions, senses, and thoughts.

This kind of learning process will avoid automatic learning that repeats information but active learning that seeks other answers and is not fixated on a single answer.

Joyful learning is fun learning, which aims to create a positive and motivating learning experience. Joyful learning creates a conducive learning atmosphere so that learning is interactive, exploratory and collaborative. Students enthusiastically participate in learning. Learning is designed to be interesting according to the way students learn. The integration of these elements in learning creates a learning atmosphere that is both effective and fun, increasing students' motivation and holistic and sustainable engagement (Diputera, 2024).

Research by (Mystakidis, 2021) highlights the role of deep learning for the development of higher order thinking skills, such as critical thinking and problem solving, which are crucial in the context of primary and secondary education, especially in facing the demands of 21st century learning materials. Research by Supriyadi (2019) cited in (Herliani, 2025) revealed that deep learning in the context of language learning can help students to better understand and process information in depth, thus improving their skills in reading and writing academic texts.

Deep learning has a number of significant advantages. Firstly, deep learning helps students to have critical thinking and actively engage in the learning process so that they can relate the subject matter to their daily lives so that students are able to understand the concepts more deeply and relevantly. This is in contrast to traditional learning methods that often emphasize memorization without deep understanding. Although deep learning has many advantages, there are some disadvantages that need to be considered. One of the main challenges is the need for a large amount and variety of data to train the learning model, and in basic education environments, access to such data is often very limited, hindering the effective application of this method (Mohammad Nur Arif, 2025).

Therefore, the present study focused on how deep learning approach can promote extrovert students in writing ability, especially in writing a argumentative text, as one of the writing materials learned in the second semester of Buddhist Communication Science Department. Then, related to the background of the problem mentioned above, the formulation of the problem are how does deep learning approach support and enhance the writing skills of extrovert students compared to introvert students.

Method

This research adopts a mixed-method design, integrating both quantitative and qualitative approaches to explore how a deep learning approach enhances the writing skills of extroverted students. By combining these methods, the study provides a well-rounded understanding of both measurable outcomes and the personal experiences of the participants. The participants were second-semester undergraduate students from the Buddhist Communication Science Department at Jinarakkhita Buddhist College in Lampung, Indonesia. The campus is located at Jalan Raya Suban No. 86, Pidada Village, Panjang District, Bandar Lampung, 35241. The study took place from January 15th to March 15th, 2025, and included a sample of twenty-four students (11 males and 12 females). Data was collected through writing tests and interviews, offering both numerical and in-depth insights into the students' progress and perspectives.

To evaluate the students' writing skills, a writing assessment rubric was used. This rubric, based on (Heaton, 1988) framework, focused on five key aspects of writing: content, organization, vocabulary, language use, and mechanics. Each dimension included specific

indicators and carried different weights in the scoring process. The data collected from the students' writing tests were analyzed using Pearson's product-moment correlation in SPSS 27 for Windows to determine the relationship between the variables. The writing test data was calculated both before and after the treatment to track changes. Additionally, Repeated Measures T-test was employed to compare the mean scores of the pre-test and post-test results, as these scores came from the same group of students. This analysis helped determine whether there was a significant improvement in the extroverted students' writing skills after the deep learning approach was implemented. To ensure the accuracy and reliability of the study, validity and reliability tests were also conducted on the assessment instruments used.

Findings

Students' Personality

The purpose of this section is to present and discuss the findings of the study, which are directly tied to the research questions. Specifically, the research question explored how a deep learning approach can enhance the writing skills of extroverted students. The study seeks to understand the connection between extroverted students and their writing abilities at the university level. To address this question, the researcher analyzed the characteristics of the participants, particularly focusing on gender. A detailed breakdown of the respondents' gender distribution is provided in the table below.

Table 1. Characteristic of Respondents Based on Gender

Gender	N	%
Male	11	48%
Female	12	52%
Total	23	100%

Source: Data analysis 2025

As shown in the table above, out of the 23 respondents, 11 (48%) are male students, while 12 (52%) are female students. To gather deeper insights, the researcher utilized a tool adapted from the Eysenck Personality Questionnaire. This instrument includes 30 items in total, with 16 items designed to measure extroversion and 14 items focused on introversion. This approach helped in understanding the personality traits of the participants and their potential impact on the study's outcomes.

The questionnaire is structured around seven key indicators: activity, sociability, risk-taking, impulsiveness, expressiveness, reflectiveness, and responsibility. These criteria were established by Eysenck et al. (1991), as referenced in (Selvianita Rahayu, 2020) work. According to the first indicator, extroverts are typically active individuals who thrive on physical activities, often completing tasks quickly and engaging in a variety of activities. They tend to have diverse interests and enjoy social events, such as parties, where they easily connect with others and build friendships. The risk-taking indicator suggests that extroverts are drawn to challenging activities and are less concerned about potential consequences. As previously mentioned, extroverts are also impulsive, often making quick decisions without much deliberation. In terms of expressiveness, they are open and unrestrained in sharing their feelings, though they can also be reserved and patient at times. When it comes to reflectiveness, extroverts are more likely to act on their instincts rather than overthink, and they can be quite stubborn. Finally, the responsibility indicator describes extroverts as carefree, unpredictable, and spontaneous. Shifting focus, the table

below outlines the questionnaire items related to introverted traits.

In terms of activity, introverts tend to be passive, sluggish, and easily exhausted. They prefer to keep their circle of friends as small as possible while maintaining a strong bond. As a result, they have difficulty making friends and opening up to others. They are afraid to take risks because they prefer familiarity, safety, and security. Introverts, unlike extroverts, do not act on the spur of the moment. They make their decision after much thought and consideration. They usually plan ahead of time and think before speaking or acting. Introverts are more sentimental, tenderhearted, labile, and emotional in their expression. Introverts have a theoretical mindset and prefer to be immersed in ideas and introspection when it comes to reflectiveness. In terms of responsibility indicators, they are likely to be dependable, trustworthy, and conscientious.

The questionnaires were converted from yes/no questions to a 5-point Likert Scale. Participants must complete the questionnaire by marking each question to indicate their level of agreement, disagreement, or neither, with strongly disagree having a value of 1, disagree 2, neutral 3, agree 4, and strongly agree 5. Only the extrovert questionnaire used this scale. The scale for the introvert questionnaire, on the other hand, was reversed, with strongly agree to have a value of 1, agree 2, neutral 3, disagree 4, and strongly disagree 5. As a result, the higher the score, the more outgoing the students. Following the collection of data, the researchers classified each student as an extrovert or an introvert using the score interpretation criteria outlined below.

Table 2. The Interpretation Table of Characteristic

Score	Interpretation
31 – 90	Introvert
91 - 150	Extrovert

Source: Data analysis 2025

According to the table above, students who scored 31-90 are introverts, while students who scored 91-150 are extroverts. Because students must complete the entire questionnaire, the smallest data value that can be entered into the class (lower-class limit) is 30 and the largest data value that can be entered into the class (upper-class limit) is 150. However, the researchers do not decide to include the lower-class limit, so the range for both classes will be the same, which is 60. Based on the interpretation above, Table 3 below identified the students' personalities.

Table 3. The Item Interpretation of Students' Characteristics

Characteristic	N	%
Introvert	2	9%
Extrovert	21	91%
Total	23	100%

Source: Data analysis 2025

As a result, 2 (9%) students are classified as introverts, while 21 (91%) are classified as extroverts. This revealed that the majority of students in the Buddhist Communication Science Department at Jinarakkhita Buddhist College Lampung, specifically the second-semester students who comprised the sample, are extroverts.

The Extrovert Students' Writing Ability

This section addressed the research question: "How does a deep learning approach help improve the writing skills of extrovert students in comparison to introvert students?" To explore this question, data was collected through pre- and post-tests focused on essay writing. To ensure the reliability of the test results, an inter-rating method was used, where both the researchers and an English lecturer from Jinarakkhita Buddhist College in Lampung independently evaluated the students' work. This collaborative approach helped provide a more accurate and balanced assessment of the students' writing progress.

The researcher evaluated and assessed the students' capacity to write argumentative essays using a rubric in this investigation. Particularly, the assessment instrument chosen was the J.B. Heaton rubric as it precisely fit the study goal of assessing students' argumentative essay crafting skills. Five main areas were the subject of the rubric: content, structure, vocabulary, language usage, and mechanics. Together they offered a thorough guide for evaluating the students' writing.

The results of the two inter-raters in this study were added and averaged to generate the ultimate scores. The highest score obtained on the writing pre-test was 65; the lowest was 38. Given that the researcher had not yet implemented any particular treatments or interventions to the students, their scores were somewhat modest at this point. During ninety minutes allotted to finish the pre-test, the students penned on themes drawn from their own experiences and learned information throughout the semester. But they also had to carefully adhere to the directions given in the pre-test paper by the researcher so that their answers matched with the task requirements.

The students struggled since they felt writing was a difficult and boring subject. They were confused on how to start their writing piece. Though they had several ideas to consider, they were unsure about how to organize their thinking and choose the right words and phrases. The students also did not know which tenses they ought to employ. They were still inconsistent despite problems with their mechanics. Still, in this pre-test stage, they attempted to write down all they knew. In the end, the students completed their pre-test writing assignment. The results of the writing pre-test conducted for each writing aspect of the students were: content 15.4, organization 11.1, vocabulary 10.2, language use 10.6, mechanics 2.5.

Just as Inter-rating was used in grading the pre-test writing, it was used in scoring the post-test writing of the students. The results were: the highest final score of the writing post-test was 73; the lowest final score was 57. At the time, the researcher had given the students any treatments based on deep learning approach. They finished the writing post-test in ninety minutes. The students followed all of the stages in the writing process. These are pre-writing, drafting, revising, editing, and publishing:

Table 4. Stage of The Writing Process

No.	Stages of The Writing Process
1.	Stage 1 : Pre - Writing
	a. Students choose a topic.
	b. Students gather ideas.
	1. Brainstorming (diagram (clustering) or randomly listing ideas)
	2. Reading
	3. Interviewing
	c. Students organize ideas.

No.	Stages of The Writing Process
	d. Students define a topic sentence.
	e. Students write an outline for their writing.
2.	Stage 2 : Drafting
	a. Students write a rough draft.
	b. Students emphasize content rather than mechanics.
3.	Stage 3 : Revising
	a. Students re – read their writing.
	b. Students share their writing with teacher.
	c. Students participate constructively in discussion about their writing with teacher.
	d. Students make changes in their compositions to reflect the reactions and comments of teacher. Besides that, students make substantive rather than only minor changes.
4.	Stage 4 : Editing
	a. Students proofread their own writing.
	b. Students increasingly identify and correct their own mechanical errors.
5.	Stage 5 : Publishing
	a. Students make the final copy of their writing.
	b. Students publish their writing in appropriate forms.
	c. Students share their finished writing with the teacher.

Source: Data analysis 2025

The students lastly finished their post-test on writing. The results of the post - tests of the students' writing were content 19.1, organization 16.1, vocabulary 13.1, language use 13.5, and mechanics 3.0. Furthermore, students' writing ability increased by 15.2% when comparing the average score of the pre - test and post - test, from 49.9 to 65.1. The end result was:

Paired Samples Statistic

Table 5. The Students' Writing Improvement

	Mean	N	Std. Deviation	Std. Error Mean
Pair1Writing_Pretest	49.9000	23	6.19001	1.29071
Writing_Posttest	65.1000	23	3.46353	0.72220

Source: Data analysis 2025

The t - test was used to determine whether the improvement was significant or not. The end result was as follows:

Table 6. Paired Samples Test

Paired Differences				95% Confidence Interval of the Difference		T	df	Sig.(2-tailed)
	Mean	Std.Deviation	Std.Error Mean	Lower	Upper			
Pair1 Posttest -Pretest	25.82609	7.81404	1.62934	22.44704	29.20513	15.851	22	.000

Source: Data analysis 2025

Using the aforementioned table, the researcher examined t-value against t-table. The t-value was 15.851 in this case, whereas the t-table was 2.074. The conclusion of the present study was statistically significant if t-value exceeded t-table. This could suggest that extroverted students' writing skills might be greatly enhanced over traditional approaches using deep learning strategies. The table above reveals a notable variation between the results on the posttest and pretest of the students. The paired sample T-Test shows that the treatment considerably affected the students' scores, as evidenced by the sig. (2-tailed) value of .000. Moreover, with an average score of 5.0 the treatment had the most positive impact on the "organization" component of writing.

Discussion

The findings of this study demonstrate that the deep learning approach considerably boosts the writing skills of extroverted students, particularly in argumentative writing. This approach, which promotes meaningful, mindful, and joyful learning, corresponds with the natural dispositions of extroverted students who flourish in participatory, socially engaging contexts. In addition to promoting cognitive development, the integration of these three essential elements, meaningful learning, mindful learning, and joyful learning also cultivates emotional engagement, which is essential for successful writing instruction. One of the most notable outcomes was the significant improvement in students' organizational skills, as evidenced by the paired samples t-test results.

From the pre-test to the post-test, extroverts' overall writing scores increased by 15.2%, with the organisation category showing the largest increases. This implies that the deep learning approach used, like group discussions, controlled outlining, and collaborative brainstorming, successfully tapped into the capabilities of extroverted learners. Through peer interaction, students were able to improve their ideas, construct cohesive structures for their written work, and express their ideas orally in a scaffolded environment (Bal & Öztürk, 2025)

In order to improve students' capacity to relate academic writing assignments to real-world situations, meaningful learning was essential. Students were better able to absorb information when it was tied to their own experiences and when reflective journaling was encouraged. Meaningful learning promotes deeper cognitive processing, which improves knowledge retention and application (Zeivots, Tyrrell, & Wardak, 2024). This part of deep learning was very beneficial to extroverts, who generally learn best through conversation and contact with others. They participated fully in class discussions, exchanged ideas in group projects, and used a variety of perspectives to strengthen their arguments, a result that aligns with (Sahid et al., 2023) findings, which emphasise the value of contextual relevance in writing training.

Futhermore, students' ability to control distractions and stay focused throughout draughting and editing was another way that mindful learning aided the writing process. Despite their tendency to be vocal and vivacious, extroverts often suffer from impulsivity and a lack of self-control (B. Husain, Wardiman, Purnawarman, & Abasa, 2024). Students were taught to slow down, think through their thoughts, and make thoughtful decisions when writing through mindfulness-based writing approaches and guided reflection exercises. This is in line with studies by (Göpferich & Neumann, 2016), which emphasises how important metacognitive techniques are for enhancing the calibre of writing. Following the integration of mindfulness into their writing practices, students expressed increased confidence in their capacity to organise arguments and steer clear of grammatical errors.

Besides that, a major factor in students' motivation and long-term involvement was joyful learning. Creative writing prompts, peer review sessions, and gamified writing exercises make learning fun and less daunting. These tactics were well received by extrovert students, who are frequently driven by social approval and active engagement. According to (Diputera, 2024), establishing a classroom environment that is encouraging and helpful is crucial for promoting intrinsic motivation and long-term skill development. According to this study, when students received constructive and cooperative feedback on their writing tasks, they were more excited about them and more persistent in editing their drafts.

According to the results of the personality test, 91% of the participants in this study were extroverts, underscoring the necessity of instructional strategies catered to their preferred methods of learning. In contrast to introverted pupils who could do better with solitary, silent writing assignments, extroverts flourished in settings that promoted conversation, teamwork, and fast feedback. These results support earlier research showing that extroverted learners do better in communicative and interactive environments (Amirotul Nabila & Joko Wibowo, 2022). Furthermore, the large proportion of extroverts in the Buddhist Communication Science Department indicates that, in order to optimise student achievement, curriculum design should progressively integrate interactive and immersive learning strategies.

Though the deep learning method produced encouraging outcomes, it must be noted that it has several drawbacks. First, the results may not be as broadly applicable as they may be because the sample size was small and restricted to a single institution. Second, because the intervention lasted just eight weeks, it might not have adequately captured the sustainability or long-term impacts of better writing abilities. Longitudinal studies and larger, more varied participant groups should be taken into account in future research to confirm these findings in other educational settings.

Conclusion

In conclusion, this study shows that the deep learning strategy can greatly improve extroverted students' writing skills by emphasising meaningful connections, focused practice, and joyful involvement. Teachers are advised to use instructional methods including peer review sessions, collaborative writing, and real-world writing assignments that capitalise on the abilities of extroverted learners. Institutions may provide inclusive and productive learning environments that enable every student to achieve success in written communication by doing this.

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