

# The Implementation of AI-Enhanced Dialogic Writing Scaffolding (AI-DWS) In a Malaysian Private Secondary ESL Classroom in Johor

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## ABSTRACT

This study investigates the implementation of AI-enhanced Dialogic Writing Scaffolding (AI-DWS) in a Malaysian secondary ESL classroom. Using a mixed-method intervention case study, the research explored student and teacher perceptions, as well as the tool's impact on engagement and writing quality. Data were collected from 30 students and one teacher through surveys, interviews, and classroom observations. Findings shown that AI-DWS significantly boosts student confidence and engagement by providing personalized scaffolding. While students reported improved vocabulary and idea generation, the study emphasizes that teacher mediation remains essential to ensure AI acts as a cognitive guide rather than a mere answer generator. The results suggest that AI-DWS is an effective pedagogical tool for fostering learner autonomy in ESL writing.

## INTRODUCTION

According to the new Malaysian Education Blueprint (2013 - 2025), it is stated that technology should be utilised in school to ensure that students are well-equipped and/or prepared for the digital era (Ismail, 2024). The national imperative has urged all English teachers to utilise Artificial Intelligence or AI, as most common term, during lesson with students who have trouble understanding the language itself. Ismail (2024), also mentions that AI is an undeniable trend within the Malaysian academic setting.

In the current interconnected world, the rise of technology advancement, increasing globalisation, and dynamic changes in job dynamics necessitate the acquisition of specific skill sets for individuals to thrive — teachers readiness in the perceives of technology should be taken into consideration to ensure that there is an established conducive learning environment that can facilitate this effective pedagogy (Pazilah et al., 2024).

In accordance with an article by Wiyaka et al. (2024), they mentioned that AI chatbots provide immediate feedback and personalised learning trajectories, addressing specific learning challenges while enabling students to advance at their own speed. The rapid advancement and proliferation of artificial intelligence or Ai technologies have triggered a paradigm shift across various domains (Wiyaka et al., 2024b), in this context — English writing skills. Again, according to Wiyaka et al. (2024), their study also mentioned that these chatbots promote an increase in students' participation and it also triggers their self-assurance in language usage by offering prompt feedback and creating an engaging atmosphere for them. An article published by Wegerif and Casebourne (2025), mentions that the rise of generative AI, particularly large language models, poses both the opportunities and challenges for education; however it also presents a profound challenge to existing structure and purposes of education.

## RELEVANT LITERATURE

### Vygotsky's Zone of Proximal Development (ZPD) as the Instructional Mandate for AI

The foundational theoretical for any scaffolding system, including this paper which is AI-DWS, is Vygotsky's ZOne od Proximal Development or in short, ZPD. A research conducted by Dhillon et al. (2024), mentioned that the collaborative writing process with AI shows how different levels of AI scaffolding influence the quality of

the written output and the user experience in the collaborative writing process. Their experiment explores how each individual engages with an AI-based collaborative writing tool and how varying levels of scaffolding from large language models (LLMs) shapes the co-writing process (Dhillon et al., 2024). In Wiyaka et al., (2024) study, stated that the proliferation of AI tools, particularly intelligent tutoring systems and large language mode (LLM)-powered chatbots, has fundamentally shifted the language education paradigms. The outcome of the research also shows a positive correlation in which their study reveals that moving from sentence -level to paragraph-level AI suggestions improves writing quality, suggesting a learning effect (Dhillon et al., 2024).

In summary, their study reveals that it is leaning towards a positive effect where the opportunities for AI writing assistants to augment writing outcomes but also accentuate the importance of adaptive, personalised scaffolding approaches.

### **The Characteristics of Dialogic Pedagogy: From Theory to Instructional Practice**

Dialogic Pedagogy provides the philosophical structure for AI-DWS, defining the vital qualities of interaction between learning. According to Wotring, A. (2025), dialogic teaching approach, in this case, between teacher as the facilitator and AI as student assistant, centres a principled conception of classroom talk to enhance pedagogical practice. Another paper published by Rahimi, M. (2025), stated that students still need to use dialogic strategies to develop core competencies, especially critical thinking and communication. The researcher also elaborated that this approach should be implemented in various courses as it could help determine whether training students in critical dialogic learning, providing the necessary resources, supports meaningful engagement with GenAI tools and mitigates the limitations of one-way lecturing — which according to the researcher, it may help in yielding positive outcomes for students as well as teachers (Rahimi, M., 2025). A study conducted by Wiyaka et al., (2024), mentioned that the concept represents a sophisticated application of generative AI that extends beyond simple automated grammar and syntax correction.

Key principles define effective dialogic teaching, which must be engineered into the AI-DWS interface:

1. Collective: Teachers and learners address tasks together, fostering shared understanding
2. Reciprocal: Participants read what AI has to offer, share ideas, and genuinely consider alternative viewpoints
3. Supportive: Learners articulate their own ideas freely without fear of judgement, assisting each other toward common understandings.
4. Cumulative: Ideas are built upon and chained into coherent lines of thinking and inquiry.
5. Purposeful: The dialogue is planned and steered toward specific educational goals.

In summary, this dialogics interaction is achieved by the AI posing questions and prompts rather than delivering prescriptive answers.

### **The Dialogic Mechanism and Impact on Critical Thinking**

According to Wiyaka et al. (2024), the defining characteristic of AI-DWS is its dialogic mode of interaction — instead of providing definitive answers and/or corrections, the AI is programmed to engage the learner to receive prompt and response by offering contingent questions and elaborative feedback. The empirical studies confirm that this conversation-based, interactive process is highly effective— by repetitively engaging with AI-generated feedback and/or responses with a guided teacher commentary, students are able to refine not only their literacy skills but also its logical, argumentative, and rhetorical skills structure (Wiyaka et al., 2024). Therefore, this suggests that the AI-DWS successfully functions as a scaffold for enhancing students' critical thinking skills alongside core writing proficiency that may benefit them.

## **Technology Acceptance Model (TAM)**

Zhongfa et al, (2025), highlighted that TAM by Davis (2003), comprises various parts which represent the process of ICT acceptance by the users including behavioural intention, perceived usefulness and perceived ease of use. While TAM has been applied to general ICT tools, its application to AI-DWS is still emerging.

## **METHODOLOGY**

### **Research Design**

A mixed-method intervention case study design has been used to gain in-depth insights into the implementation of AI-enhanced Dialogic Writing Scaffolding (AI-DWS) in a Malaysian Secondary ESL classroom. This mixed-method design was used to collect comprehensive data on students' and teachers' perceptions of the implementation of the AI-DWS tool and the understanding of student engagement and participation after implementing the AI tool in writing tasks in the classroom. The case study design was selected for this study as it allows for an in-depth exploration of a real classroom setting where AI-DWS is implemented within regular English writing lessons (Yin, 2018).

### **Research questions**

What are the perceptions of Malaysian secondary ESL students and teachers regarding the implementation of AI-DWS in English writing lessons?

How does the use of AI-DWS influence student engagement and participation during writing tasks in an ESL classroom?

To what extent does AI-DWS support students in improving their grammar, idea generation, and vocabulary development in writing?

How does the dialogic nature of AI-DWS affect students' critical thinking and their independence in revising their writing work?

### **Research objectives**

To examine the implementation of AI-DWS in a Malaysian secondary ESL classroom

To explore students' perceptions of AI-DWS in writing lessons

To investigate teacher perceptions and classroom impact

To analyse effects on engagement, writing quality, and critical thinking

### **Participant and Sampling Strategy**

This study requires the researcher to do observation of the classroom lessons, conduct interviews, and a shared Google form to conduct a questionnaire to collect data for this study. A group of students and a teacher from a particular school in Malaysia were involved in this research. This study used qualitative and quantitative research sampling. The respondents who were involved in this study are students and teachers. 20 to 30 students selected through purposive sampling, with mixed proficiency and ESL teacher implementing AI-DWS in ESL classroom. Data was collected using the observation method, exit tickets, interviews, and questionnaires. The classroom lessons were recorded for later use, and live observation was conducted during the lesson. According to Creswell (2009) observation is the process of gathering open-ended, firsthand information by observing people and places in a research field.

A purposive sampling method was used since the class selected for this survey was actively implementing AI-DWS especially in their writing tasks. Consent was obtained from the school, teacher, students, and their parents

before data collection.

### **Instrument and materials**

Instruments that were used to collect data for this study.

### **Survey questionnaire**

A google form with structured questionnaires was shared to students to retrieve quantitative data on their perceptions of AI-DWS. The questionnaire focused on student engagement, perceived support in writing, idea generation, independence and critical thinking. Likert-scale were used to measure the perceptions of students towards the use of AI-DWS in the classroom.

### **Classroom observation checklist**

Classroom observation was conducted along with a checklist as a guide to record engagement levels, participant frequency, focus indicators and the quality of work.

### **Exit cards**

Exit cards were used to collect students' post reflection at the end of the lesson. Students were required to share opinion in short on how they feel after the lesson, what idea they will use in their essay, and how did AI help them during the brainstorm session. Exit cards function as formative assessment tools that encourage reflection and feedback (Black & Wiliam, 2009; Fisher & Frey, 2014).

### **Data collection procedures**

The study was conducted in a Malaysian Secondary school during a regular English writing lesson. Before they study was conducted, students were introduced to AI- DWS and was guided thoroughly by the teacher on how it works and how the students are going to use it for the lesson of the day.

During the intervention, classroom observation was conducted and recorded as well throughout the period of implementation during the lesson. The exit cards was shared and collected at the end of the lesson to collect students' reflection on the lesson conducted. At the end of the intervention, the survey questionnaire which was in the form of Google form was shared to the students to gather the data on their overall experience and perception of using AI-DWS. The data was retrieved anonymously to ensure the participants privacy and to get honest responses from the participants.

### **Data analysis**

#### **Analytical Framework**

The data analysis employed a mixed-methods approach, integrating quantitative survey results with qualitative insights from classroom observations, teacher interviews, and student exit tickets. This triangulation ensured a deep understanding of the impact of AI-Dialogic Writing Scaffolding on ESL writing development. The analysis was guided by thematic analysis coding, descriptive statistics, and alignment with theoretical frameworks such as Vygotsky's Zone of Proximal Development (ZPD) and TPACK.

#### **Quantitative Data Analysis**

This study was conducted via a Likert-scale item that was adapted from Mohammad Ali (2023). The data was then summarised with descriptive statistics according to frequency distribution and percentages. The data were grouped into six pre-defined themes: emotional impact and motivation, grammar and error awareness, interactive learning with teacher guidance, idea generation and vocabulary development, revision independence and critical thinking, and writer development with authenticity. This is to quantify the extent of positive or negative perceptions and highlight areas where AI-DWS had the strongest impact.

## **Qualitative Data Analysis**

### **Classroom Observation Checklist**

The thematic analysis was adapted from Mai et al. (2025), focusing on engagement levels, participation frequency, focus indicators, and quality of work. The procedure was done through observations where it was conducted during pre-writing and post-writing stages. The data were then coded into categories (low, moderate, high engagement; active vs. passive participation). A comparative analysis was used to identify changes between pre- and post-writing stages. This is to identify observable shifts in student behavior and writing quality after AI-DWS integration.

### **Teacher Interview**

The semi-structured interview questions were also adapted from Mohammad Ali (2023). Prior to the conducted lesson, the teacher was interviewed to gather insights (pre-lesson). Then, the next data was collected again for post-lesson, and post-reflection. A thematic analysis was applied, coding responses into sub-themes: pre-existing support strategies, perceptions of AI tools, observed benefits, comparison with traditional methods, challenges and mediation, and future outlook. Findings were interpreted with the guidance of ZPD and TPACK frameworks. This process was conducted to contextualise student outcomes within teacher perceptions and pedagogical practices.

### **Exit Tickets**

An emoji-based and short written reflections will be collected at the end of lessons. The responses collected were categorised into positive, neutral, or negative perceptions. Respondents' qualitative comments were coded for themes such as enjoyment, confidence, confusion, and need for guidance. This process allows the researcher to identify immediate, student-centered feedback on lesson impact and tool usability.

### **Triangulation and Synthesis**

This mixed-method intervention case study was synthesised to provide holistic insights and understanding. The survey themes were compared with observational data, teacher interviews, and exit tickets reflections to confirm consistency or highlight differences. Therefore, a comprehensive narrative was developed, showing how AI-DWS influenced student writing development, engagement, teacher perceptions, while identifying risks such as over-reliance and confusion.

### **Ethical Consideration**

Consent has been obtained by clearly explaining the aim of the study and confirming that participation is voluntary for all participants and that they can withdraw anytime they want. Anonymity and confidentiality are protected by removing any identifying information and by securing all data. The use of AI is transparently communicated so that participants understand how AI tools are involved in the learning process. Moreover, students are well guided to use AI thoughtfully to avoid dependency, encouraging reflection on their learning and highlighting AI as an assistant rather than a replacement for their own ideas and effort.

### **Limitations Teaching Practice**

The use of the AI-DWS invention focuses mainly on the role of the teacher as a guide and monitor of the AI usage among the students in the classroom. The teachers are required to receive proper training on this so that they will be able to integrate AI tools effectively while making sure that critical thinking remains as the main focus to writing instruction. This integration is not to replace teacher feedback but to be used to broaden the scaffolding even outside the classroom and encourage differentiated learning.

### **Learners**

The use of AI-DWS can support ESL learners by serving as an assistant in their writing, providing guided



interaction and immediate feedback. The use of this tool can also encourage learners to be more independent when it comes to writing by maintaining an open line of communication as they work through their writing. By engaging with this tool, learners will enhance their writing precision, clarity of their writing, and most importantly, foster their ability to self-direct revision to improve their writing quality.

## Curriculum and Policymakers

The outcome of this study may be additional information for curriculum and policymakers on the prospects of AI-supported interventions in ESL writing instructions. AI DWS can be oriented with 21st-century Learning objectives by fostering teamwork, collaboration, and reflective learning. To promote fair and ethical use, schools should create comprehensive rules and ethical guidelines for the responsible use of technology among students in school.

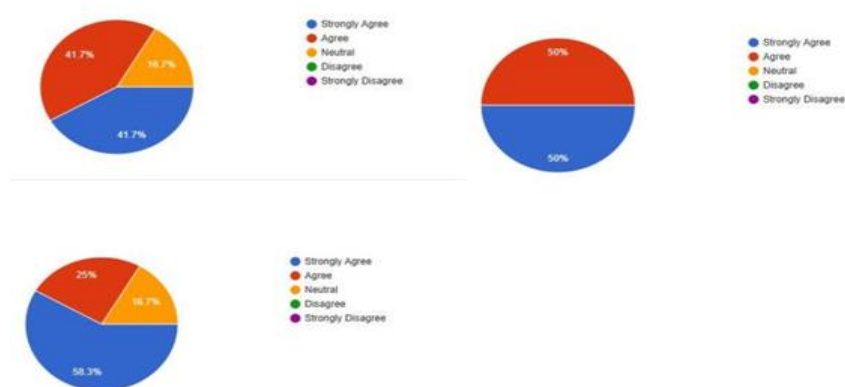
## Data and Findings

### Quantitative

A total of 30 students participated in the survey by sharing their experience on the use of AI-based digital writing systems (AI-DWS) in learning writing skills. The questionnaires were developed by adapting from Mohammad Ali (2023). The overall findings shows that most of the students have positive perceptions of using AI tools during writing activities in the classroom.

### Theme 1: Emotional impact and motivation.

Most students agree that implementation of AI-DWS makes writing less stressful and sees the tool as a supporting tool in doing writing activities. Based on the survey findings, many agreed that AI is very helpful especially when students need help in developing their ideas. When students use AI tools for writing, they will be less afraid of making mistakes and will express more ideas onto their writing. This clearly indicates that the implementation of AI-DWS reduces the writing anxiety and boosts confidence and self-efficacy among students, which will lead to active engagement in the classroom.

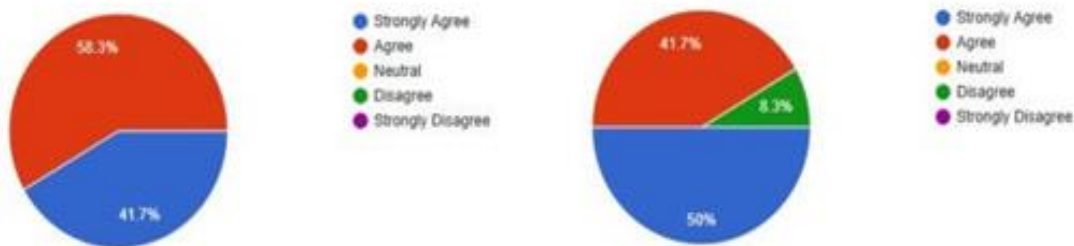


Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Using AI-DWS makes English writing less stressful for me.	13	13	4	0	0
I feel more confident when writing in English with the help of AI-DWS.	15	15	0	0	0
I enjoy using AI tools during English writing activities.	18	8	4	0	0

Table 1

## Theme 2: Grammar, sentence structure and error awareness.

The survey data shows that most students agree that AI-DWS supports them in improving their grammar knowledge in writing, mainly on sentence structure and identifying grammatical errors. The instant feedback from AI helps students to identify and understand the grammar errors and do their correction immediately. This will help students to remain focused as they can revise their work while doing the writing task and complete them on time. This will also prevent students from making repeated mistakes in upcoming writing tasks and exams.

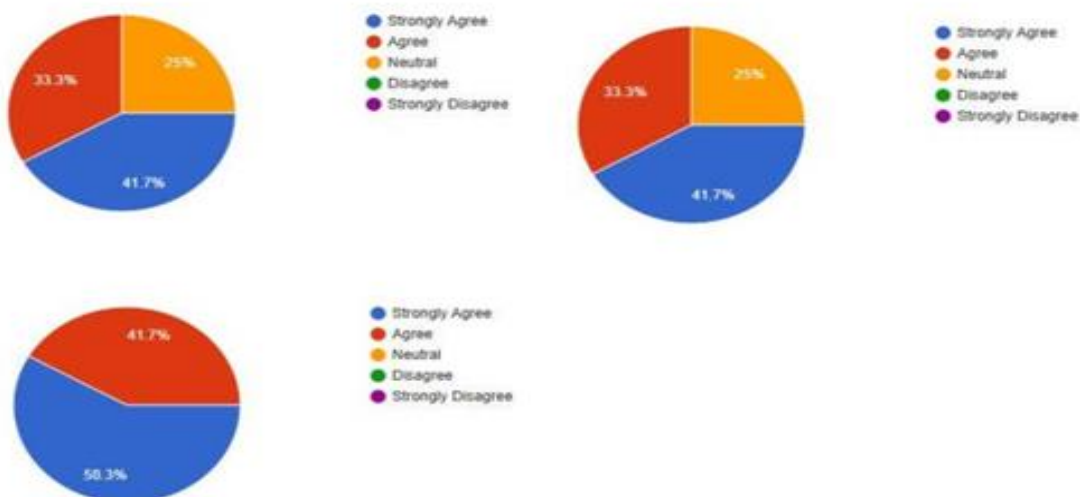


Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI-DWS helps me improve my grammar and sentence structure	17	13	4	0	0
AI-DWS helps me identify weaknesses in my writing	13	15	2	0	0

Table 2

## Theme 3: Interactive learning with teacher guidance.

Students showed a higher level of engagement when teachers guide them while using the AI-DWS in the classroom. With teacher guidance, it was easier for students to understand how to use AI-DWS responsibly and effectively. This will make the learning process more meaningful for the students. Integrating the use of AI-DWS along with teacher guidance encourages and boosts student motivation to focus fully on their lessons instead of misuse the technological tool to only generate answers. This shows the importance of guidance to maintain active participation among students in their learning.

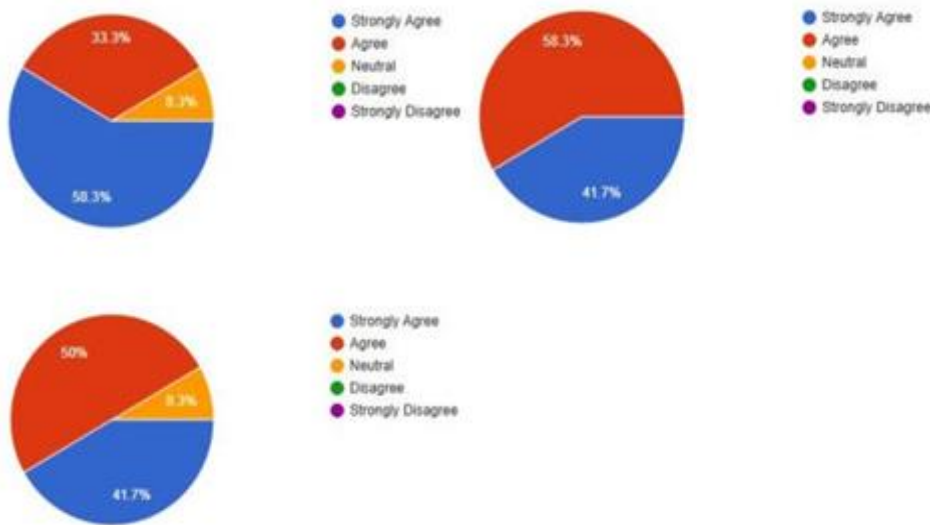


Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI-DWS is suitable for use in secondary school English writing lessons	10	13	7	0	0
I feel comfortable using AI-DWS for school writing tasks when guided by my teacher.	13	17	0	0	0
I believe AI-DWS should be integrated into English writing lessons	10	13	7	0	0

Table 3

#### Theme 4: Idea generation, clarity and vocabulary development

The findings reveal that the implementation of AI-DWS has improved student engagement in the classroom by making the writing task easier by helping students to generate ideas, writing an outline, and building students' vocabulary. Students will be able to expose themselves to bombastic words and more vocabulary when they use AI tools to generate ideas for their writing. This practice will automatically enhance students' vocabulary development since they will be practically using new words in their writing. This will encourage students to use the newly learned vocabulary effectively during exams.



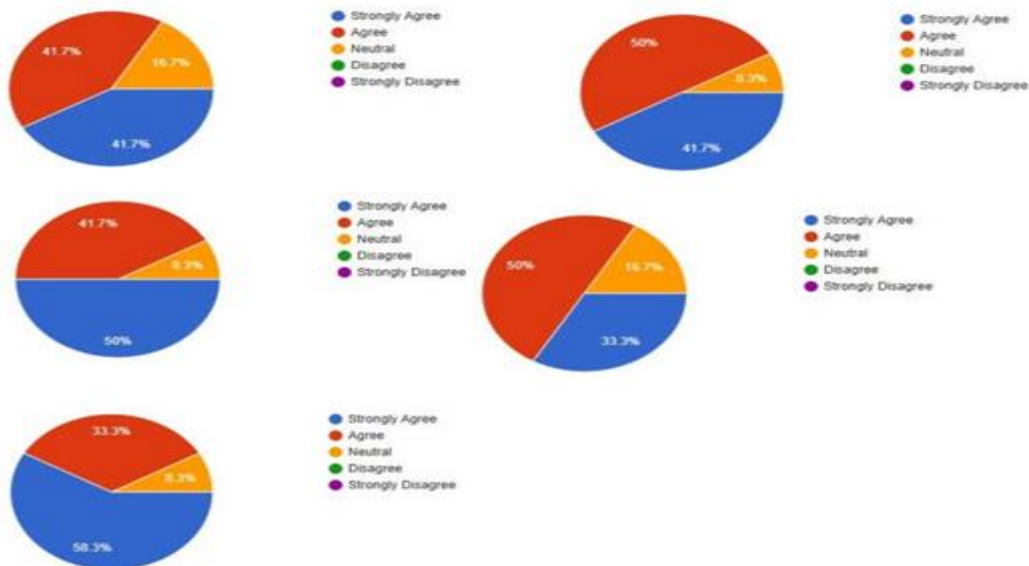
Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI-DWS helps me express my ideas more clearly in writing.	10	13	7	0	0
AI-generated suggestions help me learn new vocabulary for my writing.	13	17	0	0	0
Using AI-DWS helps me understand how to organise my ideas better.	10	13	7	0	0

Table 4



## Theme 5: Revision independence and critical thinking.

The findings from the survey show that AI-DWS are suitable to be used in the classroom, especially when guided by a teacher. With the teacher's guidance on how to use AI tools responsibly, students will be able to use AI more effectively in their writing by generating ideas and outlines. This will help students to understand that AI is only a learning tool that supports them to create ideas and construct outlines, not a replacement of their own thinking. Moreover, AI tools will help students to learn enjoyment and meaningful learning in the classroom. As a guide, the teacher's role will be to make sure students are focusing on improving the clarity of their writing, revising and doing the assigned task only. This will lead to a deep engagement from students in the classroom.



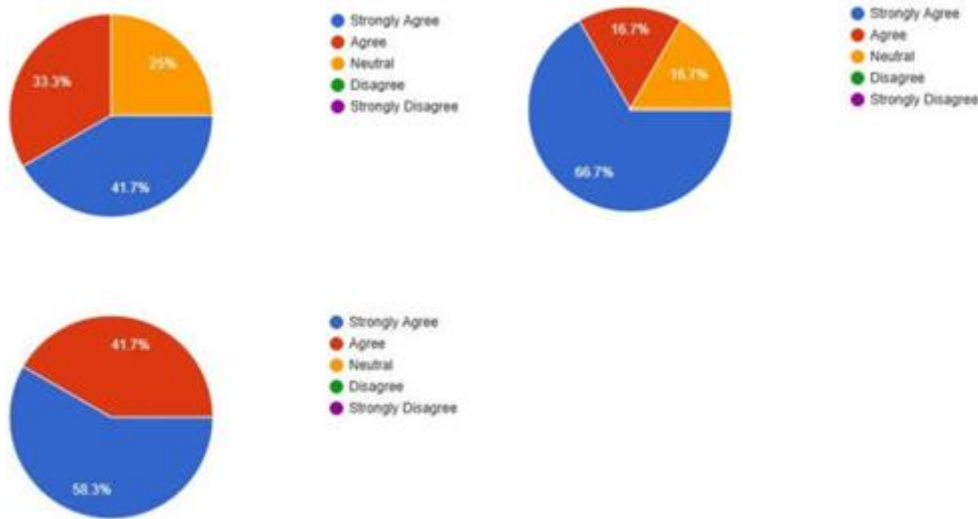
Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
AI-generated questions help me think more deeply about my writing ideas	13	12	5	0	0
AI dialogic prompts help me expand or develop my content.	13	15	2	0	0
AI prompts encourage me to revise my writing more than I normally would.	15	13	2	0	0
AI prompts help me become more independent in revising my writing.	15	13	2	0	0
Using AI-DWS encourages me to think critically about my writing choices.	18	10	2	0	0

Table 5

## Theme 6: Writer Development and Authenticity.

The data of this study shows that AI-DWS can nurture writing proficiency while maintaining the authenticity among students. The authenticity in writing is maintained when students use AI-DWS only to generate ideas while constructing them into sentences in their writing. This will also enable students to learn to adopt and adapt techniques where students will be only choosing suitable points that are related with their writing topic. This will encourage students to produce authentic writing and it will motivate students to write confidently and

independently while not fully relying on AI.



Question	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I believe AI-DWS supports my development as an English writer.	10	12	8	0	0
I feel more confident revising my writing with AI-generated guidance.	13	17	0	0	0
I do not blindly copy AI-generated text into my writing.	10	13	7	0	0

Table 6

## Qualitative

### Classroom Observation Checklist

This classroom observation checklist was adapted from Mai et al. (2025) which examines the impact of a structured digital detox on student engagement and linguistic performance in an ESL classroom at a military university in Vietnam.

This section presents the findings from the participants' writing progress in their pre-writing and post-writing with the teacher:

Observation Category	Pre-writing Stage	Post-Writing Stage
Engagement Levels	Students were able to engage during the pre-writing stage presenting their work with minimal errors in spelling and grammar; however, most of the responses collected were directly copied from the writing task question.	Students were able to come up with a more refined sentences with little to no errors in their second writing task.
Participants Frequency	Students took quite some time to produce their own points. Weaker students relied heavily on the question and rewriting them showed minimal	Active participation from students with faster idea generation showing

	output of ideas.	their willingness to refine drafts.
Focus Indicators	No evidence of revision and reflection on elaboration of sentences.	Students showed jump-start ideas with complete introduction and elaboration.
Quality of Work	Idea generation limited with basic use of vocabularies.	Output showed a more organised elaboration which aligns with IGCSE standards.

Table 7: Classroom Observation Checklist

### Analysis of Teacher's Interview

The interview questions were adapted from Mohammad Ali (2023) and were thematically analysed, with the findings organised into six sub-sections and are connected to a broader theoretical framework. This section presents the findings from the teacher's pre-lesson, post-lesson, and post-reflection interview regarding the use of AI-DWS in ESL writing instructions.

### Pre-existing Support Strategies and Challenges

The teacher traditionally scaffolds brainstorming by providing vocabulary lists and phrases to their students as their students often struggle with idea flow, imagination, and visualization. The teacher's reliance on scaffolding reflects Vygotsky's Zone of Proximal Development or ZPD, however limitations in student creativity highlight the importance of more adaptive tools for learners.

### Perceptions of Digital and AI Tools

The teacher's perception aligns with the broader study's findings that teachers are cautiously optimistic about AI, expecting efficiency and

personalisation. They view digital tools as convenient and helpful especially for brainstorming. Additionally, in the interview, the teacher is somewhat familiar with AI chatbots, with personal use for skill practice; however, it was stated by the teacher that AI should smooth out brainstorming and help students to expand their ideas in writing.

### Observed Benefits After Intervention

According to the interviewee, the AI-DWS shows an improved idea elaboration, Increased engagement and confidence, and its alignment with curriculum standards. The teacher stated that students were able to elaborate more on their ideas and adding more detail in their writing and students seem more engaged and motivated. It was also added that AI-DWS is aligned with writing criteria, especially for IGCSE. The interpretation based on the collected responses shows that AI-DWS enhanced both the quality of writing and student motivation which echoes the study's finding that AI intervention reduces errors and improves learners' writing outcomes.

### Comparison with Traditional Methods

The teacher noted that AI provided immediate and personalised prompts, which traditional approaches often lacked, particularly in larger classes. Students interacted actively with the AI , fostering their cognitive and independent thinking by asking questions and accepting responses. This reflects the study's emphasis on adaptive learning that tailors support to individual learner needs, keeping learners within their ZPD.

### Challenges and Teacher Mediation

From the interview, the interviewee mentioned about the risk on students with the utilisation of AI. Such risks

like over-reliance, repeated regeneration of responses, and difficulty selecting appropriate suggestions. Therefore, the teacher encouraged that teachers play a role in monitoring, guiding, and reminding students that AI is a support tool not as an easy way out. This resonates with the study's caution that teachers may worry about accuracy, reliability, and misuse of AI tools, which may lead to plagiarism.

### **Post-Reflection and Future Outlook**

The interviewee perceives AI-DWS as effective when guided, assisting students to overcome writing barriers or being 'stuck' while maintaining authenticity. The teacher's willingness to continue using AI-DWS depended on several factors, including evidence of student improvement, sustained engagement, curriculum alignment, and access to technology. Apart from that, it was also identified that teacher training should also be considered as they mentioned teachers become more receptive after hands-on experience, but teacher training and clear pedagogical frameworks (TPACK) are essential for sustainability.

### **Synthesis**

The responses collected reflected the broader findings of Abrar Mohammad Ali's study. Initial curiosity and cautious optimism gave way to observed improvements in student writing and engagement, which in return, reduced hesitation about AI integration. Concerns about over-reliance and the need for teacher training for the intervention echoed the study's emphasis on teacher readiness and teachers' professional development. Finally, the recognition of teacher's roles aligns with the TPACK framework, which highlights that technology must be integrated meaningfully with pedagogy and content knowledge. Overall, the teacher's experience in implementing the intervention shows that AI-DWS can and may significantly enhance ESL writing development, but its success depends on teacher mediation, student engagement and with a structured teacher training. In conclusion, hands-on exposure reduces teacher hesitation and builds willingness to adopt AI tools in pedagogy, while also highlighting the irreplaceable teacher role in guidance ensuring a sustainable and effective integration of AI-DWS.

### **Analysis of Participants Exit Tickets**

The exit tickets responses indicated a generally positive reaction, with most students selecting the emojis that reflected their emotion of the lesson with AI-DWS. This suggests that the integrated use of AI-DWS contributed to a more engaging and supportive learning experience. Nonetheless, a small number of students reported feeling confused when using AI-DWS, showcasing that the tool was not equally accessible to all learners as they need an extended amount of training with it. These observations underscore the importance of providing clearer teacher guidance and scaffolding to ensure that students can navigate AI-assisted writing effectively and confidently.

### **Synthesis of Findings**

The integration of AI-DWS or Artificial Intelligence-Dialogic Writing Scaffolding into ESL writing instruction revealed consistent patterns across quantitative and qualitative data. Survey results demonstrated that there is an overwhelmingly positive student perception, with six major themes emerging: emotional impact and motivation, grammar and error awareness, interactive learning with teacher guidance, ideas generation and vocabulary development, revision independence and critical thinking, and writer development with authenticity. Students reported reduced writing anxiety, greater confidence, and improved engagement, alongside tangible benefits in grammar accuracy, ideas elaboration, and vocabulary expansion. In occurrence, they acknowledged that teacher guidance was essential to ensure responsible and effective use of AI tools.

Classroom observations reinforced these findings, showing clear progression from limited idea generation and minimal revision in the pre-writing stage to more organised, elaborated, and accurate writing in the post-writing stage. Students demonstrated stronger focus, faster ideas generation, and improved alignment IGCSE standard after using AI-DWS. Teacher interviews further contextualised these outcomes, highlighting initial reliance on traditional scaffolding strategies, cautious optimism toward AI, and eventual recognition of its benefits in enhancing elaboration, engagement and curriculum alignment. Meanwhile, the interviewee, who is the teacher, expressed concerns about students over-reliance on AI. Though AI can and may assist students in their writing,

the risk of plagiarism and inauthenticity will arise.

Exit ticket reflections provided additional insight into student experiences. Most responses were positive, with students expressing enjoyment of using AI-DWS, though there is a minority of students reported confusion in utilising it. This highlights the importance of clearer teacher scaffolding and extended training to ensure equitable access and effective use of AI-DWS.

## CONCLUSIONS

This study is mainly focused on the implementation of AI-enhanced Dialogic Writing Scaffolding (AI-DWS) in Malaysian Secondary ESL classrooms. The AI-Enhanced Dialogic Writing Scaffolding (AI-DWS) approach is a significant advancement in the integration of artificial intelligence effectively into English Language Teaching, particularly in improving writing skills. The findings of this study indicate that implementation of AI-DWS fosters student engagement, writing proficiency and reduce writing anxiety with effective teacher guidance.

AI-DWS utilizes AI as an interactive dialogic that enhances learners' cognitive involvement during the writing process. In contrast to the usual integration of AI that concentrates only on text generation or superficial corrections. This approach is based on sociocultural and dialogic learning theories, which take in the building of knowledge as a socially mediated activity. By prompting students with reflective inquiries, AI-DWS supports idea generation, promotes clearer organization, and facilitates more in-depth revision—areas where numerous ESL learners generally encounter difficulties.

The study highlights that the students participated in this study demonstrated better engagement in the classroom and were involved in writing activities with confidence. Most importantly, the teacher guidance was very effective in this study as it was a crucial part in maintaining the authenticity of the students' writing and to prevent students from being over-reliance on AI tools. When guided appropriately, AI functions as a scaffold that supports learner autonomy rather than replacing student effort (Mercer & Littleton, 2007).

Overall, this study indicates that the implementation of AI-DWS is beneficial and meaningful for Malaysian secondary school classrooms. The findings of the study have implications for teachers, curriculum and policy makers and to learners.

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## APPENDICES

Pre-Writing Outline Template

Essay Title / Topic:

Thesis Statement:

Body Paragraph 1 – Main Idea (Advantage / Point 1):

Supporting Details / Examples:

Body Paragraph 2 – Main Idea (Advantage / Point 2):

Supporting Details / Examples:

Body Paragraph 3 – Main Idea (Disadvantage / Point 3):

Supporting Details / Examples:

Body Paragraph 4 – Main Idea (Disadvantage / Point 4):

Supporting Details / Examples:






Conclusion – Summary of Points / Final Thought:

Exit Ticket:

## EMOJI EXIT TICKET

Name: \_\_\_\_\_


Circle the emoji that best represents how you feel after today's lesson.

extremely happy
happy
okay
confused
sad

1. One idea I will definitely use in my essay is:
2. I chose this idea because:
3. How did AI help me during brainstorming today?

Move this red circle to show how you feel after today's lesson.



Quick lesson snapshot:

Topic: Advantages & disadvantages of using smartphones in school (changeable)

Level: Lower-intermediate → Advanced (Form 4)

Total time: 40–60 minutes (core 40 min + optional extension)

Core tools: AI chat (e.g., ChatGPT), mind-map template (paper or digital), timer scaffolding sequence

1) Warm up & purpose (3–5 min) — Activate prior knowledge Teacher action

Ask 2 quick whole-class questions: “Name one advantage of smartphones in school.” “Name one disadvantage.”

Say purpose: “Today we’ll use an AI to help us brainstorm and organise ideas — the AI is a helper, not the writer.”

Student action

Call out ideas; teacher notes 3–4 words on board. Success check

Students can name at least one pro and one con.

2) Model the AI prompt & read the result (5–7 min) — Teacher modeling Teacher action

Project the AI interface (or read aloud). Type a clear scaffolded prompt:

“Give me 5 ideas (advantages and disadvantages) about using smartphones in school for a secondary-school discursive essay. For each idea give: a one-sentence explanation, 2 supporting details/examples, 3 useful vocabulary words, and one possible sentence starter.”

Read the AI response aloud. Highlight a good idea and a weak idea and show how to adapt them.

Student action

Listen and take 1–2 notes. Success check

Students can identify which AI ideas are useful vs. which need editing.

3) Guided practice: Teacher + class edit (6–8 min) — Shared scaffold Teacher action

Select one AI idea on the board. Work through it with the class: Ask: “Is this idea relevant?”

Edit vocabulary or examples together (show how to make ideas more specific). Model rewriting a sentence starter into student voice (not copying AI verbatim). Student action

Suggest edits aloud; vote on best vocabulary/use an example from local context. Success check

Whole class produces one revised idea (idea + 2 local examples + vocabulary).

4) Paired AI brainstorming (10 min) — Supported practice Teacher action Give pairs a clear prompt template to paste into AI (handout or board):

“List 4 ideas (2 advantages, 2 disadvantages) about [topic]. For each idea, give one short explanation, one concrete example relevant to Malaysian secondary schools, and 2 academic vocabulary words.”

Circulate, monitor prompts and outcomes. Remind pairs not to copy whole sentences. Student action

Work in pairs: run the AI prompt, read results, pick best 4 items and note 1 local example per idea.

Success check

Each pair produces a short list: idea + example + vocab (teacher does a quick thumbs-up check).

5) Organise into a mind map / outline (7–10 min) — Scaffolded organisation Teacher action

Provide a simple outline template (Intro | Body1 | Body2 | Body3 | Body4 | Conclusion) and a mind-map graphic organizer.

Show a completed sample outline (teacher model).

Remind students to use connectors: however, moreover, on the other hand, therefore. Student action

Each pair fills the mind map/outline with their chosen ideas, supporting details, and the vocabulary they’ll try to use.

Success check

Teacher collects or scans outlines to confirm each has: thesis idea, 4 body points, at least one example each.

6) Group sharing + critique (5–8 min) — Metacognitive reflection Teacher action

Put pairs into groups of 4. Each pair reads their outline (1 min each). Ask groups to give 1 compliment + 1 suggestion for improvement.

Student action

Share outlines and receive feedback; note one change they will make. Success check

Each pair records one revised idea after feedback.

7) Exit ticket / quick formative check (2–3 min) Teacher action

Ask students to write one sentence: “One idea I will definitely use in my essay is \_\_\_\_\_ because \_\_\_\_\_.”

Collect exit tickets (or use quick digital poll). Student action

Write the exit sentence. Success check

80% of students can justify one chosen idea.

8) Optional extension — Start first draft (15–20 min)

Teacher action

Let students begin drafting their introduction and Body 1 using their outline and vocabularies

### **Transcriptions:**

Teacher B

1. Pre-lesson interview

Question 1: How do you usually support students in generating ideas before they start writing?

"I usually supports my students by provide them phrases or list any relevant vocabulary as a prompt to help them begin, especially if they are unsure how to express their ideas."

Question 2: What challenges do you face when trying to help students brainstorm ideas for writing tasks?

"One of the challenges is that I saw that my students often struggle with the flow of ideas or do not know how to begin their writing."

"And this is sometimes related to their limited imagination or they having difficulty in visualizing their ideas."

Question 3: What is your general opinion about using digital tools to support ESL writing instruction?

"I believe the digital tools are very convenient and helpful, because they help student visualize and organize their idea more effectively."

"Especially during the brainstorming section it will help them to make it easier, and the whole process will be smoother for the student."

Question 4: How familiar are you with AI-based tools such as chatbots in an educational context?

"I am, I can say I practically familiar with AI-based tool because there are many chatbots widely available

nowadays."

"And I use it to practice my own skills and especially if some of the tools even provide courses and guidance on how to use it wisely in educational context."

Question 5: What are your expectations regarding the use of an AI-assisted brainstorming tool for writing development?

"I expect an AI-assisted brainstorming tool to smooth out students' brainstorming session and help them expand their ideas more effectively."

## 2. Post-lesson interview

Question 1: Can you describe your overall experience implementing the AI-assisted pre- writing brainstorming activity in your classroom?

"So, to me, overall, the experience was positive and insightful. And through both of the activities, I was able to identify the improvement. First, the student attempted to do the activity independently, and I can see that students have limitations in their idea development. Then, at the next activity after AI-assisted brainstorming was introduced, the students were able to expand their ideas."

Question 2: What changes, if any, did you observe in students' ability to generate ideas after using the AI tool?

"I observed that a noticeable improvement in students' ability to elaborate their ideas. Before using AI, the students tended to list the points briefly. Then, after the AI-assisted brainstorming [was] introduced, the students were able to elaborate more [on] their ideas and adding more detail, which resulted in more developed content."

Question 3: How did the AI-assisted brainstorming activity influence students' engagement during the writing process?

"Students seemed to be more engaged and motivated during the writing process. The AI's questioning approach really encouraged them to think more deeply about their ideas, which helped them to write more smoothly, more confidence. And they were more willing to revise their writing because the AI helped them clearly see how their ideas improved."

Question 4: In your view, did the AI tool support students differently compared to traditional brainstorming methods?

"Yes, the AI tool provided immediate and personalized prompts, which traditional brainstorming methods may not always offer, especially in larger classes. So, instead of students passively receiving ideas, the student interacted with the AI by responding to questions, which can help in terms of their cognitive thinking and independent thinking."

Question 5: What aspect of the AI-assisted brainstorming activity did you find most beneficial for students' writing development?

"The most beneficial aspect was the way AI encouraged idea development through guided questioning. Rather than just giving them answers directly, the AI prompted students to reflect on their ideas, which helped them produce more detailed writing. And this is aligned with writing criteria, especially for IGCSE."

Question 6: Were there any challenges or limitations when using the AI tool in your classroom?

"One of the challenges was ensuring that students do not rely too heavily on the AI by repeatedly regenerating responses instead of engaging with the questions. And some students initially struggled to decide which AI suggestions were appropriate for their writing context."



Question 7: How did you address any issues related to students' reliance on AI during the brainstorming stage?

"To address this, I monitored their work and reminded them that the task focused on idea development rather than just taking AI answers directly. And I keep guiding them on how to use the prompt correctly so that the idea that AI was a support tool, not to replace their thinking skills."

### 3. Post-Reflection

Question 1: Based on this experience, how do you perceive the effectiveness of AI- assisted brainstorming for ESL writing development?

"I see AI-assisted brainstorming as a helpful support for ESL writing, especially helping students expand their ideas and get past the difficulty of starting to write. If student use AI with a clear guidance, it encourage them to think more deeply without taking away the authenticity of their writing."

Question 2: To what extent did this intervention influence your views on using AI tools in writing instruction?

"This experience really shown me that AI can be helpful tool in writing instruction as long as it's used wisely. It's not about having AI do the work but about supporting students to think more critically and develop their own ideas."

Question 3: What factors would influence your decision to continue using AI-based tools in your ESL classroom?

"I look at few things: whether students are actually improving their writing, whether they stay actively engaged, and whether the tools really fit well with the curriculum. Access to technology and students' comfort with using it would also matter."

Question 4: What kind of training or support would you need to effectively integrate AI- assisted writing activities in the future?

"I think some guidance on best practices for using AI in the classroom would help. For example, like how to design prompts, monitor students' responses, and making sure it's helping them think—helping them thinking instead of just generating answers. Some hands-on training would be useful, too."

Question 5: How do you see the role of teachers when AI tools are used to support writing instruction?

"I see teacher as still being really important. Our job is to guide student, monitor how they using the AI, and help them making decision about what works in their writing. AI is a tool, but teacher are still the one shaping the learning process."

Question 6: Would you consider using other AI-based tools for ESL writing development? Why or why not?

"Yes, I would. I think other AI tools could be useful as long as they encourage student to think, to plan, improve their writing, rather than just giving them ready-made answers. The focus should always be on supporting students' own learning."

## Observations:

Padlet



Jade Petyoulin Ayala Pater • 9 • 4 January 2026

### Writing an article with AI-DWS

Welcome! Using AI as a dialogic partner is a game-changer for IGCSE, OSL students, because it shifts the focus from "getting the answer" to improving the craft of writing.

#### Section 1

##### Activity 1

Student 1

Recently, I watched a popular television drama series that many teenagers enjoy. The ideas were relevant to our daily lives, and the main actors performed very well. However, the storyline was sometimes confusing, and the music was rather irritating. Overall, it is interesting but could be improved for young viewers today, in my honest opinion.

Student 2

I recently watched a television drama series which a lot of young people are talking about. I find the storyline really confusing but the ideas were actually very relevant to our own lives. The actors playing the main parts were very good because I did not really expect that. I really recommend this television drama series to young people all around the world. But one thing I find rather irritating is the background music, it really doesn't match what the drama is trying to say.

Student 3

This television drama is well known among us students. Even though the story line is sometimes confusing the themes are relatable and are well connected to real life situations. The main actors performed well and made the characters believable. However, the background music can get quite irritating and distracting sometimes.

Student 4

Some people believe that workers should work only four days a week and have three days to relax. However, I do not agree with this idea because it may cause several problems.

Student 5

#### review

Recently I have watched a television drama series which have a confusing and interesting storyline. I like this series as it is relevant to our own lives while the actor are playing the important part very well. On the other hand, the music was irritating and story make deeper character development and relationship between characters which is why the story is confusing

Student 6

Recently, I watched a TV series, and I find the plot confusing to modern viewers, but once you understand it, it's incredibly impactful.

Many people are debating whether employees should work a maximum of four days a week instead of five. Personally, I think the advantages of a four-day work week outweigh the disadvantages. First, less stress means employees have more time to rest. When employees feel relaxed, they can concentrate better and accomplish more, potentially leading to increased productivity. Although employee salaries may decrease, which will increase company expenses, I believe these issues are not as important as the benefits. In conclusion, the advantages of a four-day work week outweigh the disadvantages.

#### Activity 2

Student 1

I strongly believe that employees should work a maximum of four days a week. One of the main advantages is that people would have more time to spend with their families, which is extremely important for building stronger relationships and creating happy memories together. Having extra time to relax also reduces stress and improves overall mental health. Happier workers are often more motivated, energetic, and efficient when they return to work. Some critics argue that a shorter week may result in unfinished tasks, but this problem can be solved with better planning, careful time management, and the use of modern technology. Overall, a four-day work week clearly benefits both employers and employees.

Student 2

People nowadays are discussing whether employees should work for four or five days a week. I partly agree with this idea. But this system could make workers happier because they would have more time to rest and spend with their families, which may also increase productivity. However, some employees might earn less money, and companies may need to hire more staff, which could raise costs. In my opinion, a four day work week has clear benefits, but it should be introduced carefully and only in suitable industries. In conclusion, although a four day work week has benefits, it should be introduced carefully and only in suitable industries.

Student 3

Firstly, working fewer days can lead to lower pay. If workers earn less money, they may not be able to afford basic daily needs such as food, rent, and transport. This can make life more difficult for many people. Secondly, four working days may not be enough to finish all tasks and orders that are asked for. Workers may feel rushed, which can reduce the quality of their work and increase their stress.

Student 4

In my opinion, a five day work week is better. It gives workers a stable income and still allows them to rest and spend time with their families on weekends.

#### AI-DWS

You may use this prompt: "I am an IGCSE English OSL student practicing for my writing exam. I want you to act as my Writing Coach. I will provide you with a past paper prompt."

#### Exit tickets

AI-DWS Class Exit Ticket Form

This canva link leads to the exit ticket form. Please complete this exit ticket form at the end of the lesson. Thank you!

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