

Using mini whiteboards to promote classroom interaction in university English as a foreign language course: A review of the literature

Nai-Ying Chang *

General Education Center, Hsiuping University of Science and Technology, Taiwan.

World Journal of Advanced Research and Reviews, 2026, 31(01), 723–731

Publication history: Received on 02 June 2026; revised on 11 July 2026; accepted on 13 July 2026

Article DOI: <https://doi.org/10.30574/wjarr.2026.31.1.1891>

Abstract

Instructors of English as a Foreign Language (EFL) at the tertiary level routinely confront a cluster of interrelated challenges: unequal patterns of student participation, foreign-language anxiety, heterogeneous proficiency levels, and few reliable means of gauging the comprehension of an entire class at once. Under conventional teacher-fronted questioning, classroom talk tends to be monopolized by a small number of confident or high-proficiency students, while the majority of learners remain silent; the answers a teacher elicits may therefore misrepresent the learning state of the class as a whole. Mini whiteboards—small, erasable boards on which individual students or small groups write and simultaneously display responses—constitute a low-technology form of classroom response system. Drawing on scholarship in formative assessment, student response systems, active learning, classroom interaction, and foreign-language pedagogy, this review appraises the potential of mini whiteboards in university EFL instruction. The available evidence suggests that these tools may widen participation, render language learning visible, supply teachers with immediate evidence of comprehension, and attenuate some of the psychological risks that accompany public oral performance in a foreign language. They also appear capable of supporting vocabulary retrieval, grammar practice, reading comprehension, speaking preparation, and peer interaction. Direct empirical research conducted in university EFL settings, however, remains scarce. Further investigation is required to establish whether mini whiteboards yield measurable gains in English achievement, interactional quality, willingness to communicate, and long-term retention among tertiary EFL learners.

Keywords: Mini Whiteboards; English as a foreign language; EFL; University English Teaching; Classroom Interaction; Formative Assessment

1. Introduction

Classroom interaction lies at the heart of university-level English as a Foreign Language (EFL) education. In EFL settings, English is typically acquired and used in environments where it is not the dominant language of daily life, and the classroom may consequently constitute one of the few sites in which learners regularly encounter, process, and produce the target language. Regardless of whether a university EFL course is oriented toward general English, academic English, English for specific purposes, or oral communication, learners need recurrent opportunities to generate language, test linguistic hypotheses, receive feedback, negotiate meaning, and restructure their developing knowledge.

The distinction between EFL and English as a Second Language (ESL) contexts is consequential here. ESL learners often have access to English beyond the classroom—through schooling, employment, public services, and everyday social contact—whereas learners in many EFL environments encounter English chiefly during scheduled instruction. Classroom participation therefore assumes heightened importance: restricted interaction in class may translate directly into restricted English production overall.

* Corresponding author: Nai-Ying Chang

Notwithstanding the centrality of interaction, participation in many university EFL classrooms remains markedly uneven. When instructors pose questions, responses are typically volunteered by a small subset of confident or proficient students. Their classmates may stay silent for a variety of reasons: uncertainty about their English, a need for additional processing time, apprehension about grammatical or pronunciation errors, or prior socialization into teacher-centered instructional norms. The resulting interactional pattern is one in which a few students answer while the majority observe.

This pattern gives rise to at least two problems. First, non-responding students are deprived of opportunities to retrieve and produce English—a particularly serious loss in EFL environments where meaningful occasions for language use are already scarce. Second, instructors may erroneously infer whole-class understanding from the answers of a few high-achieving volunteers. A single correct response demonstrates neither that most learners have grasped the target feature nor that they can deploy it independently.

Research on active learning has challenged the assumption that effective university teaching consists primarily of transmitting knowledge through lectures. In a large-scale meta-analysis of undergraduate courses, Freeman et al. (2014) reported that students in active-learning conditions generally outperformed peers in traditional lecture formats. Although that analysis centered on science, technology, engineering, and mathematics disciplines, its broader implication extends to EFL education: learners must think, respond, discuss, solve problems, and externalize their understanding.

One readily accessible means of increasing visible participation is the mini whiteboard—a small erasable board used by an individual student, a pair, or a group. Learners write a response and hold it up on the teacher's signal. Responses may take the form of letters, vocabulary items, sentences, grammatical structures, symbols, diagrams, or brief explanations. Because all students can answer at approximately the same moment, mini whiteboards can convert teacher questioning from an exchange involving a handful of volunteers into a whole-class response event.

Mini whiteboards are inexpensive, portable, reusable, and independent of internet connectivity. These attributes make them especially well suited to EFL classrooms in which not all students possess digital devices, network access is unreliable, or instructors prefer a less distracting alternative to smartphone-based polling. Crucially, mini whiteboards are not merely recreational classroom props: when deployed systematically, they can operate as low-technology student response systems and as instruments of formative assessment in language teaching.

This review examines the theoretical underpinnings, prospective benefits, classroom applications, and limitations of mini whiteboards in university EFL instruction. It further identifies gaps in the existing literature and proposes an agenda for future EFL research.

2. Mini Whiteboards as Student Response Systems in EFL Education

Student response systems encompass the instructional tools and procedures that enable teachers to gather answers from many students within a short span of time. Familiar examples include electronic clickers, polling software, mobile applications, response cards, hand signals, and mini whiteboards. Reviews of audience response technologies indicate that, despite their technical variety, such systems share a common instructional logic: students answer a question, the teacher inspects the pattern of responses, and subsequent instruction is adjusted accordingly (Kay & LeSage, 2009). Meta-analytic evidence likewise suggests that the affective benefits of these systems—heightened engagement and more positive attitudes—are often more pronounced than their direct cognitive effects, underscoring that the pedagogy surrounding the tool matters more than the tool itself (Hunsu et al., 2016).

Within this family of tools, mini whiteboards may be characterized as low-technology student response systems. Unlike digital platforms, they neither compute percentages automatically nor store answers or generate performance reports. They do, however, accommodate a considerably wider range of response types than most electronic systems: students can write complete words, construct sentences, summarize ideas, sketch semantic relationships, or display the intermediate steps of their reasoning.

This flexibility carries particular weight in EFL instruction, where language performance frequently resists representation in multiple-choice format. An EFL teacher may need to observe whether students can spell a word, apply a grammatical structure, select an appropriate collocation, reformulate an informal sentence, or express an idea in their own words. Mini whiteboards render precisely these productive responses observable.

The pedagogical value of any response system, moreover, does not reside chiefly in the device. Dangel and Wang (2008) contended that the effectiveness of response systems in higher education hinges on question design, classroom discussion, feedback, and the uses to which teachers put students' answers. A sophisticated digital platform may generate only superficial engagement if learners simply guess and the instructor immediately announces the correct option; conversely, a plain whiteboard may sustain substantive language learning when students are required to explain, compare, revise, and justify their responses.

The decisive question, then, is not whether mini whiteboards are technologically advanced but whether they can sustain a productive EFL instructional cycle:

- The teacher poses a linguistically meaningful question.
- Students process the question and formulate a response.
- All students display their answers simultaneously.
- The teacher inspects patterns of understanding and error.
- Students explain, compare, discuss, or revise their answers.
- The teacher adapts the next phase of instruction.

When this cycle is enacted effectively, mini whiteboards can serve the dual purposes of promoting EFL classroom interaction and supporting formative language assessment.

3. Theoretical Foundations

3.1. Formative Assessment in EFL Classrooms

Perhaps the strongest theoretical warrant for mini whiteboards derives from formative assessment—the practice of gathering evidence of learning during instruction and using that evidence to improve teaching and learning. Formative assessment is thereby distinguished from summative assessment, which typically certifies achievement after a unit or course has concluded.

In the EFL classroom, formative assessment can disclose whether students understand a vocabulary item, can differentiate grammatical forms, can identify the main idea of a text, or can produce an expression appropriate to a communicative situation. Instructors should not depend on questions such as “Do you understand?”, since learners frequently answer affirmatively even while remaining uncertain.

Mini whiteboards make EFL learners' understanding observable by obliging every student to generate an answer rather than remain passive. Following instruction on the passive voice, for instance, a teacher might ask students to transform the sentence “Researchers collected the data in 2025” into its passive counterpart. The displayed answers may reveal several distinct patterns: some students produce the correct form, while others omit the auxiliary, supply an incorrect past participle, or retain the original subject in an inappropriate position.

Such responses yield diagnostically richer information than a global comprehension check. They indicate not merely that difficulty exists but what kind of linguistic difficulty learners are experiencing.

Andersson (2017) cautioned that formative assessment is not accomplished simply by collecting answers; teachers must interpret the evidence and act on it. Where most learners respond correctly, the instructor may advance to a more demanding communicative task. Where responses split between two alternatives, students may be asked to compare their reasoning with a partner. Where a common grammatical error predominates, renewed explanation of the form may be warranted.

The mini whiteboard, in other words, is not intrinsically formative. Its formative value emerges from the pedagogical decisions taken after students display their answers.

3.2. Active Language Learning

Mini whiteboards also align with the principles of active learning, which require students to do more than listen: they must retrieve information, make decisions, solve problems, weigh alternatives, and communicate their understanding.

Active participation is especially consequential in EFL classrooms because learners need opportunities to mobilize their linguistic knowledge. A student who follows a teacher's explanation of a vocabulary item may nonetheless be unable to

retrieve the word independently; a learner who recognizes a grammatically correct sentence may be unable to produce one.

Whiteboard tasks can generate frequent episodes of retrieval and production. Rather than listening to an extended grammatical explanation followed by a single exercise, students may respond several times over the course of the explanation itself. These brief response episodes interrupt passive listening and compel active processing of English.

Mini whiteboards can therefore facilitate a shift from teacher-dominated explanation toward learner-generated language. The depth of the resulting engagement, however, is contingent on task quality: writing a single isolated letter demands little linguistic processing, whereas correcting a sentence and explaining the correction requires substantially deeper cognitive and linguistic work.

3.3. Whole-Class Participation in EFL Contexts

Traditional oral questioning systematically favors students who are confident, linguistically proficient, quick to respond, and willing to speak English in public. Mini whiteboards can broaden participation because every learner is expected to formulate and display a response.

This whole-class format confers several advantages. First, it strengthens individual accountability: learners know they must produce an answer rather than defer to a more proficient classmate. Second, simultaneous display prevents the earliest respondent from shaping classmates' answers. Third, the teacher obtains evidence from the entire class rather than from a small and potentially unrepresentative subset.

Visible participation, however, should not be conflated with cognitive or linguistic engagement. A student may copy a neighbor's answer, write something arbitrary, or reproduce a form without comprehension. Whiteboard activities should therefore be followed, at least intermittently, by oral explanation, peer discussion, or answer revision.

3.4. Low-Risk Foreign-Language Production

Foreign-language anxiety is a salient concern in university EFL classrooms. Learners may withhold participation out of fear of negative evaluation, grammatical error, pronunciation difficulty, or embarrassment before peers. Speaking aloud can be especially threatening for students with lower proficiency or fragile confidence.

Mini whiteboards may mitigate part of this risk. A written answer is ephemeral—erasable in an instant—and lacks the permanence of a submitted assignment; it may also feel less exposing than an oral response delivered to the whole class.

Whiteboard responses can additionally scaffold speaking. Students may first write a sentence or several key words and subsequently draw on that written support to produce an oral answer, thereby distributing the cognitive load of generating ideas, organizing language, and speaking publicly.

The psychological safety of the activity nonetheless depends on teacher conduct. If the instructor singles out weaker students, ridicules errors, or exploits the boards to rank learners, anxiety may intensify. If errors are instead treated as natural and diagnostically informative features of language development, students may grow more willing to take linguistic risks. An answer on the board can vanish with a single wipe; dissolving the fear of answering incorrectly requires somewhat more deliberate pedagogical effort.

4. Potential Benefits in University EFL Courses

4.1. Broadening EFL Participation

The most immediate benefit of mini whiteboards is their capacity to enlarge the pool of students who respond to any given question. Zekrati, Barati, and Youhanaee (2025) investigated mini whiteboards in an under-resourced EFL classroom and reported gains in student engagement and attitudes toward classroom activities, which they attributed to immediate feedback, collaborative interaction, and expanded opportunities for individual participation. Comparable findings have emerged outside the EFL domain: Gimbutas (2019), examining mini whiteboards in a tenth-grade resource English language arts classroom, likewise observed benefits for engagement and academic performance.

The Zekrati et al. study is of particular relevance because it examined mini whiteboards directly within an EFL learning context. Its participants, however, were ten secondary-school students in a rural setting; the findings cannot be

extrapolated straightforwardly to university EFL courses, and the small sample constrains the strength of any conclusions.

Even so, the study offers preliminary evidence that mini whiteboards can institute a more inclusive response routine in EFL classrooms—a possibility of clear relevance to university classes in which students are reluctant to volunteer, lack confidence in their English, or cede the interactional floor to a small number of proficient peers.

4.2. Making Foreign-Language Understanding Visible

In many EFL classrooms, teachers can observe student behavior but not student understanding. Learners may appear attentive while misconstruing a vocabulary item, a grammatical distinction, a reading strategy, or a pragmatic expression.

Mini whiteboards furnish immediate evidence of comprehension and production. After introducing hedging in academic English, for example, an instructor might ask students to revise the sentence “This result proves that online learning is better.” The displayed boards can reveal whether learners are able to replace “proves” with more tentative academic alternatives such as “suggests,” “may indicate,” or “provides evidence that.”

The instructor can then draw on the spread of responses to discuss epistemic stance, academic register, grammar, and meaning. The activity exposes not only whether students remember a rule but whether they can apply it in English.

4.3. Supporting Immediate Corrective Feedback

Mini whiteboards compress the interval between EFL performance and teacher feedback. Under conventional arrangements, misunderstandings may surface only when homework is collected or an examination is scored—by which point the course has often moved on.

With whiteboards, feedback can be delivered while the relevant vocabulary, grammar, or communicative function remains active in learners' minds. Teachers can address a common error on the spot, and students can revise their answers and display them anew.

Timely corrective feedback matters in EFL learning because errors that recur unchecked tend to stabilize. A learner who repeatedly misuses a tense, article, preposition, or collocation is likely to persist in doing so unless the pattern is detected and addressed.

Corrective feedback should nevertheless amount to more than announcing the correct answer. Learners are likely to benefit more when asked to compare alternatives, explain why a form is inaccurate, or revise their original response.

4.4. Promoting Vocabulary and Grammar Retrieval

Retrieval practice entails recalling information from memory rather than merely reviewing it. Mini whiteboards can operationalize retrieval by requiring students to produce language before the answer is revealed.

In vocabulary instruction, the teacher may supply a definition and ask students to write the target word; learners may also generate a synonym, an antonym, a collocation, a word-family member, or an example sentence. In grammar instruction, students may complete, transform, combine, or correct sentences.

Each of these activities compels learners to retrieve and produce English. Because the boards can be wiped clean in seconds, a single lesson can incorporate numerous brief retrieval opportunities.

4.5. Fostering Peer Interaction and Negotiation of Meaning

Mini whiteboards can be used individually, in pairs, or in groups. When learners share a board, they must decide jointly what to write and may need to justify their linguistic choices to one another.

After reading a short academic paragraph, for instance, a group might be asked to compose a one-sentence summary. Members must negotiate which ideas are central, which details can be omitted, and how the sentence should be phrased in English. The whiteboard thus becomes a shared workspace for collaborative language construction.

Such activities can promote negotiation of meaning, peer scaffolding, and attention to linguistic form. Group work, however, can also generate unequal participation: a more proficient member may commandeer both the language and the marker while others become bystanders.

Instructors can counter this tendency by assigning rotating roles—writer, language checker, idea contributor, spokesperson—or by requiring each student to formulate an individual response before the group produces a collective answer.

4.6. Offering an Alternative to Digital Response Systems

Digital response systems provide valuable affordances, including anonymity, automatic scoring, statistical summaries, and stored data. They may also, however, entail technical malfunctions, unequal device access, distraction, login difficulties, and unstable connectivity—challenges consistently documented in reviews of audience response technology (Kay & LeSage, 2009).

Mini whiteboards circumvent many of these barriers: they require no battery, account, software update, or wireless connection. They may accordingly prove especially serviceable in under-resourced EFL contexts, or in classes where digital devices threaten to divert attention from English interaction.

The simplicity of mini whiteboards carries corresponding limitations. Because they neither archive answers nor generate performance records, they are best suited to immediate formative decision-making rather than longitudinal assessment documentation.

5. Applications in University EFL Teaching

5.1. EFL Vocabulary Instruction

Mini whiteboards lend themselves to practice with definitions, synonyms, antonyms, collocations, word families, spelling, and contextual sentence completion.

A teacher might, for example, instruct students to “write one adjective commonly used with the noun ‘evidence.’” Learners may produce “strong,” “convincing,” “empirical,” or “insufficient,” and the displayed answers can then anchor discussion of collocation, meaning, and academic register.

Alternatively, teachers may present a sentence with an underlined word and ask students to supply an appropriate synonym, after which the class can compare candidates and consider whether they are genuinely interchangeable in that context.

5.2. EFL Grammar Instruction

Grammar is particularly amenable to whiteboard work because targets can be expressed in short, focused answers. Suitable tasks include correcting an error, converting active to passive voice, combining two sentences, selecting an appropriate tense, forming a question, and recasting informal English in a more academic register.

Wu (2019) examined an interactive response system in a Taiwanese EFL grammar class. Although that study employed a digital platform rather than physical whiteboards, students expressed generally favorable attitudes toward the interactive and motivational qualities of immediate-response activities.

The study lends support to the broader proposition that response systems can enrich EFL grammar instruction. Digital and physical systems, however, should not be treated as equivalent: digital platforms afford anonymity and automatic summaries, whereas mini whiteboards permit open-ended language production and side-by-side visual comparison.

5.3. EFL Reading Instruction

In university EFL reading courses, mini whiteboards can be used to identify main ideas, supporting details, authorial stance, reference words, text structure, and implied meaning.

After reading a paragraph, students might compose a five-word summary; the constrained writing space presses them to isolate central information rather than transcribe complete sentences. Alternatively, the teacher may ask students to classify a statement as fact, opinion, or inference and to justify the classification.

Whiteboards can also serve pre-reading purposes: learners may predict a text's content from its title, list vocabulary they expect to encounter, or write one question they anticipate the text will answer.

5.4. EFL Listening Instruction

In listening courses, mini whiteboards support short dictation, number recognition, key-word identification, sequencing, note-taking, and comprehension checks.

After playing a brief segment of an English-language lecture, for instance, the teacher may ask students to record the speaker's main point. The distribution of displayed answers can reveal whether learners attended to central information or to peripheral details.

The instructor can then replay the segment and invite students to revise or refine their answers—a procedure that encourages purposeful, repeated listening.

5.5. EFL Speaking Instruction

Although whiteboard responses are written, they can scaffold oral production by functioning as planning tools. Students may jot two or three key words before delivering a short spoken response in English.

In a discussion class, learners might first write their position on an issue, compare answers with a partner, and then articulate or defend their view orally. The whiteboard thereby operates as a bridge from private thinking to public foreign-language production.

This sequence may be particularly beneficial for lower-proficiency learners and for students experiencing foreign-language speaking anxiety. The whiteboard should nonetheless support, not supplant, oral interaction.

5.6. Academic EFL and English for Specific Purposes

In English for academic purposes courses, mini whiteboards can be enlisted to practice thesis statements, topic sentences, paraphrasing, summarizing, citation conventions, hedged language, and academic register.

Students may, for example, be presented with several pieces of evidence and asked to draft a plausible claim, or asked to determine whether a source is being summarized, paraphrased, or quoted directly.

In English for specific purposes courses, whiteboard tasks can be tailored to disciplinary contexts: nursing students might compose an appropriate patient instruction, engineering students might summarize a technical process, and business students might revise an email sentence for greater professionalism.

6. Limitations and Conditions for Effective EFL Use

Mini whiteboards do not generate meaningful EFL interaction of their own accord. Their effectiveness is conditional on task design, classroom procedures, teacher feedback, and students' understanding of the activity's purpose.

First, questions must be linguistically and diagnostically productive. If learners are asked merely to copy information or guess a self-evident answer, participation may be visible yet cognitively shallow. Effective questions should surface language understanding, misconceptions, reasoning, or uncertainty.

Second, clear classroom routines are essential. Students may be directed to write with the board face-down and to display it only on a signal—a procedure that curbs copying and prevents faster or more proficient students from influencing the rest of the class.

Third, adequate processing time must be allotted. EFL learners may need time to parse the question, retrieve vocabulary, assemble grammar, and check spelling. If boards are raised prematurely, lower-proficiency students are placed at a disadvantage.

Fourth, the public character of whiteboard display can itself provoke anxiety. Teachers should attend to aggregate response patterns rather than repeatedly spotlighting individual errors; representative answers can be selected for discussion without identifying their authors.

Fifth, mini whiteboards are ill-suited to extended writing. Their restricted surface favors concise answers but cannot accommodate paragraph-level composition; they should therefore complement, not replace, notebooks, essays, portfolios, presentations, and formal assessments.

Sixth, whiteboard activities risk monotony if invoked for every question. They are best interleaved with oral discussion, pair work, written assignments, digital tools, and other modes of EFL interaction.

7. Gaps in the EFL Literature

The current evidence base exhibits several significant limitations. The bulk of research on mini whiteboards has been conducted in primary or secondary education, in mathematics classrooms, in general education, or in under-resourced settings (e.g., Gimbutas, 2019; Zekrati et al., 2025); studies involving university EFL learners remain rare.

Moreover, much of the literature concentrates on student attitudes, observable participation, or engagement. Considerably fewer studies have examined measurable gains in EFL vocabulary, grammar, speaking performance, reading comprehension, listening ability, or long-term retention—a pattern paralleling meta-analytic findings on audience response systems more broadly, where affective outcomes have proved more robust than cognitive ones (Hunsu et al., 2016).

The distinction between behavioral and cognitive engagement likewise warrants closer scrutiny. Raising a whiteboard demonstrates visible participation, but it does not guarantee deep language processing. Future research should investigate the explanations, peer discussions, linguistic negotiations, and revisions that unfold around whiteboard responses.

Researchers should also compare individual and group whiteboard use in EFL classrooms. Individual boards may yield more accurate evidence of each learner's language ability, whereas group boards may generate richer peer interaction and collaborative dialogue.

Additional moderating variables merit attention, including English proficiency, willingness to communicate, foreign-language anxiety, class size, cultural expectations, prior educational experience, and teacher questioning style. Mini whiteboards are unlikely to affect all EFL learners uniformly.

Finally, future research should examine teacher behavior after students respond. The critical factor may be not the whiteboard itself but whether the instructor uses learners' responses to pose follow-up questions, elicit explanations in English, address common errors, and adapt instruction.

8. Directions for Future EFL Research

Future studies could adopt quasi-experimental or mixed-methods designs in university EFL courses—for instance, comparing a class taught with conventional oral questioning against a class using structured mini-whiteboard routines. Outcome measures could include language achievement, participation rates, foreign-language anxiety, willingness to communicate, and retention.

Classroom observation and discourse analysis would also be informative. Researchers could examine how EFL teachers respond to correct and incorrect answers, how much English students actually use during group whiteboard tasks, and whether learners are prompted to justify or revise their responses.

Longitudinal research is needed to determine whether benefits persist once the tool's novelty subsides. Initial enthusiasm may temporarily elevate participation, but durable effects are likely to depend on task variety, question quality, feedback practices, and alignment with course objectives.

Student interviews could further illuminate whether university EFL learners experience mini whiteboards as supportive, juvenile, motivating, stressful, or useful—perceptions that may hinge on how clearly the instructor communicates the activity's pedagogical rationale.

Future work should also compare mini whiteboards directly with digital response systems, weighing not only learning outcomes but also accessibility, cost, distraction, anonymity, classroom interaction, and teacher workload.

9. Conclusion

Mini whiteboards are simple, inexpensive tools with considerable promise for university EFL teaching. They can transform classroom questioning from a process dominated by a few confident volunteers into a more inclusive whole-class response system. They can also supply immediate evidence of English-language understanding, underpin formative assessment, promote retrieval practice, facilitate peer interaction, and reduce some of the risks attached to foreign-language production.

The literatures on formative assessment, active learning, student response systems, and EFL instruction broadly support these prospective benefits. Direct empirical evidence from university EFL classrooms, however, remains thin, and it would be premature to claim that mini whiteboards necessarily raise English proficiency or outperform digital response systems.

Their value is more accurately construed as pedagogical rather than technological. Mini whiteboards are most effective when EFL instructors use them to pose meaningful language questions, involve the entire class, discern patterns of understanding and error, stimulate discussion, and steer subsequent teaching.

In university EFL contexts—where class time may represent students' most reliable opportunity to use English—even a modest increase in active participation may be educationally consequential. The whiteboard may be mini, but its role in making EFL learning visible need not be.

References

- [1] Andersson, C. (2017). Characteristics of improved formative assessment practice. *Education Inquiry*, 8(2), 104–122.
- [2] Dangel, H. L., & Wang, C. X. (2008). Student response systems in higher education: Moving beyond linear teaching and surface learning. *Journal of Educational Technology Development and Exchange*, 1(1), 93–104.
- [3] Freeman, S., Eddy, S. L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410–8415.
- [4] Gimbutas, E. C. (2019). *The effects of using mini whiteboards on the academic performance and engagement of students in a tenth-grade resource English language arts classroom* [Master's thesis, Rowan University].
- [5] Hunsu, N. J., Adesope, O., & Bayly, D. J. (2016). A meta-analysis of the effects of audience response systems on cognition and affect. *Computers & Education*, 94, 102–119.
- [6] Kay, R. H., & LeSage, A. (2009). Examining the benefits and challenges of using audience response systems: A review of the literature. *Computers & Education*, 53(3), 819–827.
- [7] Wu, C. P. (2019). Exploring the effects of an interactive response system in an EFL grammar class. *Arab World English Journal, Special Issue on CALL*, 5.
- [8] Zekrati, S., Barati, H., & Youhanaee, M. (2025). The effect of low-tech response systems on students' engagement in learning and attitude in under-resourced EFL classrooms: Mini whiteboards in focus. *Journal of English Language Teaching and Learning*, 17(35), 421–438.