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Practising Transition Signals through LINK-IT: A Mixed-Methods Evaluation of Engagement, Design Usability, and Iterative Refinement

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ABSTRACT

This mixed-methods classroom study evaluates LINK-IT, a tabletop board game for practising English transition signals, focusing on learner engagement, design usability, and refinement priorities. Forty students played the game in small groups during regular class time and subsequently completed a brief post-use questionnaire containing Likert-scale items and two open-ended prompts. Quantitative responses indicated strong motivation, enjoyment, and sustained attention during play, while perceptions of rule clarity and overall usability were positive. Qualitative or thematic analysis of students' written comments reinforced these results, highlighting novelty, social interaction, and suspense as key drivers of engagement. Students also identified areas for enhancing learning value, including clearer onboarding, more transparent mechanics, and a more deliberate progression of challenge. The discussion integrates both data strands to propose a practical refinement plan that introduces a short demo round and quick-start card to reduce cognitive load, a staged bank of items to align difficulty with learner readiness, light decision-making elements to reward knowledge over chance, and brief "apply and justify" prompts to encourage transfer from recognition to production. Although limited to a single cohort and focused on post-use perceptions rather than performance outcomes, the findings suggest that LINK-IT provides a low-tech, high-interaction complement to writing instruction on cohesion, with clear opportunities for iterative improvement.

1. INTRODUCTION

Transition signals may be small, but they carry the weight of how ideas move. When students choose the right connector, such as adding, contrasting, explaining causes and effects, sequencing steps, showing similarity, giving examples, paragraphs make sense, and arguments breathe. Learners who effectively use a wider range of transition markers demonstrate stronger logical flow and coherence in their writing

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(Alqurashi, 2025). Explicit instructions in transition markers also help learners move from basic to nuanced usage, contributing to writing fluency (Ahmed et al., 2023). Too often, though, these signals are taught as lists to memorise or as items to be spotted in isolation. That is efficient on paper but brittle in practice. Studies show that rote-based teaching of discourse markers can lead to overuse or incorrect application, reducing writing quality (Walková, 2020). Furthermore, learners tend to revert to their first language habits when not provided with context-based practice of these markers (Fareh et al., 2020).

Many learners understand the meanings of common connectors but hesitate when the context shifts. Learners may use "however" when it fits better or rely too heavily on it because they have not yet completely comprehended the finer distinctions of cause, concession, and contrast. ESL learners often misuse contrastive discourse markers due to limited contextual awareness and insufficient instruction on functional differences (Alhuqbani et al., 2025). Inconsistent use is compounded by limited contact with authentic models (Lu, 2023). Practice, therefore, should be regular, concise, and purposeful without imitating a test. Board games fit this aim well. They bring learners together. They give clear reasons to interact. They also make progress visible. Evidence shows that gamified tasks deepen cognitive engagement and support lasting retention of discourse strategies (Rahmawati & Sahid, 2024). According to Moghaddam (2023), peer interaction in playful settings also prompts more spontaneous use of transitions in writing and speaking.

Even with explicit teaching, learners still hesitate. They struggle to pick connectors for specific rhetorical moves. They lose the logical thread across sentences. They often cannot turn what they "know" into what they actually write. Studies report that even advanced students overuse "and" and "but." They underuse richer transitions such as "however" or "therefore". The result is weaker coherence in arguments (Aysu, 2023). Misuse and redundancy in discourse-marker choice also correlate with lower writing quality in content and structure (Riznanda, 2021). This can be seen in students' essay writing and other writing-related activities in the classroom.

Traditional practice offers only limited fixes. Grammar drills are tedious and easily forgotten, and teacher-led exchanges are often brief and one-way. Research shows that low interactivity and decontextualized grammar work reduce engagement and limit retention of discourse-marker functions (Crible, 2020). Learners also find it hard to transfer isolated practice into authentic writing without contextualised, collaborative reinforcement (Vickov, 2020).

What is still missing is a practical routine that increases time-on-task, spreads participation more evenly, and keeps attention on context-appropriate choices. Scholarship stresses the value of frequent, low-stakes opportunities to try out discourse options and receive immediate feedback (Dayyani & Semiyari, 2019). Interactive, game-based settings have likewise been shown to raise engagement and improve syntactic accuracy in EFL writing (Alqurashi, 2025).

LINK-IT was developed to harness these benefits in writing classes, allowing learners to practice transition signals in small, low-stakes steps before applying them in longer paragraphs. LINK-IT turns practice into short tabletop turns. Learners select, justify, and apply connectors in quick, social bursts. Evidence such as in Aysu (2023) suggests that game-based methods raise motivation and support interaction, especially in writing tasks that need cohesion devices. Furthermore, in Mohammed and Abbas (2023), students engaged in collaborative discourse practice showed improved pragmatic use of transitions over time. Hence, this study is trying to answer the following questions: what do students experience when learning transition signals through LINK-IT, and how does their feedback help in the refinements of the game? We designed LINK-IT to give immediate consequences. Learners choose, check, and try again. Game-like routines that embed feedback help refine lexical precision. They also build fluency through repetition and peer modelling (Sepúlveda-Torres et al., 2019). In our view, the quick loop is the key. Ultimately, this shift moves practice from passive identification of markers to active deployment in functional, collaborative exchanges (Rahayu et al., 2021).

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This study aimed to examine how motivational and engaging students found *LINK-IT* when practising transition signals, to evaluate their perceptions of the game's design usability in terms of rules, pacing, challenge, and strategy, and to analyse their written feedback to identify strengths, limitations, and potential refinements for future classroom use. The research questions are as follows:

i. How motivational and engaging is *LINK-IT* for practising transition signals?
ii. How do students evaluate *LINK-IT*'s design usability in terms of rules, pacing, challenge, and strategy?
iii. What themes in students' feedback reveal *LINK-IT*'s strengths and limitations, and what refinements do they suggest?

2. LITERATURE REVIEW

2.1 Second Language Acquisition (SLA) theory

Core ideas in SLA highlight how language develops through rich input, meaningful interaction, pushed output, attention to form, and affective conditions that support risk-taking (East, 2021). Learners benefit from abundant comprehensible input that is made salient through tasks; they refine developing systems when they notice gaps, test hypotheses in production, and receive timely feedback (Palanisamy & Rajasekaran, 2024; Connor & Nazari, 2020). A supportive climate lowers barriers to participation and sustains effort over time (Gao, 2023; Mohandas et al., 2020). Classroom designs that repeatedly focus attention on specific forms within authentic communicative moves are therefore well-placed to accelerate uptake (He, 2022).

Applied to pedagogy, these principles suggest activities should orchestrate cycles of noticing and use. Motivation thrives when learners experience autonomy (real choices), competence (evident progress with feedback), and relatedness (collaboration with peers) (Sholeh et al., 2021). In practice, this means designing tasks where learners choose among plausible linguistic options, must justify those choices, and can immediately see the consequences (Lucas, 2021). A game context naturally provides short, repeatable turns; visible progress; and concrete rewards and penalties, all of which help maintain focus on the target forms while encouraging talk about language in action (Huang & Gandhioke, 2021).

2.2 Game-based learning

Game-based learning integrates explicit goals, rules, feedback loops, uncertainty, and escalating challenge with curricular content. Effective designs control cognitive load with clear affordances, quick onboarding, and gradually increasing difficulty (Li, Hou, & Lee, 2022). They also provide frequent opportunities to try again, making errors informative rather than punitive (Sanchiz et al., 2024). When aligned to learning outcomes, game mechanics such as turn-taking, resource limits, risk–reward choices, and surprise events convert practice into a series of meaningful decisions that require attention to both content and strategy (Nguyen et al., 2024).

Across classrooms, educators commonly report gains in engagement, persistence, and willingness to communicate when game features are used deliberately (York, 2020). Learners tend to spend more time on task, participate more evenly within groups, and retain targeted content more readily because play builds dense cycles of retrieval (Ningrum et al., 2024). Crucially, the gains are greatest when the mechanics align directly with the specific skill under study, for instance, when making a move entail selecting the correct connector for a sentence or micro-context (Metom et al., 2020). Conversely, unclear rules, an early cognitive overload, or purely chance-driven progress can dampen learning benefits, which is why calibration of challenge and scaffolding remains central (Li, Hou, & Lee, 2022).

2.3 Board games

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Board games here refer to tabletop systems comprising a physical board, tokens, randomisers such as dice, and card decks that encode rules and content. Unlike many digital games, board games facilitate eye-to-eye interaction, explicit verbalisation of reasoning, and negotiated interpretation of rules. They are device-independent, relatively inexpensive to duplicate, and easy to adapt for local content and levels, making them especially attractive for large, mixed-ability classes (Mattheoudakis & Panteliou, 2025).

In language classrooms, tabletop play tends to distribute participation across turns, require concise talk, and provide natural entry points for quieter learners to contribute (Lailia, Suwarso, & Iswahyuni, 2024). Repeated exposure to target forms, immediate feedback from peers and the facilitator, and visible consequences for accurate versus inaccurate choices foster retention and metalinguistic awareness (York, 2020). Classroom reports consistently describe reduced anxiety compared to formal tests, stronger peer support, and a sense of progress as players advance with conditions that are particularly conducive to practising discourse moves like signalling addition, contrast, cause, sequence, similarity, and exemplification (Ningsih & Widhiatama, 2023).

2.3 Transition signals

Transition signals, also called linkers or discourse markers, cue readers about how ideas relate. Additive markers ("in addition", "moreover"), contrastive markers ("however", "on the other hand"), causal markers ("therefore", "as a result"), sequencing markers ("first", "next", "finally"), similarity markers ("similarly", "likewise"), and exemplification markers ("for example", "such as") guide interpretation and make argument structure visible (Henriques & Oliveira, 2024). Learners often over-generalise common items, misplace markers within sentences, or select a connector that is rhetorically misaligned with the intended move (Wong & Yunus, 2021). Because understanding depends on both meaning and context, students need many briefs, varied occasions to choose among alternatives and justify their choices, a practice profile well matched to structured gameplay (Sulistianingsih, Febriani, & Pradjarto, 2019).

3. METHOD

This study employed a cross-sectional, mixed-methods design to explore student experiences with *LINK-IT*, a tabletop game for practising transition signals.

3.1 Participants and context

This cross-sectional, mixed-methods study involved forty diploma-level students enrolled in an English course with a writing component at a Malaysian polytechnic. Convenience sampling was used, with the selected participants were generally low- to mid-level proficiency ESL learners of whom the researcher was teaching at the time of the study. Sessions were conducted during regular class time in the students' usual classroom environment. After a brief briefing, students engaged with the board game in small groups.

3.2 Materials

LINK-IT is a content-driven board game designed to make practice with transition signals engaging, frequent, and collaborative. The board features a start-to-finish path, movement via a die, and several card decks. "Question" cards prompt players to supply a target transition type or select an appropriate connector for a sentence/short context; "Event" cards add chance elements (advance/delay) to sustain suspense and variety. The card bank covers six categories aligned with diploma-level writing. The categories are sequence, addition, contrast, cause-and-effect, similarity, and illustration. This method is to ensure a close mapping from board practice to paragraph construction.

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3.3 Instruments

This study used a short survey for post-use feedback. It had two five-point Likert sections and two open-ended prompts. The scales measured Motivation/Engagement (10 items) and Attitudes toward Design Usability (13 items). This structure kept the workload light yet informative, and the items were adapted from a validated instrument for classroom game-based activities by Mokhtar et al. (2019). The open-ended items asked what students liked and what they would change. Because the survey drew on an established, unmodified instrument, internal consistency was not recalculated for this administration, a common practice in applied classroom research (Youhasan et al., 2021).

3.4 Procedures

After a short rule explanation and demonstration, students played *LINK-IT* in small groups during class. Immediately after gameplay, students completed the questionnaire (Likert items followed by two open-ended prompts). The sequence ensured experiences were fresh and reduced recall bias. Because turns were brief, players cycled rapidly through noticing, deciding, producing, and receiving feedback, either immediately from peers or through the game consequences tied to correct or incorrect choices. A typical session lasted under an hour and fit easily within a standard tutorial. Rules were introduced through a short demonstration, after which groups proceeded with play while the facilitator circulated to clarify ambiguities and prompted concise justifications (for example, "Why is however better than on the other hand here?").

3.5 Data analysis

For quantitative analysis, categorical responses were converted into weighted means and population standard deviations for each item. Results were reported at the item level and as construct-level summaries using the average of item means and a pooled standard deviation for each scale to aid interpretive clarity.

For qualitative analysis, we used reflexive thematic analysis (RTA) (Braun & Clarke, 2019). Two coders reviewed all comments, who also generated initial codes and wrote analytic memos. Disagreements were discussed and resolved, and the codes were grouped into candidate themes. To refine them, we checked the internal coherence and distinctiveness across the dataset (Braun & Clarke, 2019; Byrne, 2022). Representative student comments illustrated key patterns and enriched the narrative (Xu & Zammit, 2020). The key comments made by participants were also especially helpful for the refinement of the board game itself.

3.6 Ethics

Participation took place in regular class time, where the students could receive clear information about the activity. The survey was voluntary, and we assured learners that responses would not affect their grades. We also committed to reporting comments without identifying details. Data were stored securely and analysed in aggregate. Thus, this process could help build trust.

4. FINDINGS & DISCUSSION

This section presents results and findings from both the Likert-scale survey and open-ended responses, offering a comprehensive view of how students perceived and interacted with *LINK-IT*. The analysis is divided into quantitative and qualitative components, corresponding to the survey design. Likert-scale items were grouped under two constructs: Motivation/Engagement and Attitudes toward Design Usability, while the open-ended comments were thematically analysed using a reflexive approach (Braun & Clarke, 2019; Byrne, 2022). All Likert items were rated on a 5-point scale, where 1 = Strongly Disagree and 5 = Strongly Agree. Results are summarised at the item level and further analysed by construct.

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4.1 Quantitative results: Motivation and engagement

As shown in Table 1 below, participants responded most positively to items indicating that the game was different from normal class activities (Item 10: The variety of cards in *LINK-IT* makes it more interesting and fun, M = 4.700, SD = 0.458), helped them think about transition signals (Item 4: M = 4.600, SD = 0.539), and was enjoyable (Item 5: The element of entertainment while learning is available in *LINK-IT*, M = 4.650, SD = 0.477). These results indicate that learners perceived LINK-IT as motivating, novel, and cognitively engaging.

Affective engagement was noted clearly in the Compliments category. The leading subtheme was Enjoyment/Affect with majority students agreeing with the items (n = 18). Students called the LINK-IT board game "fun," "very interesting," and "exciting." The tone felt genuine. It suggested strong emotional investment. The distribution of coded subthemes in Table 5 further supports this, showing that enjoyment-related feedback was the most common form of compliment. These results are consistent with Ash'ari et al. (2024), who found that grammar-based board games heightened learner motivation and perceived relevance.

Table 1. Item-level means and standard deviations for Motivation/Engagement-related items

No	Item	M	S.D
1	I will play *LINK-IT* as a learning tool to learn English transition signals.	4.525	0.547
2	Learning English transition signals via *LINK-IT* is more fun for me.	4.575	0.494
3	The game aspects of *LINK-IT* are fun and they attract me to learn about transition signals while playing.	4.575	0.494
4	The element of suspense in *LINK-IT* is able to attract my interest in playing it.	4.6	0.539
5	The element of entertainment while learning is available in *LINK-IT*.	4.65	0.477
6	I am excited to test my understanding of English transition signals via *LINK-IT*.	4.575	0.543
7	*LINK-IT* is suitable to be played anywhere and anytime because it is easy to bring around.	4.525	0.591
8	I am more interested in learning English transition signals after studying about them from *LINK-IT*.	3.4	0.8
9	It is easier for me to understand English transition signals via *LINK-IT*.	4.425	0.738
10	The variety of cards in *LINK-IT* makes it more interesting and fun.	4.7	0.458

4.2 Quantitative results: Attitudes toward design usability

Table 2 below reports item-level means and standard deviations. The focus is Design Usability and Attitudes. As shown in Table 2, students again rated enjoyment highly (Item 1: The game was enjoyable, M = 4.650, SD = 0.477) along with clear rules (Item 3: M = 4.475, SD = 0.547). However, responses to difficulty and strategy revealed weaker areas. Students reported lower agreement on items like The questions asked were challenging (Item 4: M = 3.025, SD = 0.821), I took a long time to understand how to play the game (Item 5: M = 2.825, SD = 1.515), and the game requires the use of strategies to win (Item 13: M = 2.950, SD = 0.921).

These results align directly with qualitative feedback presented in Table 5, where the subtheme Difficulty/Mechanics accounted for 14 of the 29 total suggestions. Students also wanted more challenge. They asked for complex questions, additional rules, and clearer mechanics. Hence, their feedback signals readiness. Although enjoyment was high, scaffolding could deepen understanding and raise the level of challenge.

https://doi.org/ 10.24191/gading.v29i1.701

Table 2. Item-level means and standard deviations for Design Usability/Attitudes-related items

No	Item	M	S.D
1	The game was enjoyable.	4.65	0.477
2	The length of time for playing the game was suitable.	4.175	1.022
3	The rules of the game were clear.	4.475	0.547
4	The questions asked were challenging.	3.025	0.821
5	I took a long time to understand how to play the game.	2.825	1.515
6	I like the interaction of the players during the game.	4.275	0.894
7	I am active during the game.	4.25	0.798
8	The game keeps me alert.	4.2	0.872
9	I enjoy moving around on the board.	4.475	0.499
10	The game motivates me to learn English.	4.425	0.738
11	The game motivates me to use English.	4.425	0.738
12	I get to know new linkers / transition signals.	4.325	0.818
13	The game requires the use of strategies to win.	2.95	0.921

4.3 Quantitative results: Construct-level summary

Table 3 presents the main scores. The Motivation/Engagement scale (10 items) had an average mean of 4.455 with a standard deviation of 0.680. The Design Usability/Attitudes scale (13 items) had an average mean of 4.037 and a standard deviation of 1.058. The pattern is consistent, which indicates that LINK-IT drove affects and interest more than skill-based, structured challenges.

This mirrors work where enjoyment precedes strategy and metacognition (Youhasan et al., 2021). Table 4 stresses enjoyment, while Table 5 calls for more challenge. Together, these findings validate LINK-IT's affective appeal and point to clear directions for refinement.

Table 3. Mean scores and pooled standard deviations by construct

Scale	Average of item means	Grand SD (all responses pooled)
Motivation/Engagement (10 items)	4.455	0.68
Design Usability/Attitudes (13 items)	4.037	1.058

4.4 Qualitative themes

While the quantitative results show strong endorsement of LINK-IT's design, the qualitative comments explain how students experienced the activity. The open-ended responses were analysed and grouped into four categories, which are Compliments, Benefits, Suggestions, and Others. The examples in Table 4 serve as direct evidence of how students engaged with LINK-IT at the emotional and cognitive levels. Comments coded as Compliments consistently referenced entertainment value, with students calling the experience "fun," "very interesting," or "exciting." These spontaneous expressions indicate that learners were emotionally connected to the experience and felt positively about their time on task. Notably, under "Benefits," a smaller number of comments linked this enjoyment with learning and motivation, such as "I learn new knowledge" or "It helps improve English," suggesting that some students recognised a pedagogical function behind the fun.

Table 4. Thematic breakdown of selected student comments.

Category	Comment	Subtheme
Compliments	Simple and easy to play	Ease/simplicity
Compliments	This game was very funny and enjoying	Enjoyment/affect

https://doi.org/ 10.24191/gading.v29i1.701

Compliments	The game is enjoyable when there's a lot when idiots are playing.	Enjoyment/affect
Compliments	It's fun to play this game but this game also needs some luck to win T_T..	Enjoyment/affect
Compliments	My experience is this game is enjoyable and very interesting to play	Enjoyment/affect
Compliments	So much fun	Enjoyment/affect
Compliments	I really have a good time playing this game.	Other/uncategorised
Compliments	I like it	Other/uncategorised
Compliments	Great	Enjoyment/affect
Compliments	Enjoyable	Enjoyment/affect
Compliments	Best game ever like legit	Enjoyment/affect
Compliments	Best, I really enjoy it	Enjoyment/affect
Compliments	The game is very fun	Enjoyment/affect
Compliments	Very nice	Enjoyment/affect
Compliments	It is very fun	Enjoyment/affect
Compliments	It was a good game	Other/uncategorised
Compliments	I very enjoy and very noob	Enjoyment/affect
Compliments	Very good and best.	Enjoyment/affect
Compliments	Easy game and easy information	Ease/simplicity
Compliments	Very nice and I am very excited about this game	Enjoyment/affect
Compliments	I'm so happy	Enjoyment/affect
Compliments	Very interesting	Enjoyment/affect
Compliments	Awesome	Enjoyment/affect
Compliments	I love the games	Other/uncategorised
Compliments	*Sangat menyeronokkan* (Really enjoyable)	Other/uncategorised
Benefits	For me this game is kind of a new way to improve your English, and I never thought or thought of creating this kind of game.	Learning/motivation
Benefits	It's suitable for all ages and motivate us to improve our English grammar	Learning/motivation
Benefits	Very helpful	Other/uncategorised
Benefits	It is fun to play, we can learn while playing.	Enjoyment/affect
Benefits	This game makes me to improve my English	Learning/motivation
Benefits	It's very enjoyable and I learn new knowledge	Enjoyment/affect
Benefits	*Permainan ini menyeronokkan dan membuatkan saya belajar guna bahasa Inggeris.* (This game is really fun and makes me learn to use English)	Other/uncategorised
Benefits	Improve the English skill to win the game	Learning/motivation
Benefits	Very suitable to play for any age.	Audience suitability
Benefits	[Lecturer] had done a very good job to attract students to learn English. [Lecturer] proved that learning English is not that hard. I've gotten addicted from the first-time playing *LINK-IT*. *LINK-IT* also gave me more opportunities to get closer with my friends and also to meet [lecturer] and get to know him well. To me [the lecturer] had done a very great job, so very fortunate to have lecturer like him in the campus! Thank you [lecturer].	Enjoyment/affect
Suggestions	Nice experience but still use the same fundamentals of old board games because I expect it will give a difference to the game.	Enjoyment/affect
Suggestions	Very nice but can upgrade on next development	Enjoyment/affect
Suggestions	Need some design to attract the audience to play	Design/aesthetics
Suggestions	Give more challenging question	Difficulty/mechanics
Suggestions	Make a bigger map.	Design/aesthetics
Suggestions	Make some translation for hard sentence	Difficulty/mechanics
Suggestions	add more rules and more punishment	Difficulty/mechanics
Suggestions	add some more steps	Difficulty/mechanics

https://doi.org/ 10.24191/gading.v29i1.701

Suggestions	Remove the go back to start card	Other/uncategorised
Suggestions	Put interesting pictures on each of the slot in board game to make it more enjoyable and fun	Enjoyment/affect
Suggestions	I think make a truth or dare in punishment	Difficulty/mechanics
Suggestions	Expand the game activities	Other/uncategorised
Suggestions	Make the gameplay more challenging and unique.	Difficulty/mechanics
Suggestions	Make the questions slightly harder than before	Difficulty/mechanics
Suggestions	Make it longer	Other/uncategorised
Suggestions	Make a long journey	Other/uncategorised
Suggestions	Put more challenging questions	Difficulty/mechanics
Suggestions	More challenges	Difficulty/mechanics
Suggestions	I hope this game can add more steps, because 40 steps is not enough.	Difficulty/mechanics
Suggestions	More extreme questions	Difficulty/mechanics
Suggestions	Make it in virtual mode	Delivery mode
Suggestions	Design the game with more creative and attractive design	Design/aesthetics
Suggestions	Give more challenging punishment	Difficulty/mechanics
Suggestions	Add more punishment	Difficulty/mechanics
Suggestions	Improve the question	Learning/motivation
Suggestions	Get more card punishment	Difficulty/mechanics
Suggestions	Add some colour and design	Design/aesthetics
Suggestions	*Tidak digalakkan bermain di tempat terang sebab boleh nampak daripada belakang* (Not recommended playing in bright places because you can see from behind)	Other/uncategorised
Suggestions	*Kena buat 3 rounds* (have to do 3 rounds)	Other/uncategorised
Others	Luck and knowledge-based game	Learning/motivation
Others	*Sarangheo sir* (Love you, sir)	Teacher acknowledgement
Others	Make again muahhhh	Other/uncategorised
Others	Because of one question that i can't answer, I get second place	Difficulty/mechanics
Others	No	Other/uncategorised
Others	Nothing	Other/uncategorised
Others	No, it's already perfect	Other/uncategorised
Others	I love [lecturer]	Teacher acknowledgement
Others	Give some food	Humour/other requests
Others	Give me some money	Humour/other requests
Others	I don't know	Other/uncategorised

Some comments still carried a positive tone (e.g., "Nice experience but…"), yet many emphasised the need for greater challenge, improved aesthetics, or clearer instructions. These remarks also identify specific entry points for improvement. Items grouped as Others included humorous asides, praise for the teacher, and general observations, underscoring the informal, low-threat atmosphere the game encouraged. This variety of comments shows that LINK-IT created space not only for learning but also for candid, personal engagement. These notes also mark paths for improvement and invite honest feedback.

While Table 4 captures this affective texture through verbatim remarks, Table 5 below counts the subthemes by frequency. Within Compliments (n = 25), the subtheme of Enjoyment/Affect (n = 18) has the most responses, confirming that affective responses were most prominent for many learners. In the Suggestions theme (n = 29), the subtheme of Difficulty/Mechanics (n = 14) was most common. Students

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wanted more challenge, extra steps, and clearer penalties. These responses align with lower means for challenge and strategy, which further proves a consistent pattern across sources.

Table 5. Coded subthemes by frequency and thematic category

Category	Subtheme	Subtheme Count
Benefits (10)	Learning/motivation	4
	Enjoyment/affect	3
	Other/uncategorised	2
	Audience suitability	1
Compliments (25)	Enjoyment/affect	18
	Other/uncategorised	5
	Ease/simplicity	2
Others (11)	Other/uncategorised	5
	Humour/other requests	2
	Teacher acknowledgement	2
	Difficulty/mechanics	1
	Learning/motivation	1
Suggestions (29)	Difficulty/mechanics	14
	Other/uncategorised	6
	Design/aesthetics	4
	Enjoyment/affect	3
	Delivery mode	1
	Learning/motivation	1

In the them benefits (n = 10), there were more diverse responses. Some comments emphasised on learning and motivation (n = 4), while others mentioned suitability for different audiences or offered general praise. The Others (n = 11) category displayed a more diverse spread, from humorous requests to teacher appreciation, emphasising that the game supported not only academic gains but also interpersonal and emotional connections. The mix suggests social value that hints at community building.

Overall, the comments portray a multi-layered response to LINK-IT. Learners enjoyed it, engaged with it, and highlighted areas to improve. Table 4 brings those voices forward, while Table 5 turns them into patterns that inform design and implementation. The evidence supports that LINK-IT provides an engaging, low-threat setting for practising transition signals, and at the same time, identifying design features for deeper learning and satisfaction. High endorsement of variety, entertainment, and suspense suggests that the balance of predictability and surprise is well calibrated to sustain attention. This resonates with a study by Henriques and Oliveira (2024), which reported similar outcomes whereby learners studying discourse markers with a game-based system showed high motivation and engagement across sessions.

With the strong agreement by the students, the game is reported to be enjoyable and the rules are clear. This offers a feasible basis for classroom adoption. From the findings, students were willing to participate, and gameplay of the board game can begin without lengthy explanations. This echoes York (2020), who found that streamlined rules and short setup increase integration and maximise time in authentic interaction.

At the same time, there are three areas that need working. As indicated in the findings, a relatively lower means for time-to-understand, strategy, and challenge lead to the need to refine the board game. A smoother onboarding arc would help to reduce cognitive load for learners. Previewing the action sequence can cut cognitive load before play. Li et al. (2022) similarly noted that gradual scaffolding and hierarchical task design can reduce overload and can support better decision-making in board-game learning contexts.

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Clearer pathways for strategic play could shift the experience from chance-driven outcomes to skill-expressive ones, which can reinforce perceptions of control and competence among learners. Prior works, such as by Mattheoudakis and Panteliou (2025) align with this finding. Both have demonstrated that mechanics rewarding accuracy and knowledge fostered stronger metalinguistic awareness and persistence. Likewise, a visible ladder of difficulty can also help. This can be done from single-sentence connector choices to short paragraph-level tasks. As such, it is easier to see the growth while linking tabletop practice more directly to target writing outcomes. Lailia et al. (2024) also reported that staged progression of this kind supports deeper grammar transfer into writing.

The interpretations of the quantitative findings are supported and reinforced by the qualitative themes. Enjoyment emerged not only as an affective response but also drives repetition and focus. This is considered a meaningful exposure to transition signals. Ash'ari et al. (2024) reported a similar pattern in their study on vocabulary-based board games. They found that enjoyment sustained attention and effort, while social collaboration enhances learning by prompting concise explanations, peer-to-peer interactions, and quick feedback. Wong and Yunus (2021) also discovered that turn-based structures promote verbal participation and offer frequent opportunities for peer scaffolding. It demonstrates that the game served as a discourse scaffold, organising participation and directing attention to the linguistic target.

Furthermore, in order to create impactful refinements that preserve the LINK-IT board game's low-tech accessibility, students' suggestions were also considered. Suggestions to include a one-page quick-start guide and a two-minute demo round for smooth onboarding appear useful to ensure a better experience for players. A tiered set of question cards is another way to make progress visible to all learners. A small set of decision cards that introduce risk–reward trade-offs can further emphasise knowledge over chance. These moves keep the game low-tech and scalable. They match findings on cost-effective designs for mixed-ability groups by Metom et al. (2020), which highlighted the simplicity of board games and their importance to remain cost-effective and adaptable across mixed-ability classrooms.

To sum up, LINK-IT met its main objective to make practising transition signals among English language learners more focused and fun. Engagement stayed high because the activity moved. Clarity and enjoyment were also strong. That makes the routine easy to adopt in class. However, the lower scores on time-to-understand, strategy, and challenge allow future improvement of similarly designed board games. Minimal changes can help board games such as LINK-IT to further balance engagement and rigour without losing flow. The goal is to help learners move from recognising transition signals to confident, context-appropriate use in writing.

5. CONCLUSION

This study points to a simple refinement path. With a thoughtful design, a low-tech board game like LINK-IT can make learners practice their transition signals in a lively, memorable, and collaborative manner. This, in turn, will let students focus on recalling transition signals into an enjoyable, social experience that fits typical class periods. Drawing on students' reflections in both quantitative and qualitative findings, a practical refinement path includes smoother onboarding, such as a two-minute demo before play and a one-page quick-start card with iconography for additive, contrastive, causal, and sequencing markers. Other than that, a tiered bank of question cards which starts from the foundational level, following up to intermediate, and finally to the advanced level, can be implemented with a small set of optional decision cards, for example, limited-use hints or risk-reward rerolls. This can be implemented to foreground skill over chance. In addition, short "apply-and-justify" prompts can help to link the learners' recognition to production. These refinement steps echo in Ash'ari et al.'s (2024) WOLF game, which used structured guidance, staged tasks, and visual prompts (ADDIE-based) to build confidence and sustain interest. This can help to reinforce the value of clear iconography and staged challenge in LINK-IT.

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There are also several implications that can be highlighted. Firstly, classroom facilitation should start with clear instructions so each group can begin confidently and maintain a high momentum throughout their play. A short, yet scripted demonstration immediately before play also clarifies the action sequence. A one-page quick-start card with clear iconography for additive, contrastive, causal, and sequencing markers can help with early decisions and make learners' expectations clearer. Micro-applications can be used to tie board play to writing. After a turn, students can be asked to combine two sentences and explain the linkers used. This simple bridge moves recognition toward production. It also keeps feedback close to action. Together, these steps reduce cognitive load, minimise early hesitation, and keep attention on purposeful connector choices rather than rule decoding.

Curriculum alignment strengthens when gameplay is followed by micro-applications that recycle the targeted connector categories into writing. After selected turns, brief "apply-and-justify" prompts such as combining two sentences and explaining the chosen linker. This help bridge recognition to production. Because *LINK-IT*'s card bank mirrors common rhetorical moves in diploma-level writing (sequence, addition, contrast, cause–and–effect, similarity, illustration), these post-game tasks preserve constructive alignment between the discourse decisions made at the table and the moves assessed in coursework.

Finally, the delivery model lends itself to scalable implementation. The low-tech format and short turn cycles travel well across mixed-ability classes and time-limited lessons; a concise facilitator guide (set-up, timing, sample prompts) can promote consistent uptake among multiple instructors and sites. In practice, this combination of simple materials, clear visual cues, and staged challenge supports both teacher usability and learner persistence, making *LINK-IT* a practical complement to writing instruction across varied institutional contexts.

However, this study would also like to highlight a few limitations. Firstly, this study relied on post-use perceptions in a single institutional context and did not include a comparison group or pre–post writing measures; causal claims about proficiency gains cannot be made and generalisation should be cautious.

Future research should pair perception data with performance assessments that directly capture discourse-level cohesion, and use experimental or quasi-experimental designs (e.g., *LINK-IT* vs. exercise-only or an alternative game format). Tracking item-level performance across sessions would reveal which connector types require more practice and how staged difficulty influences understanding. A lightweight digital companion could extend practice outside class while preserving the social benefits of tabletop play.

To build on Malaysian classroom evidence, subsequent iterations can follow the playtesting-driven refinement used by Aziz et al. (2025) in Grammar Gambit, using iterative tests to gather formative data on card types, iconography, and rule tweaks, keeping changes learner-centred and pedagogically sound as challenge and transfer value are strengthened.

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CONFLICT OF INTEREST STATEMENT

The authors agree that this research was conducted in the absence of any self-benefits, commercial or financial conflicts, and declare the absence of conflicting interests with the funders.

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AUTHORS' CONTRIBUTIONS

All authors carried out the research, wrote, and revised the article. Noor Azli, Che Nooryohana, and Noraziah conceptualised the central research idea and provided the theoretical framework. Boon Yih Mah and Melati designed the research and supervised the research progress.

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