

Students' Perceptions of a Multilingual Game-Based Language Programme in a Festival-Based Non-Formal Learning Context

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DOI: <https://doi.org/10.47772/IJRISS.2026.102100143>

Received: 02 September 2026; Accepted: 07 September 2026; Published: 02 October 2026

ABSTRACT

Game-based learning provides opportunities for students to engage with languages through interaction, challenge and collaboration beyond conventional classroom instruction. Although previous studies have reported favourable perceptions of language games, much of the existing research has focused on a single target language, particularly English. Less attention has been given to multilingual game-based programmes that integrate several languages within the same non-formal learning experience. Thus, this study examined students' perceptions of a multilingual game-based language programme implemented during Lingua Fusion Day at a Malaysian public university. The programme integrated English, Arabic and Mandarin activities through interactive, collaborative and competitive games. A quantitative cross-sectional survey design was employed, involving 85 participants who completed a post-programme questionnaire. The data were analysed using descriptive statistics and reliability analysis. The two questionnaire constructs demonstrated excellent internal consistency (Cronbach's alpha = .911 and .969). Participants rated the programme's relevance to their language competency most highly ($M = 4.73$, $SD = 0.50$). All ten items assessing motivation, confidence, engagement, and critical thinking received high mean scores ($M = 4.28$ – 4.45), learning outside the classroom received the highest rating ($M = 4.45$, $SD = 0.59$), followed by engagement through language games ($M = 4.42$, $SD = 0.61$). These findings indicate favourable perceptions of the programme overall. The study provides insights into how students experience multilingual game-based learning beyond the classroom, informing the design of language enrichment programmes that respond to learners' motivational, social and cognitive needs.

Keywords: game-based language learning; multilingual learning; non-formal learning; learner perceptions; language festival; higher education

INTRODUCTION

In higher education, language learning is commonly situated within formal classroom contexts that emphasise syllabus completion and assessment outcomes, which sometimes could lead to a demanding and stressful environment for learners to practise language use in meaningful, low-anxiety situations. As a result, learners may perceive language learning as challenging, leading to reduced motivation and limited willingness to communicate. Therefore, there is a need for alternative approaches to promote language learning in more engaging and supportive contexts.

One of the approaches that has gained increasing attention as an effective pedagogical approach in language education is game-based learning (Handikaningtyas et al., 2025; Tian & Umar, 2025). Through this, it allows learners to use the language through interaction, collaboration, and competition in an authentic environment,

thereby encouraging enjoyment and active participation. Studies have shown that game-based language activities can enhance learners' motivation, confidence, engagement, and critical thinking skills, particularly when learning takes place beyond traditional classroom settings. Rashid et al. (2019), for example, examined a creative language game-based programme conducted outside the classroom among Malaysian university students. Participants reported favourable perceptions of the programme, particularly in relation to motivation, confidence, engagement and critical thinking. The study showed how carefully planned language games could provide meaningful opportunities for learning in a non-formal context.

However, little attention has been given to multilingual game-based learning initiatives that expose learners to more than one language within a single programme, particularly in festival-based non-formal settings. Rashid et al. (2019), for instance, focused specifically on English. Hence, less attention has been given to how learners perceive programmes that expose them to several languages within the same game-based learning environment. This gap is particularly relevant to Malaysia, where multilingualism is an important part of the wider linguistic and educational landscape. Examining this gap may therefore provide further insight into how non-formal language programmes can accommodate linguistic diversity while promoting positive learning experiences. Moreover, this highlights the need for innovative approaches that enhance multilingual language awareness outside the classroom and support active learning, where Ali et. al (2009) found that active learning, students' attendance and involvement in extracurricular activities are positively related to students' performance.

Learners' affective responses play a vital role in language acquisition because willingness to participate is governed not only by linguistic competence, but also by psychological factors like motivation and self-confidence. Motivation determines whether students initiate and maintain engagement, whereas confidence directly impacts their readiness to interact, pose questions, and apply language in social contexts. This can be observed in non-formal university engagement initiatives such as the experiential exploratory activities evaluated by Md Rashid et al. (2024) in the 'Pilah The Explorer Programme'. The programme demonstrates that gamified, event-based environments outside conventional classrooms significantly enhance student engagement, confidence, and holistic development. Building upon these insights, non-formal language initiatives like Lingua Fusion Day leverage gamified, festival-based environments to lower affective barriers, fostering critical thinking, interaction, and positive learner attitudes across multiple target languages.

Furthermore, language festivals provide a potentially valuable but comparatively underexplored setting to address the gap. Unlike conventional classroom activities, a language festival can bring together multiple languages, collaborative tasks, competition and social interaction within a single organised event. In light of these considerations, the present study examines Lingua Fusion Day, a multilingual language programme implemented at a Malaysian public university. The programme incorporated game-based activities involving English, Arabic and Mandarin within a non-formal, festival-based learning environment. Rather than measuring gains in language proficiency, the study focuses specifically on students' perceptions of the programme, particularly its perceived effectiveness in supporting language learning and its influence on students' motivation, confidence, engagement and critical thinking.

The study extends previous work on game-based language learning, particularly Rashid et al. (2019), in two principal ways. First, it moves from a single-language to a multilingual game-based environment involving three languages. Second, it examines game-based language learning within a festival-based non-formal setting, where different language activities are integrated within a single programme. By examining students' experiences in this context, the study seeks to contribute to the understanding of how multilingual game-based activities can be incorporated into language enrichment initiatives in higher education. Accordingly, the following research questions guide the study:

RQ1: How do students perceive the effectiveness of a multilingual game-based language programme in supporting their language learning?

RQ2: How do students perceive the influence of the multilingual game-based language programme on their motivation, confidence, engagement, and critical thinking in a non-formal learning environment?

LITERATURE REVIEW

Game-Based Learning in Language Education

Game-based learning refers to the purposeful use of games as learning activities in which learners work towards specific goals, respond to challenges and apply knowledge while playing. It differs from gamification, which generally involves adding game elements such as points, badges or leaderboards to activities that are not themselves games. Although the two concepts are distinct, both are relevant to the present study because they emphasise participation, challenge, feedback, collaboration and engagement as part of the learning experience.

Recent research indicates that game-oriented approaches can support language learning when they are aligned with explicit pedagogical objectives. Zou et al. (2021) found that digital games generally supported vocabulary development while also enhancing motivation, engagement and interaction and reducing anxiety. In higher education, Panmei and Waluyo (2023) observed that the pedagogical use of Quizizz could support English vocabulary practice and learner involvement, although the effectiveness of particular features depended on how they were incorporated into instruction. Similarly, Li et al. (2023) found an overall positive effect of gamification on learning outcomes, while noting that effects differed by duration, design principles, and learning context. In a Malaysian context, Rashid et al. (2019) found that Malaysian university students participating in a creative language game-based programme perceived the activities as enjoyable and beneficial for their motivation, confidence, engagement and critical thinking. As a result, these studies suggest that the educational value of games depends on purposeful design and alignment with language-learning goals.

Despite that, Li et al. (2023) found substantial variation across gamified interventions, demonstrating that pedagogical design and context remain important. Similarly, Al-Khresheh's (2025) concluded that gamification can enhance motivation, attention and cognitive engagement in English language learning. However, the competitive elements need to be balanced with collaboration and varied challenges. Thus, the value of game-based language learning lies not in the game format alone, but in the extent to which gameplay creates meaningful opportunities for interaction, problem-solving and language use.

Motivation and Confidence in Game-Based Language Learning

Learners' affective responses are important in language learning because willingness to participate is shaped not only by linguistic knowledge but also by how motivated and confident learners feel. Motivation can influence whether learners initiate and sustain participation, while confidence can affect their willingness to use language, ask questions and communicate with others, which directly drive active engagement and ultimately enhance overall student academic performance (Kamal & Khaidzir, 2025; Rajendran et al., 2025). These factors are particularly relevant in game-based environments, where challenge, peer interaction, feedback and a sense of progress can influence how learners experience the learning process. Regarding motivation and engagement profiles in foreign language learning, Li et al. (2022) found that these profiles were associated with emotional experiences and academic outcomes. Shen et al. (2024) further demonstrated that gamification was positively associated with language-learning outcomes and that learner motivation played an important mediating role. These findings suggest that game elements may sustain participation when learners experience achievement, competence, and involvement.

Confidence is similarly important because language use can involve apprehension, particularly when learners fear making mistakes in front of others. In game-based settings, the immediate objective of completing a challenge may shift attention away from error and towards participation. Rashid et al. (2019) reported that learners perceived their non-formal programme as increasing confidence in speaking, communicating and participating in English-language activities. More recently, Nik Fauzi et al. (2025) noted favourable perceptions of engagement and multilingual confidence among undergraduates using 'Trithasa', an educational card game incorporating English, Arabic and Mandarin. These findings suggest that game-based activities can provide affective support by making learners more willing to participate and communicate, even though such perceptions should not be equated with objectively measured language

improvement. Additionally, Al-Khresheh (2025) further notes that the motivational benefits of gamification depend on thoughtful design. Activities that are overly repetitive or too dependent on external rewards may lose their motivational value over time. This reinforces the view that motivation and confidence should be understood as responses to the overall learning experience rather than as automatic consequences of using games.

Engagement and Critical Thinking Through Language Games

Engagement in language learning is multidimensional and includes behavioural participation, cognitive effort and sustained attention. Game-based activities may encourage these forms of engagement by requiring learners to retrieve information, recognise patterns, interpret clues, negotiate responses and make decisions while working towards a goal. Shen et al. (2024) associate gamification with motivation, participation, and learning, while Al-Khresheh (2025) identifies attentional control, task focus, and deeper cognitive processing as potential benefits of well-designed game environments. Rashid et al. (2019), similarly, found that learners perceived their language games as increasing engagement and encouraging critical thinking as their programme incorporated competition, teamwork and physical participation, which were used to maintain learners' attention and involvement.

In games, critical thinking may emerge when games require learners to interpret information, evaluate possible responses or solve language-related problems. Its development therefore depends on the cognitive demands embedded in the activity rather than on competition alone. Al-Khresheh (2025) emphasises the importance of balancing competition with collaboration because excessive competition may increase anxiety for some learners. The present study consequently examines engagement and critical thinking alongside motivation and confidence, recognising that these dimensions may interact within the same learning experience.

Non-Formal Language Learning Beyond the Classroom

Non-formal learning refers to organised and purposeful learning that takes place outside conventional formal instruction. It differs from incidental informal learning because non-formal activities are intentionally structured around educational goals, even though they may not involve formal assessment. These settings can provide greater flexibility for movement, peer interaction, collaborative work and experimentation with language than is usually possible within conventional lessons. Recent studies have increasingly highlighted the importance of understanding language learning across both classroom and out-of-class contexts. Kurata (2024) observed that learners connected in-class and out-of-class experiences in different ways and used one context to compensate for limitations in the other. Lai and Sundqvist (2026) similarly argue that in-class and out-of-class language-learning experiences should be understood as interconnected rather than as separate domains. Their findings highlight the need for further investigation of learner engagement, anxiety, and willingness to communicate across these settings. Moreover, these perspectives support earlier findings by Rashid et al. (2019), whose 'Battle of Words' programme was implemented in a university gymnasium rather than a classroom. The non-formal setting allowed the researchers to incorporate teamwork, competition and physical movement in ways that would have been more difficult in a conventional lesson. Participants reported that learning outside the classroom increased their interest in English, suggesting that the context itself contributed to the perceived value of the programme.

The present study adopts a similar view of non-formal learning. Lingua Fusion Day was organised outside regular classes, but its activities were intentionally structured around language-related tasks. The festival is therefore treated as a planned learning environment rather than merely as a recreational event. This distinction is important because the pedagogical value of learning beyond the classroom depends on purposeful task design, facilitation and alignment with identifiable language-learning objectives.

Multilingual Game-Based Learning and Language Awareness

Although the literature on game-based language learning has expanded considerably, much of it remains centred on a single target language, particularly English. A multilingual game-based environment differs

because learners encounter more than one linguistic system within the same programme. The purpose of such exposure need not be immediate proficiency in all target languages, as it may instead promote language awareness, curiosity and willingness to engage with unfamiliar linguistic forms.

Emerging research suggests that several languages can be incorporated meaningfully within one game-based learning design, and this can be seen in Nik Fauzi et al. (2025) study about 'Trithasa', an educational card game incorporating English, Arabic and Mandarin among 38 undergraduates. The game combined turn-based play, peer interaction, immediate feedback and QR-supported pronunciation. Participants reported favourable perceptions of enjoyment, engagement and multilingual confidence, although responses varied across the three languages and some learners perceived the cognitive demands of the game as challenging. This study is especially relevant because it demonstrates that English, Arabic and Mandarin can be integrated within a single gamified learning experience. However, the context of Nik Fauzi et al. (2025) differs from that of the present study. The educational card game focused on one multilingual card game implemented over one month, whereas Lingua Fusion Day brought together multiple English, Arabic and Mandarin activities within a festival-based non-formal learning environment. The present study therefore extends this research by examining learners' perceptions of a broader multilingual programme in which language exposure, social interaction, competition and multiple game stations were integrated within the same event.

The multilingual dimension is also consistent with broader perspectives on learning beyond the classroom. Kurata (2024) shows that language learners strategically connect experiences across different settings, suggesting that language learning can be understood as an ecology extending beyond one classroom or one learning activity. In Malaysia, where linguistic diversity is part of everyday academic and social life, a multilingual language festival may therefore offer learners opportunities to engage with familiar and less familiar languages within the same structured environment.

METHODOLOGY

Research Design and Sample

The study employed a quantitative cross-sectional survey design to examine participants' perceptions following their participation in Lingua Fusion Day. A descriptive approach was adopted as the study focused on documenting participants' perceptions and experiences rather than determining causal effects or measurable changes in language proficiency.

Research Context

The study was conducted during Lingua Fusion Day at a Malaysian public university. The programme was conceptualised as a multilingual game-based language learning programme involving English, Arabic and Mandarin. It was conducted in a non-formal learning environment through interactive, collaborative and competitive language-based activities outside the conventional classroom setting.

Participants and Sampling

The participants were university students who attended Lingua Fusion Day and completed the post-programme questionnaire. A non-probability convenience sampling technique was employed, as participants were recruited based on their availability and willingness to respond after the programme. Participation was voluntary, and respondents were informed that their responses would remain confidential and be used for research purposes.

Multilingual Game-Based Programme

Lingua Fusion Day was a one-day multilingual language festival at UiTM Kuala Pilah comprising six game-based activities across English, Arabic, and Mandarin. This programme was open to university students across levels of study. Besides that, the activities were designed to provide structured opportunities for

language exposure and practice through individual, paired, and small-group participation. Each activity had a specific learning objective, defined duration, group structure, task requirement, and targeted language skills as seen in Table 1 below. Facilitators were present at the respective language stations to provide instructions, monitor task completion, and support participants throughout the activities.

Table 1 Description of the Game-Based Language Activities

Language	Game-based Activity	Learning Objective	Duration	Group Structure	Targeted Language Skills
English	Brainy Boggle: Vocabulary Showdown	To develop students' ability to retrieve and construct English vocabulary accurately under time constraints	3 minutes	Individual	Vocabulary retrieval and spelling
English	Tense it Up!	To develop students' ability to construct grammatically appropriate sentences using tenses	8 minutes	Two teams of three participants	Grammar, sentence construction, and interpretation of visual prompts
Arabic	Flip and Match	To develop students' ability to recognise Arabic vocabulary and associate written words with their corresponding visual referents	5 minutes	Pair	Vocabulary recognition and word-picture association
Arabic	Word Sequencing (Urutan Kata)	To strengthen students' vocabulary retrieval and awareness of Arabic letter forms and word structure	3 minutes per round	Individual: 2 - 4 participants per round	Vocabulary retrieval, Arabic letter awareness, and word structure
Mandarin	Picture Perfect Mandarin: Cíyǔ Dāpèi Túpiàn Duìjué	To develop students' ability to recognise Mandarin vocabulary and associate words with corresponding pictures	5 minutes	Two teams of two participants	Vocabulary recognition and picture-word association
Mandarin	Mandarin Artistry: Shūfǎ Duìjué	To reinforce students' recall and accurate written production of Mandarin characters	6 minutes	Individual	Character recall and written character production

For English, 'Brainy Boggle: Vocabulary Showdown' was an individual word-formation task. Participants received a grid containing 25 randomly arranged letters and had three minutes to identify and construct as many words as possible using the letters provided. The task focused on vocabulary retrieval and spelling under time constraints. Next, 'Tense it Up!' involved two teams of three participants per session. Each team was presented with three images depicting actions and one film clip and was required to construct three sentences, each using a different tense, such as the present, past or future. The teams had eight minutes to complete the task, and winning performance required all three sentences to be judged correct. The activity combined collaborative sentence construction with attention to grammatical tense and the interpretation of visual prompts.

The Arabic component consisted of 'Flip and Match' and 'Word Sequencing' (Urutan Kata). 'Flip and Match' was conducted in pairs, with participants turning over cards and matching pictures with their corresponding Arabic words. Participants had five minutes to complete the task, and successful performance required all matches to be correct. The activity focused on Arabic vocabulary recognition and the association between written words and visual referents. 'Word Sequencing' (Urutan Kata) was conducted as an individual competition involving two to four participants per round. Participants were required to generate Arabic words beginning with the final letter of a supplied word. Each round lasted three minutes, and the participant who produced the greatest number of correct words was declared the winner. The activity required vocabulary retrieval and attention to Arabic letter forms and word structure.

For Mandarin, 'Picture Perfect Mandarin: Cíyǔ Dāpèi Túpiàn Duìjué' involved two teams of two participants per session. Each team received a randomly ordered set of 10 pictures and 12 word items accompanied by Mandarin characters. Then, the teams had five minutes to match each picture with the appropriate word, and a winning performance required all matches to be correct within the allotted time. This task combined collaborative decision-making with vocabulary recognition and picture-word association. Next, 'Mandarin Artistry: Shūfǎ Duìjué' was an individual character-writing activity. Participants received three pictures and had six minutes to write the corresponding Mandarin characters in calligraphic form, with particular attention to stroke accuracy. Successful performance required correct character production within the time limit. The activity therefore focused on the relationship between pictorial meaning, character recall and written form.

Together, the six activities provided opportunities for vocabulary retrieval, grammatical production, visual-verbal matching and character writing through a combination of individual competition and collaborative participation. The programme's multilingual scope arose from bringing three language-specific components together within the same festival. Time limits and task-specific correctness criteria structured the games, but game performance was not used as a measure of language proficiency gains. The present study evaluated participants' perceptions of the programme rather than changes in their objectively assessed language performance.

Research Instrument and Measurement

Data were collected through the Lingua Fusion Day Event Feedback questionnaire administered after the programme. The instrument comprised demographic information, event evaluation, perceived programme impact, overall programme evaluation, and open-ended feedback. The event evaluation section measured participants' overall satisfaction and their perceptions of the relevance and helpfulness of the programme for their language competency. Participants also evaluated the venue, English activities, Arabic activities, Mandarin activities and facilitators. The impact section contained statements measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The items examined whether participants perceived themselves as more motivated to learn the languages, more confident, more interested in learning outside the classroom, more competitive, more engaged, more confident in asking questions, more critically engaged, more confident in participating in language classes, and more confident in communicating in English, Arabic and/or Mandarin. The questionnaire also asked participants whether they believed the programme should be continued and provided space for comments and suggestions. The impact items were adapted from the questionnaire employed by Rashid et al. (2019) and contextualised for a multilingual programme. Whereas the original instrument focused on English, the wording of relevant items was modified to refer to English, Arabic and Mandarin. This adaptation enabled the study to retain the original emphasis on programme effectiveness and learners' affective and cognitive experiences while aligning the instrument with the multilingual nature of Lingua Fusion Day.

Data Collection and Data Analysis

The questionnaire was administered online following participants' involvement in Lingua Fusion Day. Prior to responding, participants were informed that the questionnaire was intended to obtain feedback and that the information provided would remain confidential and be used for research purposes. A total of 85 responses constituted the dataset analysed in the study.

The collected data were analysed using statistical software, Statistical Package for Social Sciences (SPSS)

version 29.0. Descriptive statistics, specifically mean scores and standard deviations, were calculated to summarise participants' perceptions of the multilingual game-based programme. Reliability analysis was also conducted to determine the internal consistency of the questionnaire items. The results were subsequently interpreted in relation to the two research questions.

FINDINGS AND DISCUSSION

Survey Reliability

Quantitative data were analysed descriptively using frequencies, percentages, means and standard deviations. Frequencies and percentages were used to describe participants' demographic characteristics and responses to categorical items, while means and standard deviations were used to summarise responses to Likert-scale items. Internal consistency of the 17 Likert-scale items was assessed using Cronbach's alpha. The reliability analysis demonstrated high internal consistency for both constructs. The first construct, Students' Perceptions of the Effectiveness of a Multilingual Game-Based Language Programme in Supporting Their Language Learning, recorded a Cronbach's alpha coefficient of $\alpha = 0.911$. The second construct, Students' Motivation, Confidence, Engagement and Critical Thinking in a Non-Formal Learning Environment: Perceived Influence of the Multilingual Game-Based Language Programme, recorded a Cronbach's alpha coefficient of $\alpha = 0.969$. These results indicated excellent internal consistency for both constructs, suggesting that the survey instrument used in this study was highly reliable.

Respondent Profile

Female participants constituted 96.5 per cent ($n = 82$) of the sample, while male participants accounted for 3.5 per cent ($n = 3$). Most respondents were aged between 18 and 20 years (90.6 per cent), and the remaining 9.4 per cent were aged between 21 and 23 years. A total of 82 participants (96.5 per cent) were enrolled in diploma or pre-diploma programmes, while three (3.5 per cent) were bachelor's degree students. The respondents were almost equally distributed across ACIS (50.6 per cent) and Applied Sciences (49.4 per cent).

The discussion is organised according to the two research questions, which are participants' perceptions of programme effectiveness and their perceptions of its influence on motivation, confidence, engagement, and critical thinking.

Students' Perception of the Effectiveness of A Multilingual Game-Based Language Programme

Table 2 shows that students generally perceived the multilingual game-based language programme very positively. Participants demonstrated high satisfaction and perceived strong educational relevance across the multilingual game-based programme. The highest rating was recorded for perceived relevance to language competency ($M = 4.7294$, $SD = 0.4973$), indicating that learners recognized the pedagogical value beyond mere entertainment, thus aligning with non-formal game research (Panmei & Waluyo, 2023; Rashid et al., 2019). While satisfaction was consistently high across Mandarin and English components ($M = 4.5059$, $SD = 0.6291$), the Arabic component yielded slightly lower ratings and wider variance ($M = 4.2941$, $SD = 0.8284$). This divergence likely reflects differences in prior linguistic exposure or task difficulty, corroborating Nik Fauzi et al. (2025). Importantly, while these ratings show strong affective reception, self-reported satisfaction does not directly demonstrate objective feature acquisition.

The implementation conditions further highlight the interplay between facilitation and environmental factors in game-oriented learning. High ratings for facilitators ($M = 4.5059$, $SD = 0.6477$) underscore their critical role in guiding students across language stations and maintaining task engagement, supporting arguments that game effectiveness relies heavily on pedagogical design and human mediation rather than game elements alone (Al-Khresheh, 2025; Li et al., 2023). Although overall event and venue satisfaction remained positive ($M = 4.1882$), higher response variance ($SD = 0.9939$) suggests diverse learner expectations

regarding physical and organizational conditions. Synthesizing these elements, integrated multilingual games offer an engaging platform for non-formal language exposure when supported by active facilitation and structured task design

(Zou et al., 2021).

Table 2 Students' perception of the effectiveness of a multilingual game-based language programme in supporting their language learning

Items	Mean	Std. Deviation
Q1 How satisfied were you with the event	4.1882	0.99396
Q2 How relevant do you think it was for your language competency	4.7294	0.49733
Q3 How satisfied were you with the event venue	4.1882	0.99396
Q4 How satisfied were you with the event activities-Arabic Language	4.2941	0.82842
Q5 How satisfied were you with the event activities-Mandarin Language	4.5059	0.62913
Q6 How satisfied were you with the event activities-English Language	4.5059	0.62913
Q7 How satisfied were you with the event Facilitators	4.5059	0.64777

Students' Motivation, Confidence, Engagement and Critical Thinking in A Non-Formal Learning Environment

Table 3 presents students' perceptions of the influence of the multilingual game-based language programme on motivation, confidence, engagement, and critical thinking in a non-formal learning environment. Overall agreement across all items indicates that the non-formal, gamified environment effectively fostered student interest, motivation, and active behavioral participation. Moving language activities outside the conventional classroom setting scored highest in driving learner interest, reinforcing how out-of-class experiential activities seamlessly complement formal instruction (Kurata, 2024; Lai & Sundqvist, 2026; Rashid et al., 2019). When combined with challenge-based game mechanics, this non-formal context sustained task involvement and heightened enthusiasm for language learning (Shen et al., 2024; Zou et al., 2021). These results validate gamification as a viable pedagogical bridge connecting positive emotional experiences with sustained academic engagement (Li et al., 2022).

Beyond general engagement, the programme significantly enhanced participants' affective readiness and communicative confidence. Gamified tasks provided a psychologically safe space that mitigated target-language anxiety, encouraging students to communicate more freely and bolstering their willingness to participate in formal language classes (Nik Fauzi et al., 2025; Rashid et al., 2019). While competitive elements added immediacy and drive, the findings support the notion that competitive mechanics must be moderated by teamwork and facilitation to prevent exclusion or anxiety (Al-Khresheh, 2025). Notably, while general communicative confidence was high, confidence to ask questions publicly yielded the lowest relative mean and highest variance. This suggests that public interaction remains an affective barrier, highlighting the need for future programme designs to embed more low-risk, peer-led discussion mechanisms.

Finally, the results indicate that learners perceived the programme as a meaningful cognitive exercise rather than just an entertainment. High agreement regarding task difficulty demonstrates that integrated game activities required strategic decision-making, problem-solving, and critical thinking alongside target-language practice (Al-Khresheh, 2025; Rashid et al., 2019). Students similarly reported strong perceptions

of overall language skill development (Handikaningtyas et al., 2025; Tian & Umar, 2025). However, these self-reported gains reflect heightened learner self-efficacy and perceived value rather than empirical proof of linguistic feature acquisition.

Table 3 Students' motivation, confidence, engagement and critical thinking in a non-formal learning environment perceive the influence of the multilingual game-based language programme

Items	Mean	Std. Deviation
Q1 I am more motivated to learn the languages	4.3647	0.61426
Q2 This program increased my confidence	4.4	0.60159
Q3 Learning out of the classroom increased my interest	4.4471	0.58769
Q4 The activities increased my competitive spirit	4.4	0.63994
Q5 Language games increased my engagement	4.4235	0.60507
Q6 I am more confident to ask questions	4.2824	0.70054
Q7 Activities are challenging they make me think critically	4.3529	0.63068
Q8 I feel more confident to participate in language classes	4.3294	0.6053
Q9 This event is effective in increasing my language skills	4.3412	0.60853
Q10 The activities increased my confidence to communicate	4.3294	0.6053

CONCLUSION

This study examined 85 students' perceptions of a multilingual game-based language programme implemented during Lingua Fusion Day at a Malaysian public university. The programme integrated English, Arabic and Mandarin activities within a non-formal festival environment and provided opportunities for engagement through play, interaction, collaboration, and competition. Students evaluated the programme favourably, particularly its relevance to language competency, the value of learning outside the classroom, and the engagement generated by language games. These findings contribute to understanding how students experience multilingual game-based learning and support the potential of language festivals as purposeful settings for language enrichment beyond formal instruction. The study provides insights to inform the design of programmes that respond to learners' motivational, social and cognitive needs. They support the feasibility of treating a language festival as a purposeful learning environment rather than solely as an extracurricular event.

Several pedagogical implications can be drawn from the study. Language educators may consider using structured game-based activities to complement formal instruction. Games can provide alternative opportunities for participation, particularly when activities have clear language-related objectives rather than being used solely for entertainment. Additionally, language festivals can be designed as purposeful learning environments by incorporating structured language stations, facilitator guidance and clearly defined challenges, thereby transforming an extracurricular event into a non-formal educational experience. Besides, the multilingual format provides an opportunity to expose learners to languages beyond those they regularly study. Institutions operating within multilingual contexts may therefore consider designing activities that encourage linguistic curiosity and participation without requiring learners to possess advanced proficiency in every language represented. Furthermore, affective outcomes deserve attention when evaluating non-formal

language programmes as motivation, interest and confidence may influence whether learners are willing to engage with languages beyond compulsory classroom activities. Evaluating these dimensions can therefore provide useful information for programme designers.

Despite these contributions, the study has several limitations. Reliance on self-reported data from a post-programme survey, without baseline measures or a comparison group, limits the conclusions to participants' perceptions and precludes causal inference regarding language development, motivation or confidence. Moreover, questionnaire items addressing English, Arabic and Mandarin collectively restrict comparisons of affective responses across the three languages. The convenience sample of 85 students from a single university also limits generalisability beyond the study context. Future investigations should incorporate longitudinal assessments, comparison groups and objective measures of language performance to examine changes associated with programme participation. Recruiting larger, more diverse samples across institutions would strengthen external validity, while language-specific measures would enable more precise comparisons of students' experiences and outcomes. Integrating interviews and observations with survey data could further explain how activity design and the festival environment shape students' engagement.

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