Integrating Gamification and IRS in Task-Based Assessment to Develop Chinese Language Assessment Literacy

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Abstract: This study investigates how integrating gamification and IRS (e.g., Kahoot!) into a Chinese assessment course enhances motivation, engagement, and assessment literacy. Through mixed-method action research with 130 students, task-based activities and peer feedback complemented theoretical instruction. While test gains were modest, strong correlations and qualitative data suggest IRS-based gamification effectively supports learning in content-heavy courses.

Keywords: Gamification, Interactive Response Systems (IRS), Assessment , Teaching Chinese as a Second Language, task-based learning, scaffolding

1. Introduction

Developing assessment literacy is vital for future Chinese language teachers, yet traditional theory-heavy instruction often lacks engagement. This study addresses the gap between theory and practice by integrating IRS and gamified, task-based strategies to boost motivation, clarity, and item-developing skills.

2. Literature Review

Studies confirm that Interactive Response Systems (IRS) effectively enhance student motivation and engagement. Good and Lavigne (2017) identified four motivational principles—supportive environment, appropriate challenge, meaningful goals, and engagement—closely aligned with Kahoot!'s gamified features such as real-time feedback and competitive scoring (Wang & Tahir, 2020). Kahoot! has been shown to improve participation and vocabulary acquisition (Alawadhi & Abu-Ayyash, 2021; Yang, 2023).

Other IRS platforms like Pear Deck and Evoli Live create interactive environments that encourage attention and participation (Anggoro & Nurmala, 2024; Cassano et al., 2024). Evoli Live supports expression through anonymity, while Pear Deck is praised for usability and learning value (Anggoro & Pratiwi, 2023). Online, IRS tools foster competition and engagement while allowing instructors to monitor student understanding (Anggoro & Nurmala, 2024).

IRS also supports personalized learning through AI-driven feedback and adaptive paths (Polamuri et al., 2024). Its integration with mobile tools expands access to authentic materials and collaborative tasks (Marzuki, 2024; Hafidurrahman, 2024). IRS-based instruction improves reading, thinking, and vocabulary skills, especially when combined with peer or teacher interaction (Huang et al., 2023; "A Program…", 2023).

Classroom dynamics shift under IRS from teacher-led to student-centered dialogue (Cassano et al., 2024). AI-enabled IRS systems reduce speaking anxiety via real-time feedback in low-pressure settings, sustaining engagement (Ericsson & Johansson, 2023). Student satisfaction is high, though perceptions differ by learning style—more autonomous learners report greater benefits (Anggoro & Pratiwi, 2023).

Recent developments combine IRS with AI and VR to build adaptive, immersive learning spaces (Polamuri et al., 2024; Panicheva et al., 2023). IRS analytics can support tailored teaching (Marzuki, 2024), but challenges remain—unequal device access, digital literacy

gaps, and cheating risks still hinder equitable implementation (Anggoro & Nurmala, 2024; Pongen, 2024).

3. Research Questions & Methods

3.1 Research Questions:

- RQ1: How does IRS-based gamified scaffolding affect students' understanding of assessment theories?
- RQ2: How does gamified instruction shape student motivation and engagement in a theory-intensive course?
- RQ3: In what ways does task-based instruction enhance practical competence in item writing?

3.2 Methods and Instructional Flow:

This action research involved 130 third-year students in a Chinese language teacher training program. Students were divided into collaborative groups and engaged in weekly IRS-based Kahoot! reviews, peer assessments, and final project presentations. Quantitative data included test scores, flow-state questionnaires, and motivation surveys. Qualitative data were drawn from open-ended feedback and interviews.

The course sequence included seven weeks of theoretical input with IRS scaffolding, followed by item-writing tasks in three cycles. Week 15-16 focused on final presentations assessed by professionals. This chronological sequence is illustrated in a simplified flowchart(Figure 1):
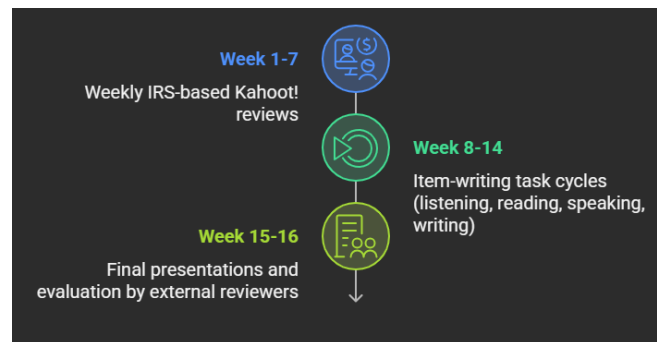

Figure 1: Weekly sequence flowchart

4. Results

4.1 Quantitative Findings

Kahoot! participation and performance significantly correlated with midterm exam scores ($r = .457$, $p < .01$). However, t-tests revealed no significant difference between IRS and non-IRS groups ($p > .05$). Flow-state analysis showed high agreement on 'clear goals' ($M = 4.28$) and 'unity' ($M = 4.34$), with the lowest rating on 'loss of self-consciousness' ($M = 3.54$). Motivation scores (ARCS) showed a minor decline post-test.

4.2 Qualitative Feedback

Students emphasized that weekly Kahoot! reviews improved memory retention and helped make abstract concepts more tangible. Over 70% of students acknowledged its benefit, and peer explanations during discussions were noted to be particularly helpful. Competitive elements such as leaderboards encouraged continued engagement.

4.3 Task-Based Learning Outcomes

Table 1 summarizes the alignment of quantitative evidence and qualitative insights for each research question.

Table 1. *Summary of Key Findings*

Research Focus	Evidence	Conclusion
IRS & learning outcome	r = .457, p < .01	Positive correlation with performance
Gamification & motivation	Mixed (ARCS decline, high flow scores)	Mixed results, high engagement
Task-based instruction	Student feedback, expert review	Increased practical competence

5. Conclusion and Implications

This study confirms the benefit of combining IRS and gamification in assessment literacy courses. While standardized test scores showed limited change, student engagement, memory, and item-writing skills improved. Dynamic scaffolding and task-based practice helped bridge theory and application.

Gamified elements encouraged participation, reduced anxiety, and promoted metacognitive reflection. Learners benefited from low-stakes review, peer support, and instructor feedback. These conditions fostered both extrinsic motivation and growing intrinsic interest.

Future work should examine long-term skill retention and classroom transfer. Expanding tools beyond Kahoot! may serve varied learner profiles. Ultimately, the findings support student-centered, interactive environments for abstract course content.

References

Alawadhi, A., & Abu-Ayyash, E. A. S. (2021). Students' perceptions of Kahoot!: An exploratory mixed-method study in EFL undergraduate classrooms in the UAE. Education and Information Technologies, 26, 3629–3658.

Anggoro, K. J., & Nurmala, N. (2024). Interactive Response Systems (IRS) in online English classes: Voices of foreign university teachers in Thailand. Studies in English Language and Education, 11(2).

Anggoro, K. J., & Pratiwi, D. I. (2023). University students' perceptions of interactive response system in an English language course: A case of Pear Deck. Research in Learning Technology, 31, Article 2944.

Cassano, G., Di Blas, N., & Riva, M. (2024). A student response system for the live class in higher education. In 2024 IEEE 24th International Conference on Advanced Learning Technologies (ICALT) (pp. 102–106). IEEE.

Ericsson, E., & Johansson, S. (2023). English speaking practice with conversational AI: Lower secondary students' educational experiences over time. Computers and Education: Artificial Intelligence, 4, 100164.

Good, T. L., & Lavigne, A. L. (2017). Looking in classrooms (11th ed.). Routledge.

Hafidurrahman, M. (2024). Innovation in English language teaching: The implementation of digital technology in the classroom. Indo-MathEdu Intellectuals Journal, 5(6), 109–120.

Huang, H.-Y. C., Tseng, C. J., & Lo, M.-F. (2023). The effectiveness of integrating a student response system into EFL reading instruction with teacher-interaction vs. peer-interaction technique. In 2023 IEEE 23rd International Conference on Advanced Learning Technologies (ICALT) (pp. 281–285). IEEE.

Koh, T., & Kim, Y. J. (2024). Correlation between academic achievement results and students' perceptions in instant response system-based language learning classes at the university. Education Sciences, 14(6), 587.

Panicheva, E. V., Radyuk, A. V., & Karimova, B. S. (2023). Integration problems of interactive forms and methods in the process of teaching a foreign language based on the example of the French language. In SWS International Scientific Conference on Social Sciences (ISCSS).

Polamuri, S. R., Manikyamba, I. L., & Viswanath, G. (2024). Artificial intelligence-driven frameworks for fostering active participation and learning in language classrooms. International Journal of Interactive Emerging Education, 1(3), 34–42.

Salem, M. M. A. (2023). A program based on interactive student response systems to develop EFL students' e-critical reading comprehension skills at the Faculty of Specific Education. Journal of the Faculty of Specific Education, 13(59), 1–28.

Wang, A. I., & Tahir, R. (2020). The effect of using Kahoot! for learning—A literature review. Computers & Education, 149, 103818.

Yang, P.-L. (2023). Gamification for EFL College Learners: To Kahoot! or not to Kahoot! Tzu Chi University Journal, 12, 29–56.