

Preparing for the Viva Through Play: A Card-based game Intervention for Doctoral Students

Annica Lau and Robin Bell

Worcester Business School, University of Worcester, UK

annica.lau2@worc.ac.uk

r.bell@worc.ac.uk

Abstract: Doctoral viva voce examinations are high-stakes milestones in which candidates defend their theses by answering questions from examiners. In the UK, the viva defence often takes place without a formal presentation, requiring candidates to respond spontaneously, justify methodological and theoretical decisions, and position their work within scholarly debates. Although doctoral researchers must ‘know’ their thesis, many report uncertainty about possible questions and limited opportunities to practise responses in supportive settings. Gamification is associated with increased engagement in learning contexts and may offer a beneficial approach to viva preparation. However, evidence of its use in this context remains limited, particularly in relation to oral defence skills. This study introduces the viva card game, a game-based learning intervention that supports doctoral candidates through structured dialogue and peer learning. The non-digital game uses curated viva-style questions and accommodates several formats (e.g. individual training, supervisor–student discussions, peer group sessions, and workshops). Candidates are encouraged to prepare arguments while engaging in verbal expression and reflection through these activities. This developmental case study draws on two pilot workshops held at doctoral research events. Participants provided feedback on the content, format, and usefulness of the intervention. The analysis is based on facilitator field notes and observations, which also informed initial revisions to the questions and workshop set-up. Preliminary observations suggest that the activity supports critical reflection, strengthens confidence when answering questions, and stimulates peer learning through discussions. These patterns align with research showing that game-based learning activities positively impact motivation and academic performance. Hence, the concept could be adapted for use in undergraduate and postgraduate contexts, including bachelor’s and master’s colloquia. Future development could involve creating multilingual versions and digital applications.

Keywords: Game-based learning, Doctoral education, Viva voce, Peer learning, Oral Assessment, Card game

1. Introduction

The doctoral viva voce examination remains one of the most consequential moments in doctoral education. Candidates are expected to not only thoroughly know their thesis but also to articulate its contribution, justify methodological and theoretical decisions, and respond persuasively to critique (Riches-Suman et al., 2026; Share, 2016). In the UK, the viva generally takes place without a formal presentation, which increases the importance of spontaneous verbal reasoning (Houston and Lunt, 2024). However, opportunities to rehearse viva-style dialogue in a structured and supportive manner are often limited (Watts, 2012).

The oral defence is not simply a test of memory. Rather, it is an opportunity for candidates to explain and defend their research aloud, handle uncertainty, and position themselves as emerging scholars (Wang et al., 2020). Doctoral students may understand their thesis well, yet still struggle when asked to answer questions aloud; thus, practising in low-risk settings where uncertainty can be explored rather than judged is critical (Stephenson et al., 2024). The viva card game was developed as a simple, reusable intervention that structures oral rehearsal in response to this challenge. This developmental study aims to investigate whether a card-based game can aid viva preparation, how peer dialogue influences learning and how the design can be refined. The paper is guided by the following research question: *How can a card-based game support doctoral candidates in preparing for viva voce examinations?*

2. Background and Literature Review

Game-based learning (GBL) and gamification are widely discussed in educational research, particularly within higher education; however, it is essential to distinguish between them conceptually, as they involve different assumptions about how learning is structured and supported (Rye et al., 2025). Plass et al. (2015) define GBL as learning through a game environment, whereas gamification implies using select game elements (e.g. points, badges, or leaderboards) in non-game activities. This distinction is crucial; the viva card game is not designed around reward mechanisms but around structured rehearsal and peer interaction, with the aim of stimulating thoughtful discussion and reflection (Chen et al, 2017). Hence, this GBL approach integrates cognitive, motivational, affective, and sociocultural dimensions, not just playful elements.

Subhash and Cudney (2018) found that GBL in higher education can enhance engagement, motivation, communication, and performance, stressing that effectiveness depends on context, design, and alignment between mechanics and learning goals. Similarly, Zainuddin et al. (2020) reported positive effects but note contradictions across studies and emphasised the importance of design choices, instructional alignment, and suitable game elements. These findings are important for the viva card game because its educational value lies not in the simple presence of cards or playful features but in how its question prompts, dialogue, and peer interaction are carefully aligned with the specific demands of viva preparation.

Drawing on constructivist learning theory (see Vygotsky, 1962), non-digital media, such as question cards, may foster collaborative problem-solving, especially when tasks require reflection rather than rapid responses (Olusegun, 2015). Thus, educational depth depends on the type of interaction a game invites (Aldemir et al., 2018) and under what conditions a card game can be effective (Clark et al., 2016). An (2023) found that doctoral learning in a game-based setting involved mixed emotions and argued that this complexity is often overlooked, especially as prior work focused on undergraduates. In doctoral viva preparation, where candidates articulate complex ideas, respond to uncertainty, and develop confidence through scholarly discussion, a low-pressure, structured learning space is pedagogically significant.

While these studies do not address viva preparation directly, they do suggest four broader design implications that help to contextualise the viva card game as an educational intervention. First, GBL supports student engagement. Second, educational value relies on game element design and task alignment. Third, low-tech formats are effective in teaching. Fourth, doctoral contexts need more focus, as learning is both intellectual and emotional.

3. Research Methodology

This developmental qualitative case study examines the viva card game to explore its pedagogical role and inform its refinement (Lauckner et al., 2012; Stake, 1995). The intervention was piloted in two conference workshops in the UK involving doctoral candidates and experienced supervisors (for timeline, see Figure 1). At the Postgraduate Research Conference, the game was used across five tables, each comprising 6–8 participants and one senior supervisor. At the University Forum for Human Resource Development Conference, 18 doctoral students worked across four tables, each supported by one senior academic. Data were collected through a facilitator reflective journal maintained by the first researcher, workshop observations, and participant comments ($n = 10$) documented in facilitator's field notes during and immediately after the sessions. Analysis was exploratory and interpretive. The first researcher read the textual materials iteratively and grouped comments and observation; for example, comments referring to answering aloud, more structured preparation, reconsidering research decisions, feeling more prepared, hearing different perspectives, or exchanging feedback were treated as relevant indicators (Almås et al., 2023). The aim was to identify early patterns, refine the intervention design, including question wording and workshop set-up, and inform the next evaluative phase.

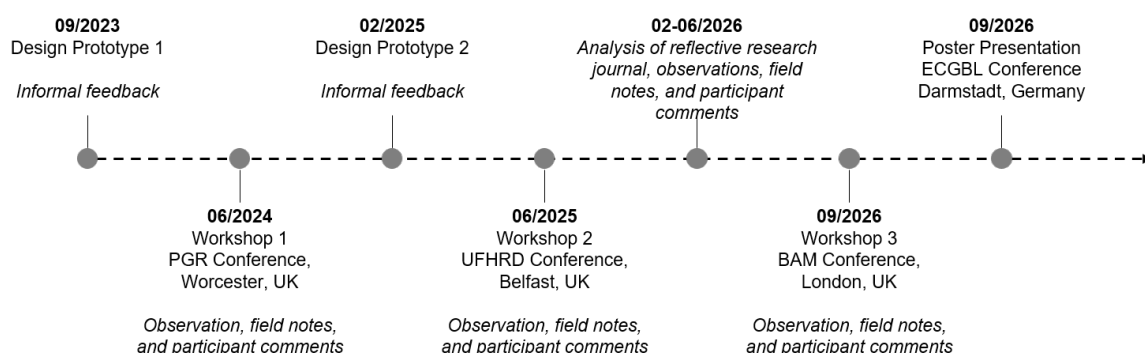


Figure 1: Overview of the development of the viva card game and data collection/analysis

4. Findings

The viva card game includes questions following a typical doctoral thesis structure: introduction, literature review, methodology, findings, discussion, and conclusion. In addition, the deck includes general viva-style questions as well as a small set of bonus questions (Figure 2).

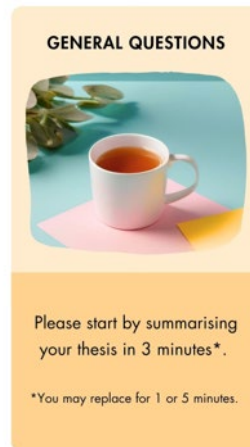


Figure 2: Sample card from the viva card game

The card deck is adaptable for individual training, supervisor–student discussions, peer group sessions, and workshops, allowing repeated use without requiring special technology or extensive training (Figure 3).



Figure 3: Use cases of the viva card game across different learning contexts

Initial findings point to four interrelated outcomes. First, the card format turns broad viva preparation into concrete prompts, shifting the emphasis from knowing the thesis to articulating and defending it aloud. Participants seemed to value this structured approach, with one respondent describing it as a ‘structured and dialogical way’ of preparing. Second, workshop observations suggest the cards encouraged participants to verbalise aspects of their research that they had not previously expressed in depth, including methodological choices and lines of argument. Early feedback highlighted the game’s value in prompting reflection on research decisions, suggesting it may support a shift from thesis familiarity towards greater defence readiness. Third, across the pilot workshops, participants appeared to grow more comfortable as they interacted with the card game. The low-stakes setting made uncertainty more discussable and framed hesitation and refinement as part of learning. The majority of the feedback centred on increased confidence and preparedness, with participants describing the game as ‘very useful’ and making viva questions feel ‘less abstract’. Finally, the workshops enabled participants to hear perspectives, compare answers, and exchange feedback, supporting sense-making in an individualised stage of doctoral preparation. Early findings suggest the game is useful for self-learning, supervisor–doctoral student discussions, and small-group interaction, highlighting flexibility. Overall, feedback concerned the intervention’s pedagogical value, especially its structured, accessible design, with a respondent calling it an ‘accessible, interactive, and low-pressure way’ to practise viva questions.

5. Discussion

The primary contribution of this study is a preliminary examination of a non-digital tool for structured oral rehearsal in viva preparation (García-Iruela, Hijón-Neira and Connolly, 2022; Singh et al., 2021; Wang et al., 2020). The workshop observations and early feedback suggest that the viva card game is perceived as valuable,

with respondents emphasising better reflection on research decisions, greater confidence, and more structured practice. However, these findings should be interpreted cautiously, as they are based on a small formative dataset and reflect perceived value rather than demonstrated learning change or improved viva performance. In this sense, the study's contribution is primarily design-orientated: it shows how a simple card-based format can create opportunities for dialogue, rehearsal, reflection, and peer interaction without relying on points, badges, or leaderboards (Khaleel, Ashaari and Wook, 2020; Subhash and Cudney, 2018). This is theoretically relevant, as discussions of gamification often privilege digital platforms or reward-based mechanisms, despite evidence that such features may be insufficient or even counterproductive when detached from clear learning goals (Astuti and Salvina, 2026). The present findings suggest that the educational value of the intervention lies in its close alignment with the specific demands of viva preparation, namely, the need to articulate, discuss, and refine responses in a low-pressure but structured setting. At the same time, it remains difficult to disentangle the pedagogical value of the card deck itself from the influence of facilitation, peer discussion, or supervisory input, which points to an important issue for future evaluation. A further contribution lies in extending GBL into doctoral education (An, 2023), an area that remains less developed than undergraduate applications. By focusing on viva preparation, this study highlights a context in which doctoral candidates appear to benefit from repeated and supportive opportunities for oral practice while also indicating the need for more robust research on how such interventions influence confidence, reflection, and performance over time.

6. Limitations and Future Research

Data are limited at this stage, and insights rely mainly on facilitator observations from pilot workshops, which offered useful design indications but cannot support strong evaluative claims. Structured feedback from doctoral students and supervisors is needed to understand the learning experience and intervention value.

Future research should incorporate post-workshop reflections and follow-up accounts from candidates who complete their viva. Comparative work across disciplines and educational levels would clarify useful question types, facilitation strategies, and different formats. The literature suggests a need for longitudinal and perception-based studies on GBL, as viva preparation shapes confidence and scholarly identity over time. Furthermore, the card game could be enhanced, for example, through multilingual and digital formats for various educational levels, including bachelor's and master's programmes.

7. Conclusion

This paper presents a developmental case study of the viva card game as a tool for doctoral viva preparation. Based on pilot workshops and feedback, preliminary findings suggest potential value in structuring oral rehearsal, supporting reflection, normalising uncertainty, and enabling peer learning. The study shows that GBL in higher education does not require complex technology; a card-based format offers a flexible and accessible tool for an academic context. At this stage, the project's strongest contribution is not proof of impact but a coherent design proposition grounded in existing scholarship and refined through early practises. As such, it offers a promising basis for further evaluation about how play can support advanced academic learning.

AI Declaration: AI was used to support the creation of Figures 2 and 3.

Ethical Statement: Formal ethical approval was not required for this work-in-progress; approval for the subsequent study is in progress.

References

- Aldemir, T., Celik, B. and Kaplan, G. (2018) 'A qualitative investigation of student perceptions of game elements in a gamified course', *Computers in Human Behaviour*, 78, pp. 235–254. doi: <https://doi.org/10.1016/j.chb.2017.10.001>
- Almås, H., Pinkow, F. and Gæver, F. (2023) 'Reimagining how to understand learning game experiences: A qualitative and exploratory case study', *Smart Learning Environments*, 10(1), p. 14. doi: <https://doi.org/10.1186/s40561-023-00234-0>
- An, Y. (2023) 'The impact of gamification on doctoral students' perceptions, emotions, and learning in an online environment', *TechTrends*, 67(4), pp. 706–717. doi: <https://doi.org/10.1007/s11528-022-00833-7>
- Astuti, A. and Salvina, D. (2026) 'Comparing digital and non-digital gamification in cooperative learning: Effects of TGT with Wordwall and question cards on students' mathematical problem-solving ability', *AL-ISHLAH: Jurnal Pendidikan*, 18(1). doi: <https://doi.org/10.35445/alishlah.v18i1.8835>
- Chen, P. et al. (2017) 'The effectiveness of using in-game cards as a reward', *Research and Practice in Technology Enhanced Learning*, 12(1). doi: <https://doi.org/10.1186/s41039-017-0054-8>
- Clark, D. B., Tanner-Smith, E. E. and Killingsworth, S. S. (2016) 'Digital games, design, and learning', *Review of Educational Research*, 86(1), pp. 79–122. doi: <https://doi.org/10.3102/0034654315582065>

- García-Iruela, M., Hijón-Neira, R. and Connolly, C. (2022) 'Can gamification help in increasing motivation, engagement, and satisfaction? A gamified experience in teaching CS to students from other disciplines', *Education in the Knowledge Society (EKS)*, 23, p. e26932. doi: <https://doi.org/10.14201/eks.26932>
- Houston, G. and Lunt, I. (2024) 'The final examination of the UK PhD: Fit for purpose?', *Assessment and Evaluation in Higher Education*, 49(8), pp. 1182–1195. doi: <https://doi.org/10.1080/02602938.2024.2364026>
- Khaleel, F. L., Ashaari, N. S. and Wook, T. S. M. T. (2020) 'The impact of gamification on students' learning engagement', *International Journal of Electrical and Computer Engineering*, 10(5), pp. 4965–4972. doi: <https://doi.org/10.11591/ijece.v10i5.pp4965-4972>
- Lauckner, H., Paterson, M. and Krupa, T. (2012) 'Using constructivist case study methodology to understand community development processes: Proposed methodological questions to guide the research process', *Qualitative Report*, 17(13), pp. 1–22. doi: <https://doi.org/10.46743/2160-3715/2012.1790>
- Olusegun, S. (2015) 'Constructivism learning theory: A paradigm for teaching and learning', *IOSR Journal of Research and Method in Education*, 5(6), pp. 66–70. doi: <https://doi.org/10.9790/7388-05616670>
- Plass, J. L., Homer, B. D. and Kinzer, C. K. (2015) 'Foundations of game-based learning', *Educational Psychologist*, 50(4), pp. 258–283. doi: <https://doi.org/10.1080/00461520.2015.1122533>
- Riches-Suman, K. et al. (2026) 'Supporting doctoral students through completion', in Polkinghorne, M., Taylor, J. and Knight, F. (eds.) *Innovative approaches to doctoral supervision*. Edward Elgar Publishing, pp. 190–213. doi: <https://doi.org/10.4337/9781035340286.00017>
- Rye, S., Sousa, M. and Sousa, C. (2025) 'Introduction to game-based learning', in *Transformative learning through play*. Springer Nature Switzerland, pp. 29–68. doi: https://doi.org/10.1007/978-3-031-78523-8_2
- Share, M. (2016) 'The PhD viva: A space for academic development', *International Journal for Academic Development*, 21(3), pp. 178–193. doi: <https://doi.org/10.1080/1360144X.2015.1095759>
- Singh, P. et al. (2021) 'Card game as a pedagogical tool for numeracy skills development', *International Journal of Evaluation and Research in Education*, 10(2), pp. 693–705. doi: <https://doi.org/10.11591/ijere.v10i2.20722>
- Stake, R. E. (1995) *The art of case study research*. Sage Publications.
- Stephenson, Z., Jackson, A. and Wilkes, V. (2024) 'Student experiences of the 'closed-door' PhD and doctorate-level viva voce: A systematic review of the literature', *Assessment and Evaluation in Higher Education*, 49(5), pp. 601–615. doi: <https://doi.org/10.1080/02602938.2023.2282941>
- Subhash, S. and Cudney, E. A. (2018) 'Gamified learning in higher education: A systematic review of the literature', *Computers in Human Behaviour*, 87, pp. 192–206. doi: <https://doi.org/10.1016/j.chb.2018.05.028>
- Vygotsky, L. S. (1962) *Thought and language*. MIT Press.
- Wang, S.-M. et al. (2020) 'Exploring the effects of card game-based gamification instructional activity on learners' flow experience, learning anxiety, and performance: A preliminary study', *International Conference on Computers in Education* [Preprint]. Available at: <https://library.apsce.net/index.php/ICCE/article/view/4081> (Accessed: 27 February 2026).
- Watts, J. H. (2012) 'Preparing doctoral candidates for the viva: Issues for students and supervisors', *Journal of Further and Higher Education*, 36(3), pp. 371–381. doi: <https://doi.org/10.1080/0309877X.2011.632819>