

A Board Game Approach to Hospitality Career Education in Schools

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Abstract: Although games-based learning has been widely studied across educational contexts, empirical work on the design and evaluation of board games for broadening occupational awareness among early adolescents remains limited. This paper presents the design rationale, iterative development, and pilot study of *Adventures in Hospitality Land*, an original educational board game introducing students aged 10.5 to 13.5 to the diversity of careers within the hospitality sector, a sector frequently underrepresented in career education and often perceived as low-skilled despite demanding transferable competencies. The study addressed three research questions: the game's support for career awareness and engagement, the soft skills facilitated through gameplay, and how iterative design affected classroom feasibility and learning outcomes. A DBR-informed pilot was conducted under institutional ethical approval with 68 students across three age groups at a summer school in Malta. Each group played two sessions: an original Full version and a streamlined Lite version developed in direct response to Session 1 findings. Data from questionnaires, student interviews, and a facilitator focus group were analysed thematically. Engagement was consistently high across both versions, with 84.1% of students naming a previously unknown hospitality role. The Lite version substantially improved accessibility and enjoyment, perceived rules difficulty falling from 71.1% to 17.4%, whilst educational value scores remained virtually identical (60.0% versus 60.9%). Eight thematic categories emerged from the qualitative data. The paper contributes to the literature on educational board game design by demonstrating that a purpose-built, low-technology game can support career awareness and soft skills development in a single classroom session.

Keywords: Games-based learning, Educational board game design, Career awareness, Hospitality education, Early adolescence, Design-based research

1. Introduction

Career education in early adolescence has gained increasing recognition as a critical component of educational provision, with research demonstrating that the occupational frameworks young people develop during this period have lasting consequences for their aspirations and career trajectories (Wang and Wang, 2025; Gutman and Schoon, 2012). Yet many sectors remain underrepresented in middle-school career education, and students receive little structured exposure to the breadth of available roles before stereotypes become entrenched (Archer et al., 2013). The hospitality industry is a prominent example. Despite its scale, diversity, and dependence on transferable competencies, the sector is frequently perceived by young people as low-skilled, temporary, and unattractive as a career destination (Baum, 2007; Walmsley et al., 2020), a perception that reflects not informed assessment but a fundamental ignorance barrier that early structured exposure could address (Walmsley et al., 2020).

Educational board games offer a promising vehicle for such exposure. Grounded in constructivist and experiential learning traditions, they engage learners through structured play and produce meaningful outcomes across content domains and age groups (Plass et al., 2015; Sousa et al., 2023). Yet empirical studies specifically examining board games for career awareness among early adolescents remain limited.

This paper addresses that gap by presenting the design rationale, iterative development, and pilot study of *Adventures in Hospitality Land*, an original educational board game developed and piloted in Malta, introducing students aged 10.5 to 13.5 to careers within the hospitality sector. The study was guided by three research questions: (RQ1) To what extent does *Adventures in Hospitality Land* engage early adolescents and support their awareness of hospitality careers? (RQ2) What soft skills does gameplay facilitate, and how do players respond to its collaborative and competitive mechanics? (RQ3) How does iterative design, specifically the development of a streamlined Lite version in response to pilot findings, affect the game's feasibility and effectiveness as a classroom tool? Section 2 reviews the literature; Section 3 describes the game design; Section 4 presents the methodology; Section 5 reports findings; Sections 6 and 7 provide the discussion and conclusion.

2. Background

2.1 Career Education in Early Adolescence

Early adolescence represents a critical window for career development. Super's (1990) stage theory positions students aged approximately 11-15 as transitioning from a growth stage to an exploration stage, during which initial career interests and occupational self-concepts begin to take shape. Social Cognitive Career Theory (Lent, Brown and Hackett, 1994) complements this developmental account by emphasising how self-efficacy beliefs and outcome expectations, both shaped by direct and vicarious experience, drive interest formation and career choice. The role-description mechanic at the centre of *Adventures in Hospitality Land* targets precisely these constructs by providing structured, mastery-oriented exposure to occupational roles. The career-related cognitive frameworks established during this period have lasting consequences for academic persistence, decision-making, and long-term satisfaction (Wang and Wang, 2025); yet systematic career education at middle-school level remains underdeveloped, with many students reporting unclear career perceptions and limited awareness of available options. Career-related interventions during early adolescence yield measurable improvements in aspirations and outcomes (Gutman and Schoon, 2012), while career stereotypes can become entrenched as early as age ten (Archer et al., 2013). Structured career guidance has been shown to produce significant gains in career readiness among students aged 12-18, with greater participation associated with higher readiness scores (Dodd et al., 2022).

2.2 The Hospitality Industry as a Career Choice

The hospitality sector encompasses hotels, restaurants, tourism, events management, and customer service. Despite its scale and economic significance, the industry has long struggled with an image problem, being widely perceived as low-skilled, low-paid, and offering limited long-term prospects (Baum, 2007). These perceptions persist despite the sector's dependence on transferable competencies including communication, cultural awareness, problem-solving, and leadership (Baum, 2007; Richardson, 2008). Walmsley et al. (2020) surveyed 245 pre-university young people and found that only a small proportion considered hospitality an attractive career, with employer interviews revealing an ignorance barrier whereby young people lack sufficient knowledge of the sector to assess its potential. Gebbels (2022) reinforces this, reporting that 95% of school leavers surveyed do not consider hospitality as a career, citing low pay, unsociable hours, and limited awareness of available roles. Liu et al. (2022), in a meta-analysis of 34 studies, identified social identity and perceived career prospects as the strongest influences on occupational choice, underscoring the importance of early, positive exposure.

2.3 Educational Board Games, Soft Skills, and Collaborative Learning

Educational board games have attracted growing scholarly attention as effective pedagogical tools. Grounded in constructivist and experiential learning traditions, they engage learners through structured play that requires applying knowledge, making decisions, and reflecting on outcomes (Plass et al., 2015). Sousa et al. (2023), in a systematic literature review of analog game-based learning, found that such games reliably foster communication, collaboration, and cognitive gains, with high learner engagement identified as the primary driver of effectiveness. Bayeck (2020) demonstrates that board games function as multidisciplinary learning spaces facilitating gains across diverse content domains.

Beyond content knowledge, games-based learning is also recognised as an effective vehicle for soft skills development. A meta-analysis by Slamet and Chen (2025) found moderate to large positive effects on socio-emotional outcomes through gamified collaborative learning, with improvements in group cohesion, peer interaction, and interpersonal skills including communication, teamwork, and conflict resolution. Hämäläinen et al. (2018) demonstrate that game mechanics requiring information exchange and interdependent action between players reliably trigger knowledge-sharing and collaborative behaviour - a finding with direct relevance to the trading mechanic at the heart of the game evaluated here.

3. Game Design

3.1 Design Rationale

Adventures in Hospitality Land was designed with two overarching aims: to introduce early adolescents to the diversity of careers within the hospitality sector, and to foster transferable soft skills such as communication, negotiation, and teamwork, through structured collaborative play. The game was conceived as a low-technology, classroom-ready tool that could function without digital infrastructure. Three core learning

objectives guided the design: that players should learn the definitions and functions of different hospitality roles; that they should become familiar with the workplace environments in which those roles operate; and that they should develop an understanding of how careers within the same site are interdependent.

3.2 Game Components and Mechanics

The game centres on a board depicting sixteen hospitality sites including a hotel, airport, seaport, restaurant, conference centre, theatre, visitor attraction, and diving school. Four card decks form the core: site cards (ownership of hospitality sites); role cards (hospitality careers such as chauffeur, sommelier, flight attendant, tour guide, and pizzaiolo); visitor cards (tourist objectives linked to specific sites); and service-point cards (in-game currency). The central educational mechanic requires players to correctly describe the function of a hospitality role before they may acquire the corresponding role card, embedding occupational vocabulary directly into gameplay so that learning is structurally necessary for progress. The role cards span a range of lexical familiarity: some roles (e.g. tour guide) will be familiar from everyday experience, while others (e.g. sommelier, pizzaiolo, linen attendant) are technical terms unlikely to be known even by native English speakers without hospitality exposure. No prior instruction in this vocabulary was provided; card illustrations scaffolded productive guessing for unfamiliar terms, and a failed description functioned as a learning incentive, with students observed returning to previously failed roles with improved recall in subsequent rounds. Once a player owns a site and the matching role cards, they score points by serving visitor objectives representing the needs of arriving tourists.

3.3 Playtesting

Prior to the pilot, the Full version was iteratively play-tested with adult players to confirm core mechanics and balance, and subsequently with facilitators during their training. Session 1 thus represented the game's first encounter with the target age group rather than its first playtest, positioning the pilot within a development process that had already stress-tested core functionality.

4. Methodology

4.1 Research Design

This study employed a mixed-methods design combining quantitative questionnaire data with qualitative data from student interviews and facilitator focus groups. The approach was DBR-informed rather than a full multi-cycle DBR study: a single iteration cycle in which Session 1 findings empirically drove Session 2 design changes, consistent with design-based research principles (Anderson and Shattuck, 2012; Pala, 2025; Symborski et al., 2017). Session 1 functioned as a deliberate first pass with complete educational content, consistent with Symborski et al.'s (2017) recommendation to prioritise content completeness in initial cycles. Triangulation across multiple data sources was used to strengthen validity (Crowe et al., 2011). The study was conducted with institutional ethical approval, with informed consent obtained from parents or guardians and assent from all student participants.

4.2 Participants and Setting

The study was conducted with 68 students across three age groups attending a local summer school in Malta. All participants were residents of Malta; the game was conducted in English, which is one of Malta's two official languages and the primary medium of instruction in Maltese schools. Participants were organised by age: Group 1 (n = 35, aged 10.5-11), Group 2 (n = 21, aged 11-12), and Group 3 (n = 12, aged 12-13.5). The sample had a near-equal gender distribution, with 64.7% of participants reporting that they regularly play board games. Each class was divided into four sub-groups of four to six players, with each sub-group assigned a facilitator drawn from a cohort of undergraduate Game Design students, hereafter referred to as leaders. Prior to the pilot, facilitators received approximately six hours of structured training during which they played the game multiple times and discussed strategies for introducing it to children of the target age range.

4.3 Procedure and Design Iteration

Each group participated in two sessions. Session 1 used the Full version as originally designed. Observation and post-session discussion consistently revealed that the Full version could not be completed within a 45-minute period, the typical length of a school lesson in Malta. The dice-based movement mechanic, service-points economy, and site-purchasing system added complexity and cognitive load for younger participants: tracking dice outcomes, managing a currency economy, and monitoring site availability simultaneously created working memory demands that substantially extended session length. In response, a streamlined Lite version was

developed prior to Session 2. Table 1 summarises the principal differences whilst Figure 1 illustrates the iterative process through which the versions were developed and tested.

Table 1: Comparison of Full and Lite Game Versions

Feature	Full Version	Lite Version
Aim	First to 20 points	Highest score when all 5 visitors served
Site acquisition	Purchased with service points	Randomly distributed to players at setup
Role card acquisition	Earned by describing roles correctly	Traded between players by describing roles correctly
Movement mechanic	Dice-based visitor movement	No dice; visitors matched to completed sites
Service points economy	Yes	Removed
Sabotage mechanic	No	Yes (airport and seaport)
Typical session length	90+ minutes	45 minutes max
Classroom feasibility	Limited	Suitable

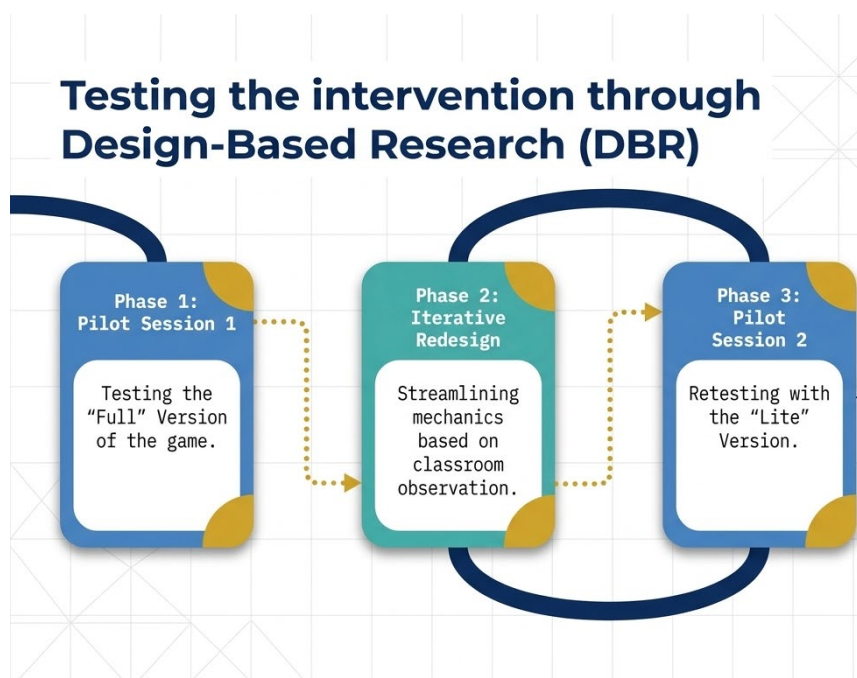


Figure 1: The iterative DBR-informed design process

The Lite version retained the role description mechanic as its central educational feature, ensuring that the core learning objective was preserved across both sessions. The addition of a sabotage mechanic, whereby players completing the airport or seaport may claim a visitor card from a rival, introduced a competitive element that leaders reported as increasing excitement and engagement, particularly among older players.

4.4 Data Collection

Data were collected through three instruments. All participants completed a paper questionnaire after each session covering enjoyment, perceived difficulty, educational value, willingness to recommend the game, and an open question asking them to name a hospitality role they had not previously known. Short individual interviews were conducted with a sample of students after each session, and a focus group was held with the leaders. All interviews and focus groups were audio recorded and transcribed verbatim; direct quotations in Section 5.2 are drawn from these transcripts unless otherwise attributed.

4.5 Data Analysis

Questionnaire data were analysed descriptively, with frequency counts and percentages calculated for each closed item. Qualitative data from student interviews and leader focus groups were analysed using Braun and

Clarke's (2006) six-phase thematic analysis, following a reflexive thematic approach (Braun and Clarke, 2019) in which both authors independently engaged with the data before collaboratively developing and refining the coding framework through ongoing discussion; consensus, rather than inter-rater reliability metrics, was treated as the appropriate quality marker for this approach.

5. Findings

5.1 Questionnaire Results

A total of 68 students completed the post-session questionnaire: 45 following Session 1 (Full version) and 23 following Session 2 (Lite version). The drop in sample size between sessions reflects the voluntary nature of summer school attendance, where students were not required to attend on consecutive days. Figure 2 compares responses across the two versions for the principal closed items.

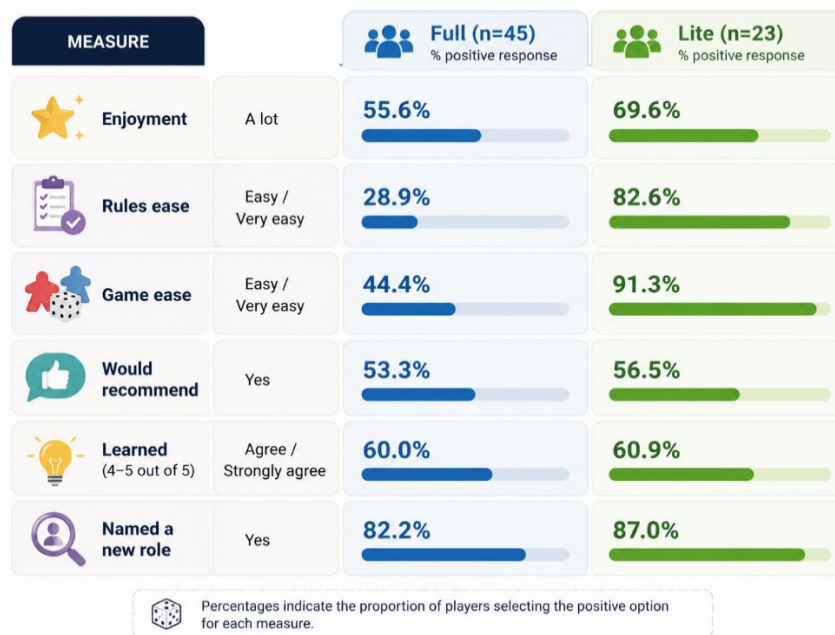


Figure 2 Questionnaire Responses by Game Version

The data reveal a consistent pattern of improvement across accessibility and enjoyment between the two versions. Perceived rules difficulty fell from 71.1% in the Full version to 17.4% in the Lite version, and the proportion finding the game difficult to play fell from 55.6% to 8.7%. No student in the Lite version reported low or no enjoyment, compared with 11.1% in the Full version, and no student declined to recommend the Lite version to friends. Critically, the proportion agreeing or strongly agreeing that they had learned about tourism roles remained virtually identical across both versions (60.0% and 60.9%), and the proportion able to name a previously unknown hospitality role was similarly consistent (82.2% and 87.0%). This pattern suggests that the Lite version achieved equivalent educational outcomes whilst substantially improving accessibility, enjoyment, and classroom feasibility.

5.2 Thematic Analysis

Eight themes emerged from thematic analysis of the student interviews and leader focus groups. The four dominant themes (engagement, teamwork, enjoyment, and educational value) are reported in full as Sections 5.2.1-5.2.4. Four supporting themes (competition, differentiated abilities, time management, and game challenges) are addressed briefly in Section 5.2.5.

5.2.1 Student engagement

Engagement emerged as the most consistently observed theme across all sessions and age groups. Leaders reported that all participants chose to play and remained involved throughout, including students who were described as typically disengaged in classroom settings. One leader noted: "We had no one who said 'I don't want to play this.' Everyone was engaged." Emotional investment was evidenced by excitement, laughter, and expressions of frustration, all interpreted by leaders as indicators of genuine personal involvement; these

observable behaviours were documented through leader observations rather than elicited through direct interview questions, which is why they are reported through leader interpretation rather than through direct student quotation. Engagement was not contingent on winning; leaders reported that students who scored no points still chose to complete the game.

5.2.2 Teamwork

The trading mechanic generated sustained collaborative behaviour across all groups. Players communicated spontaneously to negotiate card exchanges, and in several instances voluntarily assisted opponents by sharing cards without being required to do so by the rules. One leader observed: "They liked the trading a lot... they were communicating and helping each other".

5.2.3 Student enjoyment

Enjoyment was a dominant theme across both questionnaire and qualitative sources. Across both sessions combined, 92.6% of students reported at least some enjoyment (Full: 88.9%; Lite: 100%). Students described the game as fun whilst recognising its educational dimension: "I liked it because it gave a learning curve to a board game: you're learning while also playing, so it doesn't make the learning look like you're learning." (Student, Session 1) The trading mechanic was specifically identified as a primary source of enjoyment, and 95.6% of students indicated they would either recommend or possibly recommend the game to friends, rising to 100% in the Lite version.

5.2.4 Educational value

The game succeeded in its primary educational objective across both versions. Across both sessions, 84.1% of students named at least one previously unknown hospitality role, most frequently including travel consultant, chauffeur, sommelier, banquet manager, linen attendant, and pizzaiolo. Students who initially failed to describe a role returned to it in subsequent rounds with improved recall, suggesting that the failed description functioned as an effective learning incentive: "If you know them a lot already you are going to win, and if you don't know a lot, you can learn a lot from your mistakes." (Student, Session 1).

Competition, whilst not the primary mechanic, enhanced motivation and deepened engagement with content. Players became increasingly strategic and exacting in their assessment of role descriptions as sessions progressed, and the sabotage mechanic in the Lite version was particularly effective with older groups: "When they heard the word sabotage, their faces lit up." It is acknowledged that adversarial mechanics are not universally appealing, and future iterations should consider whether an optional reduced-conflict mode could improve inclusivity for students who respond less positively to competitive challenge. Differentiated abilities were well accommodated: visual cues on role cards supported students who struggled with text-based descriptions, and one student with a learning disability was reported to have engaged fully and progressed at a similar pace to peers. Time management emerged as the critical design constraint differentiating the versions: no group completed the Full version within the 45-minute lesson period, whereas all groups completed the Lite version within the time limit. Game challenges centred on the linguistic complexity of certain role names; in several instances this prompted productive deductive reasoning as students inferred role functions from card illustrations.

6. Discussion

This study set out to investigate the extent to which *Adventures in Hospitality Land* could engage early adolescents and support their awareness of hospitality careers (RQ1), the soft skills that gameplay facilitated (RQ2), and how the iterative design process affected the game's feasibility and effectiveness as a classroom tool (RQ3).

6.1 Engagement and Career Awareness (RQ1)

The consistently high engagement observed across all groups and both sessions provides strong evidence that the board game format is well suited to this age group, consistent with the broader literature on analog games as engagement mechanisms (Sousa et al., 2023; Bayeck, 2020). Engagement was not superficial: the role-description mechanic ensured that progress required active engagement with career knowledge, making learning structurally inseparable from play, consistent with Plass et al.'s (2015) argument that effective games-based learning depends on alignment between game mechanics and learning objectives.

That 84.1% of students were able to name a previously unknown hospitality role represents a meaningful shift in occupational awareness within a single session. Roles such as sommelier, pizzaiolo, banquet manager, and linen attendant are unlikely to feature in standard career curricula, and their appearance in student responses suggests genuine learning rather than recall of familiar terms, speaking directly to the ignorance barrier identified by Walmsley et al. (2020). It is particularly striking that, in Malta, a tourism-saturated economy where students live daily in proximity to the industry, many still named roles they did not previously know. The consistency of educational value scores across both versions (60.0% and 60.9%) further suggests that this outcome was robust to changes in game complexity.

6.2 Soft Skills Development (RQ2)

The qualitative data provide rich evidence of soft skills development through gameplay, particularly in communication, negotiation, and collaborative problem-solving. The trading mechanic created repeated, structured opportunities for players to communicate their needs and negotiate mutually beneficial exchanges, consistent with Hämäläinen et al.'s (2018) demonstration that mechanics requiring information exchange reliably generate collaborative behaviour. Spontaneous prosocial behaviour in several groups suggests the game created conditions for the empathic cooperation that Slamet and Chen (2025) identify as a distinguishing outcome of gamified collaborative learning, and the competitive dimension contributed positively, consistent with Medina-Merodio et al.'s (2024) finding that combined collaborative and competitive mechanics are most effective for skill development.

6.3 Design Iteration and Classroom Feasibility (RQ3)

The most practically significant finding is the contrast between Full and Lite versions across accessibility and enjoyment, set against near-identical educational value scores. The reduction in perceived rules difficulty from 71.1% to 17.4%, and the elimination of negative enjoyment responses in the Lite version, demonstrates that targeted simplification can improve classroom experience without compromising learning outcomes, consistent with Pala's (2025) description of DBR as producing simplifications that improve accessibility whilst preserving core learning objectives, and with Laine and Lindberg's (2020) identification of appropriately scoped challenges and sufficient task time as core design principles.

The comparison between Full and Lite versions was not a controlled experiment: because the Lite version was designed in direct response to Session 1, a counterbalanced design in which some participants encountered the Lite version first was logically impossible. Session 2 was therefore better understood as a test of whether the redesign met its stated goals, namely 45-minute classroom feasibility, improved accessibility, and preserved learning outcomes. The near-identical educational value scores (60.0% versus 60.9%), together with the clear correspondence between specific Lite design changes (removal of dice movement and the service-points economy) and the dimensions showing the largest accessibility improvements, support attributing the gains primarily to intentional design decisions rather than to participants' growing familiarity with the game alone.

6.4 Limitations

Several limitations should be acknowledged. The summer school setting differs from a formal classroom in student motivation and teacher oversight, and findings may not generalise directly to school deployment. The sample is relatively small, and the absence of a control group means learning gains cannot be attributed exclusively to the game. Some component of the accessibility improvement in Session 2 may reflect Session 1 familiarisation effects, though this does not undermine the central finding that targeted simplification preserved educational outcomes. The questionnaire was administered after a single session per version, limiting assessment of retention, and the undergraduate facilitators may have influenced session dynamics differently from classroom teachers. Future research should address these limitations through a larger-scale study in formal school settings with teacher facilitators and a pre-post measure of career awareness.

7. Conclusion

This paper has presented the design rationale, iterative development, and pilot study of *Adventures in Hospitality Land*, an educational board game developed to introduce early adolescents to careers within the hospitality sector.

Regarding RQ1, the game engaged participants across all age groups and produced measurable gains in occupational awareness, with 84.1% of students able to name a hospitality role previously unknown to them. The role-description mechanic proved effective in embedding career knowledge within gameplay, addressing the ignorance barrier identified in the hospitality careers literature.

For RQ2, the trading mechanic generated sustained collaborative behaviour, spontaneous communication, and negotiation across all groups. Leaders reported no instances in which competitive elements undermined collaborative engagement, and the qualitative data suggest the two dimensions operated in complementary rather than antagonistic ways, though the small sample limits any strong claim in this regard.

Finally, addressing RQ3, the contrast between Full and Lite responses provides evidence that targeted simplification of game mechanics improves classroom feasibility and player experience without compromising educational outcomes. The single iteration cycle, in which Session 1 evidence directly drove the Lite redesign, illustrates the value of DBR-informed approaches, with multi-cycle DBR studies a natural next step.

Future research should address the limitations of this pilot through a larger-scale study in formal school settings with teacher facilitators, pre- and post-measures of career awareness, and longitudinal follow-up. The findings contribute to the literature on educational board game design by demonstrating that a low-technology, purpose-built board game can support both career awareness and soft skills development among early adolescents in a single classroom session.

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Ethics Declaration: This study received ethical clearance from the University of Malta Research Ethics Committee (Ref: EDUC-2025-00628). Informed consent was obtained from parents or guardians of all participants, and assent was obtained from students prior to data collection.

AI Declaration: ChatGPT and NotebookLM were used to generate the diagrams included in this paper. The output was reviewed and edited by the authors to ensure accuracy and alignment with the content before inclusion in the final manuscript.

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