Educational Interdisciplinary Journal
ILS Scientific Press, an Imprint of **CV. ILS NUSANTARA**
Volume 1, Issue 2, 2026. Pages 14-26
e-ISSN: 3165-3847
https://jurnal.ilsnusa.com/index.php/educatio

Developing the Gambarin Karier Card Game to Support Junior High School Students' Career Understanding

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ARTICLEINFO

Received: 20 June 2026
Revised: 30 June
Accepted: 20 July 2026
Published: 22August 2026

Keywords:

career guidance; career understanding; classroom guidance; game-based learning; card game

ABSTRACT

Junior high school students must choose a further educational pathway, often with limited information about schools, study programs, and related occupations. At SMP Negeri 5 Tarakan, Indonesia, students were confused about which school to attend after graduation, had limited access to career information, and responded passively to classroom guidance delivered through presentations, videos, and worksheets. This study aimed to develop Gambarin Karier (Draw Your Career), a card game for career guidance, and to determine its feasibility as a supporting medium for classroom guidance services in the career domain. A research and development design based on the Borg and Gall model was carried out through its first five stages: identifying potentials and problems, collecting information, designing the product, validating the design, and revising the design. The product consists of 32 cards measuring 5 × 7 cm, which adapt the quartet card game by linking schools and study programs with occupations and educational levels, together with a guidebook for school counselors. Data from observation, interviews, and four-point validation sheets were analyzed using descriptive percentages and narrative analysis. The material and language expert rated the product at 75.89% (feasible), and the media expert rated it at 88.24% (highly feasible). Revisions addressed the guidebook structure, cover colors, and card illustrations. The novelty of this study lies in integrating local information on further schools, study programs, occupations, and educational levels into a single game for classroom guidance. The product is feasible for use, although its effectiveness still requires field testing.

INTRODUCTION

Career development is an essential part of students' growth because it shapes their educational plans, occupational choices, and the direction of their future lives. From a life-span perspective, career development does not begin when young people enter the labor market; it starts in childhood and becomes increasingly purposeful during adolescence, when students begin to formulate educational and occupational goals and relate them to real-world opportunities (Parola et al., 2024a). At the junior high school (Sekolah Menengah Pertama, SMP) level in Indonesia, students reach a point at which they must decide which type of senior secondary school to attend, such as a general senior high school or a vocational high school, and which study program to pursue. Although this decision does not fix their future occupation, it opens or narrows later pathways, making it one of the first consequential career decisions they face.

Making such a decision well requires career understanding. In this study, career understanding refers to students' knowledge of their own characteristics, such as abilities, interests, aspirations, and personality, their knowledge of the world of education and work, including the competencies, educational routes, and prospects associated with different occupations, and their ability to reason about how these two bodies of knowledge fit together. This view is consistent with school-based career programs that seek to integrate awareness of self-identity with knowledge of the world of work (Sgaramella & Ferrari, 2024). The process through which students gather this information is known as career exploration. A meta-analysis of studies on students' career exploration found that exploring the self and the environment is associated with more positive career-related outcomes, including greater career decidedness and lower career self-doubt (Kleine et al., 2021). Interventions that deliberately stimulate exploration can also strengthen students' career maturity and self-concept (Lau et al., 2021), and structured school-based career construction courses have shown promising results among secondary school students (Gülşen et al., 2021).

Many adolescents nevertheless struggle with these tasks. Career decision-making difficulties may stem from a lack of readiness, a lack of information, or inconsistent information, and they can delay decisions or lead to choices that do not fit the individual (Kulcsár et al., 2020). Among adolescents, such difficulties are related to the career-related behaviors of parents and to students' career adaptability, and they are associated with lower life satisfaction (Parola & Marcionetti, 2022). Adolescents are also highly sensitive to their peers, whose influence can promote both adaptive and less adaptive behavior (Andrews et al., 2021). In practice, this means that junior high school students often choose a further school by following friends or deferring to others rather than by examining how a particular pathway matches their own characteristics. School transitions themselves can be stressful, and adolescents' confidence in their life skills is related to the timing of these transitions (Pedditzi et al., 2023).

These problems were evident among grade VIII students at SMP Negeri 5 Tarakan. Observation conducted on 8 September 2025 showed that students still found it difficult to recognize their own interests and talents, were confused about which school to attend after graduation, and had limited information about the available schools and the educational prospects that follow junior high school. Career information services had not been delivered in an optimal and structured way, partly because school counselors had no dedicated class hours for guidance. An interview with the school counselor on 16 October 2025 confirmed the need for more intensive and structured career guidance so that students could receive assistance in understanding their potential and career direction.

Classroom guidance at the school had used PowerPoint presentations, educational videos, and student worksheets (Lembar Kerja Peserta Didik, LKPD). During field observation, however, many students responded passively to these formats and showed signs of boredom, whereas game-based activities generated greater enthusiasm and interaction. This contrast is consistent with research on games in education. A meta-analysis found that gamification has positive effects on cognitive, motivational, and behavioral learning outcomes (Sailer & Homner, 2020), and a more recent meta-analysis of 41 studies reported a large overall effect of gamification on student learning outcomes (Li et al., 2023). Systematic reviews further indicate that game elements can increase engagement and participation in learning (Zainuddin et al., 2020) and that tabletop games can improve knowledge, enhance interaction

among participants, and increase motivation (Noda et al., 2019).

Games have also begun to be used specifically for career guidance. A systematic review of digital games for career guidance identified a growing number of such tools but noted that many lack a clear theoretical foundation, which makes their effects difficult to evaluate (Parola et al., 2024b). In a randomized trial in Italian middle schools, career guidance activities led by trained teachers that included a game with job cards increased students' career exploration, career adaptability, and career competences compared with a control group (Parola et al., 2024a). Narrative and creative approaches, such as digital storytelling and creativity-based life design activities, have likewise been used to help young people imagine and plan their futures (Fusco et al., 2021; Pordelan et al., 2021). These studies suggest that well-designed playful activities can provide a concrete, low-threat context in which adolescents explore possible educational and occupational selves.

Building on this evidence and on the conditions at SMP Negeri 5 Tarakan, the present study developed Gambarin Karier (Draw Your Career), a card game that combines educational content, interaction, and the local context of Tarakan City. The game adapts the familiar quartet card game to the theme of further schools and careers. The front of each card displays the name of a school and its study program, while the back displays types of occupations and the educational level they require. The product consists of 32 cards measuring 5 × 7 cm and a guidebook containing the objectives, instructions for use, rules and steps of play, sample questions and answers, and supporting materials for guidance services. Card-based media are simple, portable, suitable for group play, and able to present information concisely, which makes them practical for school counselors working within limited service time.

Classroom guidance was chosen as the context of use because it reaches all students in a class and can address the career domain. Its implementation requires direct interaction between the school counselor and students, so a medium that invites students to participate can be integrated naturally into the service. Gambarin Karier is therefore positioned as a tool used by counselors within classroom guidance, not as a stand-alone service, and it is not intended to replace the role of counselors or families in career decision-making. Career-related support from teachers is itself an important resource for adolescents' career development (Parola et al., 2023), and teacher-led game activities appear to be most beneficial when the adult acts as a facilitator who connects play with reflection (Parola et al., 2024a).

Although card games have been developed for career information in Indonesian schools, few products integrate information on further schools, study programs, occupations, and educational levels into a single game rooted in the local context of the students who will use it. This study aimed to develop the Gambarin Karier card game and to determine its feasibility as a supporting medium for classroom guidance services in the career domain for students at SMP Negeri 5 Tarakan. The study was limited to product development and validation by a material and language expert and a media expert. Because it stopped at the fifth stage of the Borg and Gall model, its results concern the feasibility of the product and are not intended to establish its effectiveness, which would require broader field testing.

METHOD

Research Design

This study used a research and development (R&D) design based on the Borg and Gall model, which remains widely applied in educational R&D because it links needs assessment, product development, and expert evaluation in a traceable sequence (Widodo et al., 2025). Of the ten stages in the version of the model commonly used in Indonesian educational research, this study carried out the first five because of time and budget constraints: identifying potentials and problems, collecting information, designing the product, validating the design, and revising the design (Figure 1). As a consequence, the product was not tried out with groups of students, and its effectiveness was not measured experimentally.

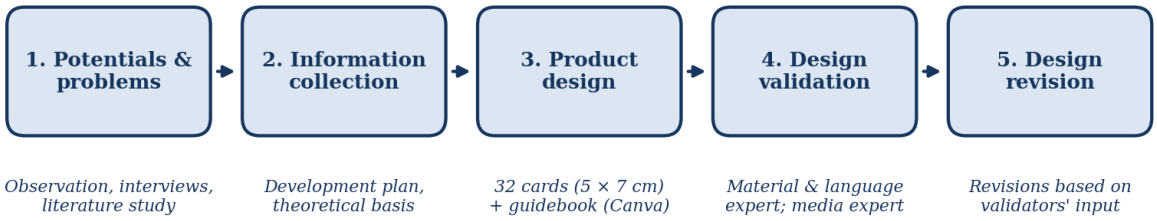


Figure 1. Development Stages of the Gambarin Karier Card Game

Development Procedure

The potentials and problems stage was carried out through literature study, observation, and interviews. Field observation took place at SMP Negeri 5 Tarakan from September to November 2025 and focused on students' career understanding, the implementation of guidance and counseling services, the media used, and students' responses to the services. Unstructured interviews were conducted with grade VIII students and the school counselor to strengthen the identification of needs. This stage revealed a need for a more interactive medium for conveying information about further schools, study programs, and career prospects.

In the information collection stage, the researcher drew up a development plan based on the field needs and on theoretical foundations concerning career understanding, classroom guidance, educational games, and card media. In the product design stage, the 32 Gambarin Karier cards were designed using Canva, and a guidebook was prepared. The design aimed to make information on schools, study programs, occupations, and educational levels visually understandable for junior high school students. The validation stage involved two validators, and the revision stage used their scores and comments to improve the product. The activities and outputs of each stage are summarized in Table 1.

Table 1. Stages, Activities, and Outputs of the Development Procedure

Stage	Main Activities	Output
1. Potentials and problems	Literature study, observation from September to November 2025, and unstructured interviews with grade VIII students and the school counselor	Identified need for an interactive career information medium
2. Information collection	Development planning based on field needs and theory on career understanding, classroom guidance, educational games, and card media	Product specification
3. Product design	Designing 32 cards (5 × 7 cm) in Canva and drafting the guidebook, including sample service plans and worksheets	Initial prototype
4. Design validation	Assessment by a material and language expert and by a media expert using four-point validation sheets	Scores, comments, and suggestions
5. Design revision	Revising the guidebook structure, cover colors, and card illustrations according to the validators' input	Revised product

Source: Research procedure (2026)

Validators and Instruments

The design was validated by two experts: a material and language expert and a media expert. The validation instruments used a four-point Likert-type scale with the categories very poor, poor, good, and very good. The material and language validation sheet covered content feasibility, presentation, contextual relevance, and language, with a maximum attainable score of 112. The media validation sheet covered card size, cover design, content design, and language readability, with a maximum attainable score of 68. In addition to the scores, both sheets provided space for qualitative comments and suggestions.

Data Analysis

Quantitative data were analyzed using descriptive percentages by dividing the total score obtained by the maximum attainable score and multiplying the result by 100%, that is, $P = (\Sigma x / \Sigma x_{max}) \times 100\%$. The percentages were interpreted using the criteria in Table 2. The product was declared feasible if the validation results reached at least the feasible category (61–80%). Qualitative data, consisting of the validators' comments and suggestions, were analyzed narratively to determine which parts of the product needed improvement. Combining both types of data was important because a product may achieve an acceptable score yet still require specific improvements to be practical for counselors and students.

Table 2. Criteria for Interpreting Validation Percentages

Percentage	Category	Decision
81–100%	Highly feasible / highly valid	Usable, with minor improvements where suggested
61–80%	Feasible / valid	Usable after the suggested revisions
41–60%	Less feasible	Requires substantial revision
21–40%	Not feasible	Not suitable for use

Source: Research instrument criteria (2026)

RESULT AND DISCUSSION

Results

Needs Identified in the Preliminary Stage

The preliminary stage showed that students' difficulties were related not only to a lack of information but also to the way information was delivered. Students had received several forms of service using presentations, videos, and worksheets, but the responses observed tended to be passive. This finding indicated that the medium should provide activities through which students interact with the content rather than merely receive it. The interview with the school counselor also showed a need for more intensive and structured services, because not all students came to the counselor on their own initiative when they needed career information.

Description of the Product

The product developed is the Gambarin Karier card game, which consists of 32 cards measuring 5 × 7 cm and a game guidebook. The cards adapt the mechanics of the quartet card game, in which players ask one another for cards in order to complete thematic sets. The front of each card presents a school and its study program, while the back presents types of occupations and the corresponding educational level. In designing the cards, attention was given to font readability, color combinations, layout, illustrations, and the relationship between educational information and career information, following the principle that well-integrated words and pictures support deeper understanding than words alone (Mayer, 2024). The guidebook was prepared so that counselors would have systematic instructions, and it includes a sample service implementation plan (Rencana Pelaksanaan Layanan, RPL) and a student worksheet so that the game can be integrated into a guidance session rather than played freely. The components of the product are summarized in Table 3.

Table 3. Components of the Gambarin Karier Product

Component	Description
Cards	32 cards measuring 5 × 7 cm, designed in Canva and adapted from the quartet card game
Front side of the cards	Name of a further school and its study program
Back side of the cards	Types of occupations and the educational level required
Guidebook	Foreword, introduction, description of the medium, instructions for use, rules and steps of play, sample questions and answers, and closing
Service materials	Sample service implementation plan (RPL) and student worksheet (LKPD) for classroom guidance in the career domain

Source: Product design (2026)

Expert Validation

The material and language validation assessed the suitability of the content for the service objectives, the quality of presentation, the relevance of the material to students' context, and the readability of the language. The product obtained a score of 85 out of a maximum of 112, or 75.89%, which falls within the feasible (valid) category. The media validation assessed card size, cover design, content design, font selection, color combinations, layout, illustrations, ease of use, and language readability. The product obtained 60 out of 68,

or 88.24%, which falls within the highly feasible (highly valid) category. The results are presented in Table 4.

Table 4. Results of Expert Validation of the Gambarin Karier Card Game

Validator	Aspects Assessed	Score	Percentage	Category
Material and language expert	Content feasibility, presentation, contextual relevance, language	85 of 112	75.89%	Feasible / valid
Media expert	Card size, cover design, content design, language readability	60 of 68	88.24%	Highly feasible / highly valid

Source: Data processing results (2026)

At the item level, most items on the material and language sheet received a score of 3 (good). The highest score of 4 (very good) was given to items concerning the ability of the material to motivate students to discuss and to encourage critical thinking. This pattern shows that the product met the basic requirements for content and language while leaving room for improvement in the items that had not yet reached the maximum. On the media sheet, a score of 4 was given to the ease of handling the card size, the attractiveness of the cover, the cover color combination, the relevance of the illustrations, the proportion of the cover layout, the clarity of the title, the appearance of the content, the color combination, and ease of use. A score of 3 was given to font type, font size, content layout, content illustrations, and language readability. Table 5 summarizes these item-level patterns.

Table 5. Summary of Item-Level Validation Results

Validation Sheet	Items Rated 4 (Very Good)	Items Rated 3 (Good)
Material and language	Material motivates students to discuss; material encourages critical thinking	Most other items on content, presentation, context, and language
Media	Card size, cover attractiveness, cover color, illustration relevance, cover layout, title clarity, content appearance, color combination, ease of use	Font type, font size, content layout, content illustrations, language readability

Source: Validation sheets (2026)

Product Revision

The validators' qualitative comments were used as the basis for revising the product rather than relying on the percentages alone. The revisions are summarized in Table 6. In the guidebook, the separate sections on rules and steps of play were merged, and the table of contents was reorganized so that the structure became more concise and easier to follow. On the cards, the cover colors were made brighter and more varied, and illustrations of occupations and educational levels were added to the back of the cards to improve readability and visual relevance.

Table 6. Validators' Suggestions and Revisions Made

Part of the Product	Before Revision	After Revision
Guidebook structure	Rules of the game and steps of play were presented in separate sections	Rules and steps of play were merged into a single section
Table of contents	The sequence of sections was not yet systematic	The table of contents was reorganized to follow the revised structure
Cover	Cover colors were considered less attractive	Brighter and more varied colors were applied
Back of the cards	Occupations and educational levels were presented mainly as text	Illustrations of occupations and educational levels were added

Source: Validators' comments and revision results (2026)

Discussion

The results show that Gambarin Karier meets the feasibility criteria for use as a supporting medium in classroom guidance services in the career domain. Both validation results exceeded the minimum threshold of 61%, and the revisions addressed the specific weaknesses identified by the validators. The following sections discuss how the product responds to students' needs, how it represents the components of career understanding, how it fits into classroom guidance, what the validation results imply, and what limitations should be considered.

Responding to Real Needs in Career Services

The need for Gambarin Karier arose from actual conditions in the school's career services. Grade VIII students are at a point when they start thinking about educational and occupational options, but not all of them are able to connect their interests, talents, and abilities with information about the world of work. This developmental position is consistent with the view that middle school years are critical for career development and future planning and that adolescents begin to relate educational and career goals to real-world contexts during this period (Parola et al., 2024a). Limited information on further schools and study programs is therefore not a minor gap but a barrier to meaningful exploration, which in turn is associated with greater career decidedness and lower self-doubt (Kleine et al., 2021).

From a developmental perspective, junior high school students do not yet need to determine a final occupation. What they need is the opportunity to know themselves and to broaden their knowledge of the options available. For this reason, Gambarin Karier is best positioned as a medium for introduction and exploration. The game can help students formulate questions about themselves, such as which fields they like, which abilities they want to develop, and what kind of education is required to reach a particular goal. This emphasis on exploration rather than early commitment is in line with research showing that career exploration interventions can strengthen students' career maturity and self-concept (Lau et al., 2021).

Representing the Components of Career Understanding

The self-understanding component is not conveyed only through the information printed on the cards but also through interaction during the game and reflection facilitated by the counselor. When students choose or discuss an occupation, the counselor can ask them to explain why they are interested in it, which abilities it requires, or what relevant experiences

they already have. This process shifts career conversations from merely recognizing the names of occupations toward considering the fit between oneself and the available options. Such reflection is important because educational decisions that simply follow friends' choices or the decisions of others can limit students' independent exploration, particularly in adolescence, when sensitivity to peer influence is high (Andrews et al., 2021).

Knowledge of the world of work is strengthened by presenting types of occupations together with educational levels. This information shows students that each occupational field requires particular competencies and educational routes. Students can compare several alternatives and discuss how they differ. Presenting information in this connected way addresses one of the main sources of career decision-making difficulties, namely a lack of information or inconsistent information about options (Kulcsár et al., 2020). It also mirrors school programs that integrate awareness of the self with knowledge of the world of work (Sgaramella & Ferrari, 2024). Gambarin Karier attempts to present these connections in a simpler form suited to the context of junior high school students.

Integrating the Game into Classroom Guidance

From the perspective of service delivery, the medium can help counselors change a predominantly one-way pattern of delivery into an activity that actively involves students. Classroom guidance is provided to all students in a class through direct interaction and can support personal, social, academic, and career development. Within this setting, the game functions as a stimulus that encourages students to ask questions and express opinions, while the counselor remains a facilitator who keeps every interaction directed toward the goals of the service. This design is consistent with evidence that gamification can improve cognitive, motivational, and behavioral learning outcomes (Sailer & Homner, 2020) and that its effects depend on design principles and the learning environment in which it is used (Li et al., 2023).

The role of the counselor is especially important. Interactive games can create an active atmosphere, but without purposeful facilitation, students may focus more on competition than on the message of the service. Counselors should therefore ensure that each round of the game is followed by a brief discussion and reflection, and they should manage the groups so that students who are less confident still have opportunities to participate. In the Italian NEFELE trial, the teacher acted as a "game master" who guided students through job cards and career scenarios, and the benefits were observed when the activity was led by trained teachers (Parola et al., 2024a). Studies of teachers' career-related support similarly emphasize that adults' informational and motivational support matters for adolescents' career development (Parola et al., 2023). The quality of use thus depends not only on the design of the cards but also on the service plan, classroom management, and the counselor's ability to link play with career guidance goals.

The game can also help counselors obtain an initial picture of the career information that students have or have not mastered. Questions that arise during play can serve as a basis for planning subsequent services. For example, if many students do not yet understand the differences between certain educational pathways, the counselor can follow up with a more specific information service. Seen this way, the product functions not only as a learning medium but also as a stimulus for informal needs assessment and career discussion.

Interpreting the Validation Results

The material and language rating of 75.89% places the product in the feasible category. The assessment covered the suitability of the material for the topic of career understanding and the objectives of guidance services, the accuracy and currency of the material, its ability to stimulate curiosity, its presentation, its contextual relevance, and its language. The fact that many items received a score of 3 indicates room for refinement, particularly in the depth of the material and in language presentation. The highest ratings for items on motivating discussion and encouraging critical thinking are nevertheless encouraging, because these are precisely the qualities through which a game can support career exploration rather than mere memorization of occupations.

The media rating of 88.24% places the product in the highly feasible category, indicating that the size, appearance, layout, illustrations, and readability of the cards were generally appropriate. Even so, the validator still suggested changes to the cover colors and to the illustrations on the back of the cards. A highly feasible category therefore does not mean that a product needs no improvement. In development research, qualitative suggestions remain an essential part of refining the product, and the revisions in this study, namely merging the rules and steps of play, reorganizing the table of contents, brightening the cover, and adding illustrations of occupations and educational levels, were intended to make the product more practical for counselors and students. This sequence of validation followed by revision is characteristic of the Borg and Gall model, which places expert review and design improvement before field testing (Widodo et al., 2025).

Local Context, Strengths, and Limitations

Gambarin Karier also has a local dimension, because the information presented concerns further schools in Tarakan City and was developed with students' local learning environment in mind. Rather than presenting careers abstractly, the game links the discussion to schools that students may actually attend after junior high school. Contextualizing career guidance to young people's circumstances has been emphasized as a way of making career counseling more relevant and meaningful (Maree, 2021), and local relevance can help students build a more concrete picture of the options available to them. Compared with earlier card-based career media in Indonesian schools, which generally focused on general career information, the distinctive feature of Gambarin Karier lies in its integration of further schools, study programs, occupations, educational levels, and the local context of Tarakan.

The game has several potential strengths: it presents career information visually, it introduces challenge and interaction among players, it offers opportunities to explore the relationship between interests and talents and particular occupations, and it opens discussion among students. Board and card games have been associated with improvements in knowledge, interaction, and motivation (Noda et al., 2019), which supports the choice of a card format. However, the medium also has limitations. Playing the game takes adequate time, while counseling service time at school is limited. A competitive atmosphere may lead some students to focus on winning rather than on the service objectives, and participation levels may vary among students.

Another limitation concerns card size. The 5 × 7 cm format makes the medium easy to carry and handle, but it limits the space available for text and illustrations. During development, the researcher found it challenging to arrange icons, text, occupations, and their

descriptions so that they did not overlap. This explains why improvements to the illustrations and information on the back of the cards were important. In future development, card size, typography, and information density should be tested again through direct use with students. Because school and occupational information changes over time, the cards should also be updated when study programs or educational requirements change. The medium could be expanded with additional cards or a digital version, provided that the principles of readability, content suitability, and fit with students' context are maintained, and digital and narrative formats for career guidance offer useful models for such development (Parola et al., 2024b; Pordelan et al., 2021).

The most important limitation is methodological. The study stopped at the fifth stage of the Borg and Gall model, so no product trial with students was conducted, no pretest–posttest data were obtained, and the results cannot be used to conclude statistically that the medium improves career understanding. The findings mainly show the feasibility of the product according to expert judgment. Statements about improving career understanding in this study should therefore be understood as development goals rather than demonstrated outcomes. Future research should continue to the trial stages and test changes in students' career understanding after using the medium, ideally with a controlled design similar to that used in recent game-based career guidance trials (Parola et al., 2024a).

CONCLUSION

This research and development study produced Gambarin Karier, a card game consisting of 32 cards measuring 5 × 7 cm and a guidebook, designed to support classroom guidance services in the career domain for students at SMP Negeri 5 Tarakan. The development followed the Borg and Gall model up to its fifth stage, namely identifying potentials and problems, collecting information, designing the product, validating the design, and revising the design. The material and language expert rated the product at 75.89% (feasible/valid), and the media expert rated it at 88.24% (highly feasible/highly valid). Revisions based on the validators' input included merging the rules and steps of play, reorganizing the table of contents, using brighter and more varied cover colors, and adding illustrations of occupations and educational levels to the cards. Gambarin Karier therefore meets the feasibility criteria for use as a supporting medium in classroom career guidance. Counselors are encouraged to use the game with structured discussion and reflection after each round so that play remains connected to career exploration. Because the study did not reach the field-testing stage, this feasibility should not be equated with evidence of effectiveness, and future research should test the medium with students using experimental or quasi-experimental designs.

ACKNOWLEDGMENTS

The authors thank Universitas Borneo Tarakan and the Guidance and Counseling Study Program, Faculty of Teacher Training and Education, Universitas Borneo Tarakan, as well as the supervisors, examiners, the material and language validator, the media validator, and SMP Negeri 5 Tarakan for their support and contributions throughout the research and development process. The authors also thank everyone who helped in completing this study.

AUTHOR CONTRIBUTIONS

Putri Patrasiah: conceptualization, investigation, product design (cards and guidebook), data collection, formal analysis, and writing–original draft. Nisa Ariantini: supervision, methodology, validation of the research instruments, and writing–review and editing. Both authors have read and approved the final version of the manuscript.

CONFLICT OF INTEREST

The authors declare that they have no conflicts of interest related to the research, authorship, or publication of this manuscript

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