

Promoting Learner Reflection Through a Card Game: An Exploratory Study

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Abstract

Over the last two decades, gamification has received increased attention in the language learning field (Braga & Racilan, 2020). It refers to the use of game elements in educational settings to foster learner motivation and engagement, encourage social interaction, allow self and peer evaluation, provide learning opportunities for a wide range of student profiles, and increase feelings of competence and discovery (Kapp, 2012; Kim et al., 2018). In language learning, gamification is often implemented to improve linguistic skills. However, little is known about how it can be used to foster reflective skills in the self-directed learning context. This publication sheds light on this matter by describing a card game designed to enhance reflection on learning strategies and resources for self-directed language learning. It also reports on students' perceptions regarding playing the game and its potential impact on their learning process. The main purpose of the game is for students to select a learning strategy for hypothetical learning scenarios and justify their selections. Students' feedback on their perceptions of the game was gathered via a questionnaire afterwards. Findings suggest that the majority of the participants considered the game to be a useful means to learn new strategies. Additionally, some students engaged in a deeper level of reflection such as explaining their rationale for choosing the strategies and making connections to their real-life learning experiences.

この20年間、ゲーミフィケーションは言語学習の分野で注目を集めてきた (Braga & Racilan, 2020)。ゲーミフィケーションとは、ゲーム要素を教育現場で使用することにより、学習者のモチベーションやエンゲージメントの促進、社会的交流の促進、自己評価や相互評価の促進、幅広い特性を持つ生徒への学習機会の提供、能力感や発見を促進することを指す (Kapp, 2012; Kim et al., 2018)。言語学習において、ゲーミフィケーションは言語スキルの向上に焦点を当てて実施されることが多い。しかし、自己主導型学習の中で、内省スキルを育成するためにどのように利用できるかについては、ほとんど知られていない。この問題に注目し、筆者は自己主導的な言語学習のための学習ストラテジーやリソースに関する内省を高めるためのカードゲームを制作した。本稿では、本ゲームが学習にどのような影響を与えると感じるかについての学生の声を報告する。本ゲームにおける学生の主な目的は、仮想の学習状況に対して有効な学習ストラテジーを選択し、その正当性を説明することである。ゲーム終了後にアンケートを実施し、本ゲームに関する学生の感想を収集した。その結果、参加者の多数が、ゲームは新たな戦略を学ぶための有用な手段であったと考えていることが示唆された。さらに、学習ストラテジーを選択した根拠を説明したり、現実の学習経験と関連付けたりするなど、より深い考察に取り組む学生もいたことが分かった。

Keywords: gamification, self-directed learning, reflective learning

Reflection plays an important role in effective language learning and stands as a prominent quality for good language learners (Curry et al., 2023; Griffiths, 2008; Kato & Mynard, 2016). Good language learners are able to make informed decisions about their learning process by considering appropriate and relevant goals, strategies, and resources. In addition, they can effectively manage affective factors (e.g., motivation, confidence, and emotions) and social factors (e.g., relationships with their peers, teachers, and advisors) to have an overall positive learning experience. While certain language learners are naturally inclined to display such characteristics, many students need to be provided with opportunities to develop the ability to reflect on the learning process.

The practical implementation of activities for developing reflective skills and self-regulation strategies in the language classroom is limited by various constraints including the number of students, class time, curriculum, and teacher preparation (Huang, 2021; Mynard, 2023; Polczynska et al., 2023). Different tools and activities facilitating learner reflection and self-regulation in various learning situations have been proposed as promising approaches (Curry et al., 2023), with gamification yet to be explored in this regard.

In this article, we examine learners' perceptions regarding a card game designed to scaffold reflection on learning strategies and resources for self-directed language learning. In particular, our study brings attention to the use of gamification elements for promoting reflection on language learning in ways that encourage learners to engage in experiential and reflective learning as players. With this aim, we begin by outlining the theoretical foundation that grounded the design of the card game, which includes reflection and gamification in language learning and gamifying reflection in self-directed language learning. We continue by describing the methodological considerations undertaken in this study, including the context, the card game players, the data collection instrument, and the data analysis procedures. We then focus on the results of an online questionnaire to shed light on students' perceptions of the game and its possible impact on their language learning beliefs. Finally, we present the final considerations, including implications for language learning in general and self-directed learning in particular.

Literature Review

Reflection in Language Learning

Reflection is an important and necessary component of language learning as it allows individuals to redefine their understanding of specific experiences, thoughts, and actions (Mynard, 2023). This introspective practice also promotes the development of self-

awareness, enabling learners to gain insights into their own behaviors and thoughts. Moreover, reflection serves as a tool for evaluating one's actions, helping learners assess the effectiveness and outcomes of their decisions. It further facilitates the enhancement of the quality of future actions and fosters a greater sense of accountability and autonomy. As Mynard (2023) describes, reflection is a process that drives personal growth and informed change by intentionally examining one's experiences, thoughts, and actions.

Kolb's (1984) experiential learning cycle is one influential model for understanding learner reflection. This four-stage cycle offers a structured approach to learning through reflection and is comprised of concrete experience, reflective observation, abstract conceptualization, and active experimentation (Mynard, 2023). This cyclical process encourages learners to engage in practical experiences, observe and contemplate these experiences, synthesize abstract concepts from them, and apply their newfound knowledge through active experimentation (Kolb, 1984; Mynard, 2023).

Participating in experiential and interactive learning where individuals actively engage with each other's experiences fosters a deeper understanding and self-awareness (Kohonen, 2001; Polczynska et al., 2023). As extensively described in Curry et al. (2023), this collaborative reflection complements Kolb's model and serves as the foundation for effective learning modules offered at the institution where the current study took place. Such modules encourage learners to develop self-regulation skills through a combination of practical experience and thoughtful reflection, as will be described later. This integrated approach has been recognized as beneficial for the learning process as it simultaneously promotes self-regulation and personal growth (Curry, 2019; Mynard & Stevenson, 2017; Watkins, 2015). In other words, reflection plays a pivotal role in pursuing self-directed learning and personal growth, whether undertaken individually or collaboratively.

Fostering learner reflection in the classroom is enhanced through various tools. As an illustration, Polczynska et al. (2023) have demonstrated how advising tools, such as the Wheel of Language Learning and the Motivation Graph, can facilitate interactive reflection. Their research uncovered valuable insights into the effectiveness of these tools for encouraging the process of reflection cooperatively and interactively. Moreover, researchers and practitioners have explored and suggested a range of other tools for scaffolding learner reflection, including the use of learning diaries, journals, action logging, portfolios, blogs, and questionnaires (Anderson, 2008; Griffiths, 2008; Murphy, 2021; Mynard, 2007). In this article, we propose the incorporation of a card game into this diverse tapestry of reflective tools to further promote learner reflection within the classroom.

Gamification in Language Learning

Gamification has emerged as a multidisciplinary field exploring the integration of game-related elements into contexts beyond traditional gaming environments. Although gamification has its roots in various fields such as game design, psychology, and marketing, its applicability has extended into the realm of education (Kapp, 2012) and applied linguistics (Braga & Racilan, 2020). Kapp (2012) defines gamification as the use of “game-based mechanics, aesthetics, and game thinking to engage people, motivate action, promote learning, and solve problems” (p. 10) and breaks down this definition into the following characteristics:

Table 1

Characteristics of Gamification (Kapp, 2012, pp. 10–12)

Characteristic	Description
Game-based	Creates engaging challenges with rules, feedback, and emotion to motivate participation
Mechanics	Uses game elements like levels, scores, and time limits for engagement
Aesthetics	Has a good design to encourage one’s willingness to play the game
Game thinking	Transforms ordinary activities into social and cooperative experiences
Engage	Captures an individual’s attention and involves them in the process
People	Refers to the participants in the process (e.g., learners, players)
Motivate action	Encourages participation with the right challenges
Promote learning	Focuses on both motivating and educating learners
Solve problems	Focuses on cooperation and competition to solve problems and achieve goals

As Table 1 shows above, gamification in learning encompasses several key elements. First, it aims to establish a system where learners as players partake in an abstract challenge governed by rules and feedback that can lead to an emotional response. In addition, it involves the use of engaging graphics and a well-designed user experience, and it allows for

everyday experiences to be transformed into activities featuring elements of competition, cooperation, exploration, and storytelling. Moreover, gamification engages individuals, garners their attention, involves them in the process, motivates action, promotes learning, and facilitates problem-solving and goal achievement.

In language learning, within the framework of active methodologies, gamification places learners at the center of their learning. As it conceives learners as protagonist players in the game of language learning, gamification fosters a sense of autonomy, agency, motivation, and engagement (Quast, 2020). Quast asserts that gamification facilitates the development of crucial language learning skills by encouraging students to make decisions, take risks, embrace experimentation, and explore creativity. It also includes teamwork, cooperation, utilization of learning resources, time management, perseverance, and imagination.

Gamifying Reflection: Designing a Card Game to Promote Learner Reflection

Games are based on a dynamic model of reality and, as such, represent a hypothetical, imagined, or fictional representation of real situations in ways that allow players to draw upon their own experiences and imagination (Kapp, 2012). Goals play a crucial role in this representation, adding purpose and focus that guide players toward specific outcomes. With clear goals in mind, players can make use of different strategies to achieve them, relying on elements such as competition, cooperation, or conflict resolution. In addition, educational games are particularly social, requiring players to collaborate to attain mutually desirable and beneficial objectives. Kapp (2012) states, “the more individuals work together, the more they are able to achieve” (p. 32). Kapp further underscores the significance of feedback in educational games as it provides learners with information to steer them towards desired outcomes. Consequently, students should be encouraged, guided, or directed toward more appropriate actions or activities without being explicitly told what to do, fostering their autonomy and reflective skills.

Building upon the premises and considering the characteristics of games discussed in the previous section, we have developed a card game called *Smarties* to foster interactive reflection and encourage engagement in a self-directed learning course. Table 2 below offers a comprehensive overview detailing the connection between gamification and *Smarties*. We believe that a card game is well-suited for the context of self-directed learning as students are expected to experiment with various learning strategies and resources, collaborate to share

their progress and ideas, and evaluate the effectiveness of their decisions in learning (Curry, 2023; Imamura & Wongsarnpigoon, 2023).

Table 2

Characteristics of Gamification Applied to Smarties (Kapp, 2012)

Characteristics of gamification	Relation to <i>Smarties</i>
Game-based	The game rules explain that players give each other feedback on suitable strategies to help fictional learners with a given situation
Mechanics	The card game includes a way to win (provide the most appropriate strategy) and time limits to discuss and convince the other players
Aesthetics	The cards are colorful and easy to handle
Game thinking	The learning situations described correspond to real-life students' issues which need to be solved in groups
Engage	The game requires the players to understand the learning situation, find a suitable strategy, and convince others
People	The game can be played by anyone interested in increasing strategies for language learning
Motivate action	The game relies on players challenging their opponents' solutions to solve the learning issue
Promote learning	The card game encourages reflective thinking as players need to provide a rationale for their decisions in the game
Solve problems	The players must cooperate to find the best strategy for a given learning situation

The card game *Smarties* introduced in this article presents hypothetical learning scenarios. It offers potential strategies that best suit each language learning scenario (see

Appendix A for a description of the cards used in the game, the rules, and an example of a round). To kick off the game, the cards are arranged in two piles, facedown, one for strategies and the other for situations. Each player then draws five strategy cards. Next, one player reads the top card from the situation card pile. Subsequently, each player selects a strategy card to address or improve the announced situation. Players reveal their strategy cards simultaneously and provide an explanation for why their chosen strategy is the most suitable for that specific learning situation. Ultimately, students decide on the best strategy for that learning situation collaboratively. The act of giving a rationale for the strategy is an essential and integral part of the game. By drawing on their imagination and personal experiences as language learners, students exercise metacognitive skills as they reflect on the connection between strategies and learning situations. Moreover, by sharing their reflections with others, students can learn from each other's opinions and expand their repertoire of strategies to navigate various learning situations they might encounter on their learning journey.

Methodology

This study examines language learners' perceptions of a card game designed to promote student reflection. By taking an exploratory approach, this study seeks to answer the following research questions (RQs):

RQ1: What are the students' perceptions of playing the card game in the ELLC1?

RQ2: In what ways do students perceive the relationship between the card game and their language learning?

RQ3: To what extent do students perceive the game as helpful for reflecting on their language learning?

Context and Participants

The students who participated in this study were enrolled in the Effective Language Learning Course 1 (ELLC 1) at Kanda University of International Studies (KUIS) in Chiba, Japan. KUIS is a medium-sized university specializing in foreign languages and cultures, meaning that all the students enrolled in the university are studying one or more languages (e.g., Chinese, English, Indonesian, Korean, Portuguese, Spanish, Thai, and Vietnamese). ELLC 1 is a credit-bearing elective course open to all students, and it aims to introduce them to self-directed learning skills and reflective skills such as setting goals, selecting and evaluating learning strategies and resources, and planning, implementing and evaluating a learning plan (Curry, 2023; Imamura & Wongsarnpigoon, 2023). Two learning advisors usually teach the course, consisting of twelve 90-minute class meetings during the semester,

including two individual meetings between learning advisors and students to provide them with feedback as well as help them deepen their reflection on language learning. The study reported in this article was carried out with two ELLC 1 classes taught between April and July of 2023.

Participants were undergraduate students ($n = 20$) of different majors, including International Communication ($n = 10$), English ($n = 5$), Chinese ($n = 2$), Spanish ($n = 1$), and international students learning Japanese ($n = 2$). Students were registered in different school years as freshmen ($n = 11$), sophomores ($n = 1$), juniors ($n = 3$), and seniors ($n = 3$), with their self-perceived English language proficiency ranging between A2 and B1 (e.g. Council of Europe, 2001).

Research Instrument and Procedures for Data Collection

Data were collected through an online questionnaire administered immediately after students played the card game. The instrument was designed exclusively for this study, based on the pedagogical and research aims of the project, as well as on our experience as teachers of ELLC 1. The questionnaire explored participants' general experience of using the card game to prompt reflection on language learning in the classroom, so both closed and open-ended questions were employed (see Appendix B for the questionnaire outline). The instrument consisted of 13 items, including 10 questions about the participants' perceptions of the game experience (7-point Likert scales ranging from *strongly disagree* to *strongly agree*), one question about the perceived level of engagement in reflection (selection from *not at all*, *a little*, *somewhat*, and *very much*), and two questions about the perceived impact of the game on their language learning (selection from *not so much*, *a little*, *yes*, *somewhat*, and *very much so*, followed up with an open-ended question). The instrument was available in both English and Japanese to facilitate students' understanding of the questionnaire.

Prior to data collection, this project received ethical clearance from our institution's ethics committee. In addition, all participants were asked to read a plain language statement and a consent form in English and Japanese. Furthermore, participants were informed that the game was a classroom activity that would not be graded nor affect their final grade, and they could deny consent if they preferred not to have their responses as part of the dataset for this study. Finally, they were assured that any markers potentially identifying them would be anonymized.

Before conducting the final study reported in this article, a pilot study on the game design and the suitability of the questionnaire was carried out in the middle of the academic semester (Week 6) with the same group of students. This stage aimed to establish the feasibility

of the research instrument and perceive how students would understand the card game's rules. Based on this stage, the wording of the questionnaire items was modified, and the game rules were simplified. In this article, following these procedures, we report on the questionnaire administered to the two ELLC 1 classes the second time students played the game at the end of the semester (Week 13). First, participants were briefed on the game rules, allowing them to ask questions and clarify any doubts. Then, five groups of four learners played the game for about 10 minutes each round. Finally, they answered the questionnaire.

Procedures for Data Analysis

To analyze the data, the first author organized the dataset, checking for possible duplicate or incomplete answers, and then translated the answers from Japanese to English. After that, all team members read participants' answers to the open-ended question and categorized them into codes that emerged from recurring themes covered in the answers. Then, the three authors met to compare the code list, discussing it extensively in order to refine and agree on the final codes and their definitions.

Table 3

Qualitative Answers: Codes and Definitions of the Codes

Codes	Definitions
Connect to their actual learning	The game allows students to understand how the given learning situations and strategies could align with their learning issues and ways to solve them
Gain perspectives on their learning process	The game encourages students to observe what and how they learn from different angles
Increase understanding of the learning process	The game provides students with further awareness of what and how they learn
Reflect on pre-existing knowledge	The game helps students to use previous learning experiences to reflect and apply to the given learning situations and strategies

Lack of connection to actual learning	The game did not support students in tying the given learning situations and strategies with their language learning process
Need to confirm strategies by playing again	The game requires to be played more than once to foster further awareness and understanding of the given learning strategies
Collaborate with others	The game presents students with opportunities to work in groups to solve the given learning situations and strategies

Findings

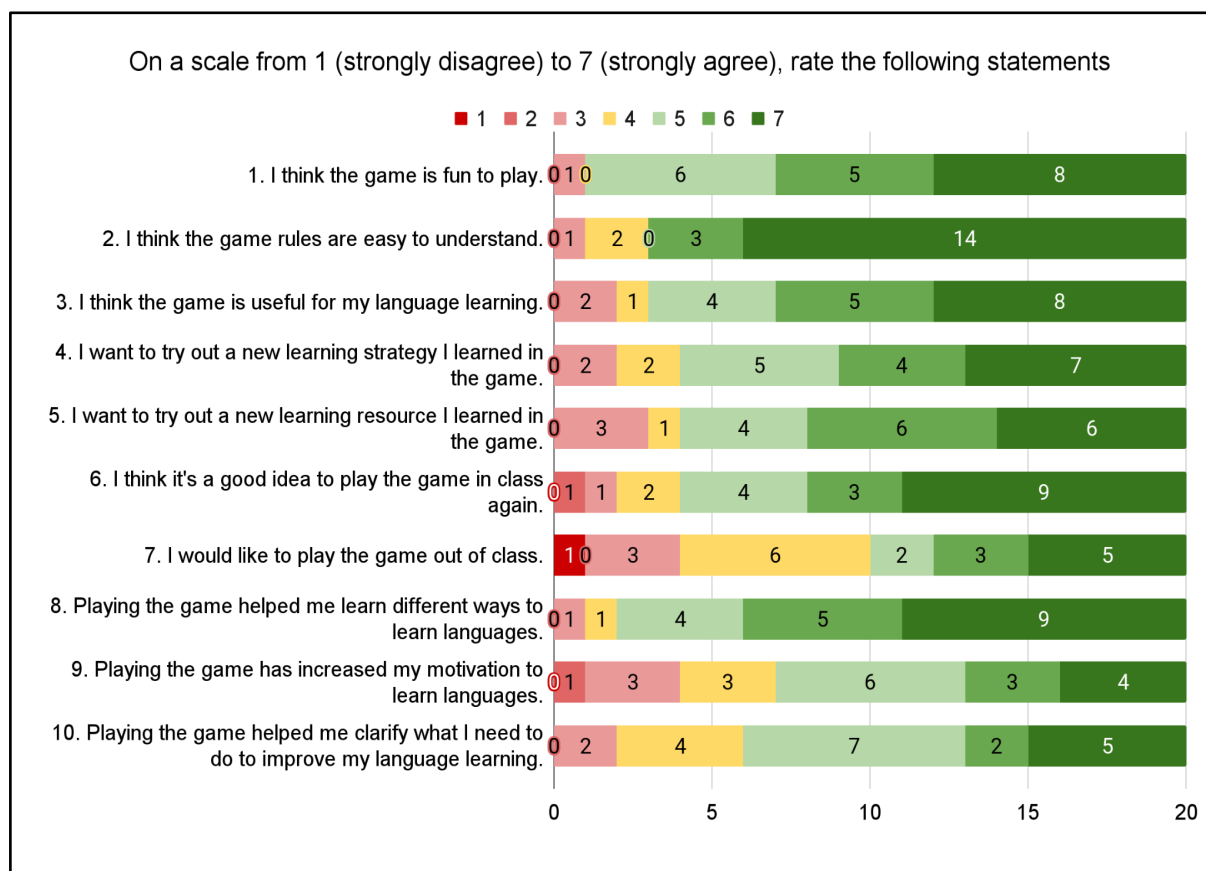
This section presents both quantitative and qualitative results obtained from the online questionnaire. The initial segment of the analysis focuses on the Likert scale statements, while the subsequent portion delves into the respondents' open-ended comments regarding the perceived impact of the game on their learning.

Analysis of the Quantitative Data

The first ten Likert scale statements gauged participants' agreement levels concerning their perception of the game and its potential influence on their language learning process. The responses to these statements are illustrated in Figure 1. Each level of agreement is represented by a color, ranging from dark red for *strongly disagree* to dark green for *strongly agree*. The color segments in the figure denote the distribution of participants' responses.

Figure 1

Participants' Answers to the Likert-Scale Statements



Given that 4 is in the middle of the scale, or neutral, and that the majority of the levels of agreement ranged from *somewhat agree* to *strongly agree*, the participants' perceptions are overall more positive. Students especially agreed with Statement 2, "The game rules are easy to understand," and Statement 8, "Playing the game helped me learn new ways to learn languages." These results suggest that the game helped learners to familiarize themselves with different strategies to learn and practice languages, with the straightforwardness of the rules possibly being a contributing factor.

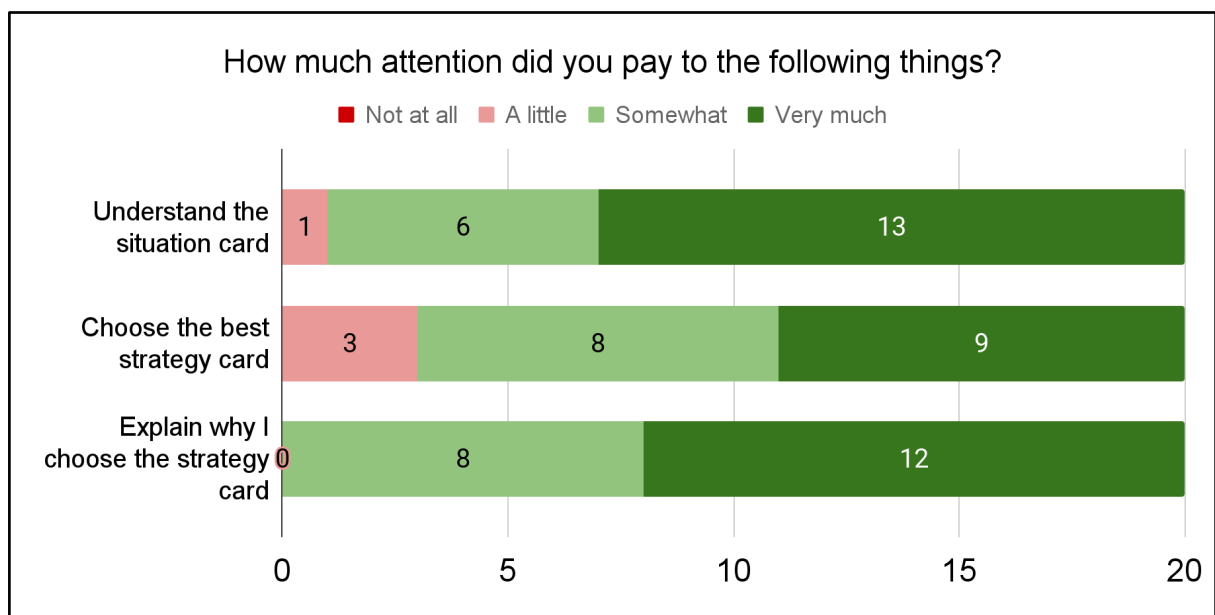
Additionally, results for Statement 4, "I want to try out the new learning strategies I learned in the game", and Statement 5, "I want to try out the new learning resources I learned in the game", in which 16 participants agreed, implied that the majority of the respondents found the learning strategies and resources shared in the game to be applicable or useful in their real-life language learning context. The item that received the least agreement was Statement 7, "I would like to play the game out of class", in which only half of the participants agreed. This contrasted with Statement 6, "I think it's a good idea to play the game in class again," whose result was noticeably more positive for which 16 participants

agreed. The gap observed between the results for each question suggests that participants might believe the game to be more meaningful inside the classroom rather than outside.

Figure 2 summarizes learners' responses to the question, "How much attention did you pay to the following things?" The results were similar for all items in that *somewhat* and *very much* accounted for the majority of responses. The positive result for "Explain why I chose the strategy card" may indicate that the game fostered a higher level of reflective thinking than simply understanding and selecting cards.

Figure 2

Participants' Attention in the Game



Analysis of the Qualitative Data

At the end of the survey, respondents indicated the extent to which they believed that the game affected the way they think about language learning. They chose between five options (*not at all*; *not much*; *a little*; *yes, somewhat*; and *very much so*) and then provided a rationale for their answers. Figure 3 indicates participants' answers to the question, "Has the game affected how you think about your language learning?" (the option *not at all* was not selected by any respondents; therefore, this value is absent in the figure), and the corresponding codes of the explanations given in the follow-up written responses.

Figure 3

Codification of the Participants' Qualitative Answers

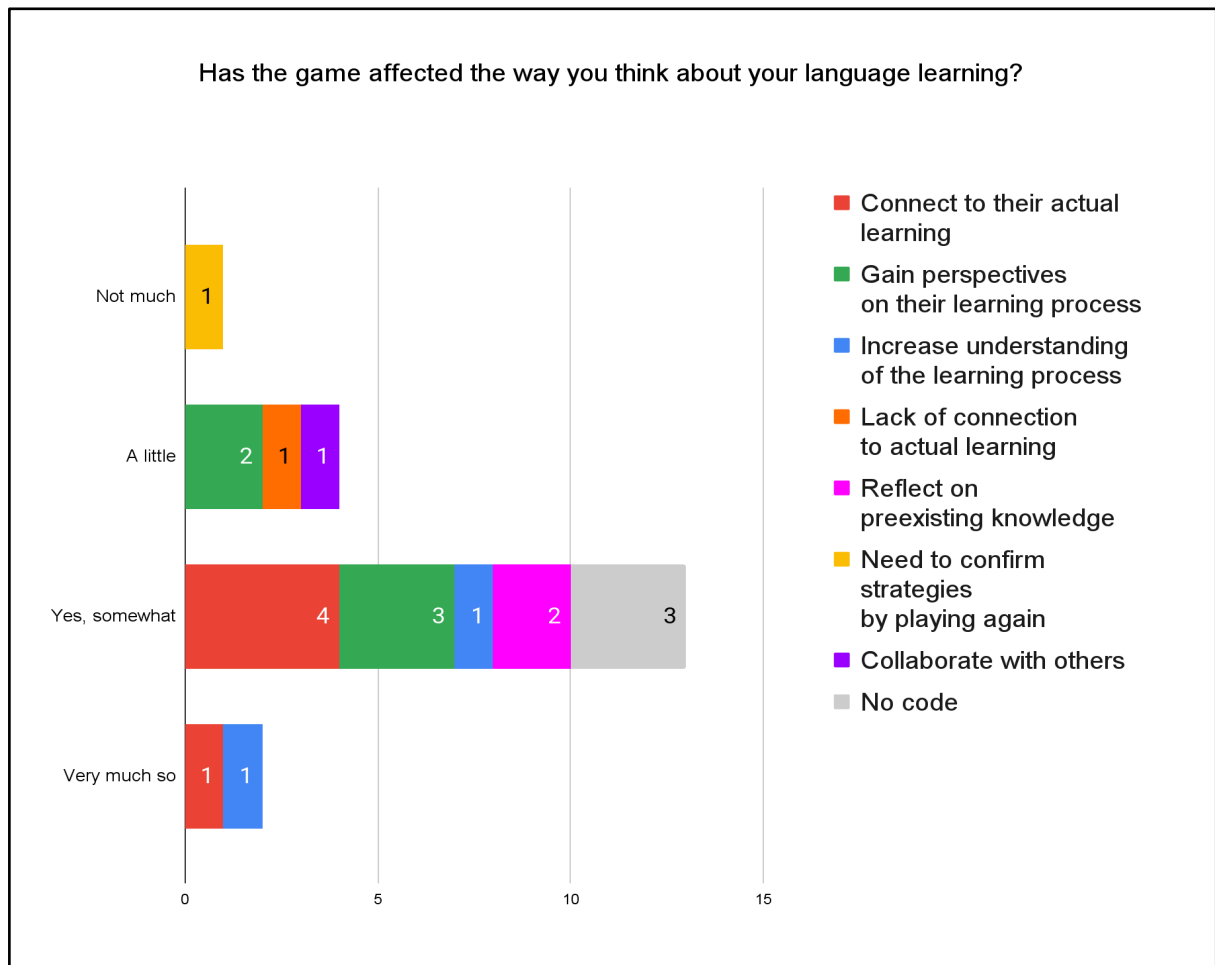


Figure 3 shows the extent to which participants believed the game to affect their learning ranging from *not much* to *very much so*. Additional subdivision of each item shows the occurrence of codes that account for the ratings. The answers categorized in Figure 3 indicate that most participants believed that the game impacted how they think about their language learning, at least to some extent. Looking at the codes associated with each level of impact allows one to identify contributing factors to their perceptions. “Connect to their actual learning” and “increase understanding of the learning process” were found in *very much so*, and *yes, somewhat*, which implies those factors can be especially connected to a positive perception of the game leading to a greater impact on their language learning process. “Reflect on preexisting knowledge” can be seen in *yes, somewhat*, while “Gain perspectives on their learning process” can be seen in *yes, somewhat* and *a little*. On the other hand, “need to confirm the strategies by playing again” and “lack of connection to actual learning” seem to lead to a less positive perception of the game. The participants’ qualitative

answers, which are analyzed in the following paragraphs, further explain how and to what extent the game affected participants' beliefs about their language learning process. Three of the answers were not coded as they did not relate to or explain how the game affected their language learning, suggesting that these participants might not have understood the question or had no explanation.

Connection to Participants' Actual Learning

Five participants' responses were associated with the code "connect to their actual learning," four of whom believed the game *somewhat* impacted their language learning, while one believed it was *very much so* impacted. According to these participants, the game allowed them to understand how the given learning situations (situation cards) and strategies (strategy cards) align with their learning issues (or challenges close to their learning reality) and ways to solve them. They indicated their interest in using the learning strategies provided in the game for their language acquisition process, as shown in the following statements: "Because I thought I can make use of it/them for my learning from now on," and "In that card, there are some strategy that I didn't know. I thought I wanted to try any strategy to learn English." Furthermore, the answers indicate that *Smarties* allowed them to discover new strategies, and seeing how those are connected to actual learning might have encouraged the students to use them.

Gaining Perspectives on their Learning Process

The code "gain perspective on the learning process" also corresponded to five respondents' statements, two who indicated *somewhat*, and three *a little*, which illustrates that the game encouraged them to observe and reflect both individually or collectively on what they learn in their language acquisition process and how they do it. Some of these participants reported that the game might have contributed to looking at their learning issues through new perspectives and finding solutions among some of the language learning strategies given, as these excerpts show: "There are many way to study which I don't know," "It was a good reference for me as there were various strategies," and "There so many learning strategies out there, it blew me mind." While those comments may not be sufficient indicators of any immediate impact on their language-learning process, they suggest that the game helped widen their perspectives to some extent.

Increasing Understanding of the Learning Process

The code "increase understanding of the learning process" emerged in two students' comments. For these two participants, the game helped them raise their awareness of what and how they learn languages to some extent, fostering further understanding of aspects

connected to the language learning process, including challenges, strategies, and resources. For example, one student said, “Sometimes we have no very consistent answer cards, then we have to think about how to explain in another way,” while the other said, “I was able to deepen my thinking because I thought of how to use the cards to win.” It seems that the different phases of the game (analyzing the learning situation, selecting the most adequate strategy to help the fictional learner address the learning issue, and convincing others in what way this strategy would be the most helpful for the fictional learner, as described in Appendix A) may have contributed to finding similarities or possible applications in the students’ own learning process.

Reflecting on Preexisting Knowledge

For two players, the game helped them use previous personal language learning experiences to reflect on the given situation and strategies, and choose an adequate option to help the fictional language learner in the hypothetical situation. The following statements suggest that playing this game allowed them to apply learning methods they were already familiar with to help another learner become a more successful student: “Because it was an opportunity for me to remind myself with methods that I already knew,” and “Because I already know about some choices I can choose in the cards.”

Collaborating with Others

Finally, for one participant, a positive aspect of the card game was that it allows students to work in groups to help fictional students solve their given learning situations with the available language learning strategies. The comment, “Because we were able to bring a variety of solutions and hear the opinions of the group members” illustrates the perceived benefits of playing with other students. While this participant highlighted this aspect of the *Smarties* card game, this comment suggests that the activity’s collaborative nature allowed them, and perhaps other course takers, to gain insights and learn from each other.

Lack of Connection to Actual Learning

The code “lack of connection to actual learning” corresponds to the statement of one student and shows that the card game *Smarties* did not meet this participant’s expectations in terms of providing them with relevant strategies to use in their own learning. In their words, “I don’t think I can apply them since I only got fractions of information.” It seems that this respondent could only partially learn about strategies, did not get enough information about each strategy to be able to use them fully, or needed more time to analyze the learning situations to find the most adequate solution that the game dynamics allows.

Need to Confirm Strategies by Playing Again

For one participant, although the game helped them use previous learning experiences to reflect and apply to the given language learning situations and strategies, they expressed the need to play the card game once more to connect the learning strategies described in the cards to their actual language learning. The participant's comment, "It was a little bit [of a] short time to understand a lot of strategies" indicates the time constraint of the classroom context may cause some difficulty in understanding the game. Since the game was perceived as useful and beneficial by the majority of participants, it seems that this player might need extra time and support to complement the lack of information or insights gained during the gameplay.

Discussion

The categories that emerged from the analysis and the corresponding participants' statements suggest that students found the game to be an enjoyable and easy-to-understand means to foster learning and reflection on language learning strategies to a certain degree. Moreover, learners' responses indicate that playing this game in class impacted their understanding of their language learning process in different ways and to various extents by becoming decision makers and advisers.

Echoing Quast (2020), excerpts in our study suggest that students showed engagement in their effort to solve the given learning situations collectively. In some measures, the findings indicate different stages of reflection, as in Kolb's (1984) reflective cycle, facilitated by identifying solutions they were familiar or unfamiliar with, remembering similar learning experiences in their own learning process, fostering a dialogue between participants, and finding the most adequate language learning strategy for the student issue. It seems that *Smarties* potentially offer a structured approach to familiarize the players with learning methods through (individual and collective) reflection using concrete language learning experiences, observation by reflecting on the experience, abstract conceptualization by learning from the experience, and active experimentation by planning to use the knowledge acquired.

In the context of a self-directed learning course, the game served as a means by which students learned various strategies as well as examined the validity of strategies in different situations. As some of the comments suggest, the game has the potential to foster a deeper reflection than simply learning new strategies, e.g., making connections to real-life learning. However, limited control over the content is a possible drawback of the game; students did

not necessarily find available strategies applicable or relevant to the randomly assigned situations. Even though this randomness can affect the extent to which the card's contents resonated with students' experiences, their autonomy levels and prior language learning experiences can also be major factors. Learners can be at different stages of their learning process, from having little awareness to being largely aware and capable of controlling their learning (Kato & Mynard, 2016). It can be inferred that actions that require a deeper level of reflection, like those described in the codes “increased understanding of the learning process” and “reflect on preexisting knowledge,” are more likely to occur to students with better awareness of the language learning process. Finally, the combination of competition (e.g., winning the game) and collaboration (e.g., learning from other players) is likely to be a motivating factor (Kapp, 2012; Sailer & Homner, 2019).

Conclusion

This study examined students' perceptions of a card game and uncovered valuable insights. The findings from the online questionnaire highlighted participants' positive reception of the game. The perceived benefits of language learning underscored the game's positive impact. The collaborative nature of the game emerged as an important factor, fostering a dynamic environment where mutual learning could occur. Moreover, the study emphasized the importance of leveraging imagination, creativity, and personal experiences in the context of the game, suggesting its relevance to individual learning journeys. Games in self-directed learning contexts seem to be a powerful tool for helping students make connections between their own learning contexts, experiences, and broader learning situations.

The immediate pedagogical and practical implications of this study suggest that language teachers and learning advisors have the opportunity to be creative in using the card game to encourage reflection on the use of learning strategies and resources in language learning. For instance, instead of relying on strategy cards, students can be provided only with situation cards, prompting them to engage in group conversations to decide together the most suitable strategy for that given situation. However, it is crucial to note that, given the limited time available to promote learner reflection in certain contexts, students are likely to require support in understanding the game well and connecting it to their personal experiences.

Relying on a single instrument for data collection is certainly a limitation of this study. Future studies will benefit from a more in-depth analysis of players' interactions

during the game, aiming to unravel how students build their reflective skills as well as make sense of the gaming experience. We posit that incorporating conversation and discourse analysis, possibly through recorded interactions or triangulation with other instruments, could offer richer insights. Another potential limitation of this study stems from piloting the game with the same group of students, wherein varying levels of self-awareness among participants may have influenced the results. However, given the exploratory nature of this study, the findings serve as an impetus for diverse studies to be conducted in different contexts.

The next rounds appear promising. By addressing the limitations and building upon the positive aspects uncovered in this project, the game holds the potential to further enrich language learning experiences in self-directed learning contexts as it can foster collaborative, engaging, and creative learning environments for language learners both inside and outside the classroom. Furthermore, following the priming of the card game with other players and the collection of feedback from them, the next step will also involve making the game available to a wider audience. We believe this will allow more individuals to enhance their language learning strategies and resources through an engaging card game experience.

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Appendix A: The Game

Figure A1

Rules of Smarties

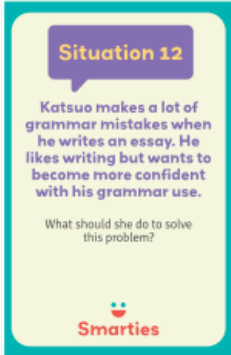

Let's play <i>Smarties</i>	How each round goes
<p>Goal of the game Players will try to provide the best strategy to deal with language-learning situations</p> <div data-bbox="204 663 435 1016"></div> <p>Situation cards represent students' situations that players try to solve/improve</p> <div data-bbox="528 981 766 1335"></div> <p>Strategy cards represent possible ways to solve/improve the given situations</p>	<ol style="list-style-type: none">1. Make Situation and Strategy card piles (face down)2. Each player draws 5 strategy cards3. Announce the situation: One player reads the top card of the situation card pile4. Thinking time: Each player chooses a strategy card that can solve/improve the situation announced5. Reveal Strategies (at the same time)6. Explain your strategy: From the person who read the situation7. Discuss and convince others that your strategy is better (3 to 5 minutes)8. Decide the best strategy: Each player votes for the best strategy (point at a strategy card)9. The winner keeps that round's situation card10. Refill hands

Figure A2

Example of a round of Smarties



Appendix B: The Online Questionnaire

In this form, you will be asked to reflect on your overall experience playing the card game in class. We would appreciate your honest feedback on this activity. Your sincere comments are of fundamental importance, and they will not affect your grade in any way. You can answer in English, Japanese or a combination of both languages. Thank you very much for your cooperation.

このフォームでは、ゲームをした際の全体的な経験を振り返っていただきます。こちらのゲームアクティビティおよびフォームの使用は、教師から指示があります。このゲームアクティビティに対する皆様のご意見をお聞かせください。あなたの率直なコメントをいただくことが最重要であり、回答の内容によりあなたの成績に影響を与えることはありません。英語、日本語、または両方の言語での回答が可能です。ご協力ありがとうございます。

On a scale from 1 (strongly disagree まったくそう思わない) to 7 (strongly agree とてもそう思う), rate the following statements:

1. I think the game is fun to play.

このゲームは楽しいと思う。

2. I think the game rules are easy to understand.

このゲームのルールは簡単に理解できる。

3. I think the game is useful for my language learning.

このゲームは自分の英語学習の役に立つと思う。

4. I want to try out a new learning strategy I learned in the game.

ゲームの中で覚えた学習戦略を実際に使ってみたいとおもう。

5. I want to try out a new learning resource I learned in the game.

このゲームの中で覚えた学習リソースを実際に使ってみたいと思う。

6. I think it's a good idea to play the game in class again.

またクラスの中でこのゲームのプレイする機会があると良いと思う。

7. I would like to play the game out of class.

このゲームをクラス外でやりたいと思う。

8. Playing the game helped me learn different ways to learn languages.

このゲームは、様々な学習方法を覚える上で役に立ったと思う。

9. Playing the game has increased my motivation to learn languages.

このゲームをやることで、言語学者モチベーションが上がったと思う。

10. Playing the game helped me clarify what I need to do to improve my language learning.

このゲームは、自分の言語学習において何をすべきかはっきりさせる上で役に立ったと思う。

11. How much attention did you pay to the following things?

下記の事項に関してどれくらい注意を払っていましたか？

a. Understand the situation card お題のシチュエーションカードを理解する	Not at all まったくなかった A little すこしあった
b. Choose the best strategy card 最適なストラテジーカードを選ぶ	Yes, somewhat ある程度あった
c. Explain why I chose the strategy card ストラテジーカードを選んだ理由を説明する	Very much so とてもあった

12. Has the game affected the way you think about your language learning?

このゲームはあなたの言語学習に対する考え方に影響を与えたと思いますか？

Not at all まったくなかった

Not much あまりなかった

A little すこしあった

Yes, somewhat ある程度あった

Very much so とてもあった

13. Please write a short comment below to explain your answer to question #12.

質問 12 に関して、簡単に理由をお聞かせください。

Thank you very much! ありがとうございます！