The Use of Traditional Board Games in the 
Teaching and Learning of French and Physics: 
the Case of the Card Game

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Abstract

This paper discusses the use of card games as a teaching tool for French and physics. It presents findings from an experiment conducted by the Centre de Didactique des Disciplines et de Diffusion des Sciences (CRDS) at the Institut de Pédagogie Appliquée – University of Burundi. The article aims to describe and analyze the use of card games in French and physics lessons. The study found that learners are motivated and actively engaged in the classroom when using this strategy. While some teachers noted that preparing for the game could be time-consuming, overall, the card game approach was regarded as an enjoyable and effective learning tool.

Keywords: Teaching-learning, habitual board game, card game, French, physics.

Introduction

Education specialists continue to search for ways to improve the teaching-learning process. This leads to research into effective teaching-learning strategies. Teachers have to focus on developing learners' skills through various objectives during the teaching-learning process. To achieve this, teachers employ appropriate strategies to meet the objectives. One such strategy is the use of games, which is
gaining popularity in several countries as a teaching-learning tool [1]. Play, which is a child’s right, is well-respected globally at the preschool level. This is because teachers have no specific knowledge to teach or assess at this level. However, play is often not integrated into the teaching-learning process at the basic and post-basic levels due to time constraints with the implementation of the school curriculum [2].

This article discusses research studies on teaching-learning strategies, specifically the use of games in teaching physics and French in Burundi. A team of researchers at the University of Burundi’s Centre de Recherche en Didactique des Disciplines et Diffusion des Sciences (CRDS) designed a card game to teach the concept of generators in physics and the color adjective agreement in French.

1. Issues

Playing games has always been an important activity for children, as they use it to explore and understand the world around them. However, games are not limited to childhood and can also be found in the adult world, although the form and content of these games change as people age. Games have been used throughout history as a means of passing on knowledge and teaching important skills, both to humans and other animals. This is why play remains an important activity for all learners, including those in school.

Despite the importance of play, many students struggle with certain subjects, such as physics and French, which are often seen as difficult and unenjoyable [3]. Research has shown that students find physics challenging and this has led to a lack of motivation and poor performance in this subject [4&5]. Similarly, many students lack motivation to learn French [6], which is the language of teaching in Burundi. These negative attitudes towards learning can be a barrier to success and make it difficult for students to improve their skills [4].

To address these challenges, it is worth considering the use of games in teaching. By making learning more enjoyable and engaging, games could help to improve students’ motivation [7] and attitude towards these subjects. To test this idea, a card game was designed and tested in physics and French lessons. The results of this experiment could provide valuable insights into the potential benefits of using games in the classroom.

2. Theoretical framework

Researchers [8, 9, 10 &11] have attempted to define play by identifying its various characteristics. Play is a secondary, fictitious activity that simulates real-life situations [8&9]. It is a frivolous activity with nothing at stake [9]. The freedom to engage in the activity is also important for considering it a game, and the pleasure it provides seems to define it. The fact of being active is also given as a characteristic of play. When we enjoy doing something, we are motivated, committed, and active.
The different conceptions of these authors converge on certain fundamental characteristics which, if absent, would mean we could not speak of play. No definition of play can exclude the notion of pleasure. The primary aim of plays is the pleasure it provides (Ayme quoted by [15]). It is advisable to respect the equation "play equals fun" when organizing games for pupils [12]. For an activity to be considered a game, enjoyment must be present. Play appeals to intrinsic motivation, and the player must experience pleasure while playing. Play can only exist as an activity that gives pleasure. However, not every activity that gives pleasure is a game [8]. There are other essential characteristics, such as frivolity [14]. This means that failure or success in the game has no consequences in real life. For Brougère, eliminating frivolity means running the risk of eliminating play as well [15]. Another characteristic is the player's freedom to join and leave the game whenever they want [8]. To emphasize these three characteristics, we can retain the idea that "the very idea of play implies relaxation, entertainment, evoking an activity without constraint but also without consequences for real life" [17].

There are several ways of classifying games according to one criterion or another. Piaget's classification presents games according to the child's psychological development, distinguishing between exercise games (0 to 2 years), symbolic games (3 to 6 years), construction games (7 to 11 years), and games with rules (from adolescence onwards). The other classification refers to the attitudes of the player and indicates that there are games of competition (Agôn), games of chance (Alea), games of simulacra (Mimery), and games of vertigo (Ilinx) [8]. For each aspect of child development, there are physical games, manipulative games, and games with rules [10]. Garon's ESAR system (Exercise Games-Symbolic Games-Assembly Games, and Rule Games) is inspired by Piaget.

There is a typology based on the purpose of the game and the intensity of pleasure, freedom, and frivolity. There are playful games, educational games, and pedagogical games [11]. Playful play is free and spontaneous, with no educational objectives. This is the case with all the games children play in the playground, such as marbles, running, jumping rope, throwing sand at each other, climbing up and down a ladder in the playground, and so on. This game is full of joy and pleasure, and there is total freedom in this type of play. The child invites himself to play and seeks only the pleasure of playing.

Educational games, on the other hand, are designed for educational purposes, with games deliberately designed to educate the child who plays, such as the development of memory, reasoning, and social behaviour. Educational games are created for specific teaching-learning purposes, with a didactic focus. While educational games are generally available on the market, educational games are often designed by teachers for a particular aspect of the official school curriculum. Depending on the type of game (free play, educational game, or teaching game), the pleasure derived from playing is different. When we are invited or even obliged to play, the pleasure diminishes, although it does not disappear. Similarly, the freedom to enter and leave the game affects the pleasure derived from playing.
3. Research methodology

Our research took place in Burundi, where we worked with pupils and teachers from both high-performing and low-performing schools in rural and urban areas. Specifically, we focused on the 8th grade level, where physics instruction typically begins. Since French is the language of instruction in Burundi, we chose to target this subject in our research, recognizing that students’ mastery of French can impact their success in all subjects.

To gather data, we reviewed literature, designed a card game, and trained physics and French teachers to use it in their classrooms. We then conducted interviews with teachers and focus groups with pupils to gather feedback on the game's efficacy.

Using Piaget's classifications as inspiration, we designed a card game that could be used to teach both physics and French. We carefully selected lessons on chemical generators and color adjectives and designed the game cards to include all the necessary content for each lesson. Each card corresponds to a logical half-unit of content, such as a concept, definition, characteristic, or figure. The cards also feature motifs similar to those on traditional playing cards to make the game more engaging for students.

To aid teachers in using the game effectively, we created a detailed booklet that provides a clear description of the game's rules, objectives, and teaching materials. We then trained French and physics teachers to use the booklet and game in their classrooms.

Finally, we examined the use of games in teaching and learning in both high-performing and low-performing schools in rural and urban areas.

4. Research findings

This research delves into the perspectives of teachers regarding the incorporation of games in their training, as well as the behaviour of students during lessons where the card game is utilized.

4.1 Pupils' behaviour

At first, the students were surprised and curious when they found out that they would be playing games during their French and physics lessons. They were unsure how playing games would help them learn, but they were excited to try. As they engaged in the learning process, the students became highly motivated and interactive. They were all attentive and interested, although the classroom sometimes got noisy and made it difficult to manage. Overall, the students felt more comfortable playing games than learning, which confirmed the idea that games should stay true to their nature. The question of whether ordinary games could be adapted for teaching and learning was answered positively.

Interestingly, not a single student asked for permission to leave the lesson, which indicates their high level of interest. They were eagerly anticipating the outcome of the game, whether it resulted in victory or defeat.
4.2 Opinions of teachers and pupils

4.2.1. Teachers’ opinions before the lesson

After being trained in the card game teaching technique for physics and French lessons, teachers shared their opinions on the technique. They discussed its benefits, strengths, and potential drawbacks. The teachers found the game technique interesting and saw its potential to improve their students' understanding of the material. They noted that the game helped students memorize the lesson, internalize concepts, exchange ideas, and speak up in class. They also recognized that the game technique could motivate students who are otherwise demotivated to learn.

However, the teachers also had concerns about the technique. They worried that some students might not play the game, that obtaining teaching materials and managing the class could be difficult, and that the game could distract students from the lesson's content. The teachers emphasized that the game technique is not a magic solution for teaching physics and French and that not all lessons are suitable for this approach.

Despite these concerns, the teachers recognized the benefits of the game technique and believed that it could improve students' understanding of the material. They suggested that time management could be a challenge in implementing the method, but they did not rule it out entirely. Overall, the teachers' opinions showed that the game technique could be a valuable tool for teaching physics and French, but it requires careful planning and consideration to ensure its effectiveness.

4.2.2. Teachers’ opinions after the lesson

According to teachers at the Lycée Etoile des Montagnes in Ijenda and the Lycée communal Rusaka, using a card game as a teaching technique proved to be exciting and motivating for students. Even those who were usually undisciplined and inactive in class became active and disciplined during game-based teaching. They were able to understand the rules of the game and even explain them to others. Students who were previously described as "distracted" and "withdrawn" were more engaged and interacted with their peers during the activity.

While physics teachers were initially unsure if a physics lesson could be taught through a game, French teachers found playing cards to be a new and exciting educational tool compared to other games they were used to. All teachers agreed that using the card game had the potential to effectively teach both physics and French lessons.

However, one issue that arose was time management. Teaching and learning a lesson using the card game took more than two hours for a single session, which is significantly longer than the typical 45-minute lesson period. Even with two sessions in a row, it was difficult to complete a single lesson. This highlights the challenges and demands of incorporating games into teaching and learning.

4.2.3. Pupils’ opinions after lessons using card games.

The students had a lot of fun playing games during the experiment. Their comments showed how much they enjoyed it:
- We played some really fun games.
It was enjoyable to play.
The games were fun, and I even learned a lot from them.
I had a great time and learned a lot from the cards.
Playing cards was both fun and educational.
I enjoyed having fun with my classmates while learning.
Learning was fun and interactive.
The students found that playing cards was a great way to learn and kept them engaged throughout the experiment. They said:
- The cards helped me understand the lesson quickly and made me happy.
- Playing with us helped us understand the lesson better.
- The games taught me a lot and were really fun.
- Playing cards made learning easier and more enjoyable.
- I enjoyed learning French and Physics, especially when we played the card game.
- The game made learning more fun and engaging.
The students also noted that the card game allowed them to interact with each other and participate confidently in the learning activities. They said:
- You helped me love learning French and Physics.
- I enjoyed having fun with my classmates.
- I mastered Physics and French colour adjectives through the game.
- I felt confident participating in the game with my teachers and peers.
Overall, the students enjoyed learning through the card game and found it to be an effective way to learn and engage with their subjects.

5. Discussion

The use of games as a teaching-learning strategy has been positively received by French and physics teachers who participated in an experiment. The strategy has been found to motivate learners and create a relaxed atmosphere for studying. Interestingly, even pupils who are not typically interested in French and physics lessons found the game engaging, with some explaining the rules to their classmates. This demonstrates the educational and pedagogical value of the game, as it facilitates understanding, consolidates concepts, and develops language, remediation, manipulation, and reinvestment [18].
The card game experiment revealed that learners were motivated to learn, expressing satisfaction with the new teaching-learning tool during interviews. They found that the game allowed them to interact with classmates in a relaxed atmosphere, which aligns with research indicating that games can increase student motivation and attention [19], leading to better retention of learning content [20]. However, some teachers also noted negative aspects of teaching through play, namely that it can be a pastime and distraction for learners. The introduction of playful elements to educational content can have opposite effects depending on the perspective adopted, either distracting learners or improving their attention and learning [21].
Additionally, not all French and physics lessons may be suitable for the use of card games, reinforcing the restrictive nature of introducing games into the classroom, particularly for learners in year 8 classes. It is natural for younger learners to learn through games, but their effectiveness may vary depending on the age and context of the learners.

The existing literature on play and teaching has opposing views, with some authors arguing that play is not serious enough for teaching [22,23], while others see it as a valuable opportunity for interactive communication. Cuq, Silva, and Muniz emphasize the benefits of using games for language teaching [24]. Games can be effective in language teaching, offering an opportunity to experience language in action and relation through oral exchanges [12] since they involve interactive communication between two or more participants and are designed to develop language skills. In the classroom, games offer an opportunity to practice language in real-life situations, as they often encourage oral communication. Muniz's research [25] on classic board games like Monopoly and La Bonne Paye shows that maintaining enjoyment means simplifying the rules to avoid mathematical difficulties. However, maintaining pleasure can sometimes lead to simplifying rules or avoiding difficulties, which may not align with the goal of learning [23].

**Conclusion**

The purpose of this paper was to examine the teaching and learning experience in French and physics using the card game strategy. Based on experimentation, this strategy has proven to be beneficial to learners, although the teachers' opinions were divided. However, it is important to note that the results of this article align with existing literature. Despite initial concerns that the game would hinder learning, the teachers' perceptions changed after using the card game in their classes. They found that the game motivated students and encouraged interaction among even the shyest and least motivated learners. However, managing time during a standard 45-minute class proved challenging when using games that lasted over two hours. This strategy should be used selectively and with careful consideration. To accurately assess the effectiveness of the card game, it would be necessary to test it on a larger number of students and compare the results to those of traditional teaching methods.

**References**


The use of traditional board games in the teaching and learning of ... 633


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