



4

Ottobre 2025

**Playing for Inclusion: Evaluating Board Games as a Tool for Enhancing Executive Functions**

**Giocare per includere: valutazione dei board games come strumento per il potenziamento delle funzioni esecutive**

**Francesco Palma<sup>1</sup>, Emiliano De Mutiis<sup>2</sup>**

<sup>1</sup> *Università Europea di Roma*

<sup>2</sup> *Università Telematica Pegaso*

francesco.palma@unier.it  
emiliano.demutiis@unier.it

Doi: [https://doi.org/10.14668/QTimes\\_17430](https://doi.org/10.14668/QTimes_17430)

ABSTRACT

*The use of board games in educational settings is increasingly emerging as a practice capable of combining inclusive aims, cognitive development, and active learning. This contribution presents the development and testing of an evaluation grid for board games, aimed at analyzing their effectiveness in strengthening executive functions, specifically: emotional self-regulation, cognitive flexibility, planning, focused attention, working memory, and response inhibition, from an inclusive education*

QTimes webmagazine - Anno XVII - n. 4, 2025

Anicia Editore

[www.qtimes.it](http://www.qtimes.it)

ISSN 2038-3282

*perspective.*

*The tool was implemented within a university workshop involving third-year students from the Primary Education degree program. Working in groups, the students selected and analyzed over ten children's board games, critically completing the proposed evaluation grid and collectively discussing their findings. The games analyzed varied widely in type, mechanics, target age, and educational objectives.*

*The results show that the tool supports systematic observation and pedagogical reflection, fostering greater awareness among future teachers regarding the educational use of games in diverse and inclusive school contexts. The article discusses the theoretical and practical implications of the experience, offers a summary of the data collected, and proposes criteria for the informed adoption of board games in instructional planning.*

**Keywords:** Board games, Executive functions, Inclusive education, Emotional self-regulation, Teacher training.

#### RIASSUNTO

*L'utilizzo dei giochi da tavolo in ambito educativo si configura sempre più come una pratica capace di coniugare finalità inclusive, sviluppo cognitivo e apprendimento attivo. Il presente contributo propone l'elaborazione e la sperimentazione di una scheda di valutazione dei giochi da tavolo finalizzata ad analizzarne l'efficacia rispetto al potenziamento delle funzioni esecutive – in particolare: autoregolazione emotiva, flessibilità cognitiva, pianificazione, attenzione focalizzata, memoria di lavoro e inibizione della risposta – in una prospettiva di didattica inclusiva. Lo strumento è stato impiegato all'interno di un laboratorio universitario con studenti del terzo anno del corso di laurea in Scienze della Formazione Primaria. Gli studenti, organizzati in gruppi, hanno selezionato e analizzato oltre dieci giochi da tavolo per bambini, compilando in modo critico la scheda proposta e discutendone collegialmente i risultati. I giochi analizzati si sono rivelati eterogenei per tipologia, meccaniche, target d'età e obiettivi formativi. I risultati dell'attività mostrano come lo strumento favorisca l'osservazione sistematica e la riflessione pedagogica, stimolando nei futuri docenti consapevolezza rispetto all'uso del gioco in contesti scolastici eterogenei e inclusivi. L'articolo discute implicazioni teoriche e operative dell'esperienza, presentando una sintesi dei dati raccolti e suggerendo criteri per l'adozione consapevole del gioco da tavolo nella progettazione didattica.*

**Parole chiave:** Giochi da tavolo, Funzioni esecutive, Didattica inclusiva, Autoregolazione emotiva, Formazione insegnanti.

## 1. INTRODUCTION

In recent years, board games have attracted growing attention within educational contexts, not only as recreational tools but also as valuable resources for cognitive, social, and emotional development. Unlike digital games, board games foster direct interaction among participants, promoting collaborative and competitive dynamics that can be harnessed for learning purposes. Several studies highlight their potential in strengthening executive functions, fostering inclusion, and enhancing motivation in diverse classroom settings (Toda *et al.*, 2023).

Executive functions, understood as a set of higher-order cognitive processes that regulate thought and behavior, are increasingly recognized as critical for academic success and personal development (Diamond, 2013). Among these, emotional self-regulation, cognitive flexibility, planning, focused attention, working memory, and response inhibition play a pivotal role in supporting adaptive learning pathways. Research has demonstrated that targeted interventions aimed at these processes can significantly improve students' capacity to engage with complex tasks and navigate diverse social contexts (Best & Miller, 2010).

In inclusive education, the use of board games represents an innovative strategy capable of combining playfulness with intentional pedagogical design. By creating contexts where cooperation, problem-solving, and emotional negotiation are naturally required, board games enable the development of key competences while reducing barriers to participation. This makes them particularly suitable for heterogeneous classrooms, where students with different learning profiles, strengths, and needs can find meaningful ways to engage in shared activities (Gaggioli, 2022).

The present study aimed to design and test an evaluation grid for board games, focusing on their potential to enhance executive functions from an inclusive perspective. The instrument was implemented in a university laboratory with third-year students of a Primary Teacher Education program. Organized in groups, the participants selected and analyzed a range of board games for children, applying the evaluation grid and collectively discussing the outcomes. The purpose was twofold: to foster systematic observation and pedagogical reflection in future teachers, and to generate criteria for the conscious adoption of board games in inclusive educational planning.

This article presents the outcomes of the experience, providing a synthesis of the data collected, and discussing theoretical and practical implications for teacher training and classroom practice.

## 2. THEORETICAL FRAMEWORK

### *2.1. Board Games as Pedagogical Tools*

Board games, long considered leisure activities, have increasingly been recognized in research as pedagogical resources that can stimulate both cognitive and socio-emotional processes. Their value resides in the structured interplay of rules, materials, and social interactions, which create a microcosm of learning opportunities. Unlike open-ended forms of play, board games provide a balance between freedom and constraint: players are free to choose strategies and actions, yet must operate within defined boundaries. This tension mirrors many educational contexts, where creativity is nurtured through structured tasks (Gee, 2017; Schrier, 2019).

A growing body of studies demonstrates that board games can enhance problem-solving, critical thinking, and cooperative skills (Toda *et al.*, 2023; Tinterri *et al.*, 2025). For example, games requiring pattern recognition and categorization strengthen analytical abilities, while those centered on negotiation foster empathy and perspective-taking. Board games also differ from digital games in their materiality: tangible components such as cards, tokens, and boards make abstract rules more concrete, thus providing embodied experiences that are particularly effective for younger learners and those with special educational needs (Mullins & Sabherwal, 2020).

### 2.2. Executive Functions and Learning

Executive functions (EFs) are widely regarded as predictors of academic achievement, socio-emotional adaptation, and lifelong learning (Diamond, 2013). Training executive functions through playful activities has proven to be effective because games naturally demand regulation, adaptation, and goal-oriented behavior (Blair & Raver, 2015). For instance, fast-paced recognition games stimulate inhibitory control by requiring players to withhold impulsive actions until the correct cue is identified. Strategic games cultivate planning and working memory, as players must anticipate moves and hold multiple rules in mind. Narrative and role-based games reinforce emotional regulation and cognitive flexibility, enabling players to shift perspectives and adapt to evolving scenarios.

Importantly, executive functions are not isolated skills but interact dynamically with each other. Playing a game often requires the simultaneous coordination of attention, memory, and self-regulation. This multidimensional stimulation explains why board games are increasingly considered tools for “naturalistic” cognitive training (Zelazo *et al.*, 2016).

### 2.3. Inclusive Education and the Role of Play

Inclusive education, as framed by international policy documents (UNESCO, 2020; European Agency for Special Needs and Inclusive Education, 2018), demands methodologies that are flexible, differentiated, and capable of addressing diverse learner profiles. Play, in this context, is a particularly powerful vehicle, as it lowers affective barriers, fosters cooperation, and validates multiple forms of participation. Through play, students who may struggle in traditional academic tasks can find alternative pathways to express competence and creativity.

Board games, in particular, contribute to inclusive practices by offering:

- Shared rules that create common ground for participation.
  - Multiple entry points (e.g., some players rely on speed, others on strategy, others on communication).
  - Immediate feedback, which helps regulate behavior without stigmatizing errors.
  - Opportunities for differentiation, since teachers can adapt pace, group composition, or roles according to learners’ needs.
- The Universal Design for Learning (UDL) framework provides an important lens for analyzing the inclusive potential of board games. UDL calls for providing multiple means of engagement, representation, and action/expression (CAST, 2018). Board games can embody these principles by:

- offering varied motivational incentives (competition, collaboration, narrative immersion),
- presenting information through visual, tactile, and symbolic channels,
- enabling players to demonstrate competence in diverse ways (speed, reasoning, creativity).

For example, a game like *Dobble Kids* exemplifies multiple means of representation, as visual cues can be recognized regardless of linguistic competence, while *Lupus in Tabula* leverages multiple means of engagement through social negotiation and role assumption. Teachers can intentionally align game selection with UDL principles to ensure that participation is not limited by cognitive or linguistic barriers.

While digital games have been extensively researched in education, board games retain unique strengths. Their physicality supports embodied cognition, their social setting promotes face-to-face interaction, and their pace can be more easily adapted by the teacher. At the same time, board games and digital games should not be seen as competing but rather as complementary. Hybrid formats—such as digital platforms simulating board game mechanics—demonstrate the potential of integrating both modalities. For inclusive education, board games provide accessible, low-cost tools that can be implemented without advanced technological infrastructure, making them especially valuable in contexts where resources are limited (Gaggioli, 2022).

### 3. METHODOLOGY

#### 3.1. Participants

The study involved approximately twenty-five third-year students enrolled in a Primary Teacher Education program at a university in central Italy. Participation was framed within a laboratory course on inclusive pedagogy, in which students were invited to critically explore the educational potential of board games. Although the project did not aim to produce generalizable empirical evidence, it provided a meaningful opportunity for teacher candidates to engage in systematic analysis and reflection.

#### 3.2. Instrument

An evaluation grid was designed to analyze board games in relation to both *inclusivity* and *executive functions* (see Appendix). The tool included three main sections:

1. *Accessibility and inclusivity* (materials and design; adaptability; cooperation and interaction; accessibility), each rated on a 1–5 Likert scale.
2. *Executive functions* (emotional self-regulation, cognitive flexibility, planning and organization, focused attention, working memory, response inhibition), also rated on a 1–5 scale.
3. *Other aspects* (cooperation, competition, creativity, involvement, fun), with an overall final judgment.

The grid also contained open fields for noting strengths, weaknesses, and overall comments. Its purpose was to stimulate systematic observation and critical discussion among students.

The evaluation grid was developed through an iterative process grounded in both theoretical and practical considerations. Initially, the main dimensions were identified through a review of literature on executive functions, inclusive education, and game-based learning (Diamond, 2013; CAST, 2018; Toda *et al.*, 2023). These dimensions were subsequently operationalized into observable indicators suitable for the analysis of board game mechanics and interaction dynamics.

A preliminary version of the grid was discussed within the research team and piloted with a small group of students, allowing for refinement of item wording and scale clarity. Although the instrument was not subjected to a full psychometric validation process, internal consistency was examined *ex post* through Cronbach’s alpha, yielding a satisfactory value ( $\alpha = 0.74$ ).

The grid should therefore be considered an exploratory and formative tool, primarily aimed at supporting reflective practice in teacher education rather than as a standardized assessment instrument.

### 3.3. Procedure

Students, organized into small groups, were asked to select and evaluate more than ten children’s board games, applying the grid collaboratively. After completing the evaluations, each group presented its findings in a plenary discussion, highlighting convergences and divergences in their assessments.

The set of games analyzed was heterogeneous in terms of mechanics, age targets, and educational objectives. It included both well-known commercial games (e.g., *Dobble*, *Set*) and titles specifically designed for accessibility and inclusion (e.g., *Lampadino e Caramella*). The final corpus comprised the following games: *Bicchieri Sprint*, *C’era un pirata*, *Geistes*, *Hally Gally*, *Dobble Kids*, *Dobble*, *Lupus in Tabula*, *Ho una fame che*, *Katamino Family*, *Tripolo*, *Set*, *Baba Cadabra*, *Lampadino e Caramella*, and *Mano Lesta*.

In order to document the diversity of the analyzed corpus, Table 1 summarizes the board games selected for the study, specifying their title, publisher, and reference link. This descriptive overview not only clarifies the composition of the sample but also provides readers with access to official resources for further exploration. The heterogeneity of the chosen games, ranging from fast-paced recognition activities to narrative and accessibility-oriented titles, was intended to ensure a broad representation of cognitive and inclusive dynamics.

| Game (EN/IT)                                       | Publisher / Imprint   | Reference link   |
|--|-----------------------|--|
| Bicchieri Sprint ( <i>Speed Cups</i> , IT edition) | Giochi Uniti (IT)     | <a href="http://shop.giochiuniti.it/bicchieri-sprint">shop.giochiuniti.it/bicchieri-sprint</a> |
| Halli Galli (often spelled “Hally Gally”)          | AMIGO Spiele          | <a href="http://amigo.games/product/halligalli">amigo.games/product/halligalli</a>             |
| Geistesblitz ( <i>Ghost Blitz</i> ; IT: “Geistes”) | Zoch Verlag (Asmodee) | <a href="http://zoch-verlag.com/.../geistesblitz">zoch-verlag.com/.../geistesblitz</a>         |
| Dobble Kids  | Zygomat (Asmodee)     | <a href="http://dobblegame.com/en/games/dobble-kids">dobblegame.com/en/games/dobble-kids</a>   |
| Dobble   | Zygomat (Asmodee)     | <a href="http://zygomat-games.com/en/game/dobble">zygomat-games.com/en/game/dobble</a>         |

|                               |                               |  |
|-------------------------------|-------------------------------|--|
| Lupus in Tabula               | dV Games / daVinci Editrice   | <a href="http://dvgiochi.com/catalogo/lupus-in-tabula">dvgiochi.com/catalogo/lupus-in-tabula</a>   |
| C'era un pirata               | Erickson                      | <a href="http://erickson.it/it/c-era-un-pirata">erickson.it/it/c-era-un-pirata</a>   |
| Ho una fame che...            | Erickson                      | <a href="http://erickson.it/it/ho-una-fame-che">erickson.it/it/ho-una-fame-che</a>   |
| Katamino Family               | Gigamic (Hachette Boardgames) | <a href="http://en.gigamic.com/.../katamino-family">en.gigamic.com/.../katamino-family</a>   |
| Tripolo                       | dV Games / daVinci Editrice   | (IT distributor page listing dV Giochi as editor)<br><a href="http://dungeondice.it/26848-tripolo">dungeondice.it/26848-tripolo</a>  |
| SET (card game)               | SET Enterprises / PlayMonster | <a href="http://playmonster.com/product/set">playmonster.com/product/set</a>   |
| Baba Cadabra<br>(Babacadabra) | Erickson                      | <a href="http://erickson.it/it/babacadabra">erickson.it/it/babacadabra</a>   |
| Lampadino e Caramella         | CreativaMente                 | (official rules PDF from publisher) <a href="http://creativamente.eu.../Regole-gioco-Lampadino-e-Caramella.pdf">creativamente.eu.../Regole-gioco-Lampadino-e-Caramella.pdf</a> |
| Mano Lesta<br>(Manolesta)     | Erickson                      | <a href="http://erickson.it/it/manolesta">erickson.it/it/manolesta</a>   |

Tab. 1: Board games analyzed: name, publisher, reference link

### 3.4. Data Analysis

Although the evaluation was not conceived as a large-scale quantitative study, descriptive statistics were calculated to synthesize the assessments. Means and standard deviations were computed for each game, and Cronbach's alpha was applied to the entire dataset to examine the internal consistency of the instrument. Furthermore, the games were classified into categories according to the predominant executive functions involved, in order to highlight patterns and pedagogical implications.

## 4. RESULTS

### 4.1. Descriptive Outcomes

Across the dataset, mean ratings for the games ranged between 3.0 and 4.5 on a 1–5 scale. The highest scores were attributed to games emphasizing rapid visual recognition and motor coordination (e.g., *Dobble*, *Bicchieri Sprint*, *Hally Gally*), while lower scores were associated with games requiring advanced linguistic or social skills (e.g., *Lupus in Tabula*). Standard deviations were moderate, suggesting a relatively homogeneous perception of the games among participants.

The instrument showed a satisfactory level of internal consistency, with Cronbach's  $\alpha = 0.74$ , indicating that the items measured dimensions that were sufficiently coherent while still capturing distinct aspects of gameplay.

Table 2 reports mean scores and standard deviations for each game.

| Game             | Accessibility & Inclusivity | Emotional Self-Regulation | Cognitive Flexibility | Planning & Organization | Focused Attention | Working Memory | Response Inhibition | Fun & Involvement | Overall Mean | Standard Deviation |
|------------------|-----------------------------|---------------------------|-----------------------|-------------------------|-------------------|----------------|---------------------|-------------------|--------------|--------------------|
| Bicchieri Sprint | 3.5                         | 4.0                       | 3.0                   | 2.5                     | 4.5               | 3.0            | 4.5                 | 4.5               | 3.7          | 0.74               |
| C'era un pirata  | 3.0                         | 3.0                       | 3.5                   | 3.0                     | 3.0               | 3.0            | 3.0                 | 3.5               | 3.1          | 0.65               |
| Geistes          | 4.0                         | 3.5                       | 4.0                   | 3.0                     | 4.0               | 3.0            | 3.5                 | 4.5               | 3.7          | 0.53               |
| Hally Gally      | 3.5                         | 4.0                       | 3.0                   | 2.5                     | 4.5               | 3.0            | 4.5                 | 4.5               | 3.7          | 0.75               |
| Dobble Kids      | 4.5                         | 3.5                       | 3.5                   | 3.0                     | 5.0               | 3.5            | 4.5                 | 4.5               | 4.1          | 0.58               |
| Dobble           | 4.0                         | 3.5                       | 3.5                   | 3.0                     | 4.5               | 3.5            | 4.0                 | 4.5               | 3.9          | 0.48               |

|                       |     |     |     |     |     |     |     |     |     |      |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Lupus in Tabula       | 2.5 | 4.0 | 4.0 | 4.0 | 3.0 | 4.0 | 3.0 | 3.5 | 3.5 | 0.52 |
| Ho una fame che...    | 3.0 | 3.0 | 3.0 | 2.5 | 3.5 | 2.5 | 3.0 | 3.5 | 3.0 | 0.37 |
| Katamino Family       | 3.0 | 3.5 | 4.0 | 4.5 | 3.5 | 4.5 | 3.5 | 4.0 | 3.9 | 0.63 |
| Tripolo               | 3.5 | 3.0 | 4.0 | 4.0 | 4.0 | 4.0 | 3.5 | 4.0 | 3.8 | 0.45 |
| Set                   | 3.0 | 3.0 | 4.5 | 4.5 | 4.5 | 4.5 | 4.0 | 4.0 | 4.1 | 0.62 |
| Baba Cadabra          | 3.5 | 3.5 | 4.0 | 3.5 | 4.0 | 3.5 | 3.5 | 4.5 | 3.9 | 0.41 |
| Lampadino e Caramella | 4.0 | 3.0 | 3.0 | 3.0 | 3.5 | 3.0 | 3.0 | 3.5 | 3.3 | 0.36 |
| Mano Lesta            | 3.5 | 3.5 | 3.5 | 3.0 | 4.0 | 3.0 | 4.0 | 4.5 | 3.6 | 0.47 |

Table 2: Descriptive statistics of board games (mean and standard deviation)

## 4.2. Functional Grouping of Games

The classification of games according to predominant executive functions allowed a more nuanced interpretation of the results. The functional grouping of games was based on the identification of predominant executive functions emerging from the descriptive scores, rather than on exclusive or mutually exclusive categories. Each game potentially engages multiple executive processes; however, classification was guided by the dimensions that obtained the highest mean values and were most consistently emphasized during group discussions.

This approach reflects the multidimensional nature of executive functions and avoids a reductive one-to-one correspondence between games and cognitive processes. The proposed categories should therefore be interpreted as heuristic lenses to support pedagogical decision-making rather than as fixed taxonomies.

Four categories were identified:

### 1. Focused attention and response inhibition

Games such as *Dobble*, *Dobble Kids*, *Bicchieri Sprint*, *Hally Gally*, *Geistes*, and *Mano Lesta* scored particularly high in attention and inhibition ( $M = 4.3$ ). Their mechanics, based on speed and perceptual accuracy, effectively engaged students in tasks requiring concentration and emotional self-regulation.

### 2. Planning, working memory, and cognitive flexibility

*Set*, *Tripolo*, and *Katamino Family* achieved the highest scores in planning and memory ( $M = 4.2$ ). These games encouraged strategic reasoning, combinatorial logic, and the capacity to hold and manipulate multiple pieces of information simultaneously. They were perceived as cognitively demanding, but also particularly valuable for fostering higher-order thinking skills.

### 3. Emotional self-regulation and socio-relational skills

Games with strong narrative and role-playing components, such as *Lupus in Tabula*, *C'era un pirata*, and *Ho una fame che*, were evaluated as effective in stimulating emotional management, perspective-taking, and negotiation within the group. However, they scored lower in accessibility, reflecting their reliance on linguistic competencies and social dynamics that may exclude some learners without adequate mediation.

### 4. Accessibility-oriented and inclusive design

*Lampadino e Caramella* and *Baba Cadabra* stood out for their attention to accessibility and adaptability. While rated slightly lower in terms of fun and involvement, they highlighted how design choices can intentionally support inclusion by reducing sensory and cognitive barriers. Their evaluation underscored the importance of considering accessibility not as an incidental benefit but as a structural feature of the game.

### 4.3. General Trends

When considering transversal dimensions such as fun and involvement, most games obtained high ratings ( $M = 4.2$ ), reinforcing the motivational value of play in learning contexts. However, the analysis also revealed that enjoyment alone is not sufficient to guarantee educational effectiveness: while fast-paced games stimulated attention and inhibition, they were less effective in fostering planning or memory; conversely, strategic games promoted reflection but risked disengagement among less experienced players.

The classification by executive functions provided teacher candidates with a concrete framework to understand how different types of games stimulate distinct cognitive processes. In class discussions, students emphasized the need to match the choice of a game with specific pedagogical objectives, and to implement mediation strategies that ensure accessibility for all learners.

Figure 1 illustrates the average scores per game, while Figure 2 summarizes mean values across the different evaluation areas. Together, these visualizations highlight both the diversity of the games and the coherence of the evaluation grid as a reflective tool.

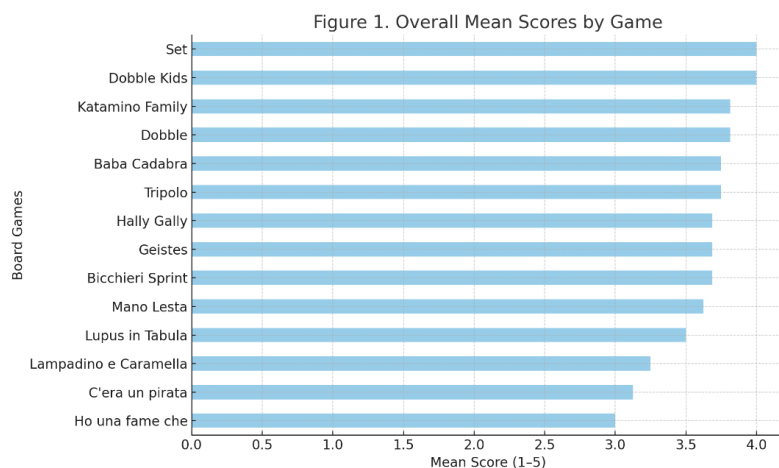


Fig. 1: Overall Mean Scores by Game

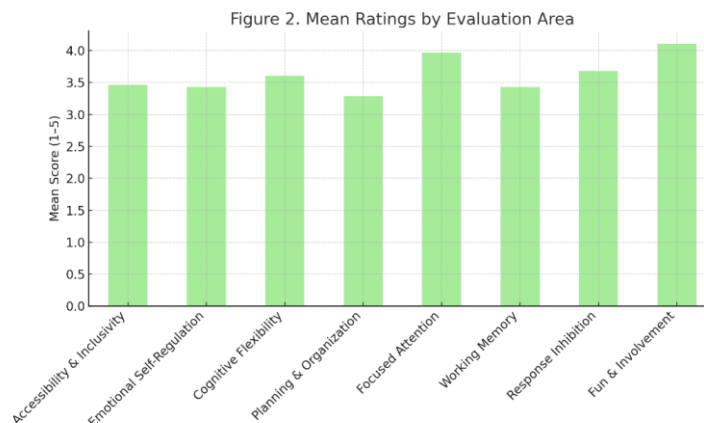


Fig.2: Mean Ratings by Evaluation Area

## 5. DISCUSSION

The findings of this study reinforce and expand upon a growing body of research highlighting the educational potential of board games in fostering executive functions and supporting inclusive practices. While previous studies have primarily emphasized cognitive outcomes (Best & Miller, 2010), the present experience demonstrates that the systematic evaluation of board games also stimulates pedagogical reflection among future teachers, encouraging them to consider both the strengths and limitations of games as didactic tools.

### 5.1. Board Games and Executive Functions: Comparison with Existing Literature

The differentiated cognitive profiles identified in this study mirror those documented in the literature. Fast-paced recognition games were associated with improvements in inhibitory control and attention (Diamond, 2013; Granic *et al.*, 2014). Strategic and logic-based games, which demanded planning and working memory, confirmed results from interventions where board games were linked to enhanced problem-solving and mathematical reasoning (Ramani & Siegler, 2008). Narrative and role-playing games, as shown in previous work by Schrier (2019), stimulated empathy, perspective-taking, and emotional regulation—competences increasingly recognized as essential within social-emotional learning (SEL) frameworks (CASEL, 2020).

The classification into four categories (attention and inhibition, planning and memory, socio-emotional regulation, and accessibility-oriented design) thus aligns with broader psychological and educational taxonomies, demonstrating the relevance of the evaluation grid as a bridge between theory and practice. Importantly, the grid revealed that no single game covers all functions equally, underscoring the need for intentional selection according to specific pedagogical objectives.

### 5.2. Implications for Teacher Education

One of the most valuable contributions of this project lies in its impact on teacher education. By

engaging with the evaluation grid, prospective teachers practiced reflective observation, moving beyond surface-level enjoyment to analyze cognitive, emotional, and inclusivity dimensions. This shift is consistent with models of teacher agency, which emphasize the educator's capacity to make informed, intentional choices in designing learning environments (Biesta, Priestley, & Robinson, 2015).

The use of board games within teacher training also resonates with the principles of Universal Design for Learning (UDL) (CAST, 2018). Future teachers recognized how games can embody multiple means of engagement (e.g., competition vs. collaboration), representation (e.g., visual vs. linguistic cues), and expression (e.g., speed vs. strategy). The analysis fostered awareness that inclusive teaching does not emerge from uniformity but from differentiated pathways that value diversity as a resource.

Moreover, the collaborative dimension of the laboratory promoted dialogic learning, as students compared their perspectives, negotiated meanings, and collectively refined their evaluations. This process mirrors classroom dynamics, where teachers must balance multiple viewpoints and design activities that accommodate heterogeneity. In this sense, the laboratory not only trained cognitive analysis but also modeled inclusive practices.

### *5.3. Pedagogical Potential and Risks*

The results also invite reflection on the risks of uncritical adoption. While most games were rated as fun and engaging, the data show that enjoyment does not necessarily equate with inclusivity or cognitive benefit. For example, some high-speed games risk excluding students with slower processing speeds unless carefully mediated. Conversely, games designed explicitly for accessibility were sometimes perceived as less engaging, raising the question of how to reconcile inclusivity with intrinsic motivation. These tensions highlight the necessity of the teacher's role as mediator: selecting, adapting, and facilitating gameplay in ways that maximize both participation and learning. Another risk lies in the over-instrumentalization of play. Reducing games solely to their cognitive benefits may undermine their intrinsic value as playful experiences. A balanced approach is therefore required, where pedagogical intentionality coexists with respect for the ludic dimension, preserving joy and spontaneity as essential ingredients of meaningful learning.

### *5.4. Limitations and Future Research*

Although the study provides meaningful insights into the perceived educational potential of board games, several methodological limitations must be acknowledged.

First, the sample size was limited and consisted exclusively of pre-service teachers enrolled in a single university program. This restricts the generalizability of the findings and situates the results within a specific training and cultural context.

Second, the evaluation focused on participants' reflective judgments rather than on direct measurements of children's executive functioning. Consequently, the data should be interpreted as indicators of perceived pedagogical affordances rather than as evidence of actual cognitive outcomes.

Third, the laboratory-based nature of the activity may have influenced the ratings, as games were analyzed in simulated conditions rather than implemented in authentic classroom environments. Variables such as teacher mediation, classroom climate, and individual learner profiles were therefore not systematically observed.

Future research should pursue several directions:

- Empirical validation of the evaluation grid with larger and more diverse samples, including teachers in service and children with different learning profiles.
- Longitudinal studies to examine how repeated exposure to specific games influences executive functions and social dynamics over time.
- Comparative studies between board games and digital games, to better understand their complementary contributions in inclusive education.
- Design-based research exploring how teachers can adapt game mechanics to better align with UDL principles and the needs of heterogeneous classrooms.

Such studies would not only refine the grid as an instrument but also deepen our understanding of how play can be intentionally integrated into inclusive pedagogies.

## 6. CONCLUSIONS

This study explored the educational potential of board games through the development and use of an evaluation grid designed to assess inclusivity and the stimulation of executive functions. Conducted with prospective primary school teachers, the experience demonstrated how systematic analysis of games can foster pedagogical reflection, critical awareness, and an appreciation for the complexity of play as an educational practice.

Key findings include:

- Board games stimulate distinct executive functions depending on their mechanics: fast recognition games foster attention and inhibition; strategic games enhance planning and working memory; narrative games promote socio-emotional skills.
- Accessibility-oriented games, although sometimes less engaging, provide crucial insights into inclusive design and the removal of barriers.
- The evaluation grid proved to be a reliable instrument, encouraging systematic reflection and supporting teacher training in inclusive didactics.

For teacher education, these results suggest that integrating board games into training programs can help future educators develop the competence to choose and mediate games according to specific learning and inclusion goals. More broadly, the study points toward the need for criteria of conscious adoption, whereby the use of play in schools is guided by pedagogical intention rather than mere entertainment.

Future research should extend this approach to classroom settings, involving children with diverse needs and abilities, to test the grid's validity and to further explore the interplay between board games, executive functions, and inclusion. By doing so, educators can strengthen the role of play as a central component of innovative and inclusive teaching practices.

REFERENCES

- Andreoletti, M., & Tinterri, A. (2023). *Apprendere con i giochi. Esperienze di progettazione ludica*. Roma: Carocci.
- Bayeck, R. Y. (2020). Examining Board Gameplay and Learning: A Multidisciplinary Review of Recent Research. *Simulation & Gaming, 51(4)*, 411-431.
- Best, J. R., & Miller, P. H. (2010). A developmental perspective on executive function. *Child Development, 81(6)*, 1641–1660.
- Blair, C., & Raver, C. C. (2014). School readiness and self-regulation: A developmental psychobiological approach. *Annual Review of Psychology, 66*, 711–731.
- Dell'Angela, L. et al. (2020). Board Games on Emotional Competences for School-Age Children. *Games for Health Journal, 9(3)*, 187-196.
- Diamond, A. (2013). Executive functions. *Annual Review of Psychology, 64*, 135–168.
- Gaggioli, C. (2022). *La classe oltre le mura. Gamificare per includere*. Milano: FrancoAngeli.
- Gee, J. P. (2017). *Teaching, learning, literacy in our high-risk high-tech world: A framework for becoming human*. Teachers College Press.
- Miyake, A., Friedman, N. P., Emerson, M. J., Witzki, A. H., & Howerter, A. (2000). The unity and diversity of executive functions and their contributions to complex “frontal lobe” tasks. *Cognitive Psychology, 41(1)*, 49–100.
- Pelizzari, F. (2025). *Strategie ludiche per l'apprendimento. Gioco, videogiochi e gamification in contesti educativi e didattici*. Lecce: PensaMultimedia.
- Tinterri, A., di Padova, M., & Pelizzari F. (2025). Board Game-Based Learning: From Cognitive Processes To Assessment. *Italian Journal of Health Education, Sports and Inclusive Didactics, 9(1)*, 1-25.
- Toda, A., Cristea, A.I., & Isotani, S. (Eds.) (2023). *Gamification Design for Educational Contexts. Theoretical and Practical Contributions*. Cham: Springer.
- Schrier, K. (2019). *We the gamers: How games teach ethics and civics*. Oxford University Press.
- UNESCO. (2020). *Global Education Monitoring Report 2020: Inclusion and education: All means all*. UNESCO.
- Zelazo, P. D., Blair, C. B., & Willoughby, M. T. (2016). Executive function: Implications for education. *NCER 2017-2000*. National Center for Education Research.

Copyright (©) Francesco Palma, Emiliano De Mutiis



This work is licensed under a Creative Commons Attribution NonCommercial-NoDerivatives 4.0 International License.

*How to cite this paper:* Palma, F., De Mutiis, E. (2025). Giocare per includere: valutazione dei board games come strumento per il potenziamento delle funzioni esecutive [Playing for Inclusion: Evaluating Board Games as a Tool for Enhancing Executive Functions]. *QTimes webmagazine*, anno XVII, n. 4, 433-446. Doi: [https://doi.org/10.14668/QTimes\\_17430](https://doi.org/10.14668/QTimes_17430)