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# Systematic Management of Traditional Games as Educational Media: A Multiple Case Study of Learning Quality Enhancement in Indonesian Primary Schools

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**Abstract**
Traditional games represent untapped educational resources with significant potential for enhancing student learning quality, yet systematic management approaches for their integration remain underexplored in contemporary educational research. This study investigates the management of traditional games as educational media to improve learning quality in primary school settings. A qualitative multiple case study was conducted at two primary schools in West Java, Indonesia: SDN Cipanas, Citamiang Sub-district, Sukabumi City, and SDN Cimalati, Karangtengah Sub-district, Cianjur Regency. Data collection employed structured observations, in-depth interviews with principals, teachers, and students, and document analysis of curriculum materials and assessment records. Analysis followed Miles and Huberman's interactive model, applying Terry's management framework comprising planning, organizing, actuating, and controlling functions. Results demonstrated significant improvements in student learning outcomes, including 15.3% enhancement in mathematics performance through Congklak implementation and 12.7% improvement in physical coordination via Engklek activities. Student engagement scores ranged from 4.1 to 4.5 on a five-point scale across all traditional games. Qualitative findings revealed enhanced social skills, increased cooperation, and improved cultural awareness among participants. However, implementation challenges included curriculum time constraints reported by 65% of teachers and weather-dependent outdoor activity limitations. The study validates traditional games as effective educational media when systematically managed, providing a practical framework for culturally-responsive pedagogy. These findings contribute to game-based learning literature by demonstrating non-digital alternatives that simultaneously preserve cultural heritage while achieving measurable educational outcomes.

## INTRODUCTION

Contemporary educational paradigms increasingly emphasize the necessity for students to develop multifaceted transversal skills that enable effective information processing, behavioral adaptation, and self-regulation throughout their academic journey. The heterogeneous nature of student populations necessitates adaptive pedagogical approaches that accommodate diverse learning styles and developmental needs. In response to these challenges, active teaching methodologies, particularly game-based learning (GBL), have emerged as promising educational tools that facilitate deep learning and comprehensive skill development (Bacsa-Károlyi & Fehérvári, 2024; Fiorella & Mayer, 2016; Vita-Barrull et al., 2024). The immersive nature of play-based activities has been demonstrated to foster crucial socio-emotional competencies that significantly support learning-related behaviors (Bayeck, 2020; Homer et al., 2019; Lillard et al., 2013; Richard et al., 2023; White et al., 2021).

While substantial research has documented the educational benefits of digital game-based learning approaches (Clark et al., 2016; Mayer et al., 2014; Tokac et al., 2019; Tsai & Tsai, 2020; Wouters et al., 2013), traditional games and board games have received considerably less scholarly attention (Bartolucci et al., 2019; Bayeck, 2017, 2020; Gonzalo-Iglesia et al., 2018; Sousa et al., 2023). This disparity represents a significant gap in educational research, particularly given that

emerging empirical evidence suggests traditional games can substantially contribute to learning outcomes across various educational levels (Armstrong, 2021; Cardinot & Fairfield, 2019; Chiarello & Castellano, 2016; Von Steinkeller & Grosse, 2022). Traditional games, as distinguished from digital alternatives, require no technological infrastructure and may therefore circumvent common barriers associated with technology integration in educational settings (Hu & Sperling, 2022).

Traditional games serve as repositories of cultural heritage while simultaneously functioning as educational media that promote cognitive, motor, and social skill development. These games are characterized by their accessibility, utilizing simple materials readily available in local environments, and their emphasis on direct social interaction among participants (Adnan et al., 2020). The educational potential of traditional games extends beyond mere entertainment, encompassing the development of fundamental motor skills, enhancement of mathematical and scientific understanding, and promotion of cultural awareness (Petrovska et al., 2013). Research has demonstrated that traditional games can effectively improve locomotor and object control skills among primary school children (Akbari et al., 2009), while also contributing to motor fitness development (Charles et al., 2017).

Despite these documented benefits, several challenges impede the systematic integration of traditional games into formal educational curricula. Physical inactivity among children has reached epidemic proportions globally, with only a small percentage of students engaging in adequate levels of moderate-to-vigorous physical activity (Sharif et al., 2017; Troiano et al., 2008). Furthermore, the increasing preference for digital entertainment among contemporary students poses additional challenges for traditional game implementation (Sousa et al., 2023; Talan et al., 2020). These challenges are compounded by limited curriculum time allocation, insufficient teacher training in game-based pedagogical approaches, and the need for comprehensive management frameworks that effectively integrate traditional games into educational practices.

The theoretical foundations supporting traditional game-based learning are grounded in active learning principles and experiential learning theory, which emphasize learning through direct engagement and hands-on experience (Kolb, 1984). Traditional games facilitate learning through cooperative activities, strategic thinking development, and cultural value transmission, creating holistic educational experiences that address cognitive, affective, and psychomotor learning domains simultaneously. The social interaction inherent in traditional games promotes communication skills, teamwork abilities, and emotional intelligence development, all of which are essential competencies in contemporary educational frameworks.

Management theory, particularly the systematic approach proposed by G.R. Terry encompassing planning, organizing, actuating, and controlling functions, provides a comprehensive framework for implementing traditional games as educational media. Effective management of traditional game integration requires strategic planning to align games with curricular objectives, systematic organization of resources and implementation schedules, active facilitation to ensure meaningful learning experiences, and continuous evaluation to assess educational outcomes and identify areas for improvement.

This study addresses the critical gap in understanding how traditional games can be systematically managed as educational media to enhance student learning quality. By examining the implementation of traditional games in primary school settings, this research contributes to the growing body of literature on innovative pedagogical approaches while simultaneously promoting cultural preservation and educational innovation. The research focuses specifically on investigating the management processes involved in integrating traditional Indonesian games such as Congklak, Engklek, Galah Asin, and Petak Umpet into formal educational curricula at two primary schools in West Java, Indonesia.

The significance of this study extends beyond immediate educational applications to encompass broader implications for cultural preservation, pedagogical innovation, and educational policy development. By demonstrating effective management strategies for traditional game integration, this

research provides valuable insights for educators, curriculum developers, and policymakers seeking to implement culturally responsive and engaging educational practices. Furthermore, the study contributes to the international discourse on game-based learning by offering perspectives from Indonesian educational contexts, thereby enriching the global understanding of traditional games as educational resources.

## METHODS

This study employed a qualitative research design utilizing a multiple case study approach to investigate the management of traditional games as educational media in primary school settings. The qualitative methodology was selected to enable in-depth exploration of complex educational phenomena and to capture the nuanced experiences of participants regarding traditional game implementation. The multiple case study design facilitated comprehensive examination of traditional game management across different institutional contexts, allowing for cross-case analysis and enhanced understanding of implementation patterns and challenges.

The research was conducted at two purposively selected primary schools in West Java, Indonesia: SDN Cipanas in Citamiang Sub-district, Sukabumi City, and SDN Cimalati in Karangtengah Sub-district, Cianjur Regency. These institutions were chosen based on their geographic representation of rural educational settings and their existing engagement with traditional cultural practices in educational contexts. The research participants comprised purposively selected stakeholders who possessed relevant knowledge and experience related to traditional game implementation in educational settings. The participant pool included school principals who provided institutional perspectives on traditional game integration policies, classroom teachers who directly implemented traditional games in their pedagogical practices, and primary school students who participated in traditional game-based learning activities. This diverse participant composition ensured comprehensive data collection from multiple stakeholder perspectives, thereby enhancing the validity and richness of the research findings.

Data collection was conducted through three complementary techniques designed to capture comprehensive information about traditional game management processes. Structured observations were employed to document actual implementation practices, classroom dynamics, and student engagement patterns during traditional game activities. These observations utilized a systematic observation protocol that focused on planning processes, organizational structures, implementation strategies, and evaluation practices aligned with management theory frameworks. In-depth semi-structured interviews were conducted with school principals, teachers, and selected students to elicit detailed insights regarding their experiences, perceptions, and challenges related to traditional game implementation. The interview protocols were specifically designed to explore management aspects including planning procedures, resource allocation, implementation strategies, and evaluation mechanisms. Document analysis complemented the primary data collection by examining school policies, curriculum documents, lesson plans, and assessment records related to traditional game integration.

Data analysis followed Miles and Huberman's interactive model, comprising systematic data reduction, data display, and conclusion drawing phases. Initial data coding employed both inductive and deductive approaches, with predetermined codes derived from management theory constructs and emergent codes identified from participant responses and observational data. Cross-case pattern analysis was conducted to identify similarities and differences in traditional game management approaches across the two research sites. Data validity was ensured through methodological triangulation, combining observations, interviews, and document analysis to corroborate findings. Source triangulation was achieved by gathering data from multiple stakeholder groups, while investigator triangulation involved peer debriefing sessions to enhance analytical rigor. Member checking procedures were implemented to validate interpretations with research participants, thereby ensuring accuracy and credibility of the research findings..

## RESULTS AND DISCUSSION

### Results

The analysis of data collected from both research sites revealed comprehensive insights into the management of traditional games as educational media. The findings are organized according to the four management functions identified in Terry's management theory: planning, organizing, actuating, and controlling.

#### *Planning Phase of Traditional Game Management*

Interview data from school principals and teachers indicated systematic approaches to integrating traditional games into educational curricula. The planning process involved several key components as illustrated in the following teacher response:

*"We begin by identifying which traditional games align with our learning objectives. For mathematics lessons, we plan to use Congklak because it helps students understand counting and strategic thinking. For physical education, we select Engklek and Galah Asin."* (Teacher A, SDN Cipanas)

Document analysis revealed that both schools developed structured lesson plans that incorporated traditional games as core educational activities rather than supplementary entertainment. The planning documentation showed alignment between game selection and specific learning competencies, with 85% of observed lesson plans explicitly linking traditional games to curricular objectives. Teachers demonstrated understanding of game-curriculum integration by matching game mechanics with educational goals, as evidenced in lesson plan documents that detailed learning outcomes, game procedures, and assessment criteria.

Observational data confirmed that planning sessions involved collaborative discussions among teachers to determine appropriate game selection, resource requirements, and time allocation. Both schools allocated approximately 20-30 minutes weekly for traditional game activities within regular class schedules, indicating systematic temporal planning for implementation.

#### *Organizational Implementation Structure*

research sites. Resource allocation emerged as a critical organizational component, with schools demonstrating creative approaches to material procurement and space utilization. The following observation note illustrates typical organizational practices:

*During the Congklak lesson at SDN Cimalati, the teacher had organized students into pairs, distributed locally-made Congklak boards and seeds, and arranged seating to facilitate peer interaction and teacher supervision.* (Observation Notes, Week 3)

Both schools established systematic approaches to material management, with designated storage areas for traditional game equipment and student responsibility systems for maintenance. Teachers reported that organizational challenges were addressed through community involvement, as reflected in this principal's statement:

*"We collaborate with parents and local craftsmen to create traditional game equipment. This approach reduces costs while strengthening community connections to our educational programs."* (Principal, SDN Cipanas)

The organizational structure also encompassed space management, with schools utilizing outdoor areas, classrooms, and multipurpose halls depending on game requirements. Flexible spatial arrangements accommodated different traditional games, demonstrating adaptive organizational capabilities.

#### *Implementation Strategies and Practices*

The actuating phase revealed diverse pedagogical approaches to traditional game implementation. Teachers employed cooperative learning methodologies, integrating traditional games with collaborative educational activities. Student engagement patterns showed consistent increases

during traditional game sessions compared to conventional teaching methods, as documented in observational records.

Table 1 presents the implementation frequency and student engagement levels across different traditional games:

**Table 1.** The implementation frequency and student engagement levels

| Traditional Game | Implementation Frequency (per month) | Average Student Engagement Score* | Primary Learning Outcomes |
|---|---|---|---|
| Congklak | 8 sessions | 4.2/5.0 | Mathematical concepts, strategic thinking |
| Engklek | 6 sessions | 4.5/5.0 | Motor coordination, pattern recognition |
| Galah Asin | 5 sessions | 4.3/5.0 | Teamwork, strategic planning |
| Petak Umpet | 4 sessions | 4.1/5.0 | Social interaction, problem-solving |

*Engagement scores based on observational assessment using 5-point scale

The implementation data revealed that Engklek achieved the highest student engagement scores, likely due to its physical activity components and individual skill demonstration opportunities. Teachers reported that traditional games facilitated natural differentiated instruction, accommodating diverse learning styles and abilities within single activities.

Thematic analysis of implementation practices identified three primary pedagogical approaches: direct instruction followed by guided practice, cooperative learning through team-based games, and reflective discussion sessions post-game activities. These approaches aligned with active learning principles and demonstrated teachers' adaptive use of traditional games across different educational contexts.

***Evaluation and Assessment Outcomes***

The controlling function of traditional game management encompassed both formal and informal assessment strategies. Teachers utilized observation-based assessments during game activities, focusing on skill development, social interaction, and learning objective achievement. Assessment data indicated measurable improvements in several key areas.

Pre-and post-implementation assessment results showed significant improvements in student learning outcomes. Mathematics assessment scores increased by an average of 15.3% following Congklak integration, while physical coordination assessments improved by 12.7% after Engklek implementation. These quantitative improvements were supported by qualitative observations of enhanced student motivation and classroom engagement.

Student feedback data revealed overwhelmingly positive responses to traditional game integration. Representative student comments included:

*"Learning mathematics with Congklak is more fun than using textbooks. I understand counting better now."* (Student, Grade 4, SDN Cimalati)

*"When we play Galah Asin, I learn to work with my friends and think about strategies."* (Student, Grade 5, SDN Cipanas)

Teachers reported observable improvements in social skills, with reduced classroom behavioral issues and increased peer cooperation during traditional game activities. Assessment documentation showed that 78% of students demonstrated improved collaborative skills following traditional game implementation.

However, evaluation data also revealed implementation challenges. Time constraints emerged as the primary difficulty, with 65% of teachers reporting insufficient curriculum time for optimal traditional game integration. Additionally, seasonal weather conditions affected outdoor game implementation, requiring adaptive scheduling and alternative indoor arrangements.

**Discussion**

The findings of this study demonstrate that systematic management of traditional games as educational media significantly enhances student learning quality, supporting the theoretical frameworks established in contemporary game-based learning research. The results align with Bacsa-Károlyi & Fehérvári (2024) and Vita-Barrull et al. (2024) assertions that game-based learning methodologies facilitate deep learning and comprehensive skill development. The observed improvements in student engagement and learning outcomes corroborate Bayeck (2020) and Lillard et al. (2013) findings regarding the educational benefits of play-based activities in fostering socio-emotional competencies and learning-related behaviors.

The successful implementation of traditional games in both research sites addresses the gap identified in existing literature regarding the underutilization of non-digital games in educational settings. Unlike the focus on digital game-based learning highlighted by Clark et al. (2016), Mayer et al. (2014), and Wouters et al. (2013), this study demonstrates that traditional games can achieve comparable educational benefits without technological infrastructure requirements. This finding supports Hu & Sperling (2022) argument that traditional games may circumvent common barriers associated with technology integration in educational environments.

The study's results validate Akbari et al. (2009) and Charles et al. (2017) research demonstrating that traditional games effectively improve fundamental motor skills and physical development among primary school children. The observed 12.7% improvement in physical coordination following Engklek implementation aligns with these previous findings while extending the evidence base to Indonesian educational contexts. Furthermore, the mathematical learning improvements associated with Congklak implementation support Petrovska et al. (2013) claims regarding traditional games' potential to enhance academic skills across multiple subject areas.

The management framework employed in this study, based on Terry's four-function model, proved effective in systematically integrating traditional games into formal educational curricula. The planning phase results demonstrate alignment with Kolb (1984) experiential learning theory, as teachers successfully designed learning experiences that engaged students in concrete experiences through game participation, reflective observation through post-game discussions, abstract conceptualization through connection to curricular content, and active experimentation through repeated game practice with variations.

The organizational and implementation findings reveal that traditional games address contemporary educational challenges related to student engagement and active learning. The high engagement scores across all traditional games (ranging from 4.1 to 4.5 on a 5-point scale) support Richard et al. (2023) and White et al. (2021) assertions about play's role in fostering immersion and crucial competencies that support learning-related behavior. The observed improvements in social skills and cooperative learning align with Von Steinkeller & Grosse (2022) findings regarding the prosocial benefits of board games compared to digital alternatives.

However, the study also identified significant challenges that mirror concerns raised in existing literature. The time constraint issues reported by 65% of teachers reflect broader systemic challenges in curriculum implementation noted by Gutierrez et al. (2023) regarding teacher concerns about balancing educational content with engaging activities. The seasonal weather limitations affecting outdoor game implementation highlight practical considerations that distinguish traditional games from digital alternatives, which are not constrained by environmental factors as noted by Sousa et al. (2023).

The cultural preservation aspect of traditional game implementation represents a significant contribution beyond immediate educational benefits. The community involvement in equipment creation and game transmission supports Adnan et al. (2020) emphasis on traditional games' role in promoting cultural diversity and protecting cultural identity. This finding extends the educational value proposition of traditional games beyond academic learning outcomes to encompass broader social and cultural objectives.

The study's findings regarding improved mathematics performance through Congklak align with Gasteiger & Moeller (2021) research demonstrating that commercial board games can improve numerical competencies in young children. The 15.3% improvement in mathematics assessment scores following Congklak integration provides quantitative evidence supporting the educational efficacy of traditional games in academic skill development.

The cooperative learning benefits observed in this study support Chiarello & Castellano (2016) and Bayeck (2017) arguments regarding traditional games' capacity to foster collaboration and social skill development. The reported improvements in peer cooperation and reduced behavioral issues align with Hassinger-Das et al. (2017) findings about games' potential to create engaging learning environments that promote positive social interactions.

These findings contribute to the growing body of evidence supporting Armstrong (2021), Cardinot & Fairfield (2019), and Gonzalo-Iglesia et al. (2018) assertions about traditional games' educational potential across various academic levels. The systematic management approach demonstrated in this study provides a practical framework for educators seeking to implement evidence-based traditional game integration in their educational contexts, addressing the implementation gap identified in current literature regarding the transition from research findings to classroom practice.

## CONCLUSION

This study demonstrates that systematic management of traditional games as educational media significantly enhances student learning quality in primary school settings. The application of Terry's management framework effectively facilitated the integration of traditional Indonesian games into formal curricula, resulting in measurable improvements in academic performance, social skills development, and student engagement. The research contributes to the expanding field of game-based learning by providing empirical evidence for the educational efficacy of non-digital traditional games, addressing a notable gap in current literature that predominantly focuses on digital game applications.

The findings reveal substantial learning gains, including 15.3% improvement in mathematics performance through Congklak implementation and 12.7% enhancement in physical coordination via Engklek activities. These quantitative outcomes, supported by qualitative evidence of increased student motivation and collaborative behaviors, validate traditional games as viable alternatives to technology-dependent educational tools. The study extends existing theoretical frameworks by demonstrating how management principles can systematically guide traditional game integration, offering practical applications of experiential learning theory within culturally-responsive educational contexts.

The research implications extend beyond immediate pedagogical applications to encompass broader educational policy and cultural preservation objectives. Educational practitioners can utilize the systematic management framework to implement traditional games effectively, while policymakers may consider incorporating traditional game-based learning into national curricula as culturally-sustainable educational innovations. The community involvement strategies identified in this study provide models for strengthening school-community partnerships while reducing educational resource dependencies.

However, the study acknowledges significant limitations including the small sample size of two schools, potential cultural specificity limiting generalizability, and the qualitative design's inherent subjectivity. The identified implementation challenges, particularly time constraints reported by 65% of teachers and weather-dependent outdoor activities, require systematic addressing through policy interventions and infrastructure development.

Future research should examine traditional game effectiveness across diverse cultural contexts, investigate long-term learning retention following traditional game interventions, and develop quantitative measurement tools for traditional game educational outcomes. Comparative studies

between traditional and digital game-based learning approaches would provide valuable insights for educational technology decisions. Additionally, longitudinal research examining sustained traditional game implementation and its impacts on cultural preservation and community engagement would contribute significantly to understanding the broader societal benefits of traditional game-based education.

## REFERENCES


Adnan, M., Shaharudin, S., Abd Rahim, B. H., & Ismail, S. M. (2020). Quantification of physical activity of Malaysian traditional games for school-based intervention among primary school children. *Journal of Taibah University Medical Sciences*, *15*(6), 486-494. https://doi.org/10.1016/j.jtumed.2020.09.006

Akbari, H., Abdoli, B., Shafizadehkenari, M., Khalaji, H., Hajihosseini, S., & Ziaee, V. (2009). The effect of traditional games in fundamental motor skill development in 7-9 year old boys. *Iranian Journal of Pediatrics*, *19*(2), 123-129. https://shura.shu.ac.uk/7143/

Armstrong, A. (2021). Playing settlers of Catan enhances student learning of probability in liberal arts mathematics. *Primus*, *31*(10), 1136-1148. https://doi.org/10.1080/10511970.2020.1818335

Bacsa-Károlyi, B., & Fehérvári, A. (2024). Teachers' views on gameful practices–A scoping review. *Teaching and Teacher Education*, *150*, Article 104730. https://doi.org/10.1016/j.tate.2024.104730

Bartolucci, M., Mattioli, F., & Batini, F. (2019). Do board games make people smarter?: Two initial exploratory studies. *International Journal of Game-Based Learning*, *9*(4), 1-14. https://doi.org/10.4018/IJGBL.2019100101

Bayeck, R. Y. (2017). Reforming adult education through content and teaching approaches. *Dialogues in Social Justice: Adult Education Journal*, *2*(1). https://doi.org/10.55370/dsj.v2i1.483

Bayeck, R. Y. (2020). Examining board gameplay and learning: A multidisciplinary review of recent research. *Simulation & Gaming*, *51*(4), 411-431. https://doi.org/10.1177/1046878119901286

Cardinot, A., & Fairfield, J. A. (2019). Game-based learning to engage students with physics and astronomy using a board game. *International Journal of Game-Based Learning*, *9*(1), 42-57. https://doi.org/10.4018/978-1-6684-3710-0.ch035

Charles, M. A. G., Abdullah, M. R., Musa, R. M., Maliki, A. B. H. M., & Kosni, N. A. (2017). The effect of traditional games played with the rules intervention and regulations in-developing children's motor fitness abilities. *Man India*, *97*(22), 409-416.

Chiarello, F., & Castellano, M. G. (2016). Board games and board game design as learning tools for complex scientific concepts: Some experiences. *International Journal of Game-Based Learning*, *6*(2), 1-14. https://doi.org/10.4018/IJGBL.2016040101

Clark, D. B., Tanner-Smith, E. E., & Killingsworth, S. S. (2016). Digital games, design, and learning: A systematic review and meta-analysis. *Review of Educational Research*, *86*(1), 79-122. https://doi.org/10.3102/0034654315582065

Fiorella, L., & Mayer, R. E. (2016). Eight ways to promote generative learning. *Educational Psychology Review*, *28*(4), 717-741. https://doi.org/10.1007/s10648-015-9348-9

Gasteiger, H., & Moeller, K. (2021). Fostering early numerical competencies by playing conventional board games. *Journal of Experimental Child Psychology*, *204*, Article 105060. https://doi.org/10.1016/j.jecp.2020.105060

Gonzalo-Iglesia, J. L., Lozano-Monterrubio, N., & Prades-Tena, J. (2018). Non-educational board games in University Education. Perceptions of students experiencing Game-Based Learning methodologies. *Revista Lusófona de Educação*, (41), 45-62. https://doi.org/10.24140/issn.1645-7250.rle41.03

Gutierrez, A., Mills, K., Scholes, L., Rowe, L., & Pink, E. (2023). What do secondary teachers think about digital games for learning: Stupid fixation or the future of education? *Teaching and Teacher Education*, *133*, Article 104278. https://doi.org/10.1016/j.tate.2023.104278

Hassinger-Das, B., Toub, T. S., Zosh, J. M., Michnick, J., Golinkoff, R., & Hirsh-Pasek, K. (2017). More than just fun: A place for games in playful learning/Más que diversión: El lugar de los juegos reglados en el aprendizaje lúdico. *Infancia Y Aprendizaje*, *40*(2), 191-218. https://doi.org/10.1080/02103702.2017.1292684

Homer, B. D., Plass, J. L., Rose, M. C., MacNamara, A. P., Pawar, S., & Ober, T. M. (2019). Activating adolescents'"hot" executive functions in a digital game to train cognitive skills: The effects of age and prior abilities. *Cognitive Development*, *49*, 20-32. https://doi.org/10.1016/j.cogdev.2018.11.005

Hu, H., & Sperling, R. A. (2022). Pre-service teachers' perceptions of adopting digital games in education: A mixed methods investigation. *Teaching and Teacher Education*, *120*, Article 103876. https://doi.org/10.1016/j.tate.2022.103876

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice-Hall.

Lillard, A. S., Lerner, M. D., Hopkins, E. J., Dore, R. A., Smith, E. D., & Palmquist, C. M. (2013). The impact of pretend play on children's development: A review of the evidence. *Psychological Bulletin*, *139*(1), 1-35. https://psycnet.apa.org/doi/10.1037/a0029321

Mayer, R. E., Hegarty, M., Mayer, S., & Campbell, J. (2014). When static media promote active learning: Annotated illustrations versus narrated animations in multimedia instruction. *Journal of Experimental Psychology: Applied*, *11*(4), 256-265. https://psycnet.apa.org/doi/10.1037/1076-898X.11.4.256

Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis: An expanded sourcebook* (2nd ed.). Sage Publications.

Petrovska, S., Sivevska, D., & Cackov, O. (2013). Role of the Game in the Development of Preschool Child. *Procedia-Social and Behavioral Sciences*, *92*, 880-884. https://doi.org/10.1016/j.sbspro.2013.08.770

Richard, S., Clerc-Georgy, A., & Gentaz, E. (2023). Pretend play-based training improves some socio-emotional competences in 5–6-year-old children: A large-scale study assessing implementation in authentic school environments. *Journal of School Psychology*, *96*, 1-15. https://doi.org/10.1016/j.actpsy.2023.103961

Sharif, R., Chong, K. H., Zakaria, N. H., Ong, M. L., Reilly, J. J., Wong, J. E., Poh, B. K. (2017). Results from Malaysia's 2016 report card on physical activity for children and adolescents. *Journal of Physical Activity and Health*, *13*(s2), S201-S205. https://doi.org/10.1123/jpah.2016-0404

Sousa, C., Rye, S., Sousa, M., Torres, P. J., Perim, C., Mansuklal, S. A., & Ennami, F. (2023). Playing at the school table: Systematic literature review of board, tabletop, and other analog game-based learning approaches. *Frontiers in Psychology*, *14*, Article 1160591. https://doi.org/10.3389/fpsyg.2023.1160591

Talan, T., Doğan, Y., & Batdı, V. (2020). Efficiency of digital and non-digital educational games: A comparative meta-analysis and a meta-thematic analysis. *Journal of Research on Technology in Education*, *52*(4), 474-514. https://doi.org/10.1080/15391523.2020.1743798

Terry, G. R. (2003). *Principles of management* (4th ed.). Richard D. Irwin.

Tokac, U., Novak, E., & Thompson, C. G. (2019). Effects of game-based learning on students' mathematics achievement: A meta-analysis. *Journal of Computer Assisted Learning*, *35*(3), 407-420. https://doi.org/10.1111/jcal.12347

Troiano, R. P., Berrigan, D., Dodd, K. W., Masse, L. C., Tilert, T., & McDowell, M. (2008). Physical activity in the United States measured by accelerometer. *Medicine and Science in Sports and Exercise*, *40*(1), 181-188. https://dialnet.unirioja.es/servlet/articulo?codigo=2862340

Tsai, Y. L., & Tsai, C. C. (2020). A meta-analysis of research on digital game-based science learning. *Journal of Computer Assisted Learning*, *36*(3), 280-294. https://doi.org/10.1111/jcal.12430

Vita-Barrull, N., Estrada-Plana, V., March-Llanes, J., Guzmán, N., Fernández-Muñoz, C., Ayesa, R., & Moya-Higueras, J. (2024). Do you play in class? Board games to promote cognitive and educational development in primary school: A cluster randomized controlled trial. *Learning and Instruction*, *93*, Article 101946. https://doi.org/10.1016/j.learninstruc.2024.101946

Von Steinkeller, A., & Grosse, G. (2022). Children are more social when playing analog games together than digital games. *Computers in Human Behavior Reports*, *6*, Article 100195. https://doi.org/10.1016/j.chbr.2022.100195

White, R. E., Thibodeau-Nielsen, R. B., Palermo, F., & Mikulski, A. M. (2021). Engagement in social pretend play predicts preschoolers' executive function gains across the school year. *Early Childhood Research Quarterly*, *56*, 103-113. https://doi.org/10.1016/j.ecresq.2021.03.005

Wouters, P., Van Nimwegen, C., Van Oostendorp, H., & Van Der Spek, E. D. (2013). A meta-analysis of the cognitive and motivational effects of serious games. *Journal of Educational Psychology*, *105*(2), 249-265. https://psycnet.apa.org/doi/10.1037/a0031311