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Formation of the Methodology of the Project-Activity Game in Inclusive Higher Education

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ABSTRACT

Inclusive higher education faces challenges in engagement and skill development because traditional teaching methods often fail to accommodate diverse learning needs. The Project Activity Game (PAG) methodology integrates game-based and project-based learning to enhance student participation and real-world competency. This study aims to develop and implement PAG in inclusive post-industrial universities to improve the effectiveness of higher education during the transition to a new technological order. The research employed pedagogical, didactic, historical, systemic, and logical analysis to examine existing methodologies and establish the theoretical foundations of PAG. The study identified key risks and opportunities associated with its adoption in inclusive and project-based education. The results demonstrate that PAG enhances engagement, knowledge retention, and problem-solving abilities because it immerses students in interactive, competency-driven tasks. The findings confirm that PAG can bridge the gap between education and industry needs, improving career readiness and inclusion. This research contributes to the evolution of higher education pedagogy, making learning more adaptive and accessible.

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1. INTRODUCTION

The evolving landscape of higher education necessitates innovative teaching methodologies because traditional pedagogical approaches often fail to engage students effectively, particularly in inclusive learning environments (Djirong *et al*., 2024; Onia & Rmadan, 2023; Muhabbat *et al*., 2023; Musayaroh *et al*., 2023; Wanjara & Ogembo, 2024). The increasing complexity of business and technological processes demands that students develop problem-solving, collaboration, and project management skills within the framework of post-industrial education. Game-based and project-based learning have emerged as key methodologies that align with these requirements because they foster active participation, critical thinking, and real-world application of knowledge (Wagiran *et al*., 2023; Purwianingsih *et al*., 2023; Hanna *et al*., 2021; Lestari, 2024). However, a major challenge remains in systematically integrating these approaches to create a unified, structured methodology for inclusive higher education.

Existing research highlights the growing role of educational games in competency-based learning. Scholars emphasize that game-based learning is an effective tool for skill acquisition because it enhances motivation and engagement (Hartt *et al*., 2020; Abdul Jabbar & Felicia, 2015). Studies have also demonstrated the relevance of business games in legal and managerial education because they simulate professional scenarios, allowing students to develop decision-making abilities in controlled environments. Additionally, project-based learning is widely recognized as an essential component of university education because it encourages students to apply theoretical knowledge in practical settings (Uziak, 2016). Despite these advantages, a gap persists in synthesizing game-based and project-based methodologies into a cohesive educational framework that addresses the specific needs of inclusive universities.

This study aims to develop a Project Activity Game (PAG) methodology by reengineering the Organizational Activity Game (OAG) to enhance the quality of inclusive higher education. PAG integrates the interactive, immersive nature of educational games with the structured, goal-oriented approach of project-based learning, creating a methodology that is both engaging and effective in preparing students for real-world challenges. The novelty of this work lies in its systematic unification of these two approaches, making it adaptable for inclusive education and capable of addressing diverse learning needs.

The findings from this study confirm that PAG enhances student engagement, problem-solving abilities, and project execution skills because it actively involves students in knowledge creation rather than passive learning. This research contributes to the advancement of post-industrial education by demonstrating that PAG serves as both a teaching methodology and a training tool for students entering project-based work environments. The results indicate that PAG can be implemented in academic disciplines, inclusive education programs, and corporate training settings because of its adaptability to various learning contexts. Future studies should explore its long-term impact on student career readiness and professional adaptability, further strengthening its role as a transformative educational approach.

2. METHODS

This study explored the integration of game-based and project-based learning approaches in higher education, focusing on the PAG as a tool for teaching students project development and commercialization skills. The methodology was developed by reengineering the traditional OAG to align with project-based learning principles.

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The PAG methodology was implemented with university students, following a structured process. Participants were first introduced to the learning objectives, and then divided into teams to engage in competitive and collaborative project-based tasks. The game followed a defined sequence: team formation, idea generation, role assignment, strategy development, and iterative project execution. The PAG moderator facilitated discussions, ensured balanced participation, and guided students through reflective learning. Performance was assessed based on project outcomes, team collaboration, and decision-making effectiveness.

Environmental factors influencing post-industrial pedagogy were considered, including technological advancements, student engagement, and real-world applicability. The experiment evaluated how PAG supports knowledge commercialization, critical thinking, and teamwork within an inclusive learning environment. Data collection included observations, student feedback, and qualitative analysis of project outcomes.

3. RESULTS AND DISCUSSION

The results confirmed that integrating game-based and project-based learning enhanced student engagement and knowledge retention because interactive learning environments encouraged active participation. Teams using the PAG method demonstrated greater creativity and problem-solving abilities because they actively applied their knowledge rather than passively receiving instruction. Students reported higher motivation and deeper understanding of project development because PAG simulated real-world challenges. The structured game format also improved communication and teamwork, which are essential for professional success. Additionally, PAG's competitive element stimulated engagement because students were motivated to outperform other teams, while its collaborative aspects reinforced peer learning. Reflection sessions further enhanced learning by allowing students to evaluate their decision-making processes and refine their approaches. The inclusive nature of the game-based approach ensured that students with diverse learning styles and abilities could participate effectively.

The study demonstrates that the PAG is a valuable tool in post-industrial education because it combines structured project-based learning with interactive, engaging gameplay. Future research should explore its scalability in different disciplines and its impact on long-term knowledge retention.

A comparative analysis of the OAG and the PAG revealed fundamental differences between the two, but also potential for integration. The PAG approach proved more effective because it aligns with modern post-industrial education, emphasizing project-based learning and innovation. While OAG remains useful, its structured nature can be incorporated into PAG to enhance its effectiveness.

The relevance of game-based and project-based learning in post-industrial conditions was confirmed because these methods promote innovation, critical thinking, and problem-solving. PAG was particularly effective in inclusive education because it facilitates peer interaction, engagement, and confidence-building among students with disabilities. The results suggest that PAG is not only a teaching method but also a training tool for preparing students for real-world projects and corporate environments.

The mentor's role in PAG was crucial because effective communication and interpersonal skills directly influenced student participation. The didactics of PAG required mentors to establish strong communication, psychological support, and conflict resolution strategies to maintain a productive learning environment. The study also confirmed that diagnosing

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students' cognitive processes, such as clip thinking, played a key role in optimizing learning outcomes.

Additionally, experiments on the role of implicit knowledge in learning demonstrated that direct, verbal instruction alone was not sufficient. When implicit knowledge—such as voice modulation and physical demonstration—was included, student task completion rates increased significantly because these non-verbal cues helped bridge comprehension gaps. These findings align with pedagogical research, emphasizing that multimodal instruction improves student retention and skill development.

Implementing PAG in inclusive universities created positive social and psychological effects. Students with disabilities showed increased communication, improved logical reasoning, and enhanced emotional intelligence because PAG encouraged active participation and collaborative problem-solving. Successful PAG implementation contributed to higher self-esteem and better employment prospects for students with disabilities, particularly in project management roles.

Despite its benefits, key risks in PAG implementation were identified, including incomplete understanding of the methodology, potential procedural inconsistencies, and inadequate mentor training. Addressing these challenges will require systematic mentor preparation and continuous refinement of the PAG approach.

These results confirm that PAG is a valuable tool in post-industrial education because it integrates game-based learning, project-based learning, and inclusive teaching strategies to create a dynamic, engaging, and effective educational experience. Future studies should explore long-term impacts of PAG on career readiness and adaptability in professional environments.

4. CONCLUSION

This study developed the methodological foundations for organizing and conducting the PAG in post-industrial higher education, focusing on its application in project-based, inclusive, correctional, and recreational education. The findings confirm that PAG enhances student engagement, knowledge retention, and practical skill development because it integrates game-based and project-based learning into a unified methodology. By reengineering the OAG, this study has established PAG as an effective tool for teaching project methodology and commercializing knowledge in an inclusive educational setting.

The results demonstrate that PAG effectively promotes active learning and problem-solving because it immerses students in real-world scenarios where they must collaborate, make decisions, and adapt strategies dynamically. Figure 1 illustrates the increased engagement levels observed in PAG-based learning compared to traditional methods, while Table 1 highlights the impact of mentor strategies on student performance. Additionally, Figure 2 presents the social and psychological benefits of PAG for students with disabilities, showing improvements in peer communication, emotional intelligence, and logical reasoning.

The study also highlights the importance of diagnosing clip thinking and implicit knowledge in educational processes because these cognitive factors influence students' ability to synthesize and apply knowledge. Future research should focus on quantifying the long-term impact of PAG on professional preparedness and exploring strategies for optimizing its implementation across diverse educational settings.

The novelty of PAG lies in its adaptability and broad applicability in post-industrial education. It provides an interactive, competency-based approach that aligns with the new technological order and the evolving needs of universities and industries. The results suggest that PAG can significantly contribute to higher education reform, bridging the gap between

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academic learning and real-world project execution, ultimately enhancing employment prospects and professional competency among graduates.

5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

6. REFERENCES

Abdul Jabbar, A. I., and Felicia, P. (2015). Gameplay engagement and learning in game-based learning: A systematic review. *Review of Educational Research*, *85*(4), 740-779.

Djirong, A., Jayadi, K., Abduh, A., Mutolib, A., Mustofa, R.F., and Rahmat, A. (2024). Assessment of student awareness and application of eco-friendly curriculum and technologies in Indonesian higher education for supporting sustainable development goals (SDGs): A case study on environmental challenges. *Indonesian Journal of Science and Technology, 9*(3), 657-678.

Hanna, H., Abdul, S.L., Cruz, A.D.B.D., Manalo, Z.T., Papna, F.M.L., and Falle, J.A. (2021). Game-based activity method: A case of grade 5 students. *Indonesian Journal of Teaching in Science, 1*(1), 13-16.

Hartt, M., Hosseini, H., and Mostafapour, M. (2020). Game on: Exploring the effectiveness of game-based learning. *Planning Practice & Research*, *35*(5), 589-604.

Lestari, I.S. (2024). Bibliometric analysis using VOSviewer with Publish or Perish of identifying local legends through project-based learning for critical thinking skills in English. *ASEAN Journal of Community Service and Education, 3*(2), 69-78.

Muhabbat, H., Jakhongir, S., Farxod, T., and Khulkar, K. (2023). Modernization of management system of higher education institutions: An empirical perspective from Uzbekistan. *Indonesian Journal of Multidiciplinary Research, 3*(2), 297-306.

Musayaroh, S., Asmiati, N., Utami, Y.T., Mulia, D., Sidik, S.A., Abadi, R.F., Pratama, T.Y., Maslahah, S., and Pramudyo, A.S. (2023). A digital accessibility and inclusive design-based e-module in higher education: Does it work in a classroom with a deaf student?. *ASEAN Journal of Community and Special Needs Education, 2*(1), 55-60.

Onia, S.I., and Rmadan, A.F. (2023). Policy for distance learning in education in higher education institutions: Experiences from Sudan. *Indonesian Journal of Educational Research and Technology, 3(*1), 59-68.

Purwianingsih, W., Lestari, D.A., and Rahman, T. (2023). Profile of communication skills of students in groups with the application of blended learning using project-based learning model. *Indonesian Journal of Multidiciplinary Research, 3*(1), 159-168.

Uziak, J. (2016). A project-based learning approach in an engineering curriculum. *Global Journal of Engineering Education*, *18*(2), 119-123.

Wagiran, W., Mujiyono, M., Setiadi, B.R., Wibowo, Y.E., Surahmanto, F., Agata, D.A., and Areeprasert, C. (2023). Temperature distribution in bio stove using saw dust: An

integrated project-based learning. *Indonesian Journal of Science and Technology, 8*(1), 127-140.

Wanjara, A.O., and Ogembo, P.O. (2024). Information communication technology (ICT) on implementation of higher education. *Indonesian Journal of Educational Research and Technology, 4*(3), 259-270.

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