

GAMIFICATION-BASED LEARNING THAT PRESERVES COOPERATION AND EMPATHY AMONG EMPLOYEES

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Abstract - Advances in technology and changes in workforce characteristics have encouraged organizations to seek more engaging and effective learning methods to enhance employee competencies. Gamification, as an approach that integrates game elements into non-game contexts, has been increasingly adopted in human resource development programs. Although this approach has proven effective in enhancing motivation and participant engagement, concerns remain that its emphasis on individual achievement and competition may erode values of cooperation and empathy, which are essential for successful teamwork. This study aims to analyze how gamification-based learning can be designed and implemented to preserve and even strengthen cooperation and empathy among employees. The method employed is a literature review that examines relevant scholarly sources. The findings indicate that well-designed gamification with emphasis on collaborative elements, social support, and reflection can create learning environments that are not only engaging but also reinforce interpersonal relationships among employees. The main conclusion of this study is that balancing competition and cooperation is a key factor in ensuring that gamification provides optimal benefits without negative consequences for interpersonal relations. This study contributes to the development of organizational learning theory and offers practical guidance for organizations in designing sustainable learning programs oriented toward the social and emotional development of employees.

Keywords: Gamification-based learning, employee cooperation, empathy, human resource development, organizational learning, learning design, employee engagement.

INTRODUCTION

The dynamic changes in the business environment demand that organizations continuously enhance the competencies and skills possessed by employees in order to adapt and compete effectively. Traditional learning methods that are one-way and focus on the passive delivery of information are considered less capable of meeting current learning needs. Employees, especially those from the younger workforce, tend to prefer learning methods that are interactive, engaging, and provide opportunities to participate actively (Krishnan et al., 2022). Gamification emerges as a promising alternative, where game elements such as points, badges, leaderboards, and challenges are integrated into the learning process to increase motivation and participant engagement (Eliyas & Ranjana, 2022). Companies must ensure a continuous training and development process to enhance the team's ability to manage risks (da Silva et al., 2022).

Current phenomena indicate that the application of gamification in organizational learning is expanding across various industry sectors (Uppalike, 2022). Many organizations report that the use of this approach significantly increases attendance rates, task completion, and understanding of learning materials (Gaonkar et al., 2022). This concept even evolves toward posthuman human resource management that optimally utilizes generative artificial intelligence (Darmawan, 2022). The game elements used in gamification provide measurable challenges and tangible rewards, so that employees feel more motivated to follow the learning process and apply the knowledge gained in daily work. In addition, gamification also allows organizations to monitor employee learning progress in real-time and provide immediate feedback, which further enhances the effectiveness of the learning process.

However, along with the increasing use of gamification, various issues arise related to the social and emotional impacts of this approach. One of the main issues is that many gamification programs are designed with an excessive emphasis on individual goal achievement and competition among participants (Almeida et al., 2022). In programs like this, employees tend to focus on efforts to earn points, achieve the highest rank, or obtain the offered rewards, thereby ignoring the importance of cooperation and mutual support among peers. Such excessive emphasis on individual achievements risks obscuring true work productivity, because good performance measurement should also take into account employee creativity and innovation, rather than merely the number of points obtained (Darmawan, 2023). This issue becomes increasingly important given that in the modern work environment, most tasks and projects are completed through teamwork, where the ability to collaborate and understand other people's perspectives becomes a determining factor for success. Rojak and Darmawan (2022) state that by actively fostering self-confidence, organizations can not only expect an increase in individual performance, but also collective progress in achieving organizational goals. This reciprocal interaction between personal and environmental aspects emphasizes the urgency of utilizing organizational

social capital and group collaboration in ensuring the success of work programs (Mardikaningsih & Darmawan, 2022). Flexible organizational structures play a role in driving the company's adaptability to the dynamics of the work environment, including in responding to changes in interaction patterns resulting from the implementation of gamification (Darmawan & Mardikaningsih, 2023). Organizational effectiveness itself is determined by a number of interrelated factors, so the success of gamification programs cannot be separated from these factors (Darmawan, 2024).

Another issue related to the application of gamification is the potential decline in empathy among employees. Empathy, which is the ability to understand and feel what others are experiencing, is considered an important factor in creating a harmonious and supportive work environment (Hammedi et al., 2021). When gamification-based learning programs are designed by creating situations where each participant competes with one another, employees tend to focus more on their own interests and pay less attention to the needs and difficulties experienced by their coworkers. This condition can lead to feelings of mutual suspicion, a lack of trust, and a decreased readiness to help others, which ultimately can lower teamwork effectiveness and overall organizational performance. Such a condition confirms that work patterns that reduce direct social interaction can diminish psychological well-being and strain relationships among employees (Darmawan, 2023). The appropriate design of training programs also plays an important role in shaping employee behavior, as seen in environmentally based value training that is able to foster care and social responsibility (Essa & Mardikaningsih, 2024). Without clear and transparent communication, employees will feel confused or even suspicious of the changes being implemented (Mardikaningsih & Darmawan, 2022).

The emerging problem is that many organizations applying gamification focus solely on aspects of increasing motivation and learning outcomes, without considering the impact of this approach on social values that are important in the work environment. The design of gamification programs, which frequently mimics game structures based on competition, is often unadjusted to the organizational context that requires cooperation and collaboration. Technology sustainability is not only related to economic efficiency or technical progress, but also to moral and ethical aspects that are very important for achieving shared well-being (Essa & Mardikaningsih, 2023). A healthy innovation culture should be able to balance the speed of technology adoption with the depth of humanistic consideration, so that the application of technology does not sideline the human aspect in work (Darmawan, 2023). A positive orientation toward correcting work mistakes requires ethical leadership from management to build a healthy and sustainable organizational culture (Mardikaningsih et al., 2022). Adapting to this trend is not only a moral responsibility, but also a business strategy that supports long-term sustainability and sustainable economic growth (Mardikaningsih & Darmawan, 2021). Employee motivation and performance, including those of older workers, need to be continuously paid attention to so that their contributions to the organization can take place sustainably (Darmawan & Mardikaningsih, 2023). As a result, although the applied learning programs succeed in increasing employees' technical knowledge and skills, they can cause unintended negative impacts on interpersonal relationships and teamwork dynamics. In fact, the quality of superior human resources should also be reflected in increased work performance and loyalty, rather than mere mastery of technical skills alone (Darmawan et al., 2020).

Another problem that arises is the lack of a clear understanding of how to design and implement gamification-based learning that is capable of balancing the achievement of learning objectives with the maintenance of values of cooperation and empathy. Many organizations face difficulties in determining the right type and level of game elements to use, thus often getting trapped in the choice between creating a program that is engaging but triggers unhealthy competition or creating a program that supports cooperation but is less attractive and unable to increase participant motivation. A fair system is one that balances recognition of individual achievements and team success (Darmawan & Marsal, 2021). Good knowledge management can become a distinct competitive advantage for organizations, including in formulating targeted gamification implementation strategies (Darmawan, 2023). The design of such programs also needs to pay attention to social inclusion for all groups of employees, including senior workers, so that the application of digital technology does not create new gaps in the workplace (Darmawan, 2023). Regulatory clarity also serves as an important factor in ensuring that every organizational policy, including digital learning programs, is carried out in accordance with applicable legal obligations (Waluyo et al., 2024). The lack of clear guidance on how to integrate social values into gamification design makes many organizations hesitant to apply this approach optimally.

In the digital era, learning patterns also undergo changes through online interactions that influence how students acquire information (Darmawan, 2021). The urgency to conduct research on this matter is increasingly growing considering that gamification is predicted to continue being an important part of organizational learning strategies in the future. This work system is projected to continue developing and become a common work pattern in the future, in line with technological advancements that increasingly facilitate its implementation (Putra et al., 2022). Without a clear understanding of how to design and implement gamification-based learning programs that pay attention to social and emotional aspects, organizations risk creating a learning environment that only focuses on achieving individual results and ignores the importance of cooperation and empathy. This research is necessary to provide a comprehensive understanding of the design principles and appropriate implementation of gamification, so that organizations can leverage the benefits of this approach without causing negative impacts on important values within the work environment.

Based on the background and problems that have been described, the formulation of the problem in this research is how to design and implement gamification-based learning that is capable of maintaining and enhancing the values of cooperation and empathy among employees, as well as what factors influence the effectiveness of implementing such programs. The objective of this research is to analyze the design principles of gamification-based learning that support the preservation of cooperation and empathy values among employees, identify the factors influencing the effectiveness of implementing such programs, and formulate practical guidelines for organizations in applying a balanced and sustainable learning approach. This objective is structured in alignment with the established problem formulation, so that each objective to be achieved will provide a clear answer to the problems faced. This research is expected to contribute to the development of organizational learning theory and provide useful guidance for organizations in designing learning programs that not only enhance competence but also strengthen relationships among employees.

RESEARCH METHODS

This research uses the literature study method, which is a research method aimed at collecting, identifying, assessing, and synthesizing various literature sources relevant to the research topic to gain a comprehensive and systematic understanding. This method was chosen because it allows researchers to examine various studies previously conducted, identify emerging patterns and trends, and develop a deeper understanding of the topic being studied. Literature studies also enable researchers to identify existing research gaps and provide recommendations for future research. This method is considered appropriate for the research objective, which aims to analyze the design principles and implementation of gamification-based learning that maintain the values of cooperation and empathy among employees.

The data sources used in this research are various scientific literatures relevant to the research topic. The literature sources collected include national and international scientific journals discussing organizational learning, human resource development, educational psychology, and organizational behavior. In addition, literature sources also encompass textbooks written by experts in the fields of learning and management, research reports published by prominent research institutions, as well as policy documents and practice guidelines published by professional organizations and governments. Researchers ensure that the literature sources used possess high credibility and are widely recognized by the scientific community.

The data collection technique was conducted by gathering relevant literature sources based on their suitability to the research topic and objectives. After the literature sources were collected, the researcher read and analyzed the contents of the literature to identify information relevant to the research objectives. The information collected includes definitions and basic concepts of gamification, cooperation, and empathy; gamification design principles supporting social values; factors influencing the effectiveness of implementing gamification-based learning programs; and the challenges and solutions faced in implementing such programs. The data analysis technique used in this research is content analysis and synthesis, where the collected information is grouped, critically analyzed, and combined to form a comprehensive understanding of the research topic.

RESULTS AND DISCUSSIONS

In the digital era, an organization's success is no longer determined solely by how efficient they are in running existing work processes, but also by how capable they are in creating change and adapting to environmental developments that occur (Aboiron & Aboiron, 2022). Mardikaningsih and Darmawan (2022) emphasize that by developing skills in situational leadership, leaders can provide clearer direction, build trust, and create an environment that supports employee engagement at every stage of change. Gamification-based learning can be defined as a learning approach that integrates game elements and mechanisms into non-game learning contexts to increase motivation, engagement, and learning outcomes (Zeybek & Saygi, 2023). Commonly used game elements include clear goals, structured rules, challenges tailored to participants' abilities, immediate feedback, rewards for achievements, and trackable progress. This approach leverages the fundamental human desire for achievement, socialization, and recognition, thereby creating a more engaging and enjoyable learning environment. However, the impact of implementing this approach on social values such as cooperation and empathy heavily depends on how these game elements are designed and applied within the learning program.

Cooperation among employees refers to the process in which individuals work together to achieve common goals, where everyone's success depends on the contributions made by others. In the work environment, cooperation enables organizations to leverage the diversity of skills and knowledge possessed by employees, allowing them to complete complex tasks more effectively (Abdullah et al., 2018). Cooperation also creates a supportive work environment where employees help one another and share information to achieve optimal results. In the context of learning, cooperation allows participants to share knowledge, provide support, and solve problems together, which ultimately improves the understanding and mastery of learning materials (Chawla & Jain, 2021). Involving cross-functional team members in a single training session enhances understanding of other departments' duties and

challenges. This opens opportunities for better communication, increased synergy in achieving common goals, and reduced barriers in the decision-making process (Fared & Darmawan, 2021)

Empathy is the ability to understand and feel what others are experiencing, as well as to view situations from another person's perspective. In the work environment, empathy plays an important role in creating harmonious relationships, reducing conflict, and improving the quality of communication among employees (Husain, 2021). Employees who possess a high level of empathy tend to be more sensitive to the needs and feelings of coworkers, thereby being able to interact in a way that is more respectful and supportive (Zappala, 2014). In the context of learning, empathy allows participants to understand the difficulties experienced by others and provide the needed assistance, thus creating an inclusive learning environment that supports the development of every individual. This is in line with Ramle and Mardikaningsih (2022) stating that a digitally inclusive ecosystem is one where innovation functions as a bridge, not as a barrier.

Gamification design focused on group goals is one of the main principles that can be used to maintain and enhance the value of cooperation among employees (Kotsis et al., 2021). In design of this sort, learning goals and the offered rewards cannot be achieved solely by individuals separately, but require the contribution and cooperation of all group members. Every participant has a clear role and responsibility in achieving group goals, so that everyone's success depends on the performance and contribution provided by others (Riar et al., 2021). Openness and mutual support in mastering new systems are fundamentally influenced by strong positive psychological dimensions to maintain individual commitment in completing collective tasks (Darmawan & Mardikaningsih, 2021). This condition encourages participants to share knowledge with one another, help others experiencing difficulties, and communicate effectively to ensure that group goals are achieved well.

The use of reward mechanisms based on group achievements can also strengthen cooperation among participants (Liu et al., 2020). Recognition and rewards for employees' extra-role contributions can be an effective strategy to strengthen organizational citizenship behavior (Darmawan, 2021). In a system of this sort, rewards such as points, badges, or recognition are given to all group members when the group goal is achieved, rather than being given only to individuals considered the best performers (Munoz et al., 2019). This kind of reward system creates incentives for participants to work together and support one another, because everyone will benefit from the group's success. Conversely, if reward systems are only given to top-performing individuals, participants tend to focus on efforts to outperform others and are less willing to share knowledge or provide necessary assistance.

Gamification design that provides opportunities for interaction and communication among participants can also maintain the values of cooperation and empathy (F. Liu et al., 2020). Current social media phenomena also demonstrate how important it is to maintain relationship authenticity so that communication remains honest and meaningful (Hariani & Mardikaningsih, 2022). Structured interaction allows participants to get to know one another, understand each other's roles and responsibilities, and build mutually supportive relationships. Through this interaction, participants can understand the perspectives and feelings of others, thereby increasing their level of empathy. In addition, interaction also allows participants to share experiences and knowledge with each other, which ultimately enhances the understanding of learning materials and creates a learning environment that is richer and more beneficial for all parties involved. A work environment capable of facilitating the exchange of knowledge, both formally and informally, encourages employees to be more effective in making decisions, solving problems, and adapting to change (Darmawan et al., 2020).

The use of challenges that require collaborative problem-solving can also strengthen cooperation among participants. Challenges designed in such a way that they cannot be solved by individuals separately, but require contributions from various skills and knowledge possessed by group members, encourage participants to work together and leverage the strengths possessed by each person (Ballestin et al., 2020). In the process of solving such challenges, participants will learn to appreciate the differences among them, understand the roles played by each person, and develop the ability to communicate and coordinate effectively. Relationships of mutual respect foster a sense of togetherness and unity among employees, making it easier for them to work together and support one another in facing various challenges encountered by the organization (Mardikaningsih et al., 2022). This will ultimately enhance cooperative abilities that can be applied in the daily work environment.

The provision of opportunities to give and receive feedback among participants can also increase the levels of empathy and cooperation. In gamification designs that support social values, participants are given the opportunity to provide constructive feedback on the performance and contributions made by others, as well as receive feedback on their own performance (Alves et al., 2020). Beyond interaction factors, the support of social capital and strong team collaboration function as an essential foundation in maintaining the quality of work within an organization (Putra et al., 2021). This process allows participants to understand the impact of actions taken on others and comprehend other people's perspectives regarding the performance that has been achieved. Feedback provided in an appreciative and supportive manner will enhance mutual understanding among participants and create an environment of mutual trust and support.

The management of healthy competition settings is also an important factor in maintaining the values of cooperation and empathy. Although competition can increase participant motivation and engagement, overly intense or unhealthy competition can generate negative impacts on interpersonal relationships (Galal, 2023). In this regard, the

design of performance evaluation and fair reward systems in modern organizations is highly necessary to ensure that competition remains constructive and does not damage team harmony (Darmawan & Marsal, 2021). Therefore, in gamification designs oriented toward preserving social values, competition should be structured in such a way that it takes place among groups, rather than among individuals. Inter-group competition continues to create challenges and motivation for achievement, but at the same time encourages cooperation within the group to achieve the best results. This approach allows participants to experience the benefits of competition without having to sacrifice relationships with coworkers who are in the same group.

The provision of opportunities for reflection on the learning process and outcomes can also strengthen the values of cooperation and empathy among participants. Reflection allows participants to understand the roles played by themselves and others in achieving learning objectives, as well as comprehend the impact of interactions occurring during the learning process (Shapira et al., 2016). Through reflection, participants can realize the importance of each individual's contribution, appreciate the efforts made by others, and understand how good cooperation can improve the results achieved. Reflection also enables participants to identify ways that can be used to improve cooperation and communication in the future, so that the learning experience gained can be applied in the daily work environment.

The use of compelling stories or narratives as a framework for the learning process can also support the preservation of the values of cooperation and empathy. Stories designed in such a way as to emphasize the importance of cooperation, mutual assistance, and appreciation of differences can create a context that supports the development of these social values (Ozaeta et al., 2022). Participants will be engaged in the story and understand that success in achieving the story's objectives depends on the ability to work together with others. Stories can also display situations that require an understanding of other people's feelings and perspectives, so that participants indirectly learn to develop empathy skills that can be used in daily interactions within the work environment.

The alignment of gamification design with the existing organizational culture is also a factor that determines effectiveness in maintaining the values of cooperation and empathy. Every organization has a different work culture, where the embraced values and ways of interacting among individuals can vary (Ellenberger et al., 2020). This connection reinforces the importance of social construction regarding work-life balance within the boundaries of cultural and organizational norms (Eddine & Darmawan, 2022). Gamification designs adapted to the organizational culture will be more easily accepted and properly executed by participants, because they align with what they already understand and practice in the daily work environment. Conversely, if the gamification design contradicts the existing organizational culture, participants tend to feel uncomfortable and struggle to participate actively, which ultimately diminishes the effectiveness of the learning program and may cause negative impacts on interpersonal relationships.

Employee engagement also has a positive relationship with productivity, profitability, employee retention, safety, and customer satisfaction (Buckingham & Coffman, 1999). Employee involvement in the design process of gamification-based learning programs can also enhance the program's ability to maintain the values of cooperation and empathy. When employees are involved in the design process, they have the opportunity to convey opinions, needs, and expectations regarding the learning program to be implemented (Barna & Fodor, 2018). This active participation of human resources reflects the adoption of transformational leadership acting as an agent of change for the organization's value system (Rojak et al., 2022). This involvement allows the program design to be tailored to the characteristics and needs of participants, thereby better creating a learning environment that supports the development of desired social values. In addition, employee involvement also creates a sense of ownership over the implemented program, so they are more willing to participate actively and strive to create positive interactions among fellow participants. When employees feel they have contributed to sustainability goals, they tend to be more engaged and enthusiastic about their work. By encouraging this involvement, companies can optimize employee potential to achieve greater goals (Hariani & Mardikaningsih, 2024).

The provision of adequate support during the learning process also plays an important role in maintaining the values of cooperation and empathy. When individuals receive sufficient support, they will feel more confident in their ability to learn and master new technology systems (Abdullah et al., 2021). Support can be in the form of guidance from facilitators, availability of required resources, and opportunities to discuss and share experiences with others (Mumin & Sulong, 2023). It is important for organizations to continue investing in workforce training and development to ensure that employees remain relevant and competitive in facing global market dynamics (Abdullah et al., 2021). Facilitators play a very important role in creating a supportive learning environment, where they can provide direction, facilitate interactions among participants, and resolve problems or conflicts that may arise during the learning process. Adequate support allows participants to feel comfortable interacting with others, making it easier to develop mutually supportive relationships and understand the feelings and perspectives of others.

A comprehensive evaluation of the learning process and outcomes is also necessary to ensure that the implemented gamification-based learning program truly maintains and enhances the values of cooperation and empathy among employees (Kulkarni et al., 2022). Process assessment allows organizations to evaluate the efforts made by employees in developing new ideas, conducting experiments, and overcoming emerging obstacles (Ioanid & Iliescu, 2022). Evaluation does not only focus on the mastery of learning materials and achieved results, but also assesses behavioral and attitudinal changes occurring in participants, including the ability to cooperate and understand the feelings

of others (Tan & Chong, 2023). Evaluation results can be used to identify existing shortcomings in program design and make necessary improvements, so that the implemented learning program can be continuously refined and provide optimal benefits for competence development and interpersonal relationships among employees.

The application of appropriate design principles in gamification-based learning can create a learning environment that is not only engaging and effective in enhancing technical knowledge and skills, but also capable of maintaining and enhancing the values of cooperation and empathy among employees (Liu et al., 2023). When participants engage in a learning process that emphasizes group goals, cooperation, and social support, they will understand that success cannot be achieved solely through individual effort, but also through cooperation with others. This experience will shape mindsets and behaviors that can be applied in the daily work environment, thereby creating a work environment that is more harmonious, supportive, and effective in achieving organizational goals. This is in line with the research of Barzani et al. (2022) stating that the successful integration of the three dimensions of sustainability requires strong commitment across all levels of the organization as well as close cooperation. High work effectiveness also contributes significantly to overall organizational success (Djazilan & Darmawan, 2022).

There is no single gamification design that fits all types of organizations or employee groups. Learning programs must be tailored to participant characteristics, intended learning objectives, and organizational context (Khodabandeku et al., 2022). Factors such as age, educational background, type of work, and professional experience need to be considered when designing appropriate gamification-based learning programs. This is consistent with Darmawan (2020) organizations therefore need to design training based on individual needs, taking into account work experience, learning style preference, and comfort level with digital technology. By taking these factors into account, organizations can create gamified learning initiatives that deliver optimal benefits, both in terms of competency development and the preservation of essential social values in the workplace. Mardikaningsih and Darmawan (2022) observed that digital HR practices in remote work systems can either widen or narrow this gap, depending on how they are designed.

CONCLUSIONS

Based on the literature review, it can be concluded that gamification-based learning has the potential to enhance employee motivation and engagement in learning processes, but its impact on cooperation and empathy depends heavily on program design and implementation. Gamification designs that emphasize group objectives, team-based rewards, structured interaction, and reflection can preserve and even strengthen cooperation and empathy among employees. Conversely, designs that place excessive emphasis on individual competition may negatively affect interpersonal relationships. Factors such as alignment with organizational culture, participant involvement in program design, and adequate support also influence the effectiveness of gamification in maintaining social values.

Future research could conduct empirical studies to test the effectiveness of different gamification design principles in sustaining cooperation and empathy across various organizational types and industrial sectors. Further studies may also develop more detailed and measurable frameworks that organizations can use to design and implement gamification-based learning programs suited to their specific needs and characteristics. Additionally, future research could examine the long-term impact of such programs on team performance and overall organizational outcomes.

The findings of this study provide practical implications for organizations in designing and implementing gamification-based learning programs. Organizations must carefully consider the objectives and design principles applied, ensuring that programs not only enhance motivation and learning outcomes but also preserve cooperation and empathy, which are vital in workplace dynamics. Organizations should balance competition and collaboration, involve employees in the design process, and provide adequate support throughout the learning experience. By applying these measures, organizations can harness the benefits of gamification-based learning without generating negative effects on employee relationships and team dynamics.

REFERENCES

- Abdullah, A., Almalki, B., & Blahmer, C. (2018). Collaborative knowledge management. *Journal of Fundamental and Applied Sciences*, 10, 292–297. <https://doi.org/10.4314/JFAS.V10I4S.93>
- Abdullah, M. H. A. B., Gardi, B., & Darmawan, D. (2021). Innovation in human resource management to enhance organizational competitiveness in the era of globalization. *Journal of Social Science Studies*, 1(1), 51–58.
- Aboiron, E., & Aboiron, J. (2022). Digital transformation as a tool for organizational change and value creation. *International Journal of Applied Research in Business and Management*, 3(1), 29–36. <https://doi.org/10.51137/ijarbm.2022.3.1.4>
- Almeida, C., Kalinowski, M., Uchôa, A., & Feijó, B. (2022). Negative effects of gamification in education software: Systematic mapping and practitioner perceptions. *Information & Software Technology*, abs/2305.08346, 107142. <https://doi.org/10.1016/j.infsof.2022.107142>
- Alves, T., Gomes, S., Dias, J., & Martinho, C. (2020). The influence of reward on the social valence of interactions. 168–175. <https://doi.org/10.1109/COG47356.2020.9231853>
- Ballestin, G., Bassano, C., Solari, F., & Chessa, M. (2020). A virtual reality game design for collaborative team-building: A proof of concept. 159–162. <https://doi.org/10.1145/3386392.3399328>

- Barna, B., & Fodor, S. (2018). Gamification's impact on employee engagement: Enhancing employee well-being with a cloud-based gamified team-building application. 203–208. <https://doi.org/10.1109/W-FICLOUD.2018.00039>
- Barzani, L. A., Darmawan, D., & Zulkamain, M. A. B. (2022). The application of sustainable supply chain management principles in the manufacturing industry to improve operational performance and corporate social responsibility. *International Journal of Service Science, Management, Engineering, and Technology*, 1(1), 38–45.
- Buckingham, M., & Coffman, C. (1999). *First, break all the rules: What the world's greatest managers do differently*. Simon & Schuster, New York, NY.
- Chawla, C., & Jain, V. (2021). Teamwork on employee performance and organization growth. *The Journal of Contemporary Issues in Business and Government*, 27(3), 705–709. <https://doi.org/10.47750/CIBG.2021.27.03.097>
- da Silva, B. dos S., Darmawan, D., & Gardi, B. (2022). A systematic approach to risk management to enhance information technology project success in a dynamic business environment. *Journal of Social Science Studies*, 2(2), 213–218.
- Darmawan, D. & R. Mardikaningsih. (2023). Measuring Motivation and Performance of Older Workers for Sustainable Organizational Contribution, *Studi Ilmu Sosial Indonesia*, 3(2), 167-196.
- Darmawan, D. (2020). Health, well-being, and productivity of senior employees in the era of artificial intelligence. *Journal of Science, Technology and Society*, 1(2), 43–50.
- Darmawan, D. (2021). Objective vagueness, appraisal bias, and lack of employee involvement in performance appraisal and job satisfaction in organizations. *Journal of Social Science Studies*, 1(1), 117–122.
- Darmawan, D. (2021). Social interaction in digital society: Changes in online communication patterns and dynamics of virtual communities. *Studi Ilmu Sosial Indonesia*, 1(1), 325–350.
- Darmawan, D. (2022). Posthuman human resource management in organizations using generative artificial intelligence. *Studi Ilmu Sosial Indonesia*, 2(2), 97–124.
- Darmawan, D. (2023). Innovation Culture That Balances Technological Speed with the Depth of Humanistic Thought. *International Journal of Service Science, Management, Engineering, and Technology*, 4(1), 47–54.
- Darmawan, D. (2023). Knowledge Management as a Source Of Competitive Advantage in Information Technology Companies. *International Journal of Service Science, Management, Engineering, and Technology*, 3(2), 44–50.
- Darmawan, D. (2023). Measuring Employee Productivity in the Digital Era by Considering Human Creativity and Innovation. *International Journal of Service Science, Management, Engineering, and Technology*, 4(3), 47–53.
- Darmawan, D. (2023). Social Inclusion for Older Workers in the Implementation of Digital Technology within Organizations. *International Journal of Service Science, Management, Engineering, and Technology*, 4(2), 44–51.
- Darmawan, D. (2023). The Concept Of Remote Work: A Literature Review on its Impact on Work Dynamics, Psychological Well-Being, and Social Relationships Among Employees. *International Journal of Service Science, Management, Engineering, and Technology*, 3(3), 49–55.
- Darmawan, D. (2024). Distribution of Six Major Factors Enhancing Organizational Effectiveness. *Journal of Distribution Science*, 22(4), 47–58.
- Darmawan, D., & Mardikaningsih, R. (2023). The Role of Flexible Organizational Structures in Enhancing Corporate Adaptability to Environmental Dynamics. *International Journal of Service Science, Management, Engineering, and Technology*, 3(1), 44–49.
- Darmawan, D., & Mardikaningsih, R. (2021). The role of positive psychological factors in enhancing employee engagement and commitment to work tasks. *International Journal of Service Science, Management, Engineering, and Technology*, 1(2), 37–44.
- Darmawan, D., & Marsal, A. P. (2021). Design of performance evaluation and fair reward systems in modern organizations. *Journal of Science, Technology and Society*, 2(1), 45–52.
- Darmawan, D., Mardikaningsih, R., Sinambela, E. A., Arifin, S., Putra, A. R., Hariani, M., Irfan, M., Al Hakim, Y. R., & Issa lillah, F. (2020). The quality of human resources, job performance and employee loyalty. *International Journal of Psychosocial Rehabilitation*, 24(3), 2580–2592.
- Djazilan, M. S., & Darmawan, D. (2022). Kajian tentang innovative behaviour ditinjau dari knowledge sharing dan keadilan organisasi. *Jurnal Baruna Horizon*, 5(2), 78–87.
- Eddine, B. A. S., & Darmawan, D. (2021). Professional employees, manual workers, and informal workers in achieving work-life balance. *Studi Ilmu Sosial Indonesia*, 1(1), 209–226.
- Eddine, B. A. S., & Darmawan, D. (2022). Social construction of work-life balance in cultural and organizational norms. *Studi Ilmu Sosial Indonesia*, 2(1), 213–234.
- Eliyas, S., & Ranjana, P. (2022). Gamification: Is E-next learning's big thing. *Journal of Internet Services and Information Security*, 12(4), 238–245. <https://doi.org/10.58346/jisis.2022.i4.017>
- Ellenberger, T., Harder, D., & Pešková, M. B. (2020). Gamification in Unternehmen. 55–81. https://doi.org/10.1007/978-3-658-26960-9_4
- Essa, N. E., & Mardikaningsih, R. (2023). Sustainable and fair technology for an equitable society. *Journal of Social Science Studies*, 3(1), 355–362.
- Essa, N. E., & Mardikaningsih, R. (2024). Green Training and Development for Shaping Employee Environmental Behavior in Organizations. *Studi Ilmu Sosial Indonesia*, 4(1), 305–336.
- Fared, M. A., & Darmawan, D. (2021). Design and implementation of cross-functional training to improve team collaboration. *Journal of Social Science Studies*, 1(1), 215–220.
- Galal, L. (2023). Competition can enhance motivation—But typically undermines it. 165–C44F1. <https://doi.org/10.1093/oso/9780197662359.003.0028>
- Gaonkar, D. S., Khan, D. W., Manisha, M., & Singh, A. (2022). Impact of gamification on learning and development. *Journal of Advances in Education and Philosophy*, 6(2), 63–70. <https://doi.org/10.36348/jaep.2022.v06i02.003>
- Hammedi, W., Leclercq, T., Poncin, I., & Alkire, L. (2021). Uncovering the dark side of gamification at work: Impacts on engagement and well-being. *Journal of Business Research*, 122, 256–269. <https://doi.org/10.1016/J.JBUSRES.2020.08.032>
- Hariani, M., & Mardikaningsih, R. (2022). The performance of authenticity and the commodification of parasocial bonds: Twin pillars of influencer culture on social media. *Studi Ilmu Sosial Indonesia*, 2(2), 385–412.
- Hariani, M., & Mardikaningsih, R. (2024). Encouraging employee engagement in sustainability initiatives to improve organization performance and sustainable achievement of social goals. *International Journal of Service Science, Management, Engineering, and Technology*, 6(3), 6–10.
- Husain, Y. (2021). Cultivating empathy through communication: Understanding others to improve relationships. *Journal of Public Representative and Society Provision*, 1(2), 57–62. <https://doi.org/10.55885/jprsp.v1i2.242>
- Ioanid, A., & Iliescu, D. (2022). Results of the innovative process: Measuring what matters. *Journal of Innovation and Business Best Practices*, 1–8. <https://doi.org/10.5171/2022.178279>
- Khodabandelou, R., Roghanian, P., Gheysari, H., & Amoozegar, A. (2022). A systematic review of gamification in organizational learning. *The Learning Organization*, 30(2), 251–272. <https://doi.org/10.1108/tlo-05-2022-0057>
- Kotsis, G., Paschinger, A., & Strauss, C. (2021). Gamification and application features for collaborative environments. 1–12. https://doi.org/10.1007/978-3-030-88207-5_1

- Krishnan, L., Poorani, S., & Sawmya, S. (2022). Emerging trends in training knowledge workers: Neweconomy. *International Journal of Learning and Development*, 12(4), 26. <https://doi.org/10.5296/ijld.v12i4.20413>
- Kulkarni, P. M., Gokhale, P., Satish, Y., & Tigadi, B. (2022). An empirical study on the impact of learning theory on gamification-based training programs. *Organization Management Journal*, 19(5), 170–188. <https://doi.org/10.1108/omj-04-2021-1232>
- Liu, B., & Tanaka, J. (2020). Applying social gamification in a gamified point system. 148–161. https://doi.org/10.1007/978-3-030-50164-8_10
- Liu, F., Liu, F., Wu, J., Huang, X., & Fong, P. S. W. (2020). Impact of intra-group cooperative incentives on the performance outcomes of knowledge sharing: Evidence from a randomized experiment. *Journal of Knowledge Management*, 24(2), 346–368. <https://doi.org/10.1108/JKM-05-2019-0256>
- Liu, S., Ma, G., Tewogbola, P., Gu, X., Lai, W. H., & Wu, Y. (2023). Game principle: Enhancing learner engagement with gamification to improve learning outcomes. *Journal of Workplace Learning*, 35(5), 450–462. <https://doi.org/10.1108/jwl-11-2022-0160>
- Mardikaningsih, R., & Darmawan, D. (2021). Business sustainability strategies in the facing of regulatory uncertainty and managerial challenges. *Journal of Social Science Studies*, 1(2), 111–118.
- Mardikaningsih, R., & Darmawan, D. (2022). Design and implementation of communication strategy in change management. *Journal of Social Science Studies*, 2(2), 237–242.
- Mardikaningsih, R., & Darmawan, D. (2022). Digital human resource practices in remote work systems. *Studi Ilmu Sosial Indonesia*, 2(1), 357–388.
- Mardikaningsih, R., & Darmawan, D. (2022). Situational leadership strategies to improve change management and team performance. *Journal of Social Science Studies*, 2(1), 247–252.
- Mardikaningsih, R., & Darmawan, D. (2022). The role of self-efficacy in predicting employee adaptability to technological change in the workplace. *International Journal of Service Science, Management, Engineering, and Technology*, 2(3), 43–55.
- Mardikaningsih, R., Halizah, S. N., Darmawan, D., Masithoh, N., & Nuraini, R. (2022). Examining the role of authentic leadership in shaping positive work climate and organizational citizenship behavior. *International Journal of Service Science, Management, Engineering, and Technology*, 2(1), 52–59.
- Mardikaningsih, R., Halizah, S. N., Nuraini, R., & Darmawan, D. (2022). The role of ethical leadership in shaping a positive and sustainable organizational culture. *International Journal of Service Science, Management, Engineering, and Technology*, 2(2), 48–55.
- Mumin, N., & Sulong, R. S. (2023). Instructional support, peer support, technical support, and e-learning experience: The mediating effect of learning motivation. *Malaysian Journal of Social Sciences and Humanities*. <https://doi.org/10.47405/mjssh.v8i12.2619>
- Munoz, J. G. S., Leon, M. A. C., Rubio, B. C. L., Banos, S. M., & Encinas, I. D. (2019). Experience in the use of rewards to help increase motivation and participation of university students. <https://doi.org/10.1109/LACLO49268.2019.00034>
- Ozaeta, L., Perez, I. A., & Rekalde-Rodriguez, I. (2022). Storytelling as a didactic tool for learning values using social robotics. *Innovative STEM Education*, 4(1), 18–23. <https://doi.org/10.55630/stem.2022.0403>
- Putra, A. R., Darmawan, D., & Arifin, S. (2022). Employee experience in the digital workplace: A human resource management perspective. *Studi Ilmu Sosial Indonesia*, 2(2), 361–384.
- Putra, A. R., Mardikaningsih, R., & Darmawan, D. (2021). Organisational social capital and team collaboration as supports for total quality management. *Studi Ilmu Sosial Indonesia*, 1(1), 129–146.
- Ramle, N. L. B., & Mardikaningsih, R. (2022). Inclusivity in technology-based services: Access and skills challenges. *Journal of Social Science Studies*, 2(2), 225–230.
- Riar, M., Hamari, J., & Zarnekow, R. (2021). The gamification of enterprise cooperation: A cross-comparison of case studies. 109–126. <https://doi.org/10.4324/9780429316722-8>
- Rojak, J. A., & Darmawan, D. (2022). Strategies for elevating employee performance: Focusing on work-life quality and self-efficacy development. *Journal of Science, Technology and Society*, 3(2), 9–16.
- Rojak, J. A., Darmawan, D., & Khayru, R. K. (2022). Transformational leadership as an agent of social change in organizational values systems. *Studi Ilmu Sosial Indonesia*, 2(1), 191–212.
- Shapira, N., Kupermintz, H., & Kali, Y. (2016). Design principles for promoting intergroup empathy in online environments. *Interdisciplinary Journal of E-Skills and Lifelong Learning*, 12(1), 225–246. <https://doi.org/10.28945/3605>
- Tan, B. S., & Chong, K. S. (2023). Unlocking the potential of game-based learning for soft skills development: A comprehensive review. *Journal of ICT in Education*. <https://doi.org/10.37134/jictie.vol10.2.3.2023>
- Uppalike, M. (2022). Gamification impact on human aspects of the organization. *JGGAG (Journal of Games, Game Art, and Gamification)*, 7(1), 7–14. <https://doi.org/10.21512/jggag.v7i1.7926>
- Waluyo, A., Vitrianingsih, Y., Mardikaningsih, R., Issalillah, F., & Negara, D. S. (2024). Legal Regulation of Multinational Corporate Health Services and Local Legal Obligations. *Journal of Social Science Studies*, 4(1), 359–370.
- Zappala, S. (2014). Perspective taking in workplaces. *Journal for Perspectives of Economic Political and Social Integration*, 19, 55–70. <https://doi.org/10.2478/V10241-012-0007-5>
- Zeybek, N., & Saygi, E. (2023). Gamification in education: Why, where, when, and how?—A systematic review. *Games and Culture*, 155541202311586. <https://doi.org/10.1177/15554120231158625>