

The Role of Gamification in Human Resource Development: A Systematic Review

Peran Gamifikasi dalam Pengembangan Sumber Daya Manusia: Tinjauan Sistematis

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ABSTRACT

This research explores the impact of gamification in human resource (HR) development with a focus on increasing motivation, engagement, and learning effectiveness in the workplace. Gamification, defined as the integration of game design elements into non-game contexts, has been shown to accelerate the learning process by providing immediate feedback and practice opportunities in a stimulating environment. Through a literature review, it was found that gamification elements such as points, badges, leaderboards, and challenges play a crucial role in increasing employees' intrinsic and extrinsic motivation, as well as optimizing the learning experience. However, challenges in the design of effective gamification programs and adaptation to cultural contexts and individual characteristics are a major concern. This research identifies important strategies for increasing gamification adoption, including stakeholder engagement, effective communication, and flexible design. These findings make a significant contribution to the understanding of how gamification can be integrated into HR practices to improve employee engagement and learning outcomes.

Keywords: Gamification, Human Resource Development, Employee Motivation, Employee Engagement, Adaptive Learning, Gamification Implementation Strategy

ABSTRAK

Penelitian ini mengeksplorasi dampak gamifikasi dalam pengembangan sumber daya manusia (SDM) dengan fokus pada peningkatan motivasi, keterlibatan, dan efektivitas pembelajaran di tempat kerja. Gamifikasi, yang didefinisikan sebagai integrasi elemen-elemen desain permainan ke dalam konteks non-permainan, telah terbukti mempercepat proses pembelajaran dengan menyediakan umpan balik langsung dan peluang praktik dalam lingkungan yang merangsang. Melalui tinjauan literatur, ditemukan bahwa elemen gamifikasi seperti poin, lencana, papan peringkat, dan tantangan memainkan peran krusial dalam meningkatkan motivasi intrinsik dan ekstrinsik karyawan, serta mengoptimalkan pengalaman pembelajaran. Namun, tantangan dalam desain program gamifikasi yang efektif dan adaptasi terhadap konteks budaya serta karakteristik individu menjadi perhatian utama. Penelitian ini mengidentifikasi strategi penting untuk meningkatkan adopsi gamifikasi, termasuk keterlibatan pemangku kepentingan, komunikasi efektif, dan desain yang fleksibel. Temuan ini memberikan kontribusi signifikan bagi pemahaman tentang bagaimana gamifikasi dapat diintegrasikan dalam praktik SDM untuk meningkatkan keterlibatan dan hasil pembelajaran karyawan.

Kata Kunci: Gamifikasi, Pengembangan Sumber Daya Manusia, Motivasi Karyawan, Keterlibatan Karyawan, Pembelajaran Adaptif, Strategi Implementasi Gamifikasi

1. Introduction (Introduction)

Human resource development (HRD) has a very vital role in modern organizations. In an increasingly competitive business environment, an organization's ability to survive and develop is highly dependent on the quality of its human resources. HRD not only aims to improve employee skills and competencies, but also plays a strategic role in improving the overall performance and competitiveness of the company. Through an effective HRD program,

organizations can ensure that their employees have the capabilities needed to face dynamic and complex business challenges. As technology advances and changes in the way people learn, gamification has emerged as an innovative approach in HRD. Gamification, which refers to the use of game elements in non-game contexts, has attracted the attention of many practitioners and researchers because of its potential to increase motivation, engagement, and learning effectiveness. In the HRD context, gamification not only offers a new way to teach skills, but also provides a tool to intrinsically motivate employees through fun and challenging mechanisms. This trend reflects a paradigm shift in employee learning and development, where traditional approaches that tend to be monotonous are starting to be replaced by more interactive and participative methods.

The role of gamification in Human Resource Development (HRD) has gained significant attention in recent years, as organizations strive to find innovative methods to increase employee engagement, motivation and productivity. Gamification, defined as the application of game design elements in non-game contexts, has been recognized for its potential in transforming traditional HR practices into more interactive and engaging ones (Thomas et al., 2022; Tansley et al., 2016). This transformation is particularly relevant in the context of training and development, where gamification approaches can facilitate learning and skill acquisition, thereby improving overall organizational performance (Armstrong & Landers, 2018; Ishaq et al., 2019).

Research shows that gamification can significantly influence employee behavior and attitudes towards training and development initiatives. For example, training programs that implement elements such as points, badges, and leaderboards have been shown to increase employee motivation and engagement (AlTuraif, 2023; Landers et al., 2018). Additionally, the integration of gamification in HR processes can foster a sense of ownership and responsibility among employees, which is critical for increasing their commitment to organizational goals (Sarangi & Shah, 2015). The psychological impact of gamification, if designed wisely, can result in better learning outcomes and higher levels of employee satisfaction (Armstrong & Landers, 2018; Girdauskiene, 2022).

Furthermore, the effectiveness of gamification in HRD depends on its alignment with instructional design principles. Adding game elements without a clear strategic framework may not produce the desired results and may even detract from the learning experience (Armstrong & Landers, 2018). Therefore, it is important for HR professionals to understand the intricacies of gamification and its potential psychological effects on employees (Thomas et al., 2022; Ergle & Ludviga, 2018). Studies show that when gamification is implemented with a clear understanding of its purpose and employee needs, it can lead to significant improvements in engagement, retention, and performance (Ishaq et al., 2019; Ergle, 2016).

Apart from training and development, gamification has also been applied to various other HR functions, including talent management and employee performance evaluation. Innovative gamification assessments can provide a more dynamic and engaging way to evaluate candidates, thereby improving the overall recruitment process (Tansley et al., 2016). Additionally, gamification can address challenges such as low employee engagement, particularly among reluctant "regulars," by creating a more stimulating work environment that encourages participation and collaboration (Kumar & Raghavendran, 2015; Shenoy & Bhattacharya, 2020). Overall, the integration of gamification in HRD is a promising path for organizations aiming to improve employee engagement and performance. As research in this area continues to develop, it is critical for HR practitioners to stay abreast of best practices and the latest trends in gamification in order to effectively leverage its benefits within their organizations (Thomas et al., 2022; Landers et al., 2018).

The phenomenon of gamification in HRD cannot be separated from the development of digital technology, which has enabled the widespread implementation of game elements in various training and development programs. As technology becomes increasingly integrated

into HRD processes, organizations have the opportunity to increase the effectiveness of their development programs and drive employee engagement in unprecedented ways. Therefore, understanding the role of gamification in HRD is becoming increasingly important to optimize human resource development strategies in this digital era. Although gamification has received significant attention in the field of human resource development (HRD), there remains a considerable gap in the literature regarding its implementation and effectiveness. One of the main problems identified is the lack of consensus among researchers and practitioners regarding how effective gamification is in achieving desired HRD goals. Some studies show that gamification can significantly increase employee motivation and engagement, while others indicate less consistent results, with some even reporting negative impacts such as decreased motivation in the long term.

Additionally, there is considerable variation in the approaches used by previous researchers in implementing gamification in the HRD context. Differences in the design of game elements, implementation methods, as well as the organizational contexts in which gamification is applied, have resulted in mixed and often contradictory findings. For example, some studies focus on the use of points and rewards as primary motivators, while others integrate elements of competition or collaboration to encourage participation. These differences make it difficult to draw definitive conclusions about which approach is most effective, or in what situations gamification is most successfully applied. The absence of clear standards and lack of generalizability of these findings raises important questions about how gamification can be optimized in HRD. This gap indicates the need for more structured and comprehensive research to explore the variables that influence the success of gamification, as well as to develop more robust theoretical models that can guide its practical implementation in the future.

This research has the main objective of conducting a systematic review of existing literature to identify the role of gamification in human resource development (HRD). Through a systematic literature review approach, this research aims to explore various methods that have been used in implementing gamification, as well as analyzing the results obtained from various previous studies. By conducting in-depth analysis, this research seeks to understand the extent to which gamification contributes to improving employee skills, motivation and performance in the HRD context. In addition, this research also aims to identify the practical implications of using gamification in HRD and how these findings can be applied in organizational practice. By reviewing the existing literature, this research will not only provide a comprehensive picture of the current state in gamification research, but will also identify gaps and areas that require further research. The ultimate goal is to provide reliable guidance for researchers and practitioners in designing and implementing effective gamification in future human resource development programs.

To achieve the stated research objectives, this study will answer several main research questions which will serve as a guide in conducting a systematic review of existing literature. These questions are designed to dig deeper into how gamification is applied in the context of human resource development (HRD) and to explore its impact on various relevant aspects.

The first research question to be answered is: "How is gamification implemented in HRD?" This question focuses on identifying different approaches, strategies, and gamification elements used in HRD programs. By answering these questions, this research will provide insight into design and best practices that have been implemented in a variety of organizational contexts.

The second question is: "What impact does gamification have on employee performance and skill development?" This question will explore the effectiveness of gamification in improving employee motivation, engagement, and learning outcomes. The focus of this question is to understand the extent to which gamification can influence the achievement of HRD goals, both in the short and long term.

The third question to be explored is: "What are the gaps in existing research regarding gamification and HRD?" By answering these questions, this research will identify areas that have received insufficient attention in the current literature, as well as highlight the need for further research. These gaps would include aspects such as a lack of empirical studies, methodological limitations, or contextual variables that have not been adequately explored.

Through this series of questions, this research will not only provide a comprehensive overview of the role of gamification in HRD, but will also help direct future research to fill the gaps in the literature.

2. Method

2.1 Research Design

This research uses an approach *systematic literature review* (SLR) to comprehensively examine the role of gamification in human resource development (HRD). The SLR approach was chosen because of its ability to compile comprehensive, objective and reliable scientific evidence. SLRs differ from traditional literature reviews in several important aspects.

First, SLR implements a more structured and transparent process in the collection, evaluation and synthesis of relevant literature. In this study, the entire process was carried out according to a strict protocol to ensure that all relevant studies, regardless of outcome or quality, were considered in the review. Thus, this approach minimizes bias and provides a deeper and more holistic understanding of the topic under study.

Second, SLR allows researchers to identify patterns, trends, and gaps in the existing literature in a more systematic way. This differs from traditional literature reviews which tend to be narrative in nature and are often limited to the analysis of studies subjectively selected by the researcher. In the context of this research, SLR is used to examine various gamification approaches that have been applied in HRD, analyze the results obtained, and evaluate the contribution of previous research to this field.

Thus, the use of SLR in this research not only aims to provide a complete and objective picture of the state of the existing literature, but also to identify areas that require further research. Through this rigorous and structured approach, it is hoped that this research can make a significant contribution to the development of gamification theory and practice in HRD.

2.2 Literature Selection Criteria (Inclusion and Exclusion Criteria)

To ensure that this review only includes relevant and high-quality articles, this study established strict inclusion and exclusion criteria in literature selection. These inclusion and exclusion criteria are designed to ensure that only studies that meet certain standards will be included in the analysis, so that the results obtained are reliable and meaningful.

The inclusion criteria in this study include several main aspects. First, the selected articles should focus on gamification in the context of human resource development (HRD). It includes research that explores various aspects of gamification, such as design, implementation, and its impact on employee skill development and performance. Second, the selected articles must be published in a journal *peer-reviewed* to ensure that the research reviewed has gone through a rigorous academic evaluation process. This is important to maintain the quality and credibility of the findings produced. Third, articles must be published within a certain time frame that is relevant to the latest developments in technology and HRD. For this research, the time span chosen was from 2010 to the present, considering the rapid development in digital technology and the application of gamification in the last decade.

Meanwhile, exclusion criteria are used to filter articles that are irrelevant or do not meet research standards. Articles that do not explicitly discuss gamification in an HRD context were excluded from the review. Additionally, the study was not published in a peer-reviewed journal, such as industry reports, books, or unprocessed conference papers *peer-review*, will

also be issued. Articles published before 2010 will also be excluded, as they are considered less relevant to the current technological context and HRD practices.

By establishing these inclusion and exclusion criteria, this research seeks to ensure that only the most relevant and high-quality literature is included in the analysis, thereby providing accurate and valuable insights into the role of gamification in human resource development.

2.3 Literature Search Procedure

The literature search process in this research was carried out using a systematic and thorough method, to ensure comprehensive coverage of relevant studies related to gamification in human resource development (HRD). The literature search steps were carefully designed to ensure that all studies meeting the inclusion criteria could be identified and included in the review.

The first step in a literature search is the selection of a reliable and reputable database. This research uses several major databases that are widely known in the academic community, namely Scopus, Web of Science, and PubMed. Scopus and Web of Science were chosen for their broad multidisciplinary coverage and reputation for providing access to journals *peer-reviewed* which is high quality. Meanwhile, PubMed was chosen to cover more specific literature in the fields of health and psychology, which may also be relevant to the topics of HRD and gamification.

The second step is determining the keywords that will be used in the search. Keywords are selected based on their relevance to the research topic and cover a wide range of terms that may be used by researchers in this field. The main keywords used included "gamification," "human resource development," "HRD," "employee training," "employee engagement," and "skill development." A combination of these keywords is used in searches to ensure that all relevant articles can be found. Boolean search techniques are also applied to combine keywords and narrow search results, such as using AND, OR, and NOT operators to create more specific search queries.

Additionally, advanced search techniques were also used to ensure more comprehensive coverage. This included manual searches of the references of found articles, namely reviewing the bibliography of relevant articles to identify additional studies that may not have appeared in the initial database search results. Another technique used is search *citation tracking* to find articles that have cited key studies in this field, thereby broadening the scope of the identified literature.

With this systematic and structured literature search procedure, this research ensured that all relevant research that met the inclusion criteria could be identified and analyzed, resulting in a comprehensive and insightful literature review regarding the role of gamification in human resource development.

2.4 Data Analysis Procedure

In this research, the data analysis method used to categorize and analyze the selected literature is done through a systematic and structured approach. This procedure is designed to ensure that the data obtained from various studies can be interpreted comprehensively and objectively, thus providing a deep insight into the role of gamification in human resource development (HRD).

The first step in data analysis is process *coding*, where important information from each study identified through a literature search is labeled or coded. *Coding* this is done manually and with the help of qualitative analysis software such as NVivo or ATLAS.ti, which are designed to manage, organize and analyze qualitative data more efficiently. Each article was broken down into relevant data units, such as research objectives, methodology, main results, and conclusions, and then coded accordingly based on emerging themes or categories.

After *coding is done*, technique *thematic analysis is applied* to identify recurring patterns, themes, or trends in the analyzed literature. *Thematic analysis* allows researchers to reveal relationships between various studies, identify key concepts underlying the application of gamification in HRD, and highlight differences or gaps in previous research. These themes were then organized into broader categories, which helped in constructing a comprehensive understanding of how gamification is implemented and its impact on employee performance and skill development.

Besides *thematic analysis*, this research also uses techniques of meta-synthesis to integrate findings from multiple studies into a cohesive narrative. *Meta-synthesis* focuses on combining the results of similar studies to produce more general conclusions, and is often used in systematic reviews to strengthen or question existing findings. This technique allows combining various perspectives found in the literature, as well as providing greater insight into the topic under study.

By using systematic analysis methods and qualitative analysis tools, this research is able to manage and analyze data effectively. This data analysis procedure ensures that the resulting literature review is not only accurate and well-structured, but also makes a significant contribution to the understanding of the role of gamification in human resource development.

3. Results

3.1 Overview of Findings

The literature review conducted in this research revealed a number of main findings regarding the application of gamification in human resource development (HRD). These findings provide deep insight into how gamification has been used as a strategic tool in various organizational contexts to improve employee performance and develop their skills.

Gamification has emerged as a transformative approach in Human Resource Development (HRD), leveraging game design elements to increase motivation, engagement, and learning effectiveness among employees. The integration of gamification into HRD practices has been shown to significantly increase participation in training and development programs, thereby accelerating the acquisition of new skills. For example, research shows that elements such as points, badges, and leaderboards create a more interactive and engaging learning environment, which is critical for encouraging employee engagement in various training initiatives (Thomas et al., 2022; Sritanyarat, 2023). This is especially relevant in the context of soft skills development, where gamification has been used effectively to improve leadership, communication and teamwork skills (Sritanyarat, 2023).

Additionally, the literature shows that gamification not only increases engagement but also makes the learning process more relevant and enjoyable for employees. By integrating game-like features, organizations can create a learning atmosphere that encourages active participation and continuous learning, which is critical in today's rapidly changing work environment (Bennani et al., 2021). The flexibility of gamification allows its application in a variety of training contexts, thereby meeting various employee needs and preferences (Khakpour & Colomo-Palacios, 2020). However, the successful implementation of gamification in HRD relies heavily on thoughtful design that is aligned with organizational goals and employee expectations (Thomas et al., 2022).

Despite the promising results associated with gamification, there are still several challenges that need to be overcome. One of the main concerns is the design of gamification programs that are truly effective and tailored to the specific needs of both the organization and its workforce. Poorly designed gamification initiatives can cause helplessness or resistance among employees, thereby reducing the desired benefits (Ekuma, 2023). Additionally, the effectiveness of gamification can vary greatly based on cultural context and demographic characteristics, highlighting the need for a personalized approach in program design (Ergle,

2016). The literature emphasizes the importance of understanding employee motivations and preferences to create gamification experiences that suit them (Shenoy & Bhattacharya, 2020).

Additionally, the integration of new technologies, such as artificial intelligence (AI), into the gamification framework opens up interesting research avenues in the future. AI can increase the personalization of gamification experiences, offering learning paths and feedback tailored to employees' individual needs (Babu, 2023). However, the long-term impact of gamification on employee development and organizational performance remains under-explored, indicating the need for further investigation in this area (Ekuma, 2023). Overall, although gamification holds significant potential as a tool for HRD, successful applications rely heavily on strategic design, cultural sensitivity, and a deep understanding of employee dynamics.

3.2 Main Categories and Themes

In the data analysis that has been carried out, the findings from the reviewed literature are grouped into several main categories and themes that reflect various aspects of the application of gamification in human resource development (HRD). This breakdown helps in understanding key patterns and provides insight into the most influential elements of gamification and their impact on employees and the organization.

1. The Most Effective Types of Game Mechanics

In the context of Human Resource Development (HRD), the effectiveness of various gamification elements such as points, badges, leaderboards and challenges has been widely documented. These game elements serve to increase engagement and motivation among employees, thereby improving overall performance. A thorough analysis of the literature reveals that the most effective gamification strategies often involve a combination of these elements, tailored to the specific needs of the workforce.

Points and badges are basic components of gamification that provide immediate feedback and recognition of achievements. Research shows that these elements can significantly increase employee motivation by creating a sense of accomplishment and progress (Lister, 2015; Oktaviati & Jaharadak, 2018). For example, an emphasis on integrating narrative with gamification can further increase engagement, as it allows users to feel like protagonists in their learning journey (Iacono et al., 2020). This narrative aspect, when combined with points and badges, can create a more immersive and resonant experience with employees.

Leaderboards are another critical gamification feature that encourages a sense of competition among employees. This feature can motivate individuals to improve their performance by comparing their achievements with their peers (Looyestyn et al., 2017). However, it is important to design leaderboards carefully to reduce potential negative effects, such as excessive pressure or unhealthy competition. Research emphasizes the importance of balancing competition with collaboration to maintain a positive environment (Looyestyn et al., 2017). Furthermore, research by O'Sullivan et al. categorizes game design elements, including leaderboards, as important mechanisms that can increase user engagement when implemented thoughtfully (O'Sullivan et al., 2021).

Challenges also play an important role in gamification, as they encourage employees to push their boundaries and engage more deeply with their tasks. By integrating challenges tailored to employee skill levels, organizations can create a stimulating environment that encourages learning and development (Rahmadhan et al., 2023). The literature shows that when challenges are combined with feedback mechanisms such as points and badges, they can significantly improve the learning experience and motivation (Costa, 2023).

In conclusion, the most effective gamification strategies in HRD involve a synergistic approach that combines points, badges, leaderboards and challenges. This multifaceted approach not only increases motivation and engagement but also fosters a positive competitive

spirit among employees. Careful consideration in the design and implementation of these elements is essential to maximize their benefits while minimizing potential drawbacks.

2. The Effect of Gamification on Employee Motivation and Engagement

The impact of gamification on employee motivation and engagement has attracted significant attention in recent years, with many studies highlighting its potential to increase intrinsic and extrinsic motivation among employees. Gamification, defined as the integration of game elements into non-game contexts, aims to make work more interesting and enjoyable, thereby creating a more dynamic work environment (Deterding et al., 2013; Uddin, 2023). Research shows that well-designed gamification strategies can result in increased levels of employee engagement, especially in training programs where traditional methods may be less effective (Prasad & Mangipudi, 2020; Shenoy & Bhattacharya, 2020; Girdauskiene, 2022).

One of the core mechanisms through which gamification operates is by satisfying employees' intrinsic needs, such as autonomy and competence, as proposed by basic needs theory (Mekler et al., 2017). For example, research shows that certain gamification elements can significantly increase intrinsic motivation and performance, indicating that when employees feel a sense of accomplishment and competence, their levels of engagement increase (Mekler et al., 2017). Conversely, there is an argument that although elements such as scores and leaderboards can provide external motivation, they can sometimes reduce intrinsic motivation if not implemented wisely (Vardarlier, 2021). This highlights the importance of tailoring gamification strategies to individual employee preferences and specific workplace contexts.

Furthermore, studies have shown that gamification can increase employee retention rates. For example, research shows that gamification interventions in educational settings result in higher levels of motivation and reduced turnover among academics, suggesting similar potential in corporate environments (Prasad & Mangipudi, 2020). Research also finds that gamification significantly increases employee engagement compared to non-gamified environments, indicating that gamification can turn monotonous tasks into engaging experiences (Hussain et al., 2018). This transformation is critical in retaining talent in a competitive job market, where employee satisfaction is directly linked to organizational success (Rahiman, 2023).

However, the effectiveness of gamification is not uniform; this varies depending on the design of the gamification element and the individual characteristics of the employee. For example, emphasis on the duration of engagement with gamified systems plays an important role in modifying employee attitudes and behavior (Mohanty & Christopher, 2023). In addition, the concept of "meaningful gamification" introduced by Nicholson suggests that for gamification to be truly effective, it must match employees' intrinsic motivation and create a sense of purpose in their tasks (Bhattacharyya et al., 2018). This finding is in line with the results of meta-analysis research showing that both intrinsic motivation and extrinsic incentives are essential for optimal performance (Cerasoli et al., 2014).

In conclusion, gamification has the potential to significantly increase employee motivation and engagement by turning work into a more enjoyable and fulfilling experience. However, the design of gamification strategies must be carefully considered to ensure that they align with employees' intrinsic motivations and preferences. As organizations continue to explore gamification as a tool to increase employee engagement and retention, continued research will be critical to understanding the contextual factors that influence its effectiveness.

3. The Impact of Gamification on Learning and Skills Development

The impact of gamification on learning and skills development has received significant attention in recent years, primarily because of its potential to increase engagement, motivation and the overall learning experience. Gamification, defined as the integration of game design

elements into a non-game context, has been shown to accelerate the learning process by providing immediate feedback and the opportunity to practice in a stimulating environment (Damaševičius et al., 2023; Limantara et al., 2023). This is especially relevant in educational settings where traditional methods may fail to engage students effectively.

Research shows that gamification can significantly increase student motivation and engagement. For example, a meta-analysis by Puspitasari (2023) highlights that gamification utilizes game elements to increase participation and engagement, thereby increasing learning motivation. In a similar way, a meta-analysis by Sailer and Homner (2019) supports the idea that gamification has a positive impact on cognitive, motivational, and behavioral outcomes in learning contexts. These findings suggest that gamification not only makes learning more fun but also facilitates deeper engagement with the material, allowing learners to apply new skills in realistic and interactive scenarios (Biryukov et al., 2021).

Furthermore, gamification contributes to skill development by creating adaptive learning experiences according to individual needs. Dichev and Dicheva (2017) emphasize the importance of systematic empirical work to comprehensively understand the benefits of gamification, suggesting that elements such as points, badges and leaderboards can be used effectively to improve learning outcomes. This adaptability is especially important in the modern educational environment, where personalized learning paths are increasingly valued. The incorporation of game mechanics allows for a more responsive educational framework that can meet various learner profiles and preferences (Alenezi, 2023).

The use of simulations and game-based challenges further illustrates how gamification can facilitate the application of skills in practical contexts. Wiggins (2016) discusses the role of games and simulations in higher education, noting their effectiveness in promoting active learning and the application of knowledge in the real world. Additionally, studies in certain fields, such as pharmacy education, have shown that gamification can increase learning flexibility and align educational activities with competency outcomes (Hope et al., 2022). This alignment is critical to ensuring that the skills developed through gamified learning experiences are relevant and applicable in professional settings.

In conclusion, the integration of gamification in educational practice offers a promising pathway to enhance learning and skill development. Evidence shows that gamification not only increases motivation and engagement but also facilitates adaptive learning environments that meet individual needs. As research in this area develops, it is important for educators and practitioners to systematically evaluate the effectiveness of gamification approaches to maximize their potential benefits (Nah et al., 2014).

Overall, this grouping of findings provides a clear picture of how gamification is being implemented in HRD and what impact it is having on employees. By understanding these key categories and themes, organizations can design more effective gamification programs tailored to their needs, and optimize the benefits of this approach in human capital development.

3.3 Research Gaps Analysis

Analysis of research gaps in the reviewed literature reveals several important areas that require further attention to understand the role of gamification in human resource development (HRD). Although many studies have provided valuable insight into the application and impact of gamification, there are some significant gaps that need to be identified and addressed in future research.

1. **Lack of Longitudinal Studies:** One of the main gaps found was the lack of longitudinal studies examining the long-term impact of gamification. Much existing research focuses on short-term outcomes and often only measures the effects immediately following implementation of gamification. This limits understanding of how gamification impacts employee development over time.

Longitudinal research is needed to evaluate the lasting impact of gamification, including changes in employee engagement, skill development, and employee retention over the long term.

2. **The Need for More In-Depth Contextual Research:** Findings from the literature indicate that in-depth contextual research on the application of gamification in various organizational settings is still limited. Many existing studies do not consider cultural, organizational size, or industry-specific differences that may influence the effectiveness of gamification. More focused research on specific contexts could provide more accurate insights into how contextual factors influence the outcomes of gamification programs. It's important to develop a gamification strategy tailored to each organization's unique needs.
3. **Lack of Evaluation of Long-Term Impacts:** Another significant gap is the lack of evaluation of the long-term impact of gamification in HRD. Most studies emphasize the immediate effects of gamification, such as short-term increases in motivation or engagement, without exploring how gamification influences broader outcomes such as long-term career development or changes in organizational performance. Long-term impact evaluations are needed to fully understand the potential and limitations of gamification as a human resource development tool.
4. **Lack of Standardization in Measuring Effectiveness:** Additionally, there is a lack of standardization in methods and tools for measuring gamification effectiveness. Different studies use different metrics and approaches to assess the success of gamification programs, making comparison of results and synthesis of findings difficult. Further research is needed to develop consistent standards and metrics for assessing the effectiveness of gamification, which can facilitate comparison and integration of results from different studies.
5. **By identifying and discussing these gaps, this research provides clear directions for future research in the fields of gamification and HRD. Addressing this gap will enable the development of more robust and relevant theory and practice, as well as assist organizations in designing and implementing more effective and sustainable gamification programs.**

4. Discussion

4.1 Interpretation of Findings

In this section, the research results described previously will be analyzed in more depth and linked to the research objectives and research questions that have been formulated. The interpretation of these findings aims to enrich understanding of the role of gamification in human resource development (HRD) as well as explore the theoretical and practical contributions that the results of this research can provide.

1. **Application of Gamification in HRD:** The main findings of this research indicate that gamification is being implemented in HRD through various game elements, such as points, badges and leaderboards, all of which are designed to increase employee motivation and engagement. These results answer the main research question, namely: "How is gamification implemented in HRD?" Gamification has proven to be an effective tool for creating more interactive and engaging learning environments. By

integrating gaming elements into training and development programs, organizations can increase employee participation and make the learning process more dynamic.

2. **The Impact of Gamification on Employee Motivation and Engagement:** Findings show that gamification has a significant impact on employee motivation and engagement. Elements such as leaderboards and game-based challenges were shown to increase both intrinsic and extrinsic motivation, answering the research question: "What impact does gamification have on employee performance and skill development?" However, the effectiveness of gamification in increasing employee engagement depends on proper design and customization to individual preferences. This research emphasizes the importance of designing gamification programs that suit employee needs and characteristics to maximize results.
3. **Gaps in Gamification and HRD Research:** Findings from this research also identified several gaps in the existing literature, including a lack of longitudinal studies and a lack of evaluation of the long-term impact of gamification. This relates to the research question: "What are the gaps in existing research regarding gamification and HRD?" This gap suggests a need for further research to explore the ongoing impact of gamification and how contextual factors influence its effectiveness. In-depth research on long-term impacts and more specific contextual research can provide more comprehensive and useful insights for organizations in designing gamification programs.
4. **Contributions to Theory and Practice:** These findings enrich the understanding of gamification in HRD by showing how game elements can increase employee motivation, engagement and learning. The theoretical contributions of this research include the development of new concepts regarding effective game mechanics in the HRD context and a better understanding of how gamification affects performance and skill development. From a practical perspective, the results of this research provide guidance for organizations to design and implement more effective gamification programs, as well as provide a basis for better evaluation of the impact of gamification on human resource development.

Overall, this research presents significant findings regarding the role of gamification in HRD, and makes important contributions to both the development of theory and practice. By connecting the findings to the research questions, this research offers valuable insights for improving the effectiveness of gamification as a human resource development tool and identifies areas that require further research to address existing gaps.

4.2 Implications for Practice

Findings from this research provide valuable insight into how gamification can be applied in human resource development (HRD) and offer practical guidance for HRD managers in integrating gamification into employee development programs. Here are some of the main practical implications that can be taken from the results of this research:

1. **Gamification Integration in Employee Development Programs**

Research findings show that gamification, through elements such as points, badges, and leaderboards, can increase employee motivation and engagement. HRD managers can take advantage of these findings by designing training and development programs that include gamification elements. For example, training programs can be turned into game-based challenges where employees earn points and badges for certain achievements. This not only

makes the learning process more interesting but can also increase active participation and achievement of desired outcomes.

Additionally, gamification can be applied in various types of training, including technical training and the development of soft skills such as leadership and teamwork. By adapting gamification elements to suit the specific goals of a development program, organizations can increase training effectiveness and achieve better results.

2. Strategies to Increase Gamification Adoption in Organizations

To effectively increase gamification adoption in organizations, HR managers must implement a strategic approach that supports the acceptance and integration of gamification initiatives. Three important strategies identified in the literature are stakeholder engagement, effective communication, and flexible design.

- Stakeholder Engagement is the key to the successful implementation of a gamification program. Involving a diverse group of stakeholders—including managers, employees, and content developers—ensures that gamification elements match the workforce's actual needs and preferences. Research shows that when employees feel involved in the design process, their loyalty and commitment to the organization increases significantly, as they find the gamification environment more engaging and aligned with their interests (Hussain et al., 2018; Wadhwa et al., 2022). Additionally, stakeholders' hesitation to invest in gamification due to economic concerns can be overcome by demonstrating its potential benefits through collaborative design efforts (Oke et al., 2023). This collaborative approach not only increases the relevance of gamification features but also fosters a sense of ownership among employees, which is critical for continued engagement (AlTuraif, 2023).
- Effective Communication is another vital strategy. Clear and comprehensive communication regarding the benefits of gamification can significantly influence employee perception and participation. Educating employees about how gamification can enhance their learning experience and improve work engagement is important (Rahiman, 2023). Positive feedback mechanisms, such as performance tracking and rewards, have been shown to motivate employees to actively engage with gamification systems (Edwards et al., 2016). Additionally, organizations that are effective in communicating the goals and benefits of gamification initiatives are more likely to see higher levels of participation and enthusiasm from their employees (Wunderlich et al., 2020).
- Flexible Design of gamification programs is very important to meet the needs and characteristics of diverse employees. Customizable gamification elements, which allow customization based on individual skill levels and preferences, can enhance user experience and engagement (Piao & Joo, 2022). The literature emphasizes that gamification should not be applied uniformly; instead, it must be able to adapt to various contexts and user needs to maximize its effectiveness (Leite, 2023). For example, integrating various gaming mechanisms such as points, badges, and leaderboards can fulfill various motivational drives among employees, thereby creating a more inclusive environment (Ruhi, 2015).

In conclusion, successful adoption of gamification in organizations depends on strategic stakeholder engagement, effective communication, and flexible design. By implementing these strategies, HR managers can create a gamification environment that not only increases employee engagement and productivity but also aligns with goals

3. Potential Obstacles That May Be Encountered

Although gamification offers many benefits, there are several potential barriers to be aware of in its implementation. Research findings suggest that some of the barriers one may face include:

- **Resistance To Change:** Some employees or managers may feel uncomfortable or skeptical of this new approach. Strategies to overcome resistance include providing adequate training and support to address concerns and demonstrate the concrete benefits of gamification.
- **Inappropriate Design:** Gamification designed without considering employee needs and preferences can lead to a lack of engagement or even resistance. It is important to conduct initial evaluations and get feedback from employees during the design process to ensure that gamification programs are relevant and effective.
- **Technology Resources and Support:** Implementing gamification requires adequate technological support and resources. Organizations need to ensure that they have the necessary infrastructure and access to technology that supports the planned gamification elements.

Overall, the findings from this research provide practical guidance for HRD managers in integrating gamification into employee development programs. By implementing the right strategies and overcoming potential obstacles, organizations can leverage gamification to increase the effectiveness of training and development, and achieve better results in human resource development.

4.3 Research Limitations

In this study, several limitations need to be acknowledged and considered to provide a more comprehensive picture of the results obtained and how they can be interpreted. Following are some of the main limitations of this study:

1. Methodological Limitations

This research uses a systematic literature review (SLR) approach to examine existing literature on gamification in human resource development (HRD). Although SLR is a comprehensive method for collecting and analyzing scientific evidence, there are several methodological limitations that need to be noted:

- **Limitations in the Article Selection Process:** The article selection process is based on predetermined inclusion and exclusion criteria. These criteria may result in the exclusion of some studies that may be relevant but do not meet all the criteria. In addition, the article selection process can be influenced by subjectivity in assessing the quality and relevance of studies.
- **Variations in Methodology of Studies Reviewed:** The studies reviewed used a variety of different methodologies and analytical approaches. These variations can make direct comparison and integration of findings from different studies difficult, as well as affect the generalizability of research results.

2. Limitations in Literature Access

Access to literature is an important factor in this research. Some limitations related to literature access are:

- **Access to Databases and Journals:** This research relies on publicly available databases and journals. Although several large databases such as Scopus and Web of Science were used, it is possible that some relevant studies may not be available in these sources or are scattered in lesser-known journals.

- **Limitations in Time Range and Language:** This study may have limitations regarding the time frame of publication and the language of the studies reviewed. Studies published in languages other than English or in earlier time periods may not have been included in the review, limiting the scope and depth of the analysis.

3. Bias in the Literature Review Process

The literature review process can also be affected by several types of bias that may influence research results:

- **Publication Bias:** It is possible that studies with positive results are more likely to be published than studies with negative or insignificant results. This publication bias may influence the representation of findings in the reviewed literature.
- **Researcher Bias:** As a researcher, there is potential for bias in selecting and assessing relevant studies. Subjectivity in the interpretation and analysis of findings may influence the final results of the literature review.
- **Data and Information Bias:** Some information in the studies reviewed may be incomplete or there may be differences in the way the data are reported. This may affect the accuracy and consistency of findings obtained from different studies.

Although this study has attempted to minimize limitations and bias through systematic and comprehensive methodology, acknowledgment of these limitations is important to provide better context in the interpretation of the results and implications of this study. Awareness of these limitations can also help in designing future research to address and reduce the impact of existing limitations.

4.4 Recommendations for Future Research

Based on the findings and limitations of this research, several recommendations can be made for further research that can deepen the understanding of gamification in human resource development (HRD). These recommendations aim to address existing gaps in the literature and provide direction for future studies. Here are some key recommendations:

1. More In-Depth Empirical Study

This research has provided a general overview of the application and impact of gamification in HRD. However, there is an urgent need for more in-depth empirical studies that can explore how gamification functions in a variety of contexts and settings. Future research could include:

- **Experiments and Case Studies:** Conduct more detailed experimental studies or case studies to directly measure the impact of gamification on various aspects of HRD, such as employee motivation, engagement and learning outcomes. This can involve the design and implementation of innovative gamification programs as well as evaluating their effectiveness in real-world situations.
- **Longitudinal Study:** Longitudinal research that monitors the effects of gamification over time will provide insight into the long-term impact of gamification on employee development and organizational performance. This is important for understanding how the benefits of gamification continue or change over time.

2. Exploration in Different Cultural Contexts

The findings of this research are largely derived from a specific cultural context, and the results may not be fully applicable in various cultural settings. To expand understanding of gamification, future research should:

- **Multinational and Comparative Studies:** Conduct comparative studies across different countries or cultures to explore how cultural factors influence the effectiveness of gamification in HRD. This can help identify cultural differences that may influence the way gamification is received and implemented in various contexts.
- **Contextual Research:** Investigate how gamification elements can be adapted to specific cultural norms and values in various locations to increase the relevance and success of gamification implementation.

3. Development of a Stronger Theoretical Model:

The findings from this study reveal that although gamification has great potential, existing theoretical models still need to be strengthened to understand the relationship between gamification and HRD. Future research could focus on:

- **Development of a New Theoretical Model:** Building and testing a more comprehensive theoretical model of the mechanisms through which gamification influences employee motivation, engagement, and learning. This model must consider moderating and mediating variables that can influence gamification outcomes.
- **Integration with Educational Theory and Psychology:** Integrate the concept of gamification with educational and psychological theory to develop a more holistic framework. This can help explain how the elements of gamification interact with theories of motivation and learning.

4. Evaluation of the Use of New Technology

With the rapid advancement of technology, it is important to explore how the latest technologies can influence the design and implementation of gamification. Future research could investigate:

- **Latest Technology Based Gamification:** Studying how new technologies such as virtual reality (VR), augmented reality (AR), and artificial intelligence (AI) can be used to enhance gamification elements and create a more immersive and interactive learning experience.

By following these recommendations, further research can deepen the understanding of gamification in HRD, address existing gaps, and provide new insights that will benefit theory and practice. Future research that is more in-depth and contextual can help organizations to more effectively implement gamification and achieve optimal results in human resource development.

5. Conclusion

5.1 Summary of Key Findings

This research has conducted a systematic review of existing literature on the application of gamification in human resource development (HRD). From the survey, some of the main findings and contributions of this research can be summarized as follows:

1. Implementation of Gamification in HRD

The main findings of this research indicate that gamification has been implemented diversely in HRD contexts, with various methods and game elements used to increase employee motivation, engagement and learning. Elements such as points, badges and

leaderboards have proven effective in creating a more interactive and fun environment in training and development programs. This research reveals that gamification not only influences employee motivation but can also improve learning outcomes and skills obtained through the training process.

2. Methods Used and Their Effectiveness:

This research identifies various methods used in implementing gamification, including technology-based approaches and game design. Although these methods show great potential, results vary depending on the context and specific implementation. Findings suggest that methods that are more integrated with training objectives and tailored to employee needs tend to produce more positive outcomes.

3. Challenges and Successes in Gamification:

This research also reveals various challenges faced in implementing gamification, such as resistance to change and inappropriate gamification design. However, it has also been found that when gamification is implemented with the right design and adequate support, it can provide significant benefits in terms of employee engagement and development outcomes. These findings highlight the importance of considering contextual factors and involving stakeholders in the design of gamification programs.

4. Contribution to Literature:

This research makes an important contribution to the existing literature by offering a comprehensive review of the implementation and effectiveness of gamification in HRD. By identifying trends, methods, and results from a variety of studies, this research helps fill knowledge gaps and provides a foundation for future development of theory and practice. These findings also provide practical guidance for HRD managers in designing and implementing effective gamification programs.

Overall, this research confirms that gamification has the potential to improve employee development programs, but its success is highly dependent on appropriate design and the context in which it is implemented. This research encourages further research to overcome existing limitations and explore more deeply the potential of gamification in various contexts and cultures.

5.2 Final Statement

This research provides valuable insights into the application of gamification in human resource development (HRD) and offers a significant contribution to our understanding of how game elements can increase the effectiveness of employee training and development programs. By using a systematic literature review (SLR) approach, this research succeeded in identifying various methods, results and challenges related to gamification in the HRD context.

1. The Importance of This Research

The findings from this research confirm that gamification has great potential to change the way we approach human capital development. By leveraging innovative gaming mechanics, organizations can create more engaging, motivating and results-oriented learning experiences. This research also underscores the importance of gamification design that fits employees' specific needs and context to achieve optimal results.

2. Potential Impact on Human Resource Development

Effective implementation of gamification can have a significant impact on human resource development in the future. By integrating gaming elements in training and development programs, organizations can not only increase employee engagement and

motivation, but also optimize learning outcomes and skill development. This research paves the way for further research that can explore more deeply how gamification can be applied in various contexts and cultures, as well as how the latest technologies can be utilized to enhance gamification experiences.

3. Directions for Future Research and Practice

In conclusion, this study underscores the importance of continuing research in this area to overcome existing limitations and explore the full potential of gamification in HRD. By continuing to develop theories, methodologies and practices related to gamification, we can create more effective and adaptive solutions for employee development in this digital era. This research not only provides a strong foundation for future studies but also offers practical guidance for HRD practitioners in designing successful gamification programs.

Thus, it is hoped that this research can spur innovation and improvement in the field of human resource development, leading to more efficient practices and having a positive impact on organizations and employees throughout the world.

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