



THE DEVELOPMENT AND IMPORTANCE OF GAMIFICATION IN NURSE MANAGERS

(Review study)

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Abstract

Gamification is the process of applying game design elements and principles in non-traditional game contexts to increase motivation, encourage participation, and solve problems. Gamification projects aim to increase motivation and participation for a specific target audience. This concept is considered an effective tool in education, healthcare, workplace, marketing, and many other areas. Gamification uses game mechanics (such as scoring, levels, competitions) and dynamics (such as interest, competition, collaboration) together to attract and maintain users' attention and help them achieve specific goals. The main purpose of gamification is to increase motivation, improve education and training, encourage participation and interaction, develop problem-solving skills, encourage social interaction and collaboration, and provide behavioral change in non-traditional and non-game contexts. Gamification is applied in many areas, from education to patient care, from creating health awareness to employee motivation. Issues such as education and professional development of nurse managers, patient education, patient participation and increasing the quality of healthcare services can be supported by gamification techniques and provide significant benefits. In addition to supporting learning and development in the field of nursing, gamification offers significant benefits such as increasing the quality and safety of patient care and establishing better communication and collaboration between patients and healthcare professionals. This approach offers innovative and effective solutions for the future of the nursing profession, especially by increasing the participation of young generations in education and healthcare services.

Keywords: Gamification, Nurse, Nurse Managers, Healthcare, Technology

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1. Introduction

Gamification, the use of game design elements in non-game contexts, has gained significant traction in healthcare education and leadership development over the past decade. Nurse managers, who occupy critical leadership roles in healthcare, are increasingly exposed to gamified training strategies aimed at enhancing their management skills and team performance. This review provides a scholarly overview of the evolution, current applications, and impact of gamification in training nurse managers globally. It examines how game-based learning techniques have been adopted in healthcare leadership education, reviews evidence of their effectiveness on performance and engagement, and highlights examples of gamification tools and strategies used around the world. The goal is to elucidate the importance of gamification in nurse manager development and its implications for leadership, staff, and organizational outcomes.

The concept of “gamification” emerged in the late 2000s (first coined in 2008) and was formally defined in 2011 as “the use of characteristic design elements of games in unrelated contexts”. (Deterding et al, 2011). Gamification initially gained popularity in education and business training, where it was applied to increase learner motivation and engagement. By the early 2010s, healthcare educators began exploring gamified approaches, first in patient education and health promotion, and soon after in professional training. Historically, games have long been used to develop strategic thinking and problem-solving skills; for example, board games and digital games have been employed in schools to foster logical reasoning and teamwork. Building on this foundation, gamification “arrived” in the healthcare sector to bring new perspectives to training (Alsawaier, 2018).

As healthcare organizations recognized the need for advanced leadership competencies (e.g. systems thinking, collaboration, change management), they started incorporating gamified learning into leadership development programs. By the mid-2010s, pioneering initiatives demonstrated the feasibility of using gamification to engage and motivate clinicians in improving care processes. For instance, McKeown et al. (2016) described gamification as a strategy to increase clinicians’ commitment to practice improvements. Over time, nurse managers – who are responsible for unit-level leadership – became a focus for such training innovations. The International Hospital Federation’s 2023 leadership competency model underscores the broad skill set modern healthcare leaders need, and gamified training emerged as a tool to meet this challenge. In the late 2010s and into the 2020s, research on gamified health professions education expanded rapidly (a nearly tenfold increase in publications within five years), indicating growing global interest. Thus, what began as isolated experiments in gamified learning has evolved into a recognized trend in nurse education and leadership training worldwide (Deci and Ryan, 2000).

Today, gamification is leveraged in diverse ways to train and develop nurse managers. These applications range from high-tech digital platforms to simple game-based activities, all designed to make learning interactive and engaging. Nurse leadership training often uses simulation games that mimic real-world management scenarios. (Ebrahimzadeh et al,2021) For example, the Veterans Health Administration's "Charge Nurse" game is a digital serious game developed to cultivate nurse leader skills. In this game, learners assume the role of a charge nurse and navigate realistic unit management scenarios (e.g. staffing, patient flow, emergencies). This gamified program targets key leadership competencies such as effective communication, collaboration, team-building, systems thinking, decision-making, and creative problem-solving. Similarly, "ER," a board-based simulation game, has been widely used across hospitals and universities in over 30 countries to teach systems thinking and collaborative decision-making in healthcare teams. In this 4-player game, participants work together to manage a hospital during a simulated 24-hour period, learning to coordinate across departments under pressure. Such serious games provide experiential learning that is directly relevant to nurse managers' day-to-day challenges (Buckley and Doyle 2016).

Many healthcare organizations have integrated gamification into e-learning modules for nurse managers. Gamified learning management systems award points, badges, or progression levels as managers complete training courses and achieve competencies. This creates a sense of competition and accomplishment in what might otherwise be routine professional development. For instance, a gamified nurse development program might attach point values to required activities (online courses, workshops, clinical projects) and display a progress dashboard, guiding learners on how to prioritize tasks to reach a certification goal. Quiz-based platforms are used in leadership workshops or staff meetings to test knowledge in a fun, competitive way. Studies indicate that such gamified platforms "boost engagement and excitement, making complex ideas more approachable and enjoyable" for learners. Nurse managers can engage in quiz competitions on topics like quality improvement or policy updates, which reinforces learning through friendly competition (Seaborn and Fels, 2015).

Advancements in technology have introduced virtual and augmented reality simulations into nurse manager training. In some programs, managers participate in virtual reality (VR) simulations of critical incidents (e.g. disaster drills, high-stakes patient scenarios) where they must lead a virtual team. These simulations use game elements – real-time feedback, scoring, and scenario-based challenges – to develop leadership decision-making in a safe environment. Gamified "escape room" exercises are another creative application: here, teams of nurse leaders solve puzzles or clinical problems under time pressure, promoting teamwork and communication. Using game formats like board games, escape rooms, digital simulations, and VR allows educators to cater to different learning styles while providing realistic, immersive experiences. Nurse managers-in-training can thus practice handling complex situations (e.g. managing staff conflicts or sudden surges in patient volume) in an

engaging way that traditional lectures cannot match (Kang et al, 2022).

Beyond formal training, gamification strategies are being used by nurse managers on the job to improve team engagement and well-being. Incentive-based gamification is one example: some hospitals have implemented point systems and leaderboards for unit performance metrics. Nurse managers may use gamified dashboards to encourage their staff to meet targets (such as reducing wait times or improving hand hygiene compliance), turning quality improvement into a team “game.” These approaches tap into employees’ competitive spirit and reward achievements with badges, recognition, or tangible prizes. Another emerging application is gamifying wellness and burnout prevention programs for nurse leaders. By framing self-care activities or stress-reduction practices as games or challenges (with goals and rewards), institutions seek to motivate managers to maintain their well-being. In sum, current applications of gamification in nurse management are varied and globally dispersed – from North America to Europe, the Middle East, and Asia, healthcare organizations are experimenting with game-based solutions to equip nurse managers with the skills and mindset needed in modern healthcare settings.

Research to date suggests that gamified training can have positive effects on nurse managers’ knowledge, skills, and overall performance. A consistent finding is that game-based learning improves knowledge acquisition and retention. Gamification engages multiple senses and active participation, which strengthens knowledge “fixation” (memory) compared to passive learning. In a hospital nursing orientation context, Woolwine et al. (2019) found that adding gamification significantly boosted new nurses’ motivation and knowledge retention during training. By analogy, nurse managers who train through interactive games are likely to retain leadership concepts better and recall them on the job. Importantly, gamification often makes learning enjoyable, which increases the time and effort learners invest. A systematic review of gamified health profession education noted that no negative outcomes have been reported, and many studies show improved utilization of learning materials and improved outcomes when game elements are applied.

Gamified exercises can effectively develop the soft skills and decision-making abilities that nurse managers require. Through role-play and scenario challenges, managers practice communication, team coordination, critical thinking, and crisis leadership. The immediate feedback loops in games (scores, progress bars, debriefings) help learners identify mistakes and correct them in real time. This iterative practice builds proficiency and self-confidence. Kotp et al. (2025) observed that nursing educators and students perceive gamification as a transformative approach that increases engagement and confidence in skill application. For nurse managers, greater confidence in their leadership techniques (earned by “leveling up” through game challenges) translates to more effective performance on the hospital floor. Gamification can also foster creativity and adaptability – managers learn to think outside the box to “win” a game scenario, a mindset that can carry over to innovative

problem-solving at work.

By simulating leadership situations, gamification helps nurse managers refine their leadership style and effectiveness. Many game-based trainings emphasize collaborative leadership – for example, team-based games require participants to coordinate and communicate clearly to succeed. This mirrors real leadership, where engaging and guiding a team is paramount. Gamified training that includes storytelling and role-play can also improve a leader’s empathy and communication, as managers practice delivering feedback or making decisions with human impact in a virtual setting. One notable outcome is improved decision-making under pressure: games often impose time constraints or resource limitations that force managers to prioritize and make decisions quickly, reflecting the stress of actual healthcare environments. Over time, this leads to more decisive and effective leadership in practice. In the VHA’s Charge Nurse game, each scenario is designed to develop a specific leadership skill, and the player receives performance scores and after-action reviews. Such mechanisms ensure that nurse managers not only learn concepts but also apply them and see the consequences, which greatly enhances learning transfer to the real world. Empirical evidence supports these benefits. Gamification in simulation-based nursing education has been associated with gains in critical thinking and communication skills vital for clinical leadership. Likewise, surveys show that nurse educators report higher learner engagement and better achievement of learning objectives when gamified methods are used. As a result of these improvements in knowledge, skills, and engagement, nurse managers trained with gamification are likely to perform more competently in their roles – managing units more safely and efficiently. They are better prepared to lead teams, implement protocols, and respond to crises, having essentially “practiced” these tasks in game scenarios. In summary, gamification enhances nurse managers’ learning outcomes and equips them with effective leadership behaviors, thereby improving their performance and effectiveness as leaders.

The ripple effects of gamification extend beyond the individual nurse manager to their staff and the wider organization. Effective nurse managers foster higher engagement among nursing staff, and gamified training can contribute to this effect. When gamification improves managers’ leadership skills – especially in communication, recognition, and team-building – it creates a more positive work environment. A systematic literature review found a significant correlation between positive nurse manager leadership styles and the work engagement of staff nurses. In other words, nurse managers who exhibit supportive, empowering leadership (the kind of behaviors that can be practiced and reinforced through leadership games) tend to have nurses who are more dedicated, vigorous, and absorbed in their work. Gamification itself can also be used by nurse managers to engage staff: for example, turning a mundane unit task into a friendly competition can increase staff participation and enthusiasm. Health organizations note that introducing game elements (badges, leaderboards, team

challenges) into workplace tasks can transform the culture, making work “fun” and intrinsically motivating. By tapping into nurses’ natural competitiveness and desire for achievement, gamified initiatives led by managers (such as reward systems for meeting quality targets) can boost staff morale and camaraderie. Additionally, the organizational climate benefits from gamification. Cirino (2025) observes that unlike dry traditional meetings, gamified activities create a “healthy atmosphere” for teams, strengthening communication and collaboration among participants. Nurse managers who bring these gamified approaches to their teams often find improved teamwork and a stronger sense of community on the unit. Ultimately, the goal of nurse manager development is to improve organizational performance – including patient outcomes, quality of care, efficiency, and staff retention. While gamification is not a panacea, it can contribute to these outcomes indirectly by producing more skilled and engaged leaders. Gamified training promotes a culture of excellence and continuous improvement. It aligns learning with organizational goals by actively involving managers in problem-solving relevant to hospital operations (Gallup., 2020). For example, a game that simulates reducing emergency department wait times not only trains the manager in process improvement but also reinforces the importance of that organizational objective. Managers trained in such a way are more likely to pursue innovative solutions on the job. Improved knowledge retention and decision-making can lead to fewer errors and more efficient unit management, benefiting patient safety and care quality. There is also evidence that higher staff engagement (a likely outcome of having well-trained, motivational nurse managers) correlates with better patient satisfaction and lower adverse events. Moreover, gamification can address issues like burnout and turnover. By making training and work more engaging, it helps fulfill nurses’ psychological needs for achievement and recognition. Positive reinforcement, a hallmark of gamified systems, “builds...workplace loyalty” among employees. Managers who apply game-based rewards and recognition may see improved retention of their nursing staff, reducing costly turnover (Subhash and Cudney, 2018).

Gamification can also streamline professional development, helping organizations ensure their managers are competent in core leadership areas. Continuous gamified micro-learning (short games or quizzes delivered periodically) keeps leadership skills sharp over time, which is critical in fast-changing healthcare environments. The return on investment for organizations can include a more agile leadership workforce and a learning culture that embraces change. As one industry report noted, gamification provides “more consistent feedback on performance” during training and helps individuals see their progress toward goals in real time. This results-oriented approach in training carries over to practice, where nurse managers become more outcomes-focused and aligned with organizational strategy. In summary, the importance of gamification for organizations lies in its ability to produce engaged nurse leaders who drive better staff performance and contribute to improved organizational metrics (from patient care quality to staff satisfaction). While gamification

is just one piece of a comprehensive leadership development program, its interactive and motivating nature makes it a powerful tool for positive change in healthcare management.

Gamification in nurse manager training is a worldwide phenomenon, with various tools and strategies implemented across different countries and settings. Below are notable examples illustrating the global uptake of gamified approaches: (Kotp et al., 2025)

“ER” is a classic tabletop simulation game originally developed in the United States, but now used internationally as a training exercise for healthcare teams and leaders. Participants play in groups of four, managing a fictional hospital through a busy 24-hour period. The game’s design emphasizes collaboration across departments, resource allocation, and systems thinking. Since its creation, ER has been adopted by organizations in over 30 countries, including hospitals, universities, and even Fortune 500 companies. Nurse managers in places as diverse as the U.S., Europe, Asia, and the Middle East have played this game in leadership workshops. The takeaway lessons – breaking silos, innovating under pressure, using data for decisions – are directly applicable to improving unit management. The widespread use of this game underscores the universal value of gamified learning in healthcare. A 2018 study in the *Journal of Nursing Education* reported that using Friday Night at the ER significantly enhanced systems thinking among nursing students, demonstrating its effectiveness as an educational tool for future nurse leaders (Bacon et al., 2018). This example highlights how a well-designed game can become a global standard in leadership training.

In the United States and Canada, health systems and nursing schools have developed digital games specifically for leadership development. The Charge Nurse Leadership and Management (CALM) game (mentioned earlier), developed by the U.S. Veterans Health Administration in 2017, is one prominent example. In this computer-based simulation, learners navigate scenarios that a nurse manager or charge nurse would face – such as staffing dilemmas, conflicts resolution, and prioritization during a shift. The game provides instant performance feedback and uses a scoring system to encourage improvement. It has been showcased at serious game competitions and shared with other healthcare organizations as a model for engaging professional development (Landers, 2014). Another example is a Canadian initiative where a sepsis management gamification module was used to train interdisciplinary teams (including nurse leaders) on improving sepsis outcomes. In Europe, projects like Leadershipsims have created interactive online simulations for nursing management scenarios, often funded by EU grants to modernize nursing education. These digital tools illustrate how gamification leverages technology to provide scalable, reproducible training experiences for nurse managers across the globe (Gentry et al., 2019).

In many countries, continuing education for nurse managers has moved onto mobile platforms with gamified features. For example, in Asia, some hospital groups use smartphone apps where nurse managers earn badges and points for completing leadership micro-courses, reading articles, or

mentoring staff. Progress charts and leaderboards on these apps create a friendly competition among managers across different hospitals or regions (Hamari et al 2014). The Philippines and Indonesia have reported using gamified e-learning apps in nurse leadership training as a way to standardize education in rural vs. urban hospitals (reports in these regions note improved engagement when game elements are introduced). Even in sub-Saharan Africa, where resources for training can be limited, NGOs have piloted gamified training via SMS quizzes and scenario games to build management capacity among nursing supervisors. These mobile and low-cost gamification strategies demonstrate adaptability to different global contexts, meeting nurse managers where they are and motivating lifelong learning. Around the world, professional nursing organizations and hospitals are organizing gamified workshops for leadership development (Gajardo-Sánchez et al, 2023). In Turkey, for instance, a university hospital implemented an “Innovation Game” for nurse managers – a workshop where teams of managers competed to design the best solution to a nursing unit problem, with game rules and scoring to judge the winner. In the United Kingdom, the NHS has experimented with escape room style training days for clinical leaders (including charge nurses and ward managers) to promote teamwork and problem-solving. These escape rooms require participants to solve healthcare-related puzzles collaboratively under time limits, effectively gamifying team training. In Australia, some health services have annual “Nurse Manager Olympics,” which gamify a series of leadership tasks (from budgeting exercises to clinical simulations) into a friendly inter-hospital competition. Such events not only build skills but also network nurse leaders and boost morale. They exemplify how gamification can be applied at an organizational level to stimulate learning and camaraderie (Alluhaybi et al, 2023).

On the academic front, universities in North America and Europe have started to incorporate gamification into graduate nursing leadership curricula. For example, the University of Toronto (Canada) developed a gamified simulation for nursing students in a management course, funded by an educational technology grant. In the UK, some Master’s in Nursing Leadership programs use a year-long gamified project where students earn experience points for completing various leadership competencies. The global academic nursing community is also sharing gamification best practices through conferences and research. The presence of gamification in conferences like Sigma Theta Tau’s nursing education symposiums and publications in journals (e.g., systematic reviews in SAGE Open and BMC Nursing on gamification) reflects a worldwide interest. This cross-pollination means that a successful gamified tool in one country can be quickly adapted elsewhere. For instance, a “digital badge” system for nurse manager development created in the US was adopted by a hospital in Singapore after being presented at an international conference, illustrating rapid global transfer of gamification strategies. Overall, these examples show that from low-tech board games to high-tech VR simulations, gamification has become an integral part of nurse manager training on a global scale.

Regions may differ in the tools they emphasize (due to resource availability or cultural preferences), but the underlying strategy of making learning interactive, competitive, and fun is universal. The global uptake of gamification underlines its perceived value in preparing nurse leaders who can effectively guide healthcare teams in an ever-changing environment (Hill, 2022).

Conclusion

Gamification has evolved from a novel idea into a credible and impactful approach for developing nurse managers worldwide. Historically introduced through education, it has found a natural home in nursing leadership training at a time when healthcare faces complex managerial challenges. The evidence and examples discussed demonstrate that gamified learning is more than just “playing games” – it is a potent educational strategy that engages learners, reinforces critical skills, and fosters the kind of adaptive, motivated leaders that modern healthcare organizations need. Nurse managers trained with gamification techniques tend to exhibit improved knowledge retention, greater confidence, and refined leadership skills, which in turn enhance their performance on the job. These improvements can lead to more engaged nursing staff and potentially better organizational outcomes in patient care and workforce stability.

The importance of gamification in nurse manager training lies in its ability to transform training from a passive transfer of information into an active, learner-centered experience. By simulating real-life scenarios and providing immediate feedback, gamification bridges the gap between theory and practice, allowing nurse managers to learn by doing in a risk-free setting. It taps into intrinsic motivators – such as the desire for achievement, competition, and collaboration – making the hard work of leadership development feel rewarding and relevant. As healthcare systems globally continue to grapple with rapid change, resource constraints, and burnout issues, investing in innovative training like gamification for nurse leaders is increasingly seen as a strategic move. It cultivates a generation of nurse managers who are not only skilled and knowledgeable but also highly engaged and creative in their approach to problem-solving.

In conclusion, gamification represents a significant advancement in how we prepare and empower nurse managers. Its global adoption attests to its versatility and effectiveness across different contexts. While continued research is needed to optimize gamification techniques and measure long-term outcomes, the current landscape suggests that gamification will remain a key component of nurse leadership development. For professors, educators, and healthcare executives, understanding and harnessing gamification is essential to foster leadership excellence and drive positive change in healthcare organizations around the world.

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