

Chapter 16

Gamification for Industry 5.0 at the Core of Society 5.0

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ABSTRACT

Gamification has become a popular approach to engage employees, customers, and other stakeholders in various industries. With the advent of Industry 5.0 and Society 5.0, the use of gamification is expected to increase, as companies and organizations look for innovative ways to enhance productivity, creativity, and collaboration. Industry 5.0 is the next phase of industrial development, characterized by the integration of advanced technologies, such as AI, IoT, and robotics, with human skills and creativity. Society 5.0, on the other hand, refers to a human-centered society that leverages technology to create solutions for social problems. This chapter explores the potential of gamification in the context of Industry 5.0 and Society 5.0. It discusses the various applications of gamification, including training, education, marketing, and sustainability. It also examines the benefits of gamification, such as increased engagement, motivation, and collaboration.

INTRODUCTION: AN OVERVIEW OF GAMIFICATION, INDUSTRY 5.0, AND SOCIETY 5.0

Industry 5.0 is the latest evolution of industrial production, where the focus is on merging human creativity and intelligence with advanced technologies such as artificial intelligence (AI), machine learning, and the internet of things (IoT). It emphasizes on the need to create a symbiotic relationship between humans and machines to optimize productivity while still emphasizing the importance of the human experience (Adel, 2022). On the other hand, Society 5.0 is a new concept that seeks to create a human-

DOI: 10.4018/978-1-6684-9919-1.ch016

centered society that utilizes technology to solve social issues and improve the quality of life. Society 5.0 envisions a future where technology is utilized to enhance human well-being and happiness, and gamification is a tool that can be utilized to achieve this. The application of gamification in Industry 5.0 at the core of Society 5.0 can help to enhance productivity, creativity, and innovation while creating a positive human experience in the workplace. Gamification can motivate employees by providing feedback and recognition, creating a sense of achievement, and promoting collaboration and competition (Adel, 2022). Furthermore, gamification can also be utilized to solve social issues and improve the quality of life.

In summary, gamification has the potential to become a powerful tool in Industry 5.0 at the core of Society 5.0, helping to create a human-centered approach to work and social issues, while simultaneously leveraging technology for optimal productivity and well-being (Nahavandi, 2019). Now few of essential terms and components will be discussed here in details as:

- **Gamification**

Gamification is the process of using game mechanics and design elements in non-game contexts to engage and motivate people to achieve their goals (Narang et al., 2022). It is a technique used by businesses, educators, and organizations to create a more immersive and engaging experience for their users or customers. The concept of gamification is based on the idea that people enjoy playing games and are more likely to be engaged and motivated when they are given a sense of progress and accomplishment. It can be applied to various industries, such as marketing, education, health and wellness, employee training, and customer service. Some common gamification techniques include the use of points, badges, leaderboards, and rewards. Points can be awarded for completing tasks or achieving milestones, while badges can signify achievements or levels of progress. Leaderboards can encourage competition among users, and rewards can be given for reaching certain goals or milestones. Gamification has been shown to have a positive impact on engagement and motivation (Donnermann et al., 2021). It can increase participation and improve learning outcomes in education, increase customer engagement and loyalty in marketing, and improve productivity and performance in the workplace. However, gamification also has its limitations and challenges. It can be overused or poorly implemented, leading to disengagement or frustration among users. Additionally, some users may become too focused on the rewards rather than the underlying goals or objectives. In summary, gamification can be a powerful tool for engagement and motivation when used appropriately and with careful consideration of the user experience.

- **Game elements**

Game elements are the building blocks that make up a game, and can include mechanics, rules, objectives, challenges, feedback, narrative, aesthetics, and more (Díaz et al., 2022). Here's a brief overview of each:

- **Mechanics:** The rules and procedures that govern how the game is played. For example, movement, combat, or puzzle-solving mechanics.
- **Rules:** The guidelines and restrictions that define the boundaries of the game. For example, how players win or lose, how turns are taken, or how resources are acquired.
- **Objectives:** The goals that players must achieve in order to win the game. These can be short-term or long-term, and can range from collecting items to completing a story.

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