

FACULTY AND STUDENT PERCEPTIONS OF AI-BASED GAMIFICATION FOR SOFT SKILL DEVELOPMENT IN HIGHER EDUCATION

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Abstract

Gamification based on Artificial intelligence (AI) is a concept gaining traction in the field of higher education, as it is helping create interactive and engaging educational settings that are conducive to soft skill development. The aim of this research is to investigate how faculty and students of certain higher educational institutions view AI-supported learning. Descriptive research design made use of structured questionnaire employed through Google Forms. The questionnaire was designed for the measurement of students' attitudes with regard to AI-based learning in terms of advantages and disadvantages, experiences, institutional support, and barriers experienced while using AI technology in the process of education. Data collection involved 14 respondents and was analysed with the aid of descriptive statistics. The analysis has shown that respondents believe that AI technology stands a good chance to improve the engagement of the students in the learning process and acquire soft skills through gamified learning with the help of AI technologies. At the same time, there were certain apprehensions expressed concerning technological limitations and the lack of support from institutions.

Keywords: Artificial Intelligence, Gamification, Soft Skills, Higher Education, Faculty Perception, Student Perception.

1. Introduction

Artificial Intelligence has been recognized as a revolutionary technology that is changing the sphere of education as a result of the innovative educational systems that are constantly improving teaching and learning processes. AI tools can create personalized educational experiences, bring automation to the feedback process, and facilitate making decisions based on data, thus ensuring higher levels of engagement of students (Russell & Norvig, 2021). Nowadays more and more higher education institutions employ digital technology in their work which means that AI plays more and more significant role in learner-centred education, helping create innovative educational practices (Zawacki-Richter et al., 2019).

One of the most interesting applications of the AI in the education process is gamification which is a combination of game design elements such as points, badges, leaderboards, rewards, and challenges within the learning process to increase the interest of learners (Deterding et al., 2011). Studies show that gamification positively influences the learning process because it allows engaging students in active learning through higher engagement and retention (Hamari et al., 2014). Taking into consideration the capability of AI gamification can lead to better personalization of the learning process as well as appropriate feedback (Luckin et al., 2016).

As competition in the labor market rises, more and more educational institutions find it necessary to arm their students with essential soft skills such as communication skills, teamwork, leadership abilities, critical thinking, creativity, and problem-solving. Today, employers value such competencies as much as technical skills and expertise (World Economic Forum, 2023). AI-based gamification enables the development of soft skills because it provides learning opportunities through simulations, collaboration, and simulated tasks that promote experiential learning (Gee, 2007).

However, despite becoming more popular, the efficiency of AI-based gamification still largely depends on the attitude of faculty and students toward such technology. The faculty needs to help professors use AI-based tools in classrooms while students need to show a willingness to accept new technologies so that technology-enhanced learning would be effective (Davis, 1989). Understanding the perceptions of faculty and students is important to identify the advantages and disadvantages of AI-based gamification in higher education.

In this context, the study examines the views of the faculty members and students regarding the implementation of gamification for the development of soft skills in education. The survey investigates the experiences of the respondents in regard to its effect on the learning process, its advantages, as well as issues pertaining to the institution's support.

2. Literature Review

Artificial Intelligence and gamification can be considered innovations in higher education in terms of contributing to the improvement of the process of students' engagement and motivation as well as development of soft skills. AI-based technologies can help personalize learning and provide students with ongoing feedback on their activities, making it more user-friendly. This is supported by Zawacki-Richter et al. (2019), who state that the use of AI has positive influence on the educational process by enhancing teaching and learning. This statement was also proven true by Russell and Norvig (2021), according to whom AI systems are able to detect behavioral patterns of students and provide them with unique learning experience.

The concept of gamification has gained great recognition in the field of educational strategies that involve the introduction of various elements of games such as points, badges, leader boards and bonuses into educational process. Deterding et. al. (2011) defines gamification as the use of game design elements in non-game context in order to boost motivation level. In the same vein, Hamari et. al. (2014) claim that gamification has a positive effect on learners' participation, engagement and retention of knowledge in various educational settings. The collaboration of gamification and AI helps to make education more adaptable but personalized in terms of learning routes, providing students with instant feedback and recommendations, which allows them to improve their learning experience (Luckin et.al., 2016).

The significance of soft skills in higher education has been acknowledged as well. The World Economic Forum (2023) states that skills like communication, teamwork, critical thinking, creativity and problem-solving belong to some key competences for future employment.

Regardless of certain favorable aspects, a number of obstacles exist when it comes down to effective implementation of artificial intelligence in gamification. As was described by Lester et al. (2023), the major roadblocks leading to successful implementation of AI in higher education include technological limitations, undertrained educators and insufficient support from institutions.

In spite of the fact that some previous studies analyzed AI, gamification and the process of developing soft skills separately, only few studies were devoted to the review of the perceptions of employees and learners regarding the issue of AI gamification in the process of developing such soft skills. The research described in this document is aimed at understanding the perceptions of the stakeholders with respect to advantages, learning experiences, institutional support and difficulties of AI gamification.

3. Research Methodology

The present study has used a descriptive research design in order to investigate the views of both faculty and students concerning AI-based gamification in higher education institutions. A quantitative research design has been adopted, and primary data were gathered by making use of a structured questionnaire created via Google Forms. The questionnaire consisted of demographic questions and also the questions comprised Likert-type statements pursuing to gain an assessment of the views of respondents concerning the advantages, gained learning perspectives, issues related to support on the part of the institution, and challenges related to AI-based gamification. At the same time, convenience sampling was used in order to acquire responses from respondents with different academic backgrounds. Regarding the analysis, descriptive statistical approach was used, including the frequencies and percentages, mean scores and graphical representations utilized for making a summary of respondents' opinions as well as

revealing the main trends. In this case, the selected methodology was reasonable for getting the deep understanding of the perceptions of the stakeholders and providing practical information on the implementation of the technology as an effective means of developing soft skills in higher education environment.

4. Data Analysis and Interpretation

The data collected for this study were analysed through descriptive statistics techniques, such as frequency, percentages and means scores, to understand the respondents' opinion concerning the AI gaming for soft skills development in higher education. The findings are shared in four sections, namely demographic profile, the perceived advantages of AI gaming, learning experience and institutional support, and challenges of AI game-based learning. The results give insights into respondents' views regarding AI gaming adoption and effectiveness. Demographic data has been displayed through tables and the perception-based items have been displayed in graphical form.

4.1 Demographic Profile of Respondents

The respondents comprised a number of students from varied geographical and academic backgrounds so that different viewpoints are taken into account concerning AI gaming in higher education. The data also represented respondents of both genders with males being the overwhelming majority. Most respondents appeared to have MA degrees and Ph.D. and were employed in academic fields as professors, assistant professors and research fellows. Most respondents had the backgrounds in management, some were from other countries, engineering and social sciences. The diversity of the respondents can also be seen from their teaching experience, educational training, geographic location and other aspects.

.2 Perceived Benefits of AI-Based Gamification

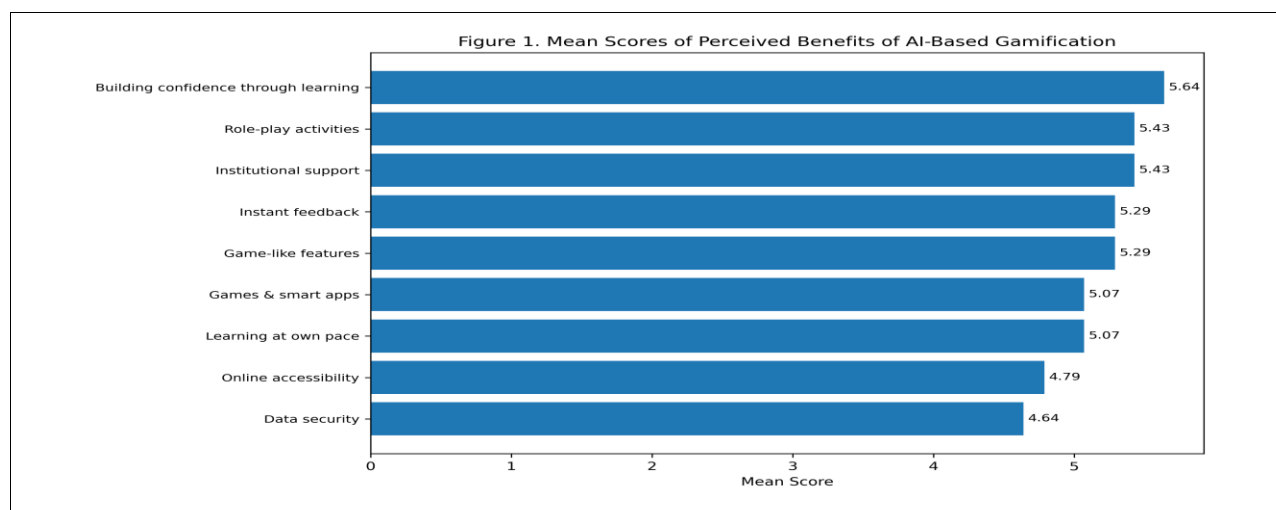


Figure 1. Mean Scores of Perceived Benefits of AI-Based Gamification

Source: Created by the author

Table 1

Variable	Mean
Learning through games and smart apps	5.07
Real-life role-play activities	5.43
Instant feedback and progress tracking	5.29
Game-like features make learning enjoyable	5.29
Learning at own pace	5.07
Building confidence through learning	5.64
Institutional support for modern tools	5.43
Easy access to online learning	4.79
Safe handling of data	4.64

Interpretation

According to the results, respondents perceive and appreciate the effectiveness of gamification based on AI. The highest average score (5.64) was in the category of increasing confidence due to learning activities, meaning that participants strongly agree that the application of AI in educational games boosts learners' self-esteem and self-improvement. Moreover, the use of role-play activities (Mean = 5.43) and support from educational institutions (Mean = 5.43) received

positive scores as well, as it proves that practical experience and innovation in technology have beneficial effects on the development of soft skills.

The participants mostly approve of feedback in time (Mean = 5.29), gamified tools (Mean = 5.29), and learning with the help of games and intelligent applications (Mean = 5.07). These results show that the use of AI gamification results in an interesting and effective learning atmosphere that motivates students and raises their involvement. Although the scores regarding access to the Internet (Mean = 4.79) and data safety (Mean = 4.64) are lower, they are still considered to be positive which indicates the necessity to improve the quality of the infrastructure and privacy.

4.3 Learning Experience and Institutional Support

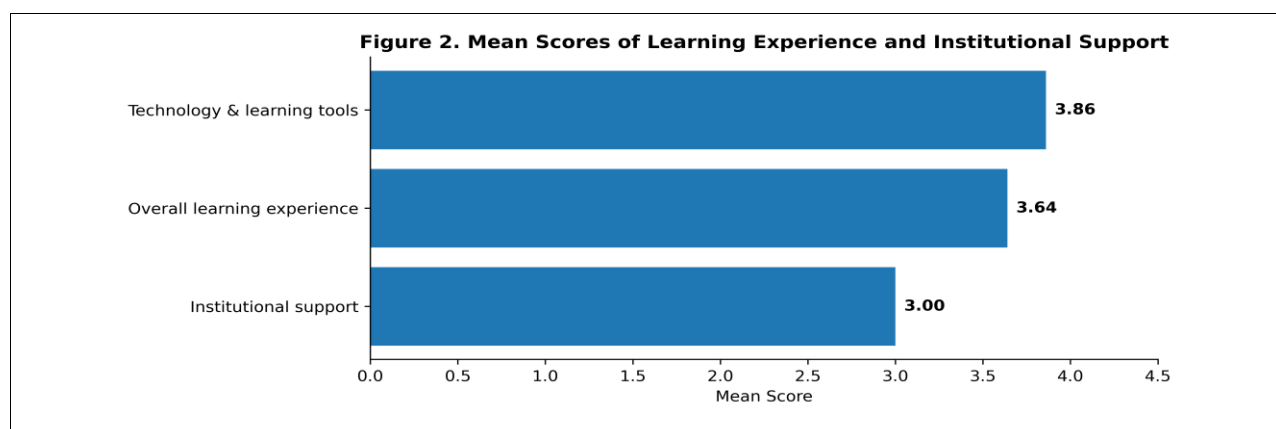


Figure 2. Mean Scores of Learning Experience

Source: Created by the author

Table 2

Variable	Mean
Technology and learning tools	3.86
Overall learning experience	3.64
Institutional support	3.00

Interpretation

The analysis shows that the surveyed people have largely enjoyed gamification learning experience through those technologies. The technology and learning tools have received the best evaluation (mean score = 3.86) which means that the respondents have considered educational technologies based on AI to be useful for learning purposes. Additionally, the learning

experience was rated as good (mean score = 3.64) which means that the participants considered AI gamification to be an effective teaching method.

But the institutional support was ranked the lowest (mean score = 3.00) which implies a lower level of happiness with the issue of how the institution helps in developing education through AI gaming tools. This means that higher education institutions should improve technological facilities of their institutions, infrastructure and research policies.

4.4 Challenges of AI-Based Gamification

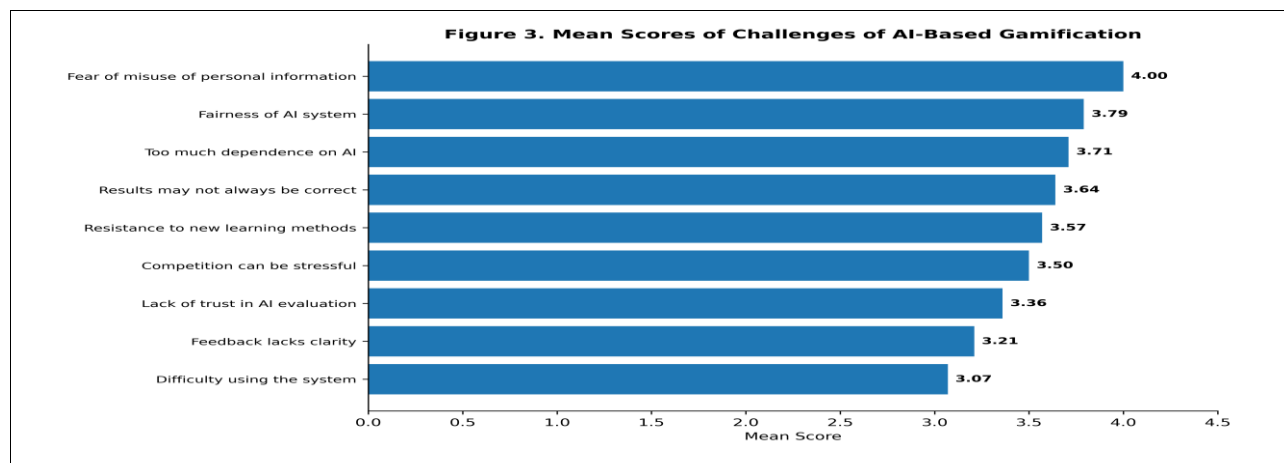


Figure 3. Mean Scores of Challenges

Table 3

Variable	Mean
Results may not always be correct	3.64
Feedback lacks clarity	3.21
Too much dependence on AI	3.71
Lack of trust in AI evaluation	3.36
Competition can be stressful	3.50
Difficulty using the system	3.07
Resistance to new learning methods	3.57
Fear of misuse of personal information	4.00
Fairness of AI system	3.79

Interpretation

The results show that the respondents perceive some of the challenges in terms of AI gamification moderately. The highest concern seems to be the fear of misuse of personal data

(Mean = 4.00) which means that privacy and security of data are still major issues of acceptance by users. The respondents also expressed concerns about the fairness of AI systems (Mean = 3.79) and the risk of becoming too reliant on AI (Mean = 3.71).

There are also moderate levels of concern regarding the wrong outcomes (Mean = 3.64), the unwillingness to adapt to new ways of learning (Mean = 3.57), and the competition brought by the gamification (Mean = 3.50). There were lower mean scores reported for the difficulty of using the system (Mean = 3.07) and the ambiguous result (Mean = 3.21). The overall findings show that even if AI gamification is supported positively, it is necessary to tackle the issues of privacy, fairness, and readiness of institutions so that the implementation becomes successful.

5. Discussion

Results of this study show that faculty and student respondent generally have positive attitudes towards using gamification and artificial intelligence in order to teach soft skills in higher education. Respondents agree that gamified learning with the help of AI improves involvement of learners in the learning process, and their confidence, communication skills, collaboration skills and ability to solve problems., since it offers many interactive tools: role-play activities, instant feedback and personalized learning. The study results are also in line with the study of Hamari et al. (2014), which established that gamification improves motivation and participation of learners. At the same time, the study identified some obstacles to the use of gamification, such as data protection, fairness of AI, dependence on technology and lack of support from the organization. The mentioned obstacles imply that institutions of higher education should improve their technological systems, offer training for faculty members and develop regulations concerning ethical use of AI in education. Similar findings were obtained by Lester et al. (2023), who described institutional and technological barriers to the use of gamification in learning.

6. Conclusion

The above article presents the results of a study that gathered opinion of university faculty and students on the issue of use of AI-based gamification in learning. The study has concluded that a majority of respondents have a positive view toward AI-based gamification and that the use is helpful in making students more engaged with the process of learning and acquiring such soft skills as communication, collaboration, critical thinking, problem-solving, leadership, etc. The importance of such methods as role playing, personalized learning, and immediate feedback has been emphasized.

One more finding of the research is that though respondents have acknowledged the positive educational features of AI-based gamification, they expressed some worries regarding issues like

data privacy, fairness of AI systems, dependency on technology, and how much support institution can guarantee in terms of implementing AI learning solutions. The identified problems mean that universities have to upgrade their digital infrastructure, teach staff how to use AI, and to develop ethical standards for using this technology.

Overall, AI-based gamification represents a promising pedagogical approach for developing the soft skills required in the twenty-first-century workplace. Its successful implementation depends on the effective integration of technology, institutional commitment, and continuous professional development. Future research should consider larger and more diverse samples, comparative institutional studies, and advanced statistical analyses to further examine the long-term impact of AI-based gamification on students' soft skill development and overall learning outcomes.

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