

GAMIFICATION IN BUSINESS EDUCATION PROCESSES

Dariusz ŻÓŁTOWSKI

Bydgoszcz University of Science and Technology; dariusz.zoltowski@pbs.edu.pl,
ORCID: 0000-0002-5123-8540

Purpose: This article presents a concept of the planned research concerning the use of gamification in business teaching.

Design/methodology/approach: The article presents a complete definition of the research, including the definition of the research problem, research questions, research objectives, hypotheses and scope of research activities and the protocol of the entire study, as well as a detailed description of the activities planned in the first of the main stages "General definition of research". It also presents the range of research methods, the use of which is necessary to achieve the research objectives.

Findings: The research concept presented in this article was created based on the results of the analysis of the general literature review on gamification, including its applications in education, as well as the results of authors' own survey of business faculty students. The research presented in this concept will be conducted in 2025 and 2026.

Originality/value: The article concerns gamification, which is becoming more common in education. The concept presented in the article defines multi-scope research in the area of gamification applications in business education. The scientific value of the research will be to expand knowledge in the area of gamification applications and its tools in business education, while the practical value is contained in the developed gamification framework, tools and implementation guidelines that will be possible to use in business education practice.

Keywords: gamification, business education, framework.

Category of the paper: Research paper.

1. Introduction

Research in gamification mainly focuses on utilizing the potential of digital tools, devices and applications to increase students' engagement and motivation using them¹. This is usually motivated by the widespread use of such tools in our time and treating them as necessary or at least useful in educational processes as well. However, more and more doubts are being raised about the results of education supported by electronic tools, specific objections are being

¹ Based on the general literature review conducted by the author (sources: Scopus and Web of Science).

formulated against such methods of work, and studies are appearing indicating the negative effects of using such tools (Spitzer, 2014, 2016).

The planned research, the concept of which is presented in this article, is aimed at developing a model of gamified business education, i.e.: determining the potential and impact of gamification on the outcomes of the business education process, developing a framework for gamification of this process, developing assumptions for the creation of tools used in this process and sample tools themselves (including games), as well as establishing guidelines for practical implementation of the defined framework with tools. The research assumes a focus on the use of non-electronic forms of gamification tools as often as possible, especially in relation to the main gamification tools. Electronic tools could be used, for example, to record and analyze gamified business education process results.

2. Background of the planned research

The term ‘gamification’ is defined as ‘incorporating elements of game in a non-game context’ (Deterding et al., 2011), and in relation to business as ‘the application of techniques known from games to business situations’ (Kozłowska, 2016). It aims, among other things, to trigger the motivational qualities of games in areas that do not focus on entertainment or motivation (Raczkowski, 2014). Gamification integrates elements of game and game-based thinking into activities that are not games (Kapp, 2012) and mechanisms specific to games are being used in business, education, commerce and even in everyday life (Kaźmierczak, 2023). Various gamification definitions can be summarized as “integration of game elements and game thinking in activities that are not games (Kiryakova et al., 2015). Some games’ features are implemented by gamification into non-game processes because of its direct or indirect influence on the result of these processes: all users are participants, challenges and tasks needed to get objectives, performed in defined order, accumulation of points for getting tasks, levels based on accumulated points, badges as rewards for completing actions, ranking based on users achievements (Kiryakova et al., 2015).

Gamification primary goal is to “reinforce certain behaviors in order to achieve the desired outcome” (Elearningindustry.Com, 2025). In education, gamification eases the learning process and makes achieving the expected outcomes more probable or easier possible, because of reinforcing the following behaviors of the gamified processes participants:

- increasing engagement (Oliveira et al., 2023) (i.e. by creation a narrative context around a task (Hanus, Fox, 2015)); motivation (Oliveira et al., 2023) (i.e. trigger the motivational qualities (Raczkowski, 2014),
- maintaining attention (Borys, Laskowski, 2013),
- encouraging to active learning (Kaya, Ercag, 2023),

- attracting to fulfill goals of learning (Borys, Laskowski, 2013),
- building relations between participants (Kaźmierczak, 2023),
- eliminating undesirable behavior by following the rules (Kaźmierczak, 2023).

The above effects are possible with appropriately constructed gamification tools, the use of which makes it possible:

- estimate the chances of success (Paľová, Vejačka, 2022),
- coping with more difficult and complex tasks by simplifying them and dividing them into easier and simpler sub-tasks (Paľová, Vejačka, 2022).
- making tedious tasks more enjoyable (Hanus, Fox, 2015) and increasing engagement in tedious and monotonous tasks (Kaźmierczak, 2023)
- reducing boredom (Oliveira et al., 2023).

The above data says that gamification and its tools increase the quality of educational processes by, among other things, enhancing the attractiveness of classes and reinforcing or even activating behaviors necessary for the effective implementation of the educational process.

The interest in gamification, saw on the Internet, has been stable for the last 15 years, with a slight increase from 2021 onwards (0).



Figure 1. Google search trend for the keyword 'gamification' in comparison to 'gamification in education' and 'gamification of learning' between 2010 and 2025 on a global scale.

Source: <https://trends.google.com/trends/explore?date=2005-01-01%202025-01-31&q=gamification&hl=en-GB, 31.01.2025>.

An increase in interest is seen in searching phrases 'gamification in education' and 'gamification in learning'. Number of searches for these phrases are far fewer than searches for the phrase 'gamification' – it generates near 10% of searches with phrase 'gamification'. All three search terms were searched mainly from Asian countries.

Gamification is also generating interest among researchers. In Scopus database have been found more than 13300 academic publications published in the last 15 years (2011-2025) containing the keyword "gamification". Gamification can be effectively used in education (Sailer, Homner, 2020) and "using gamification boosts the capacity to learn new skills by 40%" ((Giang, 2013) cited by (Denden et al., 2024)), what makes gamification and its tools one of the most effective education concepts, which for more than 20 years has aroused wider interest among both researchers and education practitioners. The field of education is also one of the

most important when it comes to research on gamification (Dichev, Dicheva, 2017; Hamari et al., 2014). It was also confirmed by Scopus searching result: almost a half of 13000 publications with the keyword gamification (over 6600) pertain to education (searching query: (KEY (gamification AND learning OR education))).

The rise of interest in gamification and its popularity has also been the basis for research critical of the concept and its tools ex. it has been described as 'the latest buzzword and the next fad' (Boulet, 2012). Boulet claims, that using gamification you actually work harder for the prize but gamification will detract motivation to learn: „incentives are only weak reinforcers in the short run and negative reinforcers in the long run” (Boulet, 2012). The unknowns associated with gamification also give rise to myths about its design and effects (Boulet, 2012) such as: gamification and games are the same thing, gamification alienates older students, it focuses on points, badges and scoreboards and there is no science behind it. All of these have been debunked because: only certain elements of the game are used for gamification, participants don't play the whole game from start to finish; people of a certain age usually don't like games but this doesn't necessarily apply to gamification, it's not an age-related rule; people don't play the game just for points – they play for mastery, challenge and socializing; and finally gamification is studied by scientists around the world from the point of view of many scientific disciplines and has a scientific basis.

Gamification and its applications in education have a broad scientific basis; however, undertaking research on gamification of business education processes seems to be justified from a theoretical perspective and interesting for educational practice, as it will allow for the development of theoretical frameworks for the gamification of these processes, tools, and guidelines for practical implementation, contributing to the results of scientific research. The verification of the developed frameworks, tools, and implementation guidelines by examining the results of their practical application will ensure the creation of a tool ready for implementation in practical conditions, which seems to be a significant practical contribution of the research.

3. Research concept

The research, the concept and basis of which are presented in this article, will try to develop a model for the gamification of the business education process conducted specifically using tools other than digital or electronic. The main goals will focus on the development of a theoretical, organizational and methodological framework for the model, gamification tools and guidelines for the model implementation. There will also be a verification of the developed model by putting it into practice and comparing the results achieved before and after the process gamification.

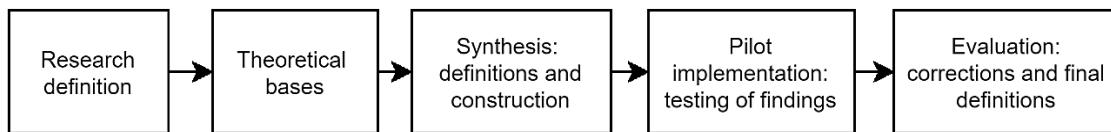


Figure 2. Gamification of the education process research general activities.

Source: Author.

The topic was taken up because of the author's interest in the gamification of education processes, particularly with the use of tools other than digital, IT or electronic tools for this purpose. The focus of the study on the use of such tools stems from the results of other publications (Spitzer, 2014, 2016) and from the being personally observed 'fatigue' with the ubiquity of digital tools in trainees. The topic was taken up to recognize whether the construction of the gamified education model planned above can significantly contribute to the effectiveness of the educational process.

3.1. Reasons for taking up the topic and research assumptions

The author's interest in developing a gamification model using tools in a non-electronic form is also related to the results of the observations of the university teaching process as well as author's own students survey. The results of the survey show that according to the respondents²:

1. The preferred working model when conducting the assessed tasks is group work. It is also considered more effective than individual work.
2. Ongoing competition during classes is a crucial element of them, especially important for obtaining better results and efficiency of work.
3. Competition increases the level of attractiveness of classes and promotes interest in participation in classes.
4. The pressure to win is stronger in a team game; in a game in which the participant works independently for his or her result, this pressure is weaker than in a team game.
5. Most respondents (65%) showed interest in taking part in activities using games. However, 15% wrote that class conducted in the classic form (ex. introduction, work on the task and discussion) is more interesting.
6. The participants of the educational process constantly use various electronic and IT tools during the process, e.g., to work on tasks, search for solutions, search for data, but they also look for informational content or entertainment and communicate during classes.
7. The possibility to use electronic tools (e.g., smartphones) in the education process can have both positive effects on learning outcomes (e.g., they support the conduct of classes, increase student involvement in class work, as long as the topic is of interest to the student) and negative effects (e.g., lowering concentration levels and activity levels

² Results of the author's own survey conducted on a group of 62 business students at a Polish university in 2025.

in class, reducing student involvement in class work, and facilitating non-topic activities (e.g., entertainment, communication)).

8. At a time of strong human impact of ubiquitous IT tools, the inclusion of non-electronic or IT methods and tools in the education and training process can result in an increase in the quality of education resulting from the activation of, among other things, the predisposition and motivation of trainees, an increase in the commitment and extent of participation in classes, improved skills of cooperation and organization of group work, as well as the recognition of predisposition to work in a group.
9. Custom tools used in teaching processes can contribute to increasing the effectiveness of education processes.

The above results indicate that there may be potential for improving the quality of educational processes in the application of gamification of business education processes using non-electronic tools. The stages of the study, the aim of each stage and their relationship to the research questions and hypotheses are presented below.

3.2. Research problem

The research problem concerns the possibility of increasing the quality of business education using gamification tools. It requires obtaining a wide range of data for analysis, as well as developing a model and verifying it in education practice, so the research work was divided into several stages. The research problem refers to the potential of gamification to increase the quality and efficiency of the business education process, and the subject of the study is business education processes conducted using gamification methods and tools.

3.3. Aims of the research

The purpose of the study is to develop a theoretical, organizational and methodological framework for business education with the use of adequate gamification tools, with a particular focus on the use of tools other than electronic and IT, and to verify the model and its tools in practice.

3.4. Research questions

The main research question seeks to determine whether the application of gamification and its tools in business education processes can contribute to a significant increase in learning effectiveness, and if so, how should the model of systematic gamified business education be structured to achieve this increase. The general research questions areas were defined below:

1. What are the universal characteristics and structures of gamification in: enterprises' activities, general and business education processes (including features, forms, methods and tools, processes in which it is applied, expected vs. actual results of application etc.).

2. Are there any developed gamification models used in: enterprises' activities, general and business education processes? If so, what are their characteristics, structure and design, and results of application?
3. What components should be included and what conditions should be met by the gamification of business education processes, the application of which can significantly contribute to increasing their quality and efficiency?
4. What gamification tools are being used in general education processes and in enterprises' operations? What are their characteristics, structure and design, as well as the results of application?
5. What are the structure and key features of correct and effective gamification implementation process?

Answers to the research questions will be determined both on the basis of the results of the individual stages of the study and on the basis of the results of the entire research process.

3.5. Hypotheses

The study posed the following hypotheses:

- H1. The increase in the involvement of trainees in business education processes obtained because of the application of gamification and its tools is the main source of the increase in the effectiveness of the business education process after the application of gamification.
- H2. The use of gamification and its tools in the business education process has a positive impact on the quality of this process from the perspective of trainees.
- H3. The use of gamification and its tools in the business education process has a positive impact on the effectiveness of this process from the perspective of trainees.
- H4. The possibility of using the business education gamification model developed in the research in practice increases interest in the use of gamification among people conducting such classes.

The hypotheses will be verified both based on the results of the various stages of the research and on the basis of the results of the entire research process after its completion.

3.6. Research process protocol

To systematize the activities of the research process, a research protocol was developed (Figure 3).

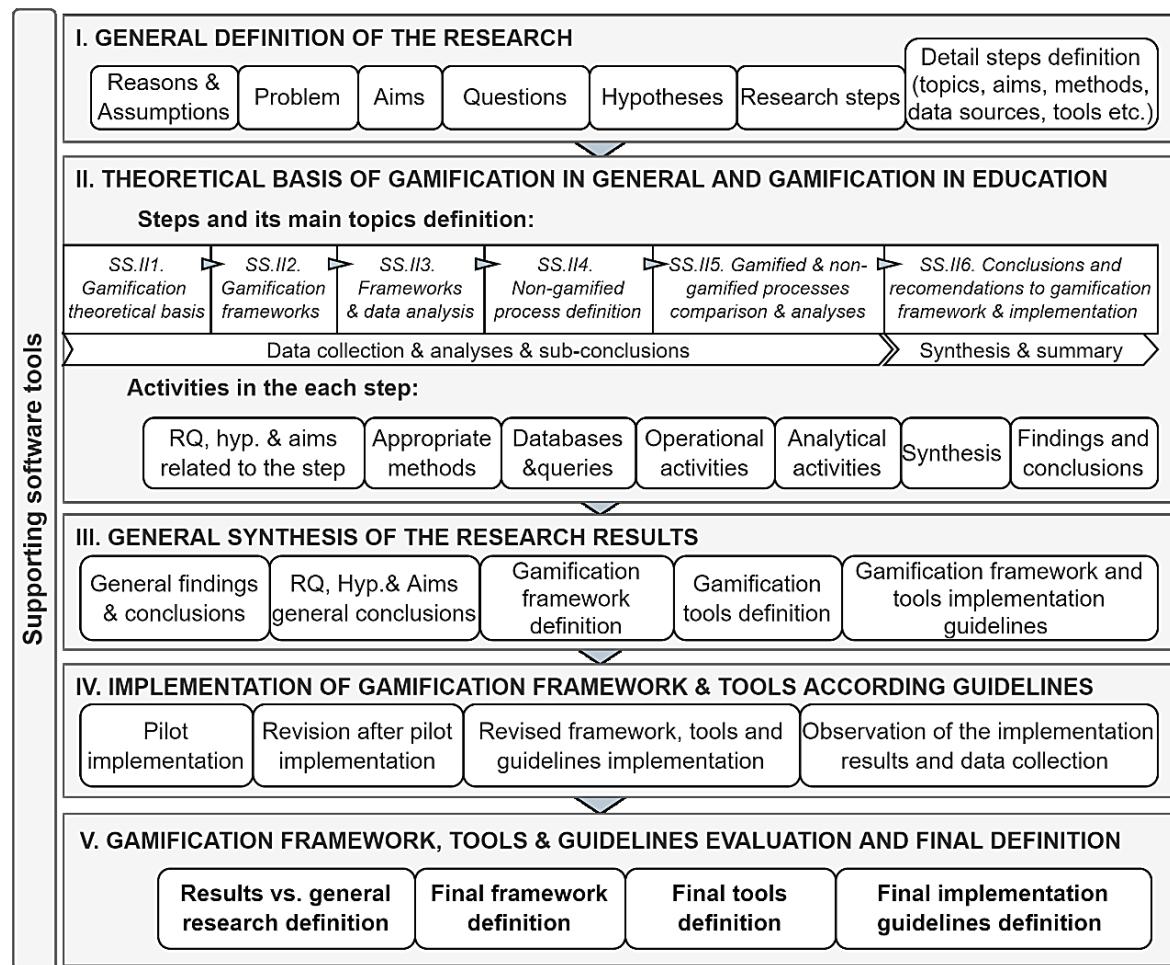


Figure 3. The protocol of the planned research.

Source: Author.

The protocol serves as a presentation of the activities necessary for the implementation of the research plan and allows initial verification of the activities necessary for the planned study. The protocol presents the main preparatory, operational and research activities. As a result of conducting the study in accordance with its planned activities and its guidelines, it will be possible to determine the answers to the research questions, verify the hypotheses and achieve the study objectives, as well as define the gamification framework, its tools and its implementation guidelines. The research process outlined in the protocol was divided according to the scope of the main activities into five main stages: I. General definition of the research, II. Theoretical basis of gamification in general and gamification in education, III. General synthesis of the research results, IV. Implementation of gamification framework and tools according to guidelines, V. Gamification framework, tools and guidelines evaluation and final definition.

This article presents the first of the main stages presented in the study protocol: "General definition of the research". The second stage, "Theoretical basis of gamification in general and gamification in education" was planned to be conducted in six sub-stages (SS.II1-SS.II6),

according to the protocol. The activities in the sub-stages will serve to acquire data in a wide range, which will then be narrowed down to a scope consistent with the research questions and develop a business teaching framework, its tools and implementation guidelines and then to verify them in practice and obtain the data required to carry out its possible revisions. Each of the sub-stages was pre-defined, among other things, in terms of references to the specific research questions and hypotheses and the specific aims of the study, and adequate research methods were proposed. Preliminary assumptions as to the methods needed to achieve the aims of the sub-stages mainly concern literature review, systematic literature review, umbrella analysis and bibliometric analysis. Main sources for the research planned in stage II there will be reputable academic research databases (ex. Scopus, Web of Science and others). Data found in them according to adequate research method will be then analyzed in detail with use of adequate software tools (i.a. Rayyan, VosViewer and others) and then will be synthetized to be able to make conclusions. The outcome of each sub-stage will be to expand the data needed to achieve the main aim of the study on gamification and gamification in education, according to the protocol. Based on the data obtained, analysis and comparison of results from each sub-stage, conclusions and recommendations to gamification framework recommended for education process and its implementation into practice will be established.

After the synthesis of the results of stage II it will be partly possible to answer research questions. Then, in the stage III ("General synthesis of the research results") will be possible to define business teaching gamification framework, its tools and implementation guidelines. Next step of the planned research is pilot implementation focused on verification of the previously defined framework, its tools and implementation guidelines, then to revise them based on the pilot implementation results. After that, the corrected model will be finally implemented into practice and data from the implementation will be collected. In the last stage ("Gamification framework, tools and guidelines evaluation and final definition") the final implementation results will be again evaluated, and all the elements will be assessed and finally corrected and presented as the research result with description of its results in practice.

4. Summary

The author's intention in this article was to present the general concept of the study as well as the activities planned to be carried out in their first stage. Among other things, the definition of the study itself was presented, i.e. the research problem undertaken, the basis and assumptions for the study, its objectives, research questions and hypotheses, the preliminary division of the study into stages. The methods, data sources and research tools that will be used during the planned activities were also generally characterized. The author hopes that the results of the presented research will interest people involved in the processes of business education.

References

1. Boulet, G. (2012). Gamification: The Latest Buzzword and the Next Fad. *eLearn Magazine*, 12. <https://doi.org/10.1145/2407138.2421596>
2. Denden, M., Tlili, A., Salha, S., Abed, M. (2024). Opening up the gamification black box: effects of students' personality traits and perception of game elements on their engaged behaviors in a gamified course. *Technology, Knowledge and Learning*, 29(2), 921-940. <https://doi.org/10.1007/s10758-023-09701-6>
3. Deterding, S., Khaled, R., Nacke, E.L., Dixon, D. (2011). *Gamification: Toward a Definition*. <http://gamification-research.org/wp-content/uploads/2011/04/02-Deterding-Khaled-Nacke-Dixon.pdf>
4. Dichev, C., Dicheva, D. (2017). Gamifying education: what is known, what is believed and what remains uncertain: a critical review. *International Journal of Educational Technology in Higher Education*, Vol. 14, Iss. 1. <https://doi.org/10.1186/s41239-017-0042-5>
5. elearningindustry.com (2025). 7 Top Serious Games FAQs ELearning Professionals Should Consider. <https://elearningindustry.com/top-serious-games-faqs-elearning-professionals-consider>
6. Hamari, J., Koivisto, J., Sarsa, H. (2014). Does Gamification Work? A Literature Review of Empirical Studies on Gamification. *47th Hawaii International Conference on System Sciences*, 3025-3034. <https://doi.org/10.1109/HICSS.2014.377>
7. Hanus, M.D., Fox, J. (2015). Assessing the effects of gamification in the classroom: A longitudinal study on intrinsic motivation, social comparison, satisfaction, effort, and academic performance. *Computers & Education*, 80, 152-161. <https://doi.org/10.1016/j.compedu.2014.08.019>
8. Kapp, K. (2012). Gamification: Separating Fact From Fiction. *International Journal of Gaming and Computer-Mediated Simulations*, 4(4), 81-83. www.CLOmedia.com
9. Kaya, O.S., Ercag, E. (2023). The impact of applying challenge-based gamification program on students' learning outcomes: Academic achievement, motivation and flow. *Education and Information Technologies*, 28(8), 10053-10078. <https://doi.org/10.1007/s10639-023-11585-z>
10. Kaźmierczak, P. (2023). 'Gamifikacja', 'grywalizacja' czy 'gryfikacja' – aktywizacja uczniów podczas zajęć zdalnych. *Acta Universitatis Lodzienis. Kształcenie Polonistyczne Cudzoziemców*, 30, 203-216. <https://doi.org/10.18778/0860-6587.30.13>
11. Kiryakova, G., Angelova, N., Yordanova, L. (2015). Gamification in education. *Informatologia*, 48(3-4), 198-204. <https://doi.org/10.3390/encyclopedia3040089>
12. Kozłowska, I. (2016). Gamifikacja-specyfika wykorzystania narzędzia w Polsce. *Zeszyty Naukowe Uniwersytetu Ekonomicznego w Katowicach*, 225(255), 37-45.
13. Ohlms, M.L., Melchers, K.G. (2025). Are Games Always Fun and Fair? A Comparison of

Reactions to Different Game-Based Assessments. *International Journal of Selection and Assessment*, 33(1). <https://doi.org/10.1111/ijsa.12520>

14. Oliveira, W., Hamari, J., Shi, L., Toda, A.M., Rodrigues, L., Palomino, P.T., Isotani, S. (2023). Tailored gamification in education: A literature review and future agenda. *Education and Information Technologies*, 28(1), 373-406. <https://doi.org/10.1007/s10639-022-11122-4>

15. Paľová, D., Vejačka, M. (2022). Implementation of Gamification Principles into Higher Education. *European Journal of Educational Research*, vol. 11, iss. 2, 763-779. <https://doi.org/10.12973/eu-jer.11.2.763>

16. Raczkowski, F. (2014). Rethinking Gamification. In: S. Fizek, M. Fuchs, P. Ruffino, N. Schrape (Eds.), *Rethinking gamification* (pp. 141-160). meson press.

17. Sailer, M., Homner, L. (2020). The Gamification of Learning: a Meta-analysis. *Educational Psychology Review*, 32(1), 77-112. <https://doi.org/10.1007/s10648-019-09498-w>

18. Spitzer, M. (2014). *Cyfrowa Demencja. W jaki sposób pozabawiamy rozumu siebie i swoje dzieci*. Dobra Literatura.

19. Spitzer, M. (2016). *Cyberchoroby. Jak cyfrowe życie rujnuje nasze zdrowie*. Dobra Literatura.