A Review on Game-Based Learning for Moral and Digital Citizenship Education

[1]Prof. Prasad Mahamuni, [2]Milind Chaudhari, [3]Manali Jain, [4]Karuna Gawai

[1]Asst. Professor, [2]Student, [3]Student, [4]Student

[1]mahamuni.prasad@gmail.com, [2]milindchaudhari511@gmail.com, [3]manujain2524@gmail.com, [4]gawaikaruna7@gmail.com

MCA Department, ASM's Institute of Business Management and Research Chinchwad, Pune-19, Maharashtra, India

---

Abstract - Game-based learning has become an interactive way of supporting learning alongside conventional classroom methods. This review examines two applications of educational games: serious games for moral sensitivity and digital game-based learning for digital etiquette, motivation, and engagement. The first study examines how a serious moral game can support moral sensitivity in business-related situations. The second study looks at digital game-based learning for improving students' digital etiquette literacy, while also examining learning motivation and engagement. This review compares the educational objectives, learning approaches, outcomes, and limitations reported in the two studies. The comparison shows that game-based learning can be used for different educational purposes, including ethical awareness and responsible behavior in digital environments. However, its effectiveness depends on factors such as instructional design, learner characteristics, learning context, and evaluation methods. The review also identifies research gaps related to broader participant groups, long-term evaluation, measurement approaches, and the design of effective game-based learning interventions.

Key Words: Game-Based Learning, Serious Games, Digital Game-Based Learning, Moral Sensitivity, Digital Etiquette, Digital Citizenship, Learning Motivation, Student Engagement

I. INTRODUCTION

A. Background

Educational games have increasingly been investigated as learning tools because they allow learners to interact with educational content through activities, situations, and challenges. Unlike purely conventional instructional approaches, game-based learning can provide learners with opportunities to participate actively in the learning process.

One important application is the use of serious games for moral and ethical learning. Such games can present learners with situations involving ethical issues and allow them to explore possible responses. This creates an environment in which moral concepts can be learned through interaction rather than only through theoretical instruction.

Another application is digital game-based learning for digital citizenship. Digital environments have created a need for students to understand appropriate communication, respectful behavior, and responsible participation online. Digital game-based learning can integrate these topics into interactive educational activities.

The two selected studies represent these two applications. The first focuses on moral sensitivity through a serious moral game, while the second examines digital game-based learning for digital etiquette and its relationship with student motivation and engagement.

B. Scope and Objective

This review focuses on two related applications of game-based learning:

1. Serious games for moral and ethical learning
2. Digital game-based learning for digital etiquette and student engagement

The main objectives of this review are:

To examine how serious games are used to support moral sensitivity.

To examine how digital game-based learning is used to develop digital etiquette.

To compare the learning approaches used in the two studies.

To examine the outcomes reported by the researchers.

To identify limitations and research gaps.

To identify possible directions for future research in game-based learning.

This review does not attempt to reproduce the experiments conducted in the original studies.

C. Review Questions

How are serious games used to support moral and ethical learning?

How is digital game-based learning used to develop digital etiquette?
What learning outcomes are reported in the two studies?
What similarities and differences exist between the two approaches?
What limitations and research gaps are identified from the reviewed studies?

II. REVIEW METHODOLOGY.

A. Literature Basis

This review is based on two research papers selected from the literature survey conducted for the research project. The first study investigates a serious moral game and its effectiveness in supporting moral sensitivity in business-related learning. The second study investigates digital game-based learning for digital etiquette and examines its effects on students' learning motivation and engagement. The review analyses the selected studies according to their research objectives, learning approaches, educational contexts, research methodologies, measured outcomes, findings, limitations, and future research directions. No new experimental results are generated in this review. The findings discussed are based on the selected studies.

B. Thematic Classification

The two selected studies are grouped into two main themes. Theme 1, Serious Games for Moral and Ethical Learning, focuses on how serious games are used to develop moral sensitivity and support ethical learning. Theme 2, Digital Game-Based Learning for Digital Citizenship, focuses on the use of digital games to teach digital etiquette and examine student motivation and engagement.

TABLE I. THEMATIC DISTRIBUTION OF THE TWO REVIEWED STUDIES

Ref.	Research Study	Primary Theme	Main Focus
[1]	Educating Moral Sensitivity in Business: An Experimental Study to Evaluate the Effectiveness of a Serious Moral Game	Serious Games	Moral sensitivity and ethical learning
[2]	Effects of Digital Game-Based Learning on Students' Digital Etiquette Literacy, Learning Motivations, and Engagement	Digital Game-Based Learning	Digital etiquette, motivation, and engagement

III. SERIOUS GAMES FOR MORAL AND ETHICAL LEARNING

A. Educational Approach

The first study investigates the use of a serious moral game as an educational approach for developing moral sensitivity.
The approach uses a game environment to place learners in situations involving moral considerations. Instead of learning ethical concepts exclusively through conventional instructional material, learners interact with the game and encounter situations requiring attention to moral issues.
The study therefore represents an application of serious games in which the game itself becomes part of the learning experience.

B. Learning Objective

The primary educational objective is to examine whether a serious moral game can contribute to the development of moral sensitivity.
The study also investigates whether additional elements, including self-reflection and prosocial interventions, can influence the effectiveness of the game-based learning experience.

C. Learning Outcomes

The study examines moral learning through measures associated with moral sensitivity and the participants' interaction with the serious game.
The research demonstrates that serious games can be investigated as an educational method for addressing moral learning rather than limiting educational games to academic subject knowledge.
However, the study also demonstrates that adding additional instructional elements does not automatically produce better learning outcomes.

D. Significance

The study is significant because it demonstrates an application of game-based learning beyond conventional academic subjects.
It shows how a game environment can be used to expose learners to ethical situations and provide an interactive context for considering moral issues.
This suggests that serious games can be considered for educational areas where judgment, awareness, and ethical understanding are important.

IV. DIGITAL GAME-BASED LEARNING FOR DIGITAL CITIZENSHIP

A. Educational Approach

The second study investigates digital game-based learning (DGBL) as an approach for teaching digital etiquette. The learning activities are designed around situations related to appropriate behavior in digital environments. Learners interact with digital learning activities rather than receiving the content exclusively through conventional instruction. The approach connects game-based interaction with concepts associated with responsible participation in digital environments.

B. Digital Etiquette Learning

The study focuses on digital etiquette literacy. Digital etiquette concerns appropriate and respectful behavior when communicating and participating in digital environments. The learning approach therefore addresses behavior that students may encounter during online communication, digital learning, online social interaction, and digital activities. The study investigates whether a game-based learning environment can support students in understanding and applying appropriate digital etiquette.

C. Learning Motivation

The second study also investigates learning motivation. Motivation is important because students' willingness to participate in learning activities can influence their overall learning experience. The study compares students participating in digital game-based learning with students receiving conventional learning and examines differences in motivation.

D. Student Engagement

The study further investigates student engagement. Engagement is examined from different dimensions rather than treating participation as a single outcome. The research considers students' behavioral, emotional, and cognitive engagement with learning. This allows the study to examine not only whether students participate, but also how they respond to the learning experience.

V. COMPARATIVE SYNTHESIS

A. Complementary Contributions

The two studies address different educational objectives while using game-based learning as a common approach. The first study applies a serious game to moral and ethical learning, whereas the second applies digital game-based learning to digital etiquette and student engagement. Therefore, the studies demonstrate that game-based learning can be adapted to different educational domains.

B. Comparison of Educational Focus

TABLE II. COMPARISON OF THE TWO GAME-BASED LEARNING APPROACHES

Aspect	Serious Moral Game	Digital Game-Based Learning
Main educational area	Moral sensitivity	Digital etiquette
Learning context	Ethical/moral situations	Digital citizenship
Primary purpose	Support moral learning	Support digital etiquette learning
Additional focus	Effectiveness of game-based moral learning	Motivation and engagement
Learning environment	Serious game	Digital game-based learning

C. Comparison of Outcomes

The first study primarily investigates moral sensitivity and the effectiveness of a serious moral game. The second study examines digital etiquette literacy, together with learning motivation and engagement. This difference demonstrates that the effectiveness of educational games should be evaluated according to the particular learning objective rather than through a single universal measurement.

D. Overall Relationship Between the Studies

The two studies complement one another by demonstrating different ways in which game-based learning can support educational development. The first emphasizes ethical awareness, while the second emphasizes responsible digital behavior and learner engagement. Together, they demonstrate the broader potential of educational games for developing skills and behaviors that extend beyond traditional academic knowledge.

VI. RESEARCH GAPS AND PROPOSED SOLUTIONS

A. Gap 1 — Limited Participant Diversity

Research conducted within a particular educational or demographic context may not fully represent learners in other environments.

Proposed Solution: Future studies should involve participants from different age groups, educational levels, institutions, and cultural backgrounds. This can help determine whether the observed effects remain consistent across different learner populations.

B. Gap 2 — Need for Long-Term Evaluation

Short-term studies can show immediate changes, but they may not establish whether those effects continue over time.

Proposed Solution: Future research should conduct longitudinal studies to examine whether improvements in moral understanding, digital etiquette, motivation, or engagement are maintained after the game-based intervention.

C. Gap 3 — Dependence on Evaluation Methods

Different learning outcomes require different evaluation methods. For example, motivation and engagement may be measured differently from moral sensitivity or digital etiquette.

Proposed Solution: Future studies should combine questionnaires, performance-based assessments, behavioral observations, learning analytics, and qualitative feedback. This can provide a more complete evaluation of game-based learning.

D. Gap 4 — Game Design and Learning Effectiveness

The use of a game does not automatically guarantee improved learning. The design of the game, learning objectives, interaction mechanisms, feedback, and instructional structure can influence the outcome.

Proposed Solution: Future research should investigate which specific game mechanics and instructional

elements contribute most effectively to particular learning outcomes.

E. Gap 5 — Expansion Across Educational Domains

The selected studies focus on two specific areas: moral sensitivity and digital etiquette.

Proposed Solution: Future studies can examine game-based learning for additional areas such as social responsibility, communication, collaboration, digital safety, professional ethics, and responsible decision-making. These applications should be evaluated separately according to their specific learning objectives.

VII. CONCLUSION

The reviewed studies demonstrate two different applications of game-based learning in education. The first examines serious games as a method for supporting moral and ethical learning, while the second investigates digital game-based learning for digital etiquette, learning motivation, and student engagement.

The comparison shows that educational games can be designed for different learning objectives and can provide interactive environments for developing knowledge, awareness, and behavioural skills. However, the effectiveness of a game-based approach depends on the educational objective, learning design, learner characteristics, context, and evaluation approach.

The review also identifies the need for broader participant groups, long-term evaluation, diverse assessment methods, and further investigation into the relationship between game design and learning outcomes.

Future research should therefore focus on developing and evaluating game-based learning approaches across different educational contexts while using reliable and multidimensional methods for measuring their effectiveness.

ACKNOWLEDGEMENT

The authors acknowledge the support and guidance provided by the MCA Department and the project guide during the literature survey and preparation of this review paper. The authors also acknowledge the researchers of the two selected studies, whose work provided the foundation for this review.

REFERENCES

[1] C. Tanner, D. Schmocker, J. Katsarov, and M. Christen, “Educating Moral Sensitivity in Business: An Experimental Study to Evaluate the Effectiveness of a Serious Moral Game.”

[2] Y. Zheng, J. Zhang, Y. Li, X. Wu, R. Ding, X. Luo, P. Liu, and J. Huang, “Effects of Digital Game-Based Learning on Students’ Digital Etiquette Literacy, Learning Motivations, and Engagement.”

[3] W. Lin, J.-Y. Wang, and H.-P. Yueh, “Learning Information Ethical Decision Making with a Simulation Game.”

[4] H. Siala, M. Tajvidi, Y. Wang, N. Hajli, M.-O. Richard, and M. Brannan, “Using Serious Games for Learning Business Ethics: Exploring Its Socio-technical Enablers and Cross-cultural Influences.”

[5] P. Tapingkae, P. Panjaburee, G.-J. Hwang, and N. Srisawasdi, “Effects of a Formative Assessment-Based Contextual Gaming Approach on Students’ Digital Citizenship Behaviours, Learning Motivations, and Perceptions.”

[6] I. Srivastava, H. Sachdeva, and S. Tyabji, “Integrating Gamification in Design Research: A Pedagogical Approach for Design Education in India.”

[7] M. Nadeem, M. Oroszlányová, and W. Farag, “Effect of Digital Game-Based Learning on Student Engagement and Motivation.”

[8] C.-C. Chen and H.-Y. Tu, “The Effect of Digital Game-Based Learning on Learning Motivation and Performance Under Social Cognitive Theory and Entrepreneurial Thinking.”

[9] A. M. Barua and S. S. Bharali, “Gamification and Its Challenges in E-Learning: A Case Study of Computer Science Learners in KKHSOU.”

[10] E. Palikot, K. Agrawal, A. Kanodia, and S. Athey, “Contests, Gamification, and Persistent Engagement in Educational Technology.”