frontiers | Frontiers in Education

TYPE Editorial
PUBLISHED 29 April 2024
DOI 10.3389/feduc.2024.1403695

OPEN ACCESS

EDITED AND REVIEWED BY
Jakub Swacha,
University of Szczecin, Poland

*CORRESPONDENCE
Roberto Di Paolo
✉ roberto.dipaolo@unipr.it

RECEIVED 19 March 2024
ACCEPTED 11 April 2024
PUBLISHED 29 April 2024

CITATION
Di Paolo R, Bisanti M, Chiarello F, Di Guida S and Pizziol V (2024) Editorial: Games-based learning for social change.
Front. Educ. 9:1403695.
doi: 10.3389/feduc.2024.1403695

Editorial: Games-based learning for social change

Roberto Di Paolo[1,2]*, Matteo Bisanti[3], Fabio Chiarello[4], Sibilla Di Guida[2] and Veronica Pizziol[5]

[1]Department of Economics and Management, University of Parma, Parma, Italy, [2]Laboratory for the Analysis of compleX Economics System, IMT School for the Advanced Studies Lucca, Lucca, Italy, [3]Department of Economics and Management, University of Florence, Florence, Italy, [4]Institute for Photonics and Nanotechnologies, National Research Council (CNR), Rome, Italy, [5]Department of Economics, University of Bologna, Bologna, Italy

KEYWORDS

game-based learning (GBL), educational methodologies, prosocial behavior, game and play, narrative-driven learning

Editorial on the Research Topic
Games-based learning for social change

Addressing the challenges of contemporary societies requires simultaneous efforts in different dimensions and innovative approaches, particularly when aiming to foster positive social changes. The new millennium has seen not only the emergence of new and unexplored criticalities but also the development of new techniques and methodologies to address these criticalities. A modern approach to problem-solving and social development requires path-breaking methods, along with tools that are useful for people to understand and deal with the inevitable complexities of our reality. These tools are mainly (but not only) related to promoting a scientific culture and enhancing the basic comprehension of the language of science.

Prosocial behaviors constitute integral facets of human decision-making processes, exerting significant influences on both individual actors and societal dynamics. Different lines of research have pointed out that the overall sustainability of a society hinges greatly on the prosocial inclinations, experiences, and competencies of its members within social dimensions (Nowak, 2006; Mikulincer and Shaver, 2010; Bilancini et al., 2022). Since the development of tendencies toward prosocial behaviors and the internalization of social norms predominantly occur during childhood (House and Tomasello, 2018; Yao and Enright, 2023), it is essential to provide opportunities for young children to nurture such inclinations. Indeed, childhood and adolescence are the most responsive life stages for learning positive and long-lasting prosocial attitudes.

In recent years, game-based educational methodologies have been increasingly employed to cultivate open-mindedness and prosocial tendencies among young individuals (Bilancini et al., 2023; Di Paolo and Pizziol, 2023). Specifically, the structured nature of games and the social interactions engendered through group play render game-based learning initiatives a natural conduit for instilling desirable behavioral patterns. A further positive characteristic of game-based learning is that, when games are integrated into familiar settings, the recurrent engagement among young players can potentially involve adults in the process and foster positive spillovers. Games often necessitate adherence to predefined rules and collaboration among participants, fostering cooperative actions and the ability to resolve conflicts amicably. However, it is crucial to remark that games should not be viewed as substitutes for conventional educational approaches; rather, they should be thoughtfully integrated and complemented with traditional pedagogical methods to maximize their efficacy. Consequently, evaluating the efficacy of structured educational programs, recurrent gaming activities, and the utilization of various types of games (ranging from digital to analog formats) in nurturing open-mindedness

and prosocial behaviors assumes paramount importance in the implementation of policy-driven initiatives that aim at integrating game-based learning with social consciousness.

This Research Topic compiles empirical studies aimed at testing the effectiveness of game-based educational programs on young adults and their families, particularly focusing on prosocial behaviors and open-mindedness. Specifically, the methods included in this Research Topic include the use of narrative-driven experiences, the significance of play, and empirical studies on the use of game-based learning in educational contexts. These contributions collectively highlight the evolving landscape of educational methodologies, emphasizing the integration of narratives, game-based learning, and play to enhance engagement, motivation, and learning outcomes across diverse educational settings and age groups.

Contributions to the collection

The use of diverse educational methodologies and technologies, particularly those focused on narrative-driven experiences and game-based learning, has gained increasing attention in educational research. Science, Technology, Engineering, Arts, and Mathematics (STEAM) education, renowned for its holistic and integrated approach, intersects with narrative-driven digital game-based learning (DGBL) to offer engaging and effective learning environments. As discussed by Fenici and Mosca, when exploring narrative learning, ranging from historical to digital forms, the importance of narratives in driving engagement, motivation, and learning becomes evident. Indeed, branching narratives, as exemplified by gamebooks, offer interactive storytelling experiences where readers can influence the outcome of the story. Introducing those narratives in higher education settings promotes communication, collaboration, and prosocial attitudes among students. This approach aligns with the broader goal of using narrative-driven educational activities to foster positive social change, emphasizing the acquisition of social development and sustainability competencies.

In this field, one model that categorizes narrative DGBL experiences is the extended ludo narrative variable model introduced by Breien and Wasson. Empirical evidence suggests that certain categories within this model have positive effects on engagement and learning outcomes. Building on this foundation, the eLuna co-design framework enables educators to collaborate with game developers in designing and developing narrative-driven DGBL experiences that support STEAM learning objectives. The framework comprises a co-design method and a visual language that facilitate the creation of narrative-driven games.

According to Breien et al., science centers have become crucial arenas for out-of-school learning, particularly in STEAM education. They offer narrative-driven learning trails that integrate physical exhibits with virtual components, supported by the eLuna framework. These trails aim to foster engagement and flow in learners, leveraging both real-world and virtual elements. Indeed, authors have extended the eLuna visual language to enhance the co-design of mixed-reality narrative game-based learning trails in science centers through thematic analyses and usability methods.

Other innovative educational experiences are being explored beyond traditional classroom activities. These experiences include outdoor activities (Alfonso) and game-based teaching systems (Iannace et al.). Engaging in outdoor activities, such as the article airplane experiment, provide hands-on experiences that deepen the understanding of concepts such as decision-making under uncertainty. Meanwhile, game-based teaching systems, exemplified by the Megagame with RPG elements, offer immersive learning experiences within courses such as Economics. While these approaches are promising, further research is required to address challenges such as high dropout rates and to optimize engagement and learning outcomes.

Additionally, as described by Tikkanen et al., the role of play is gaining recognition for its significance in nurturing computational empowerment, particularly in children's technological experiences. In participatory design sessions with children, play was identified as essential for fostering creativity, narratives, embodiment, and computational empowerment. Integrating play into design sessions can enhance children's learning experiences and contribute to their computational thinking skills and the overall empowerment.

In conclusion, this Research Topic provided useful insights on the effectiveness of game-based educational programs, highlighting a dynamic shift in educational methodologies and enhancements in learning outcomes across various educational contexts.

Author contributions

RD: Conceptualization, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. MB: Conceptualization, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. FC: Conceptualization, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. SD: Conceptualization, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. VP: Conceptualization, Investigation, Methodology, Project administration, Resources, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing.

Funding

The author(s) declare that no financial support was received for the research, authorship, and/or publication of this article.

Acknowledgments

We deeply thank all the authors and reviewers who have participated in this Research Topic.

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

References

Bilancini, E., Boncinelli, L., and Di Paolo, R. (2023). Game-based education promotes practices supporting sustainable water use. *Ecol. Econ.* 208:107801. doi: 10.1016/j.ecolecon.2023.107801

Bilancini, E., Boncinelli, L., Di Paolo, R., Menicagli, D., Pizziol, V., Ricciardi, E., et al. (2022). Prosocial behavior in emergencies: evidence from blood donors recruitment and retention during the COVID-19 pandemic. *Soc. Sci. Med.* 314:115438. doi: 10.1016/j.socscimed.2022.115438

Di Paolo, R., and Pizziol, V. (2023). Gamification and sustainable water use: the case of the BLUTUBE educational program. *Simul. Gaming* 10468781231181652. doi: 10.1177/10468781231181652

House, B. R., and Tomasello, M. (2018). Modeling social norms increasingly influences costly sharing in middle childhood. *J. Exp. Child Psychol.* 171, 84–98. doi: 10.1016/j.jecp.2017.12.014

Mikulincer, M. E., and Shaver, P. R. (2010). *Prosocial Motives, Emotions, and Behavior: The Better Angels of Our Nature*. Worcester, MA: American Psychological Association. doi: 10.1037/12061-000

Nowak, M. A. (2006). Five rules for the evolution of cooperation. *Science* 314, 1560–1563. doi: 10.1126/science.1133755

Yao, Z., and Enright, R. (2023). Social class and prosocial behavior in early adolescence: the moderating roles of family and school factors. *J. Moral Educ.* 52, 310–324. doi: 10.1080/03057240.2022.2031920