

Digital games and learning ecology

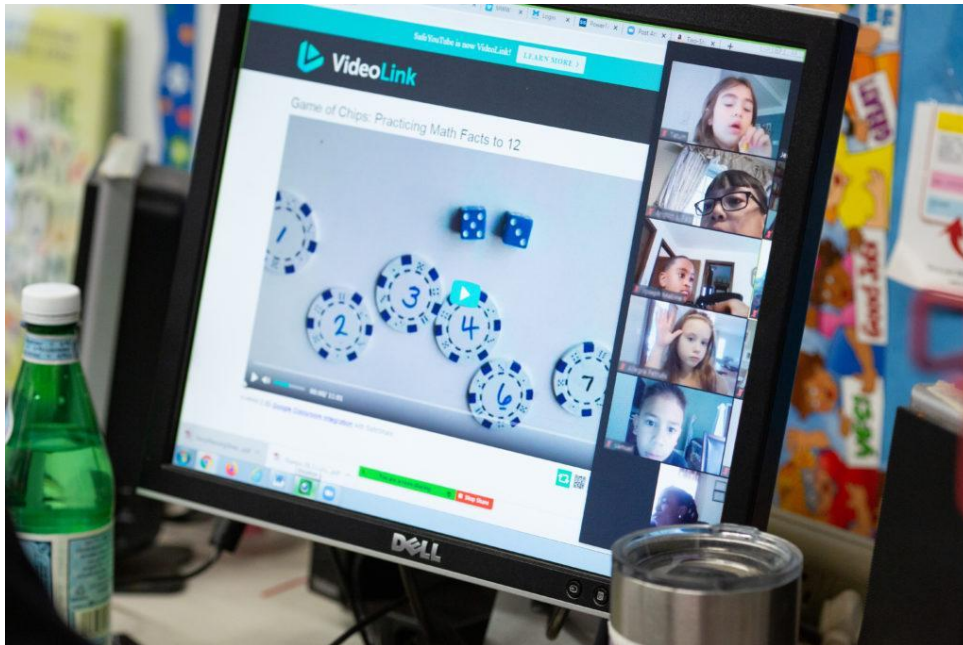


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General assessment

Digital games and learning ecology is an evidence-based approach, with high potential both for the large number of people involved in digital games and for the strong motivational lever activated. The combination of play and learning in an informal context is increasingly studied and there could be potential progress in the near future. Digital games and learning ecology is suitable for all students.

Aim

The aim of digital games and learning ecologies is to promote the potential of the combination of play and learning for educational purposes, considering the videogames as the best opportunity to keep students engaged in learning and to promote children's cognitive abilities and emotional regulation.

Target group

The target audience may be every learner. This method is particularly suitable for students in general but also for students with learning and behavioral difficulties according to the Delphi study experts

Description

Activities in digital games and learning ecologies are engaging as they have a set of objectives, they are interactive and rewarding, and they give feedback to the users. Digital games and learning ecology is based on a set of agreed rules and constraints where the goal is clear and set by a challenge. The feedback helps the student to monitor the progress toward the objective. Entertaining is the added value of this method to improve the quality of learning and motivation.

Evaluation

Digital platforms might include systems that keep track of students' performances. However, teachers should also be aware that quantitative data does not always grasp deep insight into learners' skills and needs. This approach may help to understand the important connections between humans and the world around them.

Problem behavior, risks, and protective factors

All actors need a strong awareness of both the affordances and the risks of games, such as gaming injuries and gaming addiction. Digital games help students with ADHD improve their thinking skills.

Effort

Teachers do not have enough time to include gaming in their classes if it is not part of the curriculum. Moreover, games can be difficult to incorporate due to the limitations games can present when adopted in a formal learning context.

Degree of innovation

It is an innovative approach that combines play and learning to motivate students to keep engaged in their educational tasks.

Experience with the method

The experience of this method is mainly informal. However, introducing digital games into the curriculum can be a great way to motivate students. The increased motivation brings grades up.

Brief instruction on how to implement the method

Players should be aware of the outcome of gameplay. They will use their curiosity in games as a catalyst for cultivating their interest and for taking control of it. It will help them to improve their skills and knowledge.

Teachers should increase their familiarity with digital games to reduce the generation gap with their students and exploit the educational potential of all types of games.

Resources

[A Guide to Digital Games and Learning - The Tech Edvocate](#)

[Digital Games, Design, and Learning \(sagepub.com\)](#)

[The health effects of too much gaming - Harvard Health](#)

[Incorporating game-based learning in your virtual classroom \(polleverywhere.com\)](#)

Literature

Blumberg, F. C., Deater-Deckard, K., Calvert, S. L., Flynn, R. M., Green, C. S., Arnold, D. & Brooks, P. J. (2019). Digital games as a context for children's cognitive development: Research recommendations and policy considerations. *Social Policy Report*, 32(1), 1-33.

Persico, D., Passarelli, M., Pozzi, F., Earp, J., Dagnino, F. M. & Manganello, F. (2019). Meeting players where they are: Digital games and learning ecologies. *British Journal of Educational Technology*, 50(4), 1687-1712.

Digital problem/project-based learning.

General assessment

Digital problem/project based learning is an active methodology that allows students to see the real world application of the learned concepts, stimulating the taste for learning.

Aim

This teaching method appeals to the student's ability to think and actively engage in real and personally meaningful projects by performing meaningful learning.



[Photo by Freepik](#)

Target group

Taking into account the proper adaptations needed to some students with disabilities, it is a great way to engage in significant learning with all students. Step-by-step guidance allows students not to feel lost or disheartened in the middle of a large project.

Description

Digital problem/project based learning is a teaching method whereby students are guided by their teachers through a step-by-step real problem solving process, typically: identify the problem, develop a plan, do a reality test. Students reflect on the plan while in the process of

designing and completing the project. The teacher provides a topic for either individual or group learning to be developed by the students through research or project work and monitored by the teacher).

Evaluation

This method has great potential for inclusion and can be transformative for students, especially those who are further away from the educational opportunity, as it mixes content mastery, meaningful work and personal connection to create powerful learning experiences, promoting student personal growth.

Problem behavior, risk and protective factors

Students may not accept the method well and therefore invest less in studies by learning less. On the other hand, there is a great ease of access to sources of information available on the Internet, so students can resort to dubious research sources, without the concern with the origin and veracity of the information found. Teachers should give accurate instructions and closely monitor all phases of work and provide information that allows self-regulation of learning.

Effort

In digital problem/project based learning the teacher must know very well the method. On the other hand, access to the available technology is an important factor. The teacher should be familiar with the technology.

Degree of innovation

This active methodology has more and more supporters among educators. Enhancing the use of this method through digital means remains a challenge.

Experience with the method

A well designed digital problem/project based learning provides all students, including students with special educational needs the opportunity to develop many skills such as group work, managing projects and holding leadership roles, written communications, critical thinking and

analysis, explanation of concepts based on the real world examples and problem solving involving various disciplines.

Brief instruction how to implement the method

The teacher together with the students defines the theme and launches the challenge. After that students examine and define the problem and develop a plan; explore what they already know; define what they need to learn and how they can acquire the information and tools needed to solve the problem; evaluate possible ways to solve the problem; solve the problem and communicate their outcomes.

Strategies for teachers successfully implement digital and inclusive Project-Based Learning (PBL):

- Encourage reflection and metacognitive skills: PBL should prompt students to reflect on their learning and develop metacognitive skills. Encourage them to think about how they are learning, what they are learning, and how to improve their learning.
- Focus on facilitation skills: As a teacher, develop strong facilitation skills to guide students through the PBL process effectively. Facilitate discussions, manage group dynamics, and provide support throughout the project.
- Utilize self-assessment tools: Implement self-assessment tools to help students take ownership of their learning and identify areas for improvement. It empowers students to evaluate their progress in PBL and make necessary adjustments.



[Photo by Pexels](#)

Search access, links, websites

<https://www.pblworks.org/why-project-based-learning>

<https://teaching.cornell.edu/teaching-resources/engaging-students/problem-based-learning>

Literature

Meng, N., Dong, Y., Roehrs, D. & Luan, L. (2023). Tackle implementation challenges in project-based learning: a survey study of PBL e-learning platforms. *Education Technology Research and Development*, 71, 1179-1207.

Monteiro, A., Moreira, J. A. & Lencastre J. A. (2015). Blended (e)learning in the digital, third edition, Whitebooks.

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Zhan, Z., Shen, W. & Lin, W. (2022). Effect of product-based pedagogy on students' project management skills, learning achievement, creativity, and innovative thinking in a high-school artificial intelligence course. *Frontiers in Psychology*, 13, 849842.