

Learning by playing

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1. INTRODUCTION

Play plays a key role in the development of all human beings; it is a fundamental tool for stimulating the development of thinking, language and the ability to interact with others and with the environment [1, 2, 3, 4]. Many authors in the field of psychology have emphasized the positive values of play [5], particularly linking it to learning processes and the experience of well-being [6]. Indeed, play occurs in a context that is "outside of reality", where the risk of failure is not perceived as an error, but rather as one of the possibilities that play offers. This quality of play leads to a reformulation, a loss of interest, or a shift of attention to another activity [1].

Based on these considerations, play is a core theme within the Educational Psychology curriculum in primary education and it is a topic that needs to be experienced to be fully understood. A hands-on approach along with small group interactions are essential, aiming to break down the anonymity of the "large class group" [6, 7]. Being able to experiment play activities may foreshadow the vision of the so-called "reflective practitioner," proposed by Schön [8] in later years. Initially implemented in face-to-face classrooms, this model was later transposed into online experiences [9, 10, 11, 12]. It also introduced opportunities for reality-based tasks and guided reflection on lived experience [13]. This hands-on approach marked the beginning of a culture of active and interactive teaching in psychological subjects taught at the University of Macerata (and beyond) since the 1970s.

Keeping the interactive model in mind, the educational and psychological value of play activities was planned to be taught using an interactive teaching-learning approach. To address these aims, a research project composed of three studies was conducted. The first study aimed to explore the positive effects of play on personal well-being in the academic classroom (emotional and social goals). In the second study [14], the experience shifted online, offering a screen-to-screen play practice addressed to verify the impact of online interactive gaming on well-being. The third study sought to promote understanding of the positive value of game formats in the teaching-learning process (cognitive goal) and to encourage reflection on the game experience in order to design play activities for children (metacognitive and learning transfer goals).

2. METHODOLOGY

Study 1: Forty-four university students participated in the study. They were invited to play board games in small groups. Before and after the experience, they completed a questionnaire assessing their usual state of well-being (T0) and their well-being during the gaming experience (T1) in the classroom.

Study 2: Forty-nine students in a post-specialization course participated in an online class where they first completed a questionnaire about their well-being (T0). They were then divided into online breakout rooms to interact and play in small groups. After the game activity, they completed a questionnaire assessing their well-being during the game (T1) as well as a satisfaction questionnaire. The questionnaires used in Study 1 were the same as those in Study 2.

Study 3: Eighty-six Primary Education Training students participated in the second study. First, they engaged in board games. Then, they attended a theoretical lesson on the main theories related to play activities [15] in teaching-learning processes at primary school [16] and on strategies for teaching through play (cognitive goal). At the end, students organized into small groups to design a game for children to aid in learning road safety. The designed games and their descriptions [were assessed as insufficient (0), good (1), or excellent (2). Games evaluated as good or excellent indicated an adequate level of students' knowledge and awareness about play and games.

3. RESULTS AND CONCLUSIONS

The experience of play had a positive effect on the students' perceived well-being in all cases. Students involved in the board game design activity showed an elevated understanding of the contribution of games to learning processes and psychological development. Results from Study 1 showed that the students' level of well-being was significantly lower than their perceived well-being during the game session, $F(1, 43) = 22.945, p = .000, \eta^2 = .348$. This finding suggests that the presentation of learning content in a playful form may promote the well-being of university students. The result

is consistent with research on the positive effects of game activities in fostering psychological well-being (Csikszentmihalyi, 2000). Similarly, Study 2 revealed that the general level of well-being was lower than the well-being experienced during the game-based activity, $F(1, 48) = 130.31$; $p = .000$, even when the game experience was conducted online, with students playing together through screen mediation (Guardabasis et al., 2024).

Results from Study 3 showed that students demonstrated an adequate mastery of knowledge about games through the board game projects: thirteen games on road safety were developed, and they were evaluated with good scores (10 = good; 3 = excellent). In addition to the psychology teachers, a toy designer was involved in the evaluation process.

In conclusion, consistently with previous studies about the role of games in adult education (Boghian et al., 2019), this research suggests that incorporating play into academic lessons can serve as an effective tool in the educational process, promoting students' well-being, fostering deep learning, and supporting learning transfer. Future investigations and potential projects centred on learning through play shall be explored.

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