

Chapter 8


Using Gamification Techniques to Enhance Learning in Primary School

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ABSTRACT

This chapter explores the use of a cutting-edge educational approach called gamification, which is becoming increasingly popular in academic settings. While the exact framework of gamification is still evolving, incorporating game mechanisms and features into non-game environments shows promise in enhancing student motivation and fostering active engagement in the learning process. Within the primary education ICT course, deliberate efforts were undertaken to integrate gamification elements into STEM teaching scenarios, algorithmic thinking, and the broader ICT curriculum. These efforts help educators be more creative and support a well-rounded approach to education where gamification is an important focus. The insights and observations in this chapter are collected from classroom experiences and designed to encourage the exchange of ideas among educators for further exploration and development. The challenges within the classroom and the broader education system are multifaceted.

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INTRODUCTION

This chapter aims to communicate the gamification field in education with a focus on elementary schools and to make the educational community aware of this new educational method. This effort also included some scenarios that involved elements of gamification and were taught to primary school students. Teachers have little or no experience with this new method. The lack of studies on gamification in primary education and the absence of an implementation framework to help educators become familiar with and integrate it into their teaching is a gap that this chapter aims to address.

This chapter focuses on the use of gamification in education as a pedagogical method to enhance learning in primary school. The chapter aims to show how gamification can be used in teaching, share real examples, discuss any issues, and provide scenario ideas for other teachers and colleagues. In other words, we'll discuss using gamification in a computer lab as a teaching tool for educators.

First, we have to acknowledge that gaming has become a significant area of research. Playful thinking and game mechanics have been recognized for some time, even before the term “gamification” emerged. Games with rules have been used for various purposes, from simple entertainment to more complex objectives such as acquiring new knowledge and skills. Because both video games and traditional rule-based games represent the playful nature of gaming, video games have raised the bar and enhanced the notion of “gaming” (Kalinauskas, 2014).

Gamification represents the integration of game elements into non-game contexts and is a concept aligned with research in the field of Human-Computer Interaction (HCI) (Deterding et al.,2011). In recent years, the incorporation of gamification elements into the education and learning process has become prevalent (Bohyun, 2015). Incorporating gaming elements into the educational process, whether as an academic approach or teaching technique, is intended to motivate students to interact with the educational material and encourage active participation in the learning process (Bohyun, 2015). Integrating gamification in academic environments has significantly increased students' motivation, active engagement, and sustained interest in learning (Li et al.,2023). Gamification has been identified as a valuable educational tool because it engages learners, stimulates their interest, and influences their behavior (Bohyun, 2015).

The coherent evolution of technology and educational innovation are challenges for students and teachers. Teaching methods and learning styles will need to be revised and modernized to meet the requirements of the new skills that students are called upon to develop. Gamification could improve students' problem-solving skills (Taesotikul et al.,2021). Before applying this technique, it is important to

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