Historical Thinking Development Through Gamification:
Secondary Education and Teacher Training Applications

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EXECUTIVE SUMMARY

In recent years, the literature has identified the need to influence teacher training so that teachers promote historical thinking metaconcepts and innovative methodological strategies that actually encourage learning of these history skills in the classroom. To that end, n=36 students of the Master's Degree in Teaching in Secondary Education at the University of Zaragoza (Geography and History specialty) were presented with two gamified experiences for secondary education, developed during the pandemic, so they could reflect on their usefulness, benefits, and possible challenges or limitations. Based on the preservice teachers' evaluation, their prior conceptions of the usefulness of gamification in encouraging historical thinking skills and the educational scope of introducing good practices in teacher training were analyzed using mixed methods research.

INTRODUCTION

As a result of the COVID-19 pandemic, lockdown measures were imposed in Spain from March 2020,

forcing students to continue their education online until the end of the academic year in June. As in many other countries, the following academic years at Spanish education centers have involved restrictions such as the use of masks, limits on sharing materials, and social distancing. The academic consequences of all these measures still persist, since a drop in student performance and motivation has been detected worldwide (Hoofman & Secord, 2021; Moliner & Alegre, 2021).

In this context of the "new normal," many social sciences teachers have continued to bring ideas to their classrooms to foster historical thinking skills while addressing their students' new educational needs. Consequently, the alternative of designing gamified activities fulfills both aspirations, since research has shown the ability of this method to impact students' historical reasoning and encourage their engagement (Colomo-Magaña et al., 2020; Martínez-Hita et al., 2021; Martínez-Hita & Miralles-Martínez, 2020).

Two gamified activities for fostering historical reasoning during the secondary education stage are presented below; one has been designed specifically to deal with the "new normal" circumstances, and the other dates from before the pandemic but has been adapted. Although both incorporate gamification elements, the new activity could be defined as non-tech and the adapted one as low-tech, since they aim to limit excessive exposure to the digital resources students experienced during lockdown.

Despite garnering positive results in the teachers' evaluation of these proposals in terms of student learning and rating, it was decided that both would be assessed by experts, namely n=48 students of the Master's Degree in Teaching in Secondary Education at the University of Zaragoza (Geography and History specialty). Taking advantage of the inclusion of both activities in the master's degree program, the preservice teachers' level of training in this method was also analyzed, as well as their prior conceptions about the potential of gamification to develop historical thinking metaconcepts. The main objective of presenting these activities to preservice teachers is, therefore, to subject the gamified proposals to external evaluation to identify their strengths, limitations, and aspects that can be improved. There are three other secondary objectives: 1) analyzing preservice teachers' conception of the usefulness of gamification in developing historical thinking; 2) checking whether experimenting with and evaluating good practices contribute to improving this prior conception; and 3) evaluating whether presenting good practices and experiencing them give teachers more tools to design gamified activities than the theoretical explanation of this method type.

BACKGROUND

Gamification. Definition and Educational Applications

The term "gamification," used for the first time in relation to the field of digital communication (Werbach & Hunter, 2012), has been around for just two decades. After these dynamics became popular and spread to other environments, such as business, health and education, Deterding et al. (2011) coined a definition of gamification common to the fields where it is applied: "the use of game design elements in non-game contexts" (p. 10). Although this broad characterization of gamification can be extrapolated to many fields, several authors have tried to provide a more precise definition of the elements needed to design and evaluate gamified learning activities. Educational gamification has been defined as a "a set of activities and processes to solve problems related to learning and education by using or applying the games mechanics" (Kim et al., 2018, p. 29) as well as "the introduction of game mechanics and dynamics in the classroom" (Rivero, 2017, p. 5). These definitions refer to a series of elements or