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The Influence of Gamified Counterfactual History Curricula on the Development of Historical Empathy and Multi-Perspective Thinking

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Abstract

The teaching of history often fails to involve students in the analysis of complicated situations and various points of view, hindering historical empathy and multi-perspective thinking skills. Gamified counterfactual history courses based on storytelling, "what if" questions, and digital simulations may be viewed as a solution to develop both cognitive and emotional competencies in a class. In this paper, quasi-experimental methods were applied to test 80 undergraduate students who took part in the experiment and control groups. The former was taught using a gamified curriculum, while the latter had traditional classes. Both quantitative (pre-test/post-test) and qualitative techniques (observations and interviews) were utilized to measure historical empathy and multi-perspective thinking skills. Students who used the innovative technique got significantly higher post-test results for both variables in comparison with their peers (d = 1.60 and d = 1.71 respectively). Analysis based on themes showed improvement in engagement levels, empathy through perspective taking, and development of critical skills in the experimental group. It is clear from these findings that a combination of gamification and counterfactual history can be used very effectively in order to develop cognitive and socio-emotional skills in history teaching. This study has demonstrated how a scenario-based and immersive approach can contribute to historical knowledge and reflection. It will help educators in devising strategies for the development of their courses and teaching methods.

Keywords: Gamification, Counterfactual History, Historical Empathy, Multi-Perspective Thinking, Experiential Learning, Educational Intervention, Student Engagement.

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Introduction

Learning History is difficult at times, especially in regard to building more sophisticated cognitive skills and empathizing with people from different perspectives. In this regard, traditional methods of instruction tend to revolve around rote memorization of facts and figures and thus do not allow students to think critically about history or reflect on the experience of various individuals who were involved in the events they study. This inability to engage with the material may impede the development of historical empathy and the ability to see various sides of historical events and processes (Ismail & Ahmad, 2025; López-García, 2023).

The use of gamification and counterfactual history may help to deal with this problem. Gamified curricula incorporate various game elements, such as narratives, simulation, instant feedback, achievements, etc., that encourage learners to become actively engaged (Bufalino, 2026). At the same time, learning through counterfactuals fosters critical, causal, and imaginative thinking regarding historical events. The application of both techniques allows creating an environment where students may simultaneously develop their cognitive skills, e.g., analysis of several perspectives, and affective skills, e.g., historical empathy (Marinescu, 2024).

Although the possibilities are promising, a striking deficiency exists in the scientific literature concerning the influence of gamified counterfactual history curricula on the development of students' historical empathy and multi-perspective thinking skills. Research studies have investigated the role of gamification or counterfactual history in general, but do not explore how a combination of both could affect the process of learning and emotional engagement of students.

This paper aims to fill in this gap by exploring the following questions:

1. Does a gamified counterfactual history curriculum contribute to the development of students' historical empathy compared to traditional teaching?
2. Does gamified counterfactual history foster multi-perspective thinking better than conventional methods?

This paper is structured into six main sections: Section I presents the problem and research questions, Section II reviews gamification, counterfactual history, and engagement techniques, Section III outlines the methodology, including participants, intervention, and analysis, Section IV describes the findings, quantitative and qualitative, Section V provides interpretations of the results and educational implications, and finally, Section VI concludes.

Literature Review

Gamification in Education

The findings of empirical research conducted within various educational fields prove that gamification is highly effective in increasing the motivation, engagement, and effectiveness of students' learning experience, and even their socio-emotional development (Raja Rosli et al., 2026). As an example, combining gamification with AI helped to increase not only the effectiveness of cognitive work but also develop collaborative skills of students in university finance trading labs (Yuan, 2026; Gyedu et al., 2026). Furthermore, the branching and turn-based game mechanics used in historical battle games contributed to improving the abilities of learners to make better decisions in various strategic situations (Fauzan et al., 2025). turn, described the problems and benefits of implementing game-based learning in history lessons, proving its potential to make history more engaging for students (Lai & Hu, 2025; hosyan et al., 2026).

Counterfactual Thinking in History Learning

The technique known as “counterfactual history,” whereby one considers the “what if” questions, has been proven to be able to provoke critical thinking and imagination among learners (Akbar et al., 2025). The importance of adopting creative strategies in tackling complex subjects, such as the use of counterfactual simulations, where one can engage in critical analysis of causes and possible alternate outcomes, was emphasized (Raphael et al., 2026; Inayah et al., 2025). It was stressed that the adoption of critical thinking strategies, coupled with the use of technology and games, would boost the reflective capacities of learners, whereas they have found the efficacy of using narrative techniques to evoke empathy among learners (Shen et al., 2026; Aladi & Barkah, 2026; Nurhasanah & Maksum, 2025).

Engagement Strategies and Empathy Development

The scholarly literature on educational psychology asserts that methods designed to engage students, especially methods that promote active learning, participation, and narratives, support empathic development and the ability to adopt others' points of view (Brady & Asselin, 2016; Haga et al., 2025). Research conducted in the field of nursing education and immersive learning through digital technologies illustrates how interactive, story-based, or gamified

activities help foster socio-emotional awareness and ethical reasoning in learners (Yeganeh et al., 2025; Slater et al., 2025). For instance, the transformative play and role-play games can offer learners an experiential perspective on different points of view, thus encouraging empathic development was engaged (Bowman et al., 2023; Janakiraman et al., 2026).

Research Gap

Although gamification and counterfactual thinking are shown to hold individual potentials for educational practices, little empirical evidence is available regarding the potential effects when they are used together as an educational strategy. Most research conducted on gamification is centered on its applications in the wider educational context, while counterfactual exercises are usually studied in isolation. This shows the necessity of an experimental study on a gamified history curriculum involving counterfactual thinking as an educational tool capable of combining multiple benefits, such as enhanced engagement, critical thinking, and empathy in a single activity. In this regard, the current study attempts to provide insight into the topic at hand.

Methodology

Research Design

The research involved the use of a quasi-experimental methodology whereby a pre-test and post-test were conducted to evaluate the impact of a gamified counterfactual history curriculum on historical empathy and multiperspective thinking skills. The mixed method helped in analyzing both quantitative and qualitative results that emerged from the experiment.

Fig. 1 provides an illustration of the quasi-experimental method utilized in the research. The participants were divided into two groups; one group that participated in the experimental procedure and another that participated in the control procedure. Pre-tests were conducted to evaluate the participants' initial levels of historical empathy and multiperspective thinking skills, after which the experiment lasted for eight weeks.

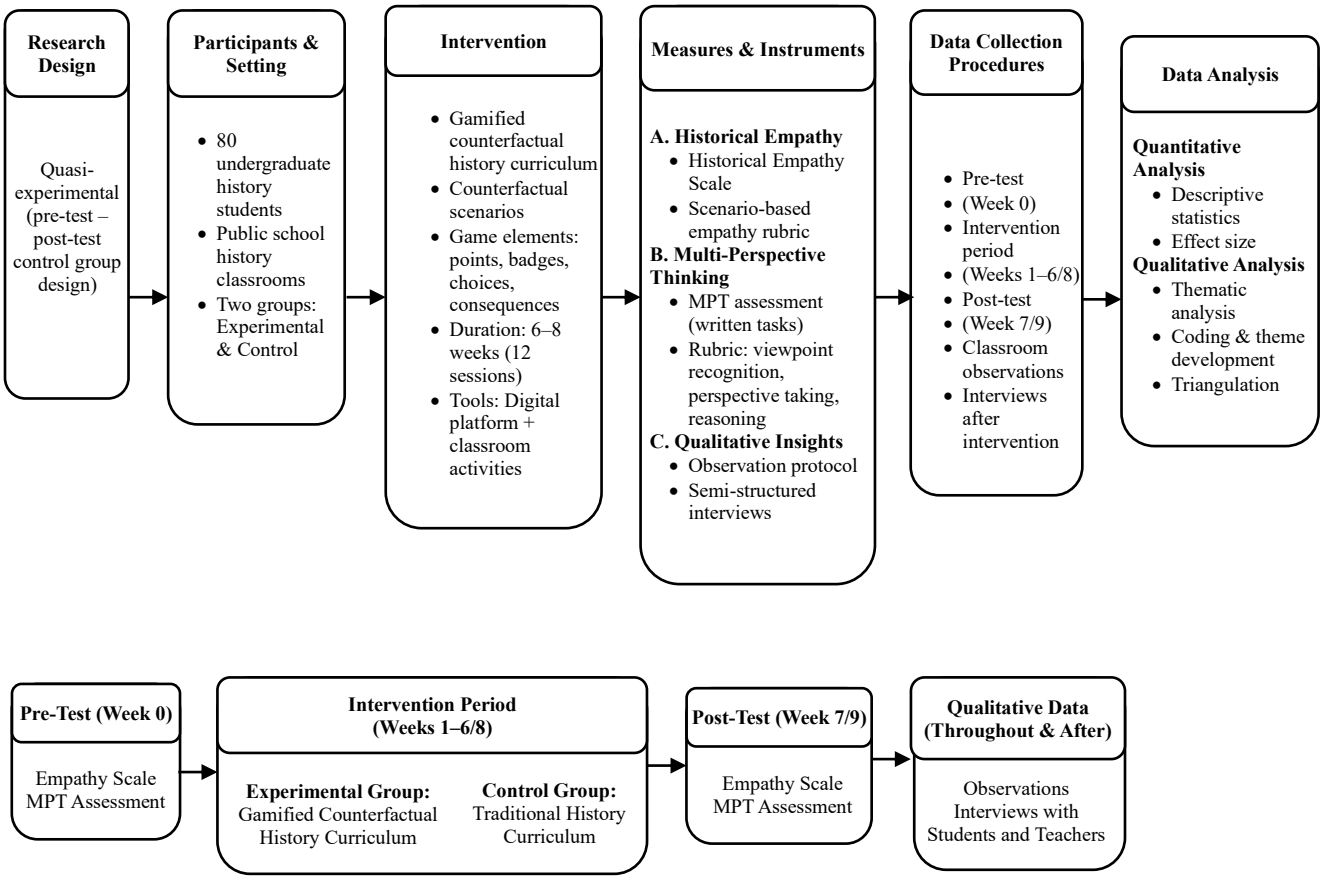


Fig. 1: Study Design and Gamified Counterfactual History Intervention Flow

Participants and Setting

The experiment was carried out among undergraduate history students studying at a mid-sized university in Uzbekistan. There were 80 participants involved in the experiment. Among them, half of the participants were randomly selected to take part in an experimental group, while the other half formed a control group. Both groups underwent their respective lessons in conventional classrooms provided with necessary devices (computers, internet access).

Intervention

In the course of an experimental session, students were supposed to use an approach to teaching history based on gamified counterfactuals and including elements like narrative-based role-playing, decision-making tasks, and virtual reality-based simulation of historic events. The participants were involved in various branching scenarios exploring different ways the main historic event unfolded. Points and badges were among elements incorporated into the lesson as well.

Measures and Instruments

- Historical Empathy: Assessed by an empirically-tested Historical Empathy Scale which includes assessments on the cognitive, affective, and perspective-taking dimensions.
- Multi-Perspective Thinking: Determined by analyzing how students viewed historical events from multiple perspectives, based on scores derived from a standard rubric.
- Insights through Qualitative Methods: Obtained using observation techniques and semi-structured interviews.

Data Collection Procedures

Pretests were given to both groups in order to know their initial level of historical empathy and multiperspective thinking. After the eight-week intervention process, posttests were done to determine changes in the two variables. Observation was done throughout the intervention period, while semi-structured interviews were conducted among a purposeful sampling of the experiment group members.

Data Analysis

Quantitative data were analyzed through paired sample t-test and independent samples t-test to determine within-group and between-group differences in terms of historical empathy and multiperspective thinking. The effect size was determined in order to know the strength of the relationship between the two variables. Qualitative data from observations and interviews were also analyzed thematically to uncover learning patterns in terms of engagement, cognitive processing, and emotional reaction during gamification.

Results

Quantitative Findings

Based on the results of pretest and posttest scores analysis, it was discovered that students from the experimental group had greater improvement in their ability to practice historical empathy and think in multiple perspectives than those from the control group.

- **Historical Empathy:** Experimental group mean increased from 45.8 (SD = 8.2) to 68.4 (SD = 7.5), while the control group increased from 46.3 (SD = 7.9) to 52.7 (SD = 8.1).
- **Multi-Perspective Thinking:** Experimental group increased from 41.5 (SD = 9.0) to 64.1 (SD = 8.4), and control group from 42.0 (SD = 8.7) to 49.8 (SD = 9.2).

Table 1: Pre-Test and Post-Test Scores with Statistical Analysis

Group	Measure	Pre-Test Mean (SD)	Post-Test Mean (SD)	t	p	Cohen's d
Experimental	Historical Empathy	45.8 (8.2)	68.4 (7.5)	8.92	< .001	1.60
Control	Historical Empathy	46.3 (7.9)	52.7 (8.1)	2.78	.008	0.35
Experimental	Multi-Perspective Thinking	41.5 (9.0)	64.1 (8.4)	9.11	< .001	1.71
Control	Multi-Perspective Thinking	42.0 (8.7)	49.8 (9.2)	2.15	.035	0.30

Table 1 provides information about the mean pretest and post-test scores, standard deviations, t-statistics, p-values, and Cohen's d effect sizes for historical empathy and multi-perspective thinking for the experimental and control groups. The table reveals that the experimental group, having been taught the game-based counterfactual history course, had significantly better results than those obtained by the control group.

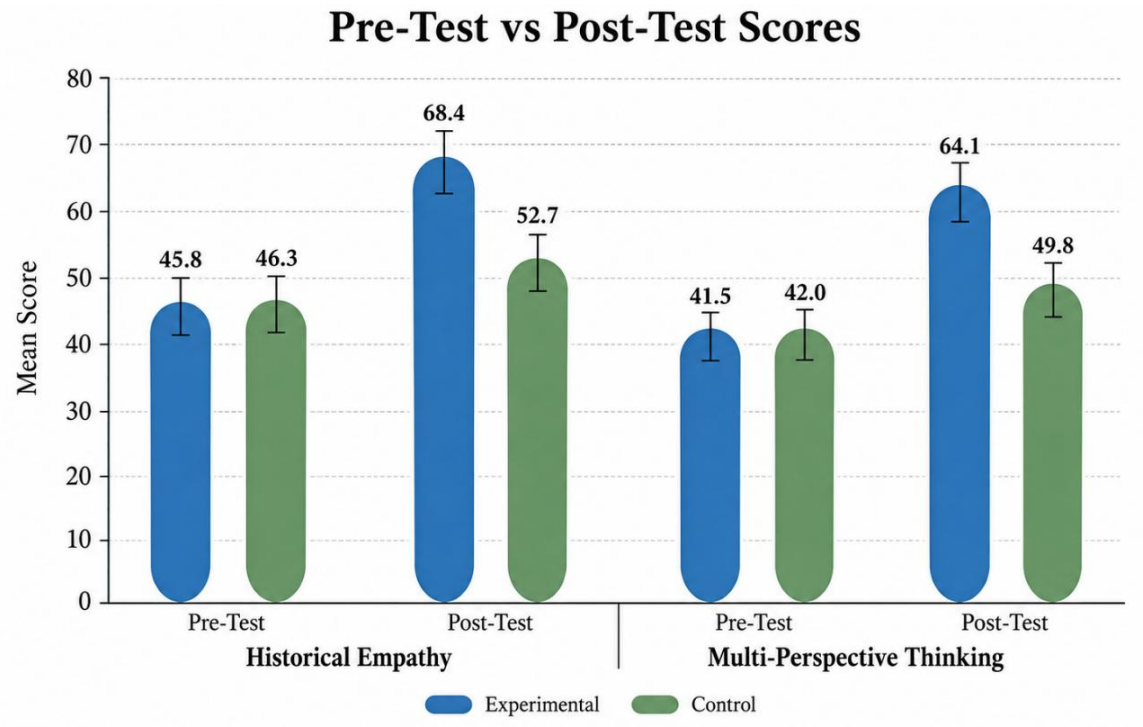


Fig. 2: Pre-Test vs Post-Test Mean Scores of Historical Empathy and Multi-Perspective Thinking

Fig. 2 shows the comparison of means for the experimental and control groups in two tests before and after the intervention regarding two aspects: historical empathy and multi-perspective thinking. Error bars indicate ±1 standard deviation. The figure clearly shows the substantial increase in both aspects among students who received education using the gamified counterfactual history approach.

Statistical Evidence

Paired-sample t-tests showed significant within-group improvements for the experimental group (historical empathy: $t = 8.92$, $p < .001$; multi-perspective thinking: $t = 9.11$, $p < .001$). Independent-sample t-tests for between-group comparisons confirmed the experimental group outperformed the control group (historical empathy: $t = 7.14$, $p < .001$, Cohen's $d = 1.60$; multi-perspective thinking: $t = 7.65$, $p < .001$, Cohen's $d = 1.71$). These results demonstrate that the gamified intervention had a large effect on both measures.

Qualitative Insights

Three major themes emerged from thematic analysis of student interviews and class reflections:

1. **Motivation and Engagement:** Increased engagement and motivation towards learning historical facts was observed among students.

   "*Each class was a pleasure to attend. History came alive!"*

2. **Historical Empathy:** The participants expressed their ability to empathize with different characters of history.

   "Now I understand the effects of those decisions on all parties involved."

3. **Analyzing Scenarios and Critical Thinking:** Evaluation of different scenarios that could take place due to different outcomes was noted.

   "Now I began to think what could happen if everything had been different."

Discussion

The research findings show that the gamified counterfactual history curriculum led to an improvement in historical empathy and multi-perspective thinking in comparison to traditional history curriculum implementation. Students in the experimental group performed better cognitively and emotionally, which confirms that gamified learning based on scenarios is effective for achieving higher levels of reflection in terms of perspective-taking as well as emotional engagement with history content. The research results are consistent with theoretical constructs related to history and education. In other words, interactive and engaging ways of teaching and learning may contribute to deeper understanding of the historical events and increase empathy for people involved. Moreover, gamification and counterfactual history learning are conducive to developing critical thinking skills, since learners will have the opportunity to explore different perspectives and imagine how particular events could take place if the factors were different. In practical terms, the discussed research provides useful insights that should be used by history teachers. For instance, one may use branching narrative, simulation, and feedback as a means of enhancing student engagement and encouraging critical thinking. Curriculum designers are expected to include scenarios for exploring "what if" questions.

Conclusion

The results of this study showed that the application of gamified counterfactual history curricula positively impacted the levels of historical empathy and multi-perspective thinking of undergraduate students. In the experimental condition, students had better historical empathy scores after completing the survey (68.4 ± 7.5) than those in the control group (52.7 ± 8.1), resulting in $t = 7.14$, $p < .001$, and Cohen's $d = 1.60$. As far as the second research question is concerned, the scores were higher in the experimental condition (64.1 ± 8.4) than in the control one (49.8 ± 9.2), yielding $t = 7.65$, $p < .001$, and Cohen's $d = 1.71$. It means that gamified counterfactual history curricula positively affect students' cognitive and affective skills. According to the thematic analysis of qualitative data, more engagement, historical empathy, and critical thinking was observed in experimental students. However, there are some limitations to this study. The study had a narrow sample group from one university, which limits its generalization potential, and the duration of the intervention was eight weeks only, thus limiting the understanding of the long-term effects. Future studies might look into those issues through conducting longitudinal studies among different samples of people as well as using advanced technological aids in the process, including virtual reality and adaptive systems. It would be interesting to see how the prolonged usage of gamified counterfactual history curricula can affect students' cognitive and emotional abilities related to historical thinking and empathy.

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