

# The Development of Cooperative Learning Activities

## With Group Investigation Technique and Generative AI to Enhance

### Ninth-Grade Students' Ability to Analyze Historical Causes and Consequences



#### Research Background

History education remains largely **teacher-centered** and focused on **rote memorization**, which **limits students' capacity for critical thinking and inquiry**. Moreover, **traditional pedagogical methods** and the **lack of engaging media and technological resources** further reduce student interest and **hinder the development of essential analytical skills**.



#### Objectives



- To **develop cooperative learning activities with group investigation technique and Generative AI**, to ensure appropriate quality and achieve effectiveness based on the 80/80 criterion.
- To **compare students' historical causes and consequences analysis abilities** before and after the learning activities.
- To **compare students' learning achievement** before and after the learning activities.
- To **examine students' satisfaction** with the learning activities.



#### Methodology

**Participants:** 36 ninth-grade students



selected through simple random sampling.

#### Research Instruments:



Lesson Plan



Achievement Test



Satisfaction Questionnaire



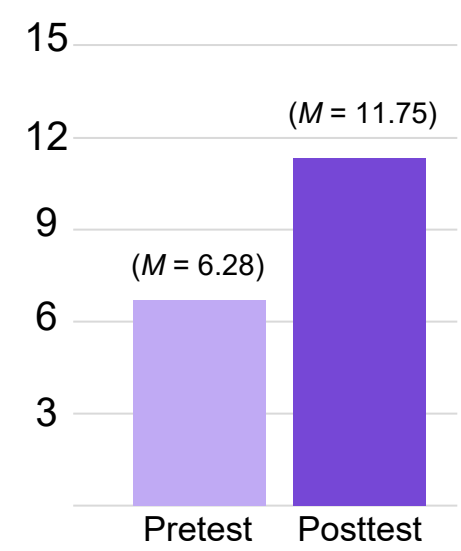
Test of Analyze Historical Causes and Consequences

#### Results

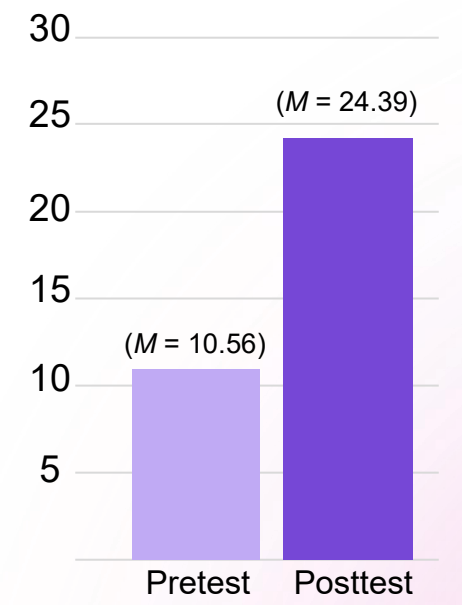


- **Learning activities: highest appropriate** ( $M = 4.56$ ,  $SD = 0.60$ ) **effectiveness scores** of 80.97/81.30

**Students' historical causes and consequences analysis abilities improved:**  
Avg. score 6.28-11.75 ( $p < .01$ )



**Students' learning achievement improved:** Avg. score 10.56-24.39 ( $p < .01$ )



- **Students' satisfaction towards learning activities:** highest level ( $M = 4.62$ ,  $SD = 0.53$ )