

Digital Storytelling as a Catalyst for Interest in Geometry: A Quasi-Experimental Study in Secondary Education

Felix O. Egara

Department of Mathematics, Natural Sciences and Technology Education, University of the Free State, Bloemfontein, South Africa

Moeketsi Mosia

Department of Mathematics, Natural Sciences and Technology Education, University of the Free State, Bloemfontein, South Africa

Abstract

Learners' persistent disinterest in geometry remains a pressing concern in mathematics education, particularly at the secondary school level. Traditional instructional methods often fail to stimulate students' engagement, limiting their conceptual understanding and long-term interest in geometric topics. As a response, this study investigates the effectiveness of digital storytelling as a pedagogical strategy to enhance learners' interest in circle geometry. The study employed a quasi-experimental design, specifically the pretest-posttest non-equivalent control group format. A total of 120 senior secondary school learners from four public schools in Delta State, Nigeria, participated. Intact classes were randomly assigned to either the experimental group (taught using digital storytelling) or the control group (taught using conventional methods). Data were gathered using the Circle Geometry Interest Inventory (CGII), which was administered as both a pretest and a posttest. The CGII demonstrated good internal consistency, with a reliability coefficient of 0.81. Data were analysed using SPSS (version 29). Descriptive statistics (means and standard deviations) were used to answer the research questions, while Analysis of Covariance (ANCOVA) was applied to test the hypotheses at the 0.05 significance level. The findings revealed that learners taught with digital storytelling showed significantly higher interest in circle geometry than those taught using conventional methods. However, no statistically significant difference was found in the interest scores of male and female learners taught using digital storytelling. It recommends that mathematics educators incorporate digital storytelling into their instructional practices to create more engaging and inclusive learning environments.

Keywords

Digital storytelling, gender, geometry, learners' interest, mathematics.