World Conference on Education and Teaching

Education and Teaching Conferences

17 - 19 October 2025 Lyon , France

Correlation Between Digital Skills and Academic Performance in University Students in La Guajira

Ramiro Moreno

University of Cartagena, Colombia

Abstract

This study explores the relationship between digital competencies and academic performance among fifth-semester Physical Education students at the University of La Guajira. While some studies demonstrate a positive correlation—indicating that greater mastery of digital skills leads to improved academic results—others report inverse or inconclusive findings. Lei et al. (2021) note that these inconsistencies may stem from the moderating effects of variables such as age, gender, and geographic context. For example, positive correlations have been observed in Italy, the U.S., and Indonesia, while negative correlations appear in countries like Nigeria and the Netherlands.

In Colombia, the Ministry of ICT (2022) reports that La Guajira ranks among the lowest departments in both digital access and skills, with a digital divide index of 0.5572 and a digital skills index of 0.7533. According to OECD (2022), these disparities could hinder sustainable development, educational progress, and digital inclusion. Academic performance in the region is also low: ICFES data (2022) place La Guajira at the bottom of national test scores, with significant gaps between students with home internet access and those without. Holm (2024) emphasizes that access to ICT at home significantly improves a student's chances of developing digital competence—an advantage not shared by students who rely on public facilities.

This research adopts a quantitative, cross-sectional, correlational design. Digital skills will be measured using the DIGCOMP-PED questionnaire, while academic performance will be assessed through students' GPA. The sample includes students who have taken the course "ICTs Applied to Education." Data will be analyzed with SPSS, applying Spearman's correlation to identify statistical relationships. The analytical framework draws on the European Commission's definition of digital competence as one of eight key skills for lifelong learning, connected to employability, civic participation, and educational equity. Academic performance, in turn, is considered a complex outcome shaped by multiple factors including income, family background, institutional quality, and access to digital tools.

The study expects to find a positive correlation between digital competence and academic performance. However, the high levels of inequality, lack of infrastructure, and limited ICT access in La Guajira could produce divergent results or no significant correlation, as found in previous studies. Conclusions will offer insights into how digital inequality in peripheral regions may affect student outcomes and inform educational strategies aimed at narrowing the digital and academic performance gaps. The findings will also contribute to a largely underrepresented area in the literature: the digital-academic nexus in marginalized Latin American contexts.

Keywords: Digital Skills, Academic Performance, Higher Education