

# INPLASY

INPLASY202430020

doi: 10.37766/inplasy2024.3.0020

Received: 05 March 2024

Published: 05 March 2024

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## Unveiling the keys to digital transformation: explanatory variables and performance indicators in Higher Education for quality education. A systematic review

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### ADMINISTRATIVE INFORMATION

**Support** - This review is conducted without the support of any funding sources.

**Review Stage at time of this submission** - The review has not yet started.

**Conflicts of interest** - None declared.

**INPLASY registration number:** INPLASY202430020

**Amendments** - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 05 March 2024 and was last updated on 05 March 2024.

### INTRODUCTION

**Review question / Objective** What are the explanatory variables and performance indicators of digital transformation in higher education aimed at delivering quality education? Synthesize the explanatory variables and performance indicators of digital transformation in higher education aimed at delivering quality education.

**Rationale** Quality education provides individual and social benefits that contribute to reducing social disparities, promoting respect for human rights, and fostering economic stability across various levels of society. In order to achieve this quality education, it is necessary to observe the digital transformation in higher education in terms of the variables that influence the digital transformation process, as well as the

performance indicators used to evaluate the success and effects of this transformation on the performance and educational experience of students and professors.

**Condition being studied** Digital transformation in higher education.

### METHODS

**Search strategy** To identify potentially relevant documents, the following databases will be used: SCOPUS, Web of Science, ERIC, EBSCO, ProQuest, and JSTOR. The search will be conducted using truncated symbols and Boolean operators to maximize the inclusion of relevant terms. The search terms have been formulated based on previous literature reviews and have been selected to ensure coverage of synonyms used by scholars to refer to digital transformation.

These terms include: "digital transformation," "digital transition," "digital revolution," "digitalization of teaching and learning," and "digital advancement."

To limit the search to the undergraduate higher education level and avoid results related to previous educational levels, the terms "higher education," "university," "college," and "tertiary education" will be used. Additionally, to restrict the search to the undergraduate level of education, the following terms will be used: "Bachelor," "degree," and "undergraduate." Furthermore, the following terms will be used as exclusion criteria: "postgraduate," "master programs," "doctoral programs," and "PhD."

The following terms will be considered: "High-quality universities" OR "accredited universities" OR "high-grade universities" OR "accredited colleges" OR "certified universities" OR "recognized institutions of higher education" OR "accredited higher education institutions" OR "accredited educational higher institutions" OR "validated colleges" OR "credentialed institutions of higher learning".

**Participant or population** This review considers all the actors involved in the relationship between digital transformation and higher education, such as students, teachers, universities, the government, the private sector, and the not-for-profit sector.

**Intervention** Explanatory variables and key performance indicators.

**Comparator** Accredited universities and non-accredited universities.

**Study designs to be included** The following inclusion criteria concerning studies will be used in this review: only peer-reviewed studies published after the peer-review process will be considered.

**Eligibility criteria** The selected documents should have an empirical nature, employing quantitative, qualitative, or mixed methodologies, to consider the explanatory variables and key performance indicators for digital transformation in higher education. Studies with a focus on digital transformation and higher education, published in Spanish and English, will be included.

**Information sources** The information source will be limited to electronic databases, which are: SCOPUS, Web of Science, ERIC, EBSCO, ProQuest, and JSTOR.

**Main outcome(s)** Initially, it is expected to identify variables and indicators of digital transformation in higher education, aiming to understand the determining factors of this relationship. These results and the process will be documented and presented in a research article.

**Additional outcome(s)** For this stage, the reviewers will collaboratively create a spreadsheet to establish which characteristics need to be extracted from the documents, thereby generating a standardized abstract tool. Copyrights will be respected in direct and indirect citations.

**Data management** For this stage, the reviewers will collaboratively create a spreadsheet to establish which characteristics need to be extracted from the documents, thereby generating a standardized abstract tool. Copyrights will be respected in direct and indirect citations.

#### **Quality assessment / Risk of bias analysis**

**Quality assessment:** PRISMA generally requires the researcher to illustrate the protocol, eligibility criteria, information sources, study selection, and data collection process in a flowchart.

Techniques will be evaluated for the following biases:

**Publication bias:** Sometimes, studies in which an intervention does not prove to be effective are not published. Therefore, articles in the sample that are not able to include unpublished studies may overestimate the true effect of an intervention.

**Selection bias:** Refers to systematic differences between compared groups in terms of their prognosis or probability of response to digital transformation. Thus, the differences found between the compared groups cannot be attributed unequivocally to the intervention under study, but may be due, in large part, to other differences between the compared groups.

**Observer bias:** It is little considered in the field of systematic reviews since it is necessary to report the articles and authors; however, it is possible to perform blinding when selecting relevant studies. It is essential since some of the reviewers might tend to favor or disfavor well-known authors.

Additionally, where applicable, we will review if there are biases regarding the sample sizes used. That is, whether the authors analyzed, described, or stated the impact of the sample size or minimum sample size.

Where applicable, we will review whether the authors stated how the results were interpreted or discussed.

**Strategy of data synthesis** The systematic review will follow the PRISMA framework as a global

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strategy, including keywords, search equations resulting from the defined keywords, search strategy (databases used), and inclusion and exclusion criteria for selecting articles.

For data synthesis, the following strategies will be used:

Specialized tools and platforms such as Zotero and Mendeley bibliographic managers (to import and export references, eliminate duplicates), Covidence (to select references by title and abstract, select references by full text, perform data extraction, and create risk of bias tables), and spreadsheets will also be used to store and tabulate the collected information.

Additionally, VosViewer and SciMAT will be used as bibliometric tools to examine the information, detect patterns, and visualize the data found.

**Subgroup analysis** It is not included. It is intended to study in general.

**Sensitivity analysis** Given the nature of the review, a sensitivity analysis is not envisioned.

**Language restriction** Only articles published after peer review in Spanish or English will be considered.

**Country(ies) involved** Colombia.

**Keywords** Higher education, Technological change, Educational indicators, Digital technology, Educational technology, Educational institutions, Educational policy.

**Dissemination plans** The dissemination plan is to prepare an article and publish it in an indexed magazine.

#### **Contributions of each author**

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