



# A Bibliometric Analysis on Undergraduate Education Management in Background of “Internet Plus” Era

Zhongyan Jiang<sup>a</sup>, Carmela S. Dizon<sup>b\*</sup>

Angeles University Foundation, MacArthur Highway, Angeles City, Philippines 2009

<sup>a</sup>jiang.zhongyan@auf.edu.ph, <sup>b\*</sup>dizoncs@auf.edu.ph

**Abstract.** This research offers a comprehensive bibliometric analysis focusing on undergraduate education management, exploring the literature to evaluate the impact and trends within the higher education domain. The study employs a systematic approach to examine the corpus of scholarly works spanning from various sources, encompassing journals, books, and publications. The timeframe under analysis extends from 2024 to 2024, providing a contemporary perspective.

Key findings highlight the significance of "Education," which emerges as the dominant theme with 39 mentions, underscoring its centrality in discussions on pedagogical systems, policies, and institutional frameworks. "Management" follows closely with 269 instances, reinforcing its crucial role in administrative procedures, instructional strategies within academic administration. "Impact" registers with 24 occurrences, focusing on inquiries into the aftermaths of interventions and technology's influence on learning outcomes. "Perceptions" captures subjective views of educators on methodologies and changes with 15 mentions, while "Model" alludes to theoretical structures for practice evolution with 15 times. Lastly, "Attitudes" and "Higher-education" crop up with 9, focusing on tertiary advancements. The study concludes by emphasizing the dynamic landscape of educational discourse, shedding light on areas like management, student engagement, stakeholder perspectives, theoretical frameworks, attitudes, and the nuanced realm of higher education, and their evolution in the "Internet Plus" era. This bibliometric exploration contributes to a nuanced understanding of trends and underscores the complexity, fostering advancements in the field, informing future strategies for enhancing educational management practices and policies.

**Keywords:** bibliometric, undergraduate education, internet plus

## 1 Introduction

In the backdrop of the "Internet Plus" era, which has ushered in a wave of technological innovations such as big data and artificial intelligence, the realm of education has experienced profound transformations [1]. These advancements have compelled all sectors, including higher education, to leverage the power of the internet for resource integration, continuous innovation, and adaptation to the evolving societal landscape. Specifically, local universities face both formidable challenges and unprecedented

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opportunities in student education management due to the "Internet Plus" phenomenon. This study aims to delve into this dynamic context by employing bibliometric methods to systematically analyze the scholarly literature on undergraduate education management under the influence of the "Internet Plus" environment[2]. This study is of significant theoretical import as it contributes to the understanding of how traditional education management paradigms are being reshaped by digital innovations. Practically, it seeks to identify knowledge gaps, trends, and influential works that can guide the development of more effective strategies for student education management in the digital age. The research intends to address the paucity of comprehensive studies examining the evolution and impact of "Internet Plus" on undergraduate education management as an integrated whole. By mapping out the intellectual structure and progression of relevant research, this bibliometric analysis will provide insights into the practical implications for enhancing the efficiency of educational administration and fostering holistic student development.

## 2 Method and Data

Bibliometric method refers to a quantitative analysis technique used to study patterns and trends in academic publishing, typically by examining citation counts, publication volumes, authorship, collaboration networks, and other measurable features of scientific literature[3]. This approach employs statistical and mathematical models to map and visualize the structure and dynamics of knowledge domains, revealing the impact, evolution, and interconnections within a field of study. In essence, bibliometrics involves three core elements: bibliography (the collection of publications), metrics (quantitative measurements), and analysis (interpretation of these measurements to understand patterns). Researchers utilize bibliometric tools to identify influential authors, journals, and institutions; track the emergence and decline of research topics; assess research productivity and collaboration patterns; and evaluate the influence of scientific outputs[4].

This study uses Bibliometrix to perform bibliometric analysis. Bibliometrix is an R package tailored for quantitative research in bibliometrics, scientometrics, and informetrics, developed by Massimo Franceschet. It empowers users to comprehensively analyze scientific literature by facilitating data import from sources like Web of Science, Scopus, and PubMed, offering data cleaning tools, and enabling network analysis for co-authorship, citations, and keyword co-occurrences. With functionalities to compute various bibliometric indicators such as citation counts and the h-index, it also supports text mining and advanced visualization for report creation. Integrating statistical analysis capabilities, Bibliometrix is a holistic solution that simplifies conducting in-depth bibliometric studies, enhancing understanding of publication patterns and impact across academic fields.

Publication data is retrieved from the Web of Science by using following search strategy: ALL=(undergraduate education management)) AND PY=(2020-2024)) AND DT=(Article). This study got 2855 publications' data for analysis.

### 3 Results

Table 1 serves as a concise yet informative summary of the dataset's fundamental characteristics, paralleling the descriptive content outlined previously. It delineates the scope and composition of the scholarly corpus under study, offering a structured overview akin to Table 1 but with updated statistics. The timeframe of the examined corpus spans from 2020 to 2024, indicating a continuation of the long-term perspective initiated in the earlier dataset, albeit focusing on a more recent period. This shortened window captures the most recent scholarly output, reflecting contemporary developments in the field. The corpus draws from a broader array of sources totaling 1001, encompassing journals, books, and other academic publications. This expansion in source variety enriches the content's diversity and comprehensiveness, contributing to a more nuanced understanding of the field. With a substantial count of 2855 individual documents, the corpus forms a rich dataset for analysis. Each document stands as a pivotal unit within the study, embodying the core data that drives the research's inquiries and conclusions. The reference list comprises 128038 entries, evidencing the extensive bibliographic foundation and interconnectedness of the works under scrutiny. The inclusion of both Keywords Plus (ID) at 4914 and Author's Keywords (DE) at 8540 underscores the meticulous tagging and thematic richness, enhancing the potential for nuanced topic analysis and understanding of research trends. Lastly, the corpus boasts a significant authorship pool of 10746 contributors, further emphasizing the collaborative nature of contemporary research in the field. This extensive authorship underscores the multidisciplinary engagement and collective intellectual endeavor reflected in the studied literature.

**Table 1.** Main information of corpus data

Description	Results
Timespan	2020:2024
Sources (Journals, Books, etc)	1001
Documents	2855
References	128038
Keywords Plus (ID)	4914
Author's Keywords (DE)	8540
Authors	10746

Table 2 presents a ranked list of the most influential sources that have made substantial contributions to the research corpus, highlighting those publications which have played a pivotal role in shaping the discourse within the field. "BMC Medical Education" leads the corpus with an impressive count of 112 articles, signifying its centrality in disseminating research pertinent to medical education and its profound impact on the academic landscape. Following closely, "Sustainability" appears with 110 articles, reinforcing its position as a key platform for sustainability-focused discussions and research. The "Journal of Chemical Education" contributes 90 articles, underscoring its

importance in the realm of chemical education studies. "International Journal of Management Education" and "Frontiers in Psychology" further solidify their roles with 77 and 73 articles respectively, demonstrating their significance in management education and psychological research. Other notable sources include "Nurse Education Today," emphasizing its relevance in nursing education with 49 articles, and the "International Journal of Environmental Research and Public Health," contributing 45 articles to environmental and public health education discussions. "Education and Information Technologies," "Frontiers in Public Health," "Psychology Research and Behavior Management," each with a considerable number of articles, also showcase their distinctive niches in the integration of technology in education, public health advancements, and behavioral psychology management within the academic community. Collectively, these sources illuminate the varied and dynamic nature of the research terrain, pinpointing the leading outlets driving advancements and debates across multiple disciplines.

**Table 2.** The most relevant source

Sources	Articles
BMC MEDICAL EDUCATION	112
SUSTAINABILITY	110
JOURNAL OF CHEMICAL EDUCATION	90
INTERNATIONAL JOURNAL OF MANAGEMENT EDUCATION	77
FRONTIERS IN PSYCHOLOGY	73
NURSE EDUCATION TODAY	49
INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH	45
EDUCATION AND INFORMATION TECHNOLOGIES	39
FRONTIERS IN PUBLIC HEALTH	36
PSYCHOLOGY RESEARCH AND BEHAVIOR MANAGEMENT	36

Table 3 furnishes a meticulous enumeration of the most highly cited publications within the corpus, shedding light on the scholarly works that have attained remarkable recognition and exerted a substantial scholarly impact in the respective field of study.

**Table 3.** The most cited articles

Document	DOI	Citations
TANG YM, 2021, COMPUT EDUC	10.1016/j.compedu.2021.104211	8
D'ANGELO JG, 2020, J CHEM EDUC	10.1021/acs.jchemed.0c00715	4
GRINDROD M, 2020, EUR J DENT EDUC	10.1111/eje.12560	4
FINSTER DC, 2021, J CHEM EDUC	10.1021/acs.jchemed.0c00142	4
OKOLIE UC, 2023, J CAREER DEV	10.1177/08948453211073913	4
KHALIL R, 2020, BMC MED EDUC	10.1186/s12909-020-02208-z	3
AL-EMRAN M, 2020, TECHNOL SOC	10.1016/j.techsoc.2020.101247	3
MORADI S, 2021, BMC ORAL HEALTH	10.1186/s12903-021-01735-5	3
TING JM, 2021, J CHEM EDUC	10.1021/acs.jchemed.0c00220	3
MAQABLEH M, 2021, CHILD YOUTH SERV REV	10.1016/j.childyouth.2021.106160	3

Fig. 1 is the themes map, providing information on research topics. The first quadrant is the moter themes, means important and need to be further dig into.

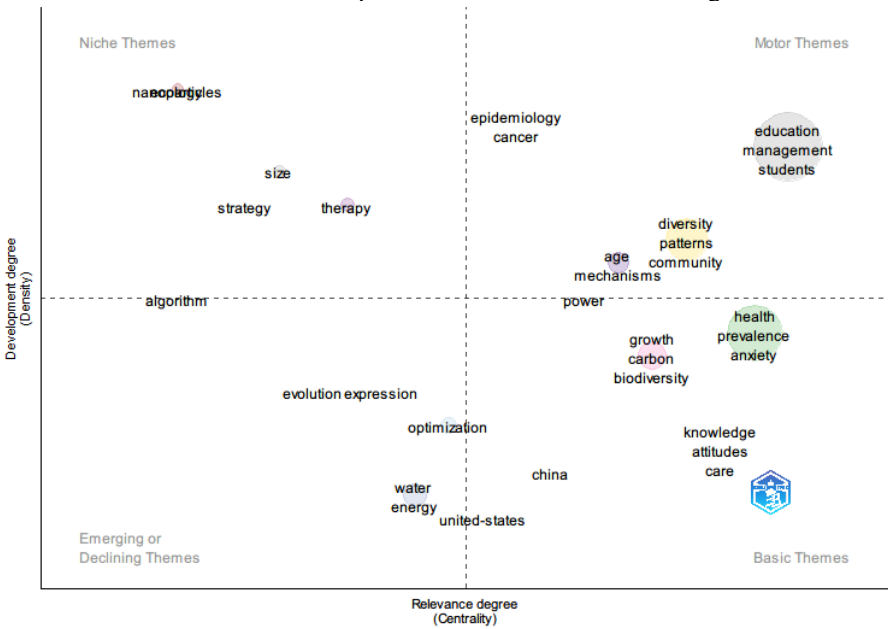


Fig. 1. Theme map

Fig. 2 presented table outlines a frequency distribution of key terminology usage within an educational context, highlighting central concepts and their prevalence. "Education" dominates with 39 mentions, serving as the core subject matter, encapsulating discussions on pedagogy, systems, policies, and institutional frameworks. "Management" follows closely with 269 times, underscoring the operational aspects of administrative practices, leadership, resource allocation, instructional strategies in academic settings. "Impact" registers 24 instances, emphasizing inquiries into the aftermath or effects of various interventions, technology integration, policy shifts on learning outcomes, and education quality. "Perceptions" with 159 occurrences denote subjective lenses, capturing views of involved parties, particularly student, educator perspectives on methodologies, innovations, or transformational changes. "Model" crops up 156 times, alluding to theoretical structures informing teaching, assessment methodologies, guiding frameworks for advancement in practice, or institutional evolution. "Attitudes" with 102 occurrences signal the exploration of mindsets, gauging receptiveness to technology adoption, pedagogical innovation, reform dynamics. Lastly, "Higher-education" crops up 9 times, underscoring the tertiary landscape, focusing on unique challenges, policy nuances, trends, university-level advancements within the sector. Collectively, this lexical snapshot underscores a comprehensive purview of educational discourse, with focal areas such as management, performance, student and stakeholder viewpoints, theoretical models, knowledge application, attitudes, and the nuanced realm of higher education.



Fig. 2. Keywords cloud

## 4 Conclusions

The development and implementation of a new student management model in the context of "Internet Plus" in local higher education requires a multifaceted approach, one that emphasizes innovation, student-centric strategies, and promotes integration, and facilitates comprehensive development[5]. This model's key elements entail updating the educational mindset to prioritize student empowerment, embracing a self-management approach and fostering engagement through the use of interactive online platforms; enhancing the "home-school-community" cooperation by leveraging digital tools for effective collaboration, enabling families, schools, and society to contribute to the educational ecosystem[6]. Enhancing the professional capacity of the education management team involves equipping them with cutting-edge technology skills, specifically in data-driven teaching methodologies and analytics, enabling them to interpret and adapt to the evolving landscape[7]. Innovating the delivery of education through innovative carriers, such as virtual labs and incorporating online courses, capitalizing on cloud-based infrastructure, expand the learning horizons, enriching the variety and flexibility for students[8]. Establishing robust management systems that ensure student data protection, clear policies, and implementing a multi-dimensional evaluation framework, while effectively harnessing big data analytics to provide personalized guidance, are pivotal for the tailored support and growth of each student[9]. Collectively, these strategic paths focusing on enhancing the management's philosophy, advancing the personnel's technology prowess, refining carriers of education[10], and evaluation methodologies in the "Internet Plus" milieu, form the bedrock for a new era of transformative education that bolsters quality and nurtures the all-encompassing student development.

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