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Tuning Journal for Higher Education (TJHE), Tuning Journal in short, is an international peer-reviewed journal publishing in English original research studies and reviews in all aspects of competence-based, student-centred, and outcome-oriented education reforms at university level across the globe. It is a joint initiative of the University of Deusto (Spain) and the University of Groningen (The Netherlands) that is run by the Tuning International Academy (http://tuningacademy.org/): an international meeting point for fostering innovative teaching, learning, and research in higher education.

The main goal of the Journal is to promote quality research into the 'Tuning Methodology' for designing, implementing, and assessing context-sensitive degree programmes and to subject the tools developed during Tuning projects and other educational projects to full academic scrutiny and debate among students, teachers, policy makers, administrators, and academics across societies, cultures, professions, and academic disciplines. To this end, the Journal invites applications for thematic issues, conference proceedings or monographs from all stakeholders. Guidelines for the preparation and submission of manuscripts are appended to this Issue and available at the web of the Journal: http://www.tuningjournal.org/

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Editorials

Revealing the present and past to improve the future in a different era and context

Editorial

Mary Gobbi
Editor

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> *You can't go back and change the beginning, but you can start where you are and change the ending*. (Attributed to C. S. Lewis 1898-1963)

Each paper in this edition illustrates the importance of analysing 'where we are' to ascertain strategies that could improve aspects of the Higher Education experience and outcomes- whether for students, staff, the institution, nation or region. Furthermore, the papers represent a considerable diversity of place, discipline, focus, degree of educational resource/ infrastructure, and empirical approach. It is a pleasure to read accounts from different regions of the world, some previously underrepresented in the literature. The challenge of diversity and historical moment is, of course, the extent to which evidence from the past is applicable to the present, particularly if the culture, context, and resource availability are dissimilar.

Where the pace of change is fast, where authenticity may be suspect and pedagogies (with or without technology) are applied successfully or inappropriately, the crucial role of inclusive, ethical, human endeavour that promotes equality of educational opportunity becomes ever more important.

Editorial Team
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Introductions

Revealing the present and past to improve the future in a different era and context

Introduction

Mary Gobbi[1]
Editor

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Abstract: Eight papers comprise this edition of the Journal reflecting a varied range of participant countries both in terms of authors and study sites (Latin America, South East Asia, Europe, Africa and the Eastern Mediterranean). Universities from both the state and private sector are represented together with bibliometric studies that identify gaps in the international literature concerning the concept of the 'ideal student' and the dominance of certain countries within a field of study. One important aspect of quality assurance is the ability to evaluate and research the nature of student/teacher relationships, competences, impact, experience, efficacy and effectiveness of adopted pedagogies and strategies to enhance teacher effectiveness and learner achievements. This is where higher education leadership, management / administration is an emerging field of study. An illustrative example from Turkey explores the tensions, realities and opportunities posed by this development. Three papers explicitly draw upon the Tuning methodology, or its tools, to develop or analyse institutional/national practises related to: a) the impact of the methodology upon national policy and curricula development; (2) quantifying and analysing student workload; and (c) comparing national quality assurance frameworks. The significance of the papers is their application to different countries and regions of the world. From these papers one can see the nuances of local or regional interrelationships between policy, culture, context, academic staff conceptions and experiences. The benefits of utilising recognisable tools and processes via the Tuning Methodology

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while providing genuine opportunities for frameworks of comparison within, and between, countries are also critiqued. Several authors analyse the extent to which European derived tools may be applicable to other contexts, systems and cultures. The papers also reveal differences between what is expected of students and what students actually experience. Academic staff development and teacher perspectives remain areas for exploration, with specific papers considering digital literacy, artificial intelligence and teacher concepts of pedagogic innovation, good teaching, available resources and enabling and impeding factors. As previous papers have identified, access to new, innovative and good pedagogies often carry with them ethical challenges, tensions in resource allocation and disparities between specific groups of students (e.g. rural versus urban). The papers in this edition continue to offer fresh perspectives on new educational challenges while questioning the suitability of applying good practices from one region to another. The diversity of settings and studies together provide rich insights into the global experiences of Higher Education whether from policy, management, institutional, teacher, administrative, or student perspectives.

Keywords: quality assurance, technology, tuning methodology, student workload, staff development.

The first three papers in this edition focus on aspects of quality at the institutional or national level and deploy Tuning tools and frameworks to assist analysis. Our first paper by Feras Al-Azzeh, and Amal Qassed Ahmad, *'The Tuning Higher Education: A Comprehensive Analysis of Quality Assurance and Qualifications Frameworks for Enhancement'* compares Jordan's National Qualifications framework with South Africa, Australia, European Union, New Zealand and the United Kingdom. The paper debates the relative merits of the different models and their relationship to accreditation, global mobility, recognition of prior learning, lifelong learning and alignment with employment needs. Challenges were noted, for example in Jordan itself, institutional variability in capacities, resources, and commitment to quality assurance strategies and the need for change as educational environments alter over time. However, when compared with the criteria found in the other settings, the Jordanian system was found to be robust, fulfilling all key criteria and having mechanisms in place to improve.This study illustrates the benefits of deploying established tools to analyse, and hence compare, quality assurance and qualifications frameworks in different countries.

Academics are often challenged by the tensions between maintaining and evolving their research, and the educational administration (EA) dimensions of their role without comprising quality. Through a study in Turkey, Pınar Ayyilidiz and Zehra Keser Özmantar, (*'The trajectories of educational administration in Türkiye: The production and dissemination of*

the field knowledge'), the authors explore not only how EA produces and circulates its knowledge, but also how its academic identity is created and contested at both local and national level. The authors offer an informative critique of the epistemologies associated with EA, the general tensions in the research community (as is often the case with applied disciplines); the specific context of EA in Turkey; and the challenges these factors bring to both academic theory development and applied practice. The study explored the educational backgrounds and professional experiences of academics with an EA role so they could understand how their research identities emerged. In addition, they were interested in the academic and scientific productivity of those professors who influenced educational policies. Through survey work, the authors gathered information on the academics' publication, research record, professional experience and academic roles during the period 2016-2021. This detailed study offers a rich portrayal of an emerging field of academic practice and research in Higher Education administration, leadership and management.

Francis Espinoza's paper *'The Tuning Project and the harmonisation and internationalisation of HE in Chile',* addresses a very important development period regarding the higher education system in Chile. Chile is often used as a reference for others in the region due to its degree of development and quality. The paper addresses issues of globalization and internationalization through the lens of 'soft power'. The case study example is how three interrelated European Processes and structures (the European Higher Education Area (EHEA), the Bologna Process in Higher Education and the Tuning Methodology for programme design) informed the development of HE in a non-European context, namely Latin America and specifically Chile. Espinoza traced the two-phase impact and interactions of the European influences and the Chilean HE system from the harmonization of country based HE (2005-2013) and then the internationalisation and globalization strategies (2013-2021). The paper is informed by two Spanish language studies.

The paper offers useful summaries and critiques of the European Processes, the European and international drivers in a global HE sector, and the specific Chilean context within Latin America. The paper contributes to our understandings of the extent to which the application/appropriateness of European initiated processes, strategies and tools has relevance and positive impacts upon contexts and cultures. While there are examples of application in other regions of the world, it remains an area that lacks evidence over time. Espinoza shows that European influences exerted soft power because they were 'transmitted as a common language determined by a specific vocabulary'.

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In the second phase the internationalisation process was enhanced through the Tuning Methodology that offered guiding principles, normative processes and curricular management. Through demonstrating the impact and strategies employed to reform Higher Education in a different context, the paper is of interest to academics, policymakers, and educational practitioners in diverse regions.

Our next paper from Richard Jugar, *'Conceptualising and Optimising Student Workload in Philippine Higher Education'* used Tuning and Bologna Process tools to ascertain student workload in the Philippines. This paper will be of particular interest to countries developing comparable qualifications within, and between, institutions and countries. As Jugar argues, "A balanced workload ensures academic rigor without overburdening students, encourages active participation and engagement, and aligns with institutional goals for learner development". The paper has a particular focus on HE in the Association of Southeast Asian Nations (ASEAN), and their Associated University thematic network for the ASEAN Credit System (ACTS).

Analysis of the Philippine HE policy and the literature on student workload, led Jugar to examine academics understanding of student workload and their implementation practices in relation to teaching, learning and assessment. The study involved 135 academics from different disciplines, ten higher education institutions in the Philippines comprising three private and seven state universities. Academics were asked to explain their understandings of student workload and then to describe the activities, processes and timings that a typical higher education student would do to produce an acceptable synthesis paper result. The findings illustrated that some academics largely focussed on contact time and assessment requirements, with little consideration given to other activities of engagement. As Jugar proposes there was a distinction between formally acknowledged *workload* and *workload experienced* by students.

At the theoretical level, the study positions student workload not merely as a measurement tool, but as a mediating construct between policy, pedagogy, and learner experience. Jugar demonstrated that, in practice, there was no standardized credit system that included non-contact time with any degree of consistency or rigour. This was attributed to a lack of connection between policy and practice in the design of the relevant policies, available and utilised methods to assign credit, and little attention paid to non-contact time. His paper cogently proposes strategies to enhance the Phillipine system that may have resonance for similar contexts elsewhere.

From student workload and accreditation, we move to the concept of the 'ideal college student [IS]' In this paper, the term refers to a generic higher

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education student, whether situated in an institution labelled 'university' or 'college' (Saeedeh Esmaeeli: *'Mapping the characteristics of the ideal college student: A bibliometric analysis (1971 - 2023)'*). Methodologically, the paper provides an insightful analysis of the techniques of Bibliometric analysis involving 475 research studies. The theoretical approach of Bourdieu's social and cultural capital underpins both the analysis and interpretation of the data/evidence. Readers unfamiliar with these techniques should find the paper instructive.

Esmaeeli observed that most of the literature derived from five countries, namely United States, United Kingdom, Italy, Germany, and Australia. Other findings related to the concept of the IS included: (1) the nature of data capture; (2) the presence or absence of data over time when changes in the perception or reality of the IS may have changed; (3) how the preferred characteristics of the IS may be associated with available resources, culture and experienced pedagogies; (4) the extent to which diverse student populations from a range of countries, cultures and contexts are represented in the evidence; and (5) influences, influencers and their impact on the IS concept development over time.

Esmaeeli offers a constructive critique and debate on the many facets of this wide-ranging study. He argues cogently that the concept needs to 'realign' with the principles of diversity, equity, and inclusion to facilitate students from diverse backgrounds, particularly those who may not possess the dominant cultural and social capital associated with the IS characteristics privileged in a specific context.

The next two papers consider different aspects of the academic teacher perspective. The first, by Omar Paccagnella, Debora Aquario, Lorenza Da Re and Anna Serbati (*(A Bottom-Up Approach for Faculty Development: A Latent Class Analysis on Teaching Innovative Practices and Needs for Improvement in Higher Education)* reports on one component of a large seven university study from Italy: the *AsdUni* project. The overall aim of the AsdUni project was to establish a national. systematic approach to educational development of staff, considering teachers' beliefs, practices and needs. This paper reports on the responses to three specific survey questions that had been distributed to all the academic staff in the seven universities. These questions were associated with what constitutes 'good teaching', innovation, and the support academic teachers consider necessary to improve their teaching and student learning outcomes.

The introductory literature review provides readers with a current overview of the literature and evidence related to the nature of good teaching from the perspectives of: (a) disciplinary content; (b) the move towards

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student centred and participatory approaches to learning, teaching and assessment; (c) the impact of technologies like Artificial Intelligence; and (d) situation and personal factors influencing students as individuals or cohorts. The implications of these factors for teacher competence and staff development are critically discussed. Methodologically, the authors used qualitative data analysis and Latent Class analysis for which a comprehensive explanation is offered. From the data analysis, 'classes' or 'types' of teachers were identified with respect to their strengths (excellences) or needs. This enabled identification of staff development needs at three different levels: national, inter- institutional (where groups of institutions shared common needs) and at single institutional level (local). This distinction is very helpful for the effective and economic provision of staff development. There were some limitations to the study related to sample sizes in some sectors. However, the overall responses provided informative data for application.

Our next paper by Sekar Purbarini Kawuryan, Anwar Senen, and Urmila Umardiant is based in Indonesia, where the authors evaluated elementary teachers' perceptions of digital literacy in one university ('*Prospective Elementary Teachers' Perceptions of Digital Literacy as A 21st-Century Skill)'*. As the authors discuss, it is important that 21st Century prospective teachers are digitally competent to best utilise digital technologies not only for their own learning, but to deploy their use effectively with their future pupils. Specifically, there were national concerns regarding elementary pupils' abilities with digital literacy with implications for the teaching profession at this level. The rapid evolution of a range multimedia technologies presents its own challenge for teachers to be current in their digital competence. The authors offer a sound background review to digital literacy, its multifaceted nature, and its development in pupils /students. This quantitative study to elicit the teacher trainees' perceptions and understanding about digital literacy, aimed to identify areas to strengthen the teacher training programme in one university. 563 undergraduate teacher students were surveyed in semesters 2 and 4 of their programme.

Profile data from individual students showed differences in perceptions of digital literacy, this included gender (first year female students), geographical location (rural), related previous experience. The data also revealed specific digital competences that needed strengthening in their teacher preparation programme. for example digital content production and the utilization of information technology.

Our final paper from Zouhaier Slimi and Beatriz Villarejo Carballido (*'Artificial intelligence in higher education: A foundational analysis of*

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drivers, barriers, and solutions') links to the previous paper. To some extent the evidence in the paper is now superseded by contemporary debates, however it is important to situate the current in the recent past and the anticipated issues from 2021 – 2022 before the generative AI era. 47 educators, administrators, and policymakers across 26 countries were surveyed using both closed and open ended questions. The questions provided data to map adoption strategies. The paper has a specific contribution in so far as it provided base line data for eliciting cross cultural adoption patterns, particularly in underrepresented regions. It also offers a socio historical insight into the then emerging issues, including those of ethics, resources and enablers. The study provided a platform for subsequent work in this field. While the empirical work drew on thematic analysis, it was also grounded in two theoretical models the Technology Acceptance Model (TAM) and the AI Ethics Framework. The authors also offer detailed and comprehensive accounts of their methodology, strategies to mitigate the effects of English language competence, ethical conduct of the study and study limitations.

The findings illustrate common patterns of adoption, barriers and enablers as well as revealing the differences between well-resourced and under resourced institutions. The detailed section on study findings and their practical implications makes a fascinating read for a range of stakeholders anticipating the current challenges in the AI field. As the authors discussed, 'Institutions and policymakers must recognise that AI readiness is not merely about acquiring tools but about building the human, technical, and governance capacities that enable responsible adoption'.

About the author

MARY GOBBI (mary.gobbi@deusto.es) is Emeritus Professor (University of Southampton, UK) and Editor of Tuning Journal for Higher Education since 2019. Professor Gobbi (PhD, MA Ed, Dip N, Dip Ned, RN) has been Tuning Nursing co-ordinator since 2003 and is an expert educational developer and evaluator, with extensive national and international experience. These include projects within the European Union (e.g. technologies in healthcare training, on Sectoral Skills Councils for Nursing'; role and training of health care assistants; developing a European MSc in Advanced Rehabilitation Technologies,); South Sudan (developing standardized in service midwifery training)'; Germany and US (Leadership Competences for executive nurse leaders); Republic of Georgia (developing bachelors nurse education); and Canada (comparing EU and Canadian nurse education and advising on masters level standards). Mary has experience with different levels of education for nurses and other health care

professionals (from care assistant to post-doctoral level); and with different educational strategies and technologies (from the use of grading in practice, simulation and use of mobile technologies to improve critical care education and resuscitation performance using 'smart technologies'). She has supervised 17 (now) doctoral students to successful completion.

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Articles

Tuning higher education: A thematic review of quality assurance and qualifications frameworks towards improving standards and student mobility

Feras Mohammad Al-Azzeh[1] and Amal Qassed Ahmad[2]

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Abstract: This research identifies areas that are critical in higher education, focusing on interdependent dynamics between the quality assurance and qualifications framework. It identifies their separate significance and how they complement each other in order to have a better impact in academia.

Key Findings and Results:

Quality Assurance Diverse Models: The study exposes a variety to global quality assurance models that inspire academic excellence and institutional accountability. Among major methods of ensuring quality are the processes of accreditation, assessment of academic programs, and the functions of quality assurance agencies.

Role of Qualifications Frameworks: This study examines how national qualifications frameworks are structured to bring about more transparency, comparability, and recognition of qualifications. This is also an area where quality assurance agencies become crucial to facilitate regional and international mobility, as well as connect educational achievements to labor market needs.

System Integration: In this study, a look is made into the ways in which quality assurance agencies influence the development and refinement of qualifications

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frameworks and how such frameworks are aligned with international standards in support of cross-border recognition of qualifications.

Best Practices and Challenges: This study identifies best practices, challenges, and future directions by a critical literature review and case studies on quality assurance and qualifications frameworks.

The study concludes with valuable lessons for policymakers, educators, and other stakeholders seeking to enhance the quality of higher education globally, by stressing that integration of quality assurance and qualifications frameworks holds the key.

Keywords: higher education; quality assurance; qualifications frameworks (QFs); European qualifications framework (EQF); United Kingdom qualifications framework (UKQF); Australian qualifications framework (AQF); South Africa qualifications framework (SAQF); New Zealand qualifications framework (NZQF); Jordanian national qualifications framework (JNQF).

I. Introduction

I.1. Background information

In recent years, the landscape of higher education has undergone transformational changes, with a greater emphasis on assuring academic excellence, fostering openness, and encouraging international mobility. The notions of quality assurance and certification frameworks have emerged as crucial pillars in establishing the standards and efficacy of higher education institutions around the world, according to Zapp and Ramirez (2019).

Lemaitre in (2017) examined the challenges of quality assurance in higher education in Latin America, focusing on structural changes, national systems, regional arrangements, and perceived effects of implementing quality assurance mechanisms. The region faces high inequality and increased demand for tertiary education due to a growing adult population and diversified student body. Three major trends in Latin American higher education systems are expansion of enrollment, diversification, and privatization. The article emphasizes institutional autonomy and the absence of recognized national higher education areas, suggesting initiatives for improvement such as recognizing diversity, developing reliable information systems, and professionalizing management. González and González and Maria (2013) focused on the importance of degree profiles in the design of degrees and their consequences in higher education. It highlights four main components that should be considered when creating new qualifications: analyzing social and professional needs, future trends, referencing the meta-profile, and considering the university where the program is anchored. The

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Tuning Project, a network of Communities of Learning, has shaped higher education intellectual identity for over ten years.

Demchuk et al. (2015) discussed competence-based learning in Russia and its integration into the European Higher Education Area. It proposes an algorithm based on the Tuning Educational Structures in Europe methodology, focusing on assessing learning outcomes. The article also addresses challenges related to mobility, transparency, and information in higher education. The study supported by the European Union, highlights the importance of quality assurance processes in the dynamic higher education environment. It calls for continuous improvement in governance and management practices. On the other hand, using the Tuning Russia project as a model, Zabotkina et al. (2019) explored how to create a translation studies master's program using a modular competence-based approach. The study, which focuses specifically on the LSP translation module, highlights the importance of multidisciplinary collaboration and specialized text translation in order to implant the competencies that are necessary for professional credentials. It is shown how the Bologna Process has influenced Russian higher education and helped it become more in line with European standards. The article suggests the LSP module as a possible model and argues for agreement between the EU and Russia on the development of translation competency models. The paper emphasizes the significance of globally consistent criteria, recognizing the difficulties in evaluating competencies and striving for compliance with the Bologna Process in the Russian higher education system.

Quality assurance in higher education refers to systematic processes and methods that monitor, evaluate, and improve the quality and standards of academic programs and institutions. Accreditation, program evaluations, and institutional assessments are all important components of quality assurance activities, since they help to improve educational offerings and institutional accountability over time. The importance of quality assurance has become even more evident in a globalized environment, where higher education institutions are increasingly networked, and the necessity for established quality benchmarks has intensified (Altbach et al. 2019; Airey and Benckendorff 2017).

Concurrently, national and regional qualification frameworks have emerged as critical tools for establishing and coordinating educational qualifications. These frameworks provide a common language for articulating learning outcomes and abilities at various levels of education. Qualification frameworks make it easier to recognise academic achievements on a national and international scale by developing a transparent and comparable framework. They play an important role in facilitating student mobility,

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supporting lifelong learning efforts, and aligning educational achievements with the changing demands of the workforce (Baker et al. 2017).

The junction of quality assurance and qualification frameworks is a vibrant field of research that requires a thorough examination. Understanding how quality assurance procedures contribute to the establishment and improvement of certification frameworks is critical for improving the overall efficacy of higher education institutions (Lim 2018). Furthermore, aligning qualification frameworks with international standards and encouraging collaboration among stakeholders are crucial topics that demand in-depth investigation (Caena and Redecker 2019).

This study will delve into these linked areas, providing insights into the best practices, problems, and future directions of quality assurance and credentialing frameworks in higher education. Through a detailed assessment of current literature, case studies, and analyses, this research attempts to add to the continuing discourse regarding the development of higher education standards on a worldwide scale.

I.2. Quality assurance and qualifications frameworks

In today's higher education scene, the symbiotic relationship between Quality Assurance (QA) methods and Qualifications Frameworks (QFs) stands out as a crucial predictor of educational excellence, international competitiveness, and the overall efficacy of academic institutions (O'Shea 2018). The shifting standards in these fields have a vital role in influencing the quality and relevance of educational achievements in an era distinguished by globalization, technological breakthroughs, and changing societal needs (Catacutan et al. 2023).

Quality assurance in higher education is the systematic processes and procedures used to ensure and improve the quality, efficiency, and effectiveness of academic programs and institutions. Ayoo et al. (2020) define quality assurance methods as accreditation processes, peer reviews, program evaluations, and institutional assessments, all of which aim to create continuous improvement and accountability in the higher education sector. In today's dynamic educational scene, quality assurance has become crucial for preserving and improving the legitimacy and standards of academic offerings (Phillips and Kinser 2018).

At the same time, Qualifications Frameworks have arisen as comprehensive systems for defining and aligning educational qualifications within a defined framework. These frameworks explain the desired learning goals, abilities, and skills associated with various stages of education,

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resulting in a transparent and globally applicable structure (Holdsworth and Thomas, 2021). In today's world, national and international Qualifications Frameworks promote academic mobility, lifelong learning initiatives, and cross-border qualification recognition. The role of higher education in driving economic growth and fostering social cohesion is underscored, urging the formulation of policies aligned with current global trends and stakeholder aspirations. Emphasizing the integration of lifelong learning (LLL) principles, the concept of policy learning is introduced, advocating for systematic knowledge extraction and communication, so that transformation of public institutions into learning systems and proposes higher education institutions adopt learning organization structures. With a focus on recognizing everyone as a learner, the importance is emphasized for institutions to teach from diverse stakeholders, including non-traditional learners, contributing to societal improvement through the generation and application of knowledge (Vargas 2014; Rifai 2015).

The interaction between QA and QFs demonstrates a complicated relationship in which quality assurance in educational processes helps to establish, implement, and revise qualifications frameworks. QA and QFs collaborate to build a more comprehensive and responsive higher education environment by aligning curricula with industry needs, emphasizing student-centered learning outcomes, and promoting internationalization (Bateman and Dyson 2022).

As educational systems adopt more global standards and best practices, the dynamic relationship between QA and QFs becomes a focus of research and policy considerations. Contemporary standards in both QA and QFs must adapt to the changing nature of education, embracing challenges like as technological integration, multidisciplinary methods, and the expectations of a varied and interconnected global workforce. Moreover, the impact of integrating creative technology and Interactive Learning in higher education, contribute to the development of I-Generation skills, enhance student-lecturer interaction, and increase student attention (Chikazinga 2022). It's worth mentioning technology integration in universities enhances learning and social circles, but faces challenges like high costs, lack of training, and resistance from traditional staff. Interactive sessions are crucial for maintaining student-teacher relationships and enhancing learning. Quality assurance depends on the implementation of interactive tools and staff training, but lack of knowledge can hinder effective teaching (Al-Azzeh 2019; El-Qirem et al. 2022).

This study seeks to investigate the existing standards of Quality Assurance and Qualifications Frameworks in higher education, giving light on their

interrelationship and impact on educational results. By exploring recent advancements, problems, and creative approaches, the study hopes to give useful insights into how these two pillars of higher education might together enhance the standards of learning, teaching, and institutional success in the modern academic landscape.

II. Framework for higher education qualifications (FHEQ) for the European Union (EU), United Kingdom (UK), Australia, South Africa, New Zealand, and its use in quality assurance

II.1. Introduction

The creation of strong and transparent frameworks for higher education qualifications is a global effort that reflects a dedication to the quality, comparability, and international recognition of academic achievements. This section investigates the Framework for Higher Education Qualifications (FHEQ) in five different regions: the European Union (EU), the United Kingdom (UK), Australia, South Africa, and New Zealand, and it ends by clarifying various details and aspects related to the Jordanian National Qualifications Framework. These frameworks are critical instruments not just for constructing academic credentials, but also for facilitating effective quality assurance methods in higher education systems.

At the European level, the European Qualifications Framework (EQF) aligns certification regimes across member countries, enabling mobility and recognition. This study examines the EQF's use in quality assurance across the EU's broad educational landscape, stressing its importance in fostering collaboration, comparability, and adherence to agreed academic standards (Mikulec 2017). By investigating the FHEQ in these diverse regions, this study aims to unravel the intricate relationship between qualifications frameworks and quality assurance practices, shedding light on their effectiveness, challenges, and the potential for harmonization in a globalized higher education landscape.

The UK's Qualifications and Credit Framework (QCF), which evolved from the National Vocational Qualifications (NVQ) framework in 2008, is innovative, yet it confronts issues such as unitization and criticism for inflexibility. Quality assurance and credentialing frameworks are critical for creating higher education, driving program creation, and sustaining standards. They promote flexibility through the Credit Accumulation and Transfer (CAT) system and adhere to worldwide standards such as the European Qualifications Framework. Continuous development promotes relevance and adaptability while encouraging collaboration, recognition, and mobility. The

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symbiotic relationship between quality assurance and credentialing frameworks is critical for maintaining educational quality and enabling informed decision-making in the university sector (Lim 2021; Leu 2017).

The Australian Qualifications Framework (AQF) is a 1995 system that regulates qualifications offered by Australian universities, aiming to provide transparency and uniformity in evaluating degrees across different sectors. It includes all levels of education and requires active participation from universities. Implementing the AQF requires consistent curriculum reviews, periodic changes, and collaboration with stakeholders like trade groups, government agencies, and community organizations to ensure quality and applicability of qualifications (Noonan 2019).

South Africa's education and training system is based on the National Qualifications Framework (NQF) and the South African Qualifications Authority (SAQA). SAQA, established in 1995, supervises and develops the NQF, ensuring the validity and comparability of qualifications both domestically and globally. The NQF, established in 1998, categorizes and identifies qualifications in various education and training domains, encouraging lifelong learning and improving education quality. It has ten levels, starting at Level 1 (Adult Basic Education and Training) and ending at Level 10 (Doctoral degree). The NQF Amendment Act of 2012 improved its functioning and addressed issues. In the university sector, SAQA and the NQF ensure that all degrees granted by universities comply with national and international standards. However, alignment across various sectors is a significant challenge, and concerns regarding recognition of prior learning (RPL) in universities must be addressed (Moosa 2018).

The Framework for Higher Education Qualifications (FHEQ) is a global effort to establish strong and transparent frameworks for higher education qualifications. It is crucial for constructing academic credentials and facilitating effective quality assurance methods in higher education systems. The EU's EQF aligns certification regimes across member countries, fostering collaboration and recognition. The UK's Qualifications and Credit Framework (QCF) promotes flexibility and adherence to global standards. Australia's AQF provides a consistent system for qualifications across multiple education sectors, facilitating national and worldwide qualification recognition. South Africa's NQF encourages lifelong learning and academic excellence, while the New Zealand Qualifications Framework (NZQF) emphasizes clarity and consistency. These frameworks play a vital role in maintaining educational quality and enabling informed decision-making in the university sector (Barker 2018; Chan 2016).

II.2. FHEQ key components

The Framework for Higher Education Qualifications (FHEQ) is a critical tool in higher education, providing a systematic and uniform structure for organizing and categorizing academic qualifications in this field. It acts as a reference point for institutions, students, employers, and other stakeholders, ensuring clarity and consistency in interpreting academic attainment levels (Stowell et al. 2016). Table 1 depicts the essential components of the FHEQ (Hawley 2016).

Table 1

Key components of the FHEQ

Component	Description
Levels of Qualifications	The FHEQ comprises several levels, each corresponding to a specific stage of academic progression. In most cases these levels range from Level 1 to Level 10 (Doctoral degree). Each level is associated with distinct learning outcomes, reflecting the depth and complexity of knowledge and skills expected at that stage.
Qualification Descriptors	At each level, the FHEQ includes descriptors that articulate the general characteristics of qualifications. These descriptors define the knowledge, understanding, and skills that students are expected to demonstrate upon completion of a particular qualification.
Types of Qualifications	The FHEQ encompasses various types of qualifications, including certificates, diplomas, bachelor's degrees, master's degrees, and doctoral degrees. Each type of qualification is positioned within the framework based on its academic rigor and depth.
Credit Accumulation and Transfer	The FHEQ incorporates the concept of Credit Accumulation and Transfer (CAT), allowing for the modularization of programs. Credits represent the volume of learning, and students can accumulate credits toward higher-level qualifications or transfer them between institutions.
Quality Assurance and Accreditation	The FHEQ plays a crucial role in the quality assurance processes of higher education institutions. It provides a common reference for internal quality assurance mechanisms and external accreditation bodies. Accreditation of programs and institutions often involves alignment with the FHEQ, ensuring that academic standards are met consistently.

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Component	Description
Alignment with European Qualifications Framework (EQF)	The FHEQ is designed to align with the broader European Qualifications Framework (EQF), facilitating comparability and recognition of qualifications across European countries. This alignment promotes international mobility and collaboration in education.

II.3. What is the purpose of the FHEQ?

The Framework for Higher Education Qualifications (FHEQ) is a critical tool meant to serve a variety of important functions in the higher education landscape. The FHEQ was developed to give clarity, uniformity, and comparability across academic qualifications, and it plays an important role in influencing students' educational experiences, guiding institutions, and facilitating larger public understanding (McGhee 2021). Table 2 highlights the FHEQ's major purposes.

Table 2

Purpose of the FHEQ

Purpose	Description
Standardization and Transparency	The FHEQ creates a standardized framework for categorizing and classifying academic qualifications. This standardization adds transparency to the varied range of qualifications granted by higher education institutions, allowing students, employers, and educational professionals to better understand the nature and level of various qualifications.
Levels of Academic Attainment	One of the primary purposes of the FHEQ is to define distinct levels of academic attainment. Each level corresponds to a specific stage of the academic journey, in most cases ranging from Level 1 to Level 10 (Doctoral degree). This hierarchical structure provides a clear progression framework, aiding students in understanding the depth and complexity of knowledge and skills associated with each level.
Qualification Descriptors	The FHEQ includes qualification descriptors for each level, outlining the general characteristics and learning outcomes expected from individuals who achieve a particular qualification. These descriptors serve as a reference point for institutions in designing and assessing programs, ensuring alignment with established academic standards.

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Purpose	Description
Quality Assurance and Accreditation	The FHEQ, which serves as the cornerstone for quality assurance systems, helps higher education institutions maintain and improve academic standards. Accreditation authorities and quality assurance agencies use the FHEQ to analyze the rigor and appropriateness of programs, ensuring that institutions meet defined standards.
International Comparability	The FHEQ facilitates international comparability of qualifications. By aligning with frameworks such as the European Qualifications Framework (EQF), it enables global stakeholders to understand the qualifications system. This comparability is crucial for international collaboration, mobility of students, and recognition of qualifications on the global stage.
Credit Accumulation and Transfer	The FHEQ contains the notion of Credit Accumulation and Transfer (CAT), which allows for greater flexibility in learning courses. Students' credits can be acquired and transferred, encouraging lifelong learning and allowing individuals to pursue education at their own pace and through a variety of educational institutions.
Guidance for Lifelong Learning	The FHEQ provides a foundation for lifelong learning by offering a structured framework that accommodates different types of learners. It encourages individuals to engage in education across various stages of life, fostering continuous personal and professional development.
Empowering Stakeholders	By providing a thorough and accessible framework, the FHEQ enables stakeholders such as students, employers, and educators to make educated decisions. It helps students organize their academic career, companies identify potential employees' qualifications, and educators develop curricula.

Understanding the FHEQ's numerous aims is critical for determining its impact on the higher education environment and its role in fostering educational excellence, transparency, and lifelong learning. This study will look into the subtleties of how the FHEQ fulfills its objectives and influences educational policies and practices in the United Kingdom.

II.4. The application of the FHEQ

The Framework for Higher Education Qualifications (FHEQ) shapes and guides higher education in a variety of ways, with implications for institutions,

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students, employers, and regulatory organizations. Its many uses include serving as a framework for academic program design and revision, assuring uniformity and quality in offerings. It also plays an important role in quality assurance and accreditation, guiding institutions to comply with FHEQ descriptors. The FHEQ serves as a resource for students in pathway planning, facilitates credit accumulation and transfer, aids employers in understanding qualifications, allows for international comparability, guides policy development, promotes institutional collaboration, and undergoes continuous improvement to adapt to evolving educational needs (Bowers 2021).

Understanding the FHEQ's numerous uses emphasizes its critical role in sustaining quality, promoting educational mobility, and allowing informed decision-making in the higher education sector. This study seeks to investigate the practical consequences and outcomes of the FHEQ's use within the educational ecosystem.

II.5. How do QAA's audit and review teams employ the FHEQ?

Quality assurance is an important part of higher education around the world, with several accreditation agencies and review committees ensuring academic standards are maintained. The Quality Assurance Agency for Higher Education (QAA) is a major actor in this scene, using a thorough audit and review system to evaluate program quality across many institutions. The use of the Framework for Higher Education Qualifications (FHEQ), a crucial tool that provides uniform criteria for academic qualifications, is central to these evaluations, according to McGhee (2021).

The FHEQ is used as a major tool in evaluations by audit and review teams at quality assurance agencies around the world. This entails a thorough review of academic programs to ensure that they are aligned with the national or regional requirements established in the FHEQ. The framework, which includes qualification descriptors and level indicators, acts as a global standard against which institutions are evaluated. During the audit and review processes, teams determine whether the design and implementation of academic programs meets the criteria for each qualification level. In this broader context, the FHEQ emerges as a critical guide for quality assurance, assuring the uniformity, quality, and relevance of higher education offerings worldwide (Airey and Benckendorff 2017).

II.6. How the FHEQ is kept up to date?

Keeping the Framework for Higher Education Qualifications (FHEQ) relevant and responsive is a dynamic process that requires continuous

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revisions and reviews to keep up with changing educational demands and societal trends. The FHEQ's maintenance and enhancement need collaborative activities that involve important players in the higher education sector, according to Maxwell and Armellini (2019).

The FHEQ is normally kept up to date by periodic assessments undertaken by educational authorities, accreditation bodies, and relevant institutions. These assessments aim to assess the framework's efficacy and relevance in meeting current educational needs. Input from academic experts, policymakers, industry representatives, and other stakeholders is vital in identifying areas for improvement and revising qualification descriptions (Lambert 2016).

Furthermore, the FHEQ's compatibility with bigger international frameworks, such as the European Qualifications Framework (EQF), ensures its continued relevance. This alignment enables worldwide comparability, which promotes international recognition and mobility (Lambert 2016).

Overall, the FHEQ's constant improvement and adaptation demonstrate its dedication to staying a strong and responsive tool that represents the dynamic nature of higher education and matches with the changing requirements of students, institutions, and society.

III. European Qualifications Framework (EQF): Perspective from the sector of the universities

The European Qualifications Framework (EQF), launched in 2008, is a key attempt for unifying and comparing qualifications across European countries. It acts as a reference framework for increasing transparency and qualification recognition across Europe. The EQF is divided into eight tiers depending on learning objectives, with the goal of increasing skill mobility and transferability. This learner-centered approach enables individuals to receive recognized for their knowledge and competences gained through a variety of means, including formal schooling, non-formal training, and job experience. The EQF supports lifelong learning, improves employability, and promotes social inclusion throughout Europe by providing a consistent structure for comparing degrees across countries and sectors. It serves as a translation tool for making national qualifications understandable while also promoting workforce and learner mobility according to Bohlinger (2019).

The European Qualifications Framework (EQF) was formed in 2008 to improve the transparency, comparability, and transferability of qualifications throughout Europe. Its origins may be traced back to early 2000s debates about a uniform qualification framework, which culminated in a consultation

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procedure started by the European Commission in 2004. The European Parliament and Council adopted the EQF in 2008, which consists of eight reference levels based on learning outcomes and competencies. These levels range from fundamental skills to advanced knowledge, with precise descriptors for knowledge, abilities, and autonomy. Over time, the EQF has been revised to preserve its effectiveness and relevance according to Elken (2016).

The European Qualifications Framework (EQF) aims to improve the transparency, comparability, and transferability of qualifications throughout Europe. It has eight reference levels that define knowledge, abilities, and competencies, ranging from basic to advanced degrees. The EQF prioritizes learning outcomes, evaluating individuals based on practical application rather than formal degrees. It also refers to national qualification frameworks to ensure compliance with European standards. Furthermore, the EQF encourages the recognition of earlier learning through validation and accreditation processes, allowing individuals to be recognized for their knowledge and abilities regardless of source according to Mikulec (2017).

The European credentials Framework (EQF) has had a substantial impact on Europe's university future by increasing transparency and comparability of credentials. It acts as a shared reference point, making it easier to recognize and evaluate qualifications across borders. This is beneficial to students who want to extend their education or work overseas. The EQF also promotes lifelong learning, encouraging universities to provide flexible courses and acknowledge non-formal and informal learning. This inclusive approach welcomes a wide spectrum of learners, including those with job experience. Furthermore, the EQF has helped to build clearer progression pathways inside university systems by linking qualifications with specified learning outcomes. Overall, the EQF has altered the university sector by encouraging transparency, lifelong learning, and clearer pathways for students according to Bohlinger (2019).

The adoption of the European Qualifications Framework (EQF) brings both obstacles and opportunities to universities. Aligning national credentials frameworks with the EQF presents challenges, as does the need for curriculum reviews and prospective program adjustments. Another problem is a clear grasp of the EQF levels and descriptors, which requires staff training to ensure uniform interpretation. However, implementing the EQF provides potential for universities to improve transparency, comparability, and qualification recognition in Europe. It promotes student mobility, quality assurance, and learner-centered techniques that prioritize learning outcomes over input-based education. This change emphasizes student-centered

teaching methods, resulting in a more dynamic educational environment according to Elken (2016).

IV. Quality assurance and qualifications frameworks in the United Kingdom (UK): Perspective from the sector of the universities

The UK's qualifications frameworks have evolved over time, with the Qualifications and Credit Framework (QCF) being the third-generation successor to the National Vocational Qualifications (NVQ) framework. Introduced in 1987, the NVQ aimed to classify vocational qualifications by level and occupational sector. The QCF, introduced in 2008, focuses on units rather than qualifications, allowing achievements to be captured and certified regardless of size, level, or learning context. The QCF covers only part of the qualifications system, mainly focusing on vocational and basic skills qualifications. However, challenges related to unitization and credit, such as surface-level and atomistic learning, are discussed. The QCF is seen as an innovative development, aligning credit-based approaches with a qualifications framework, but faces criticism for being less flexible in responding to innovations within the qualification system. Additionally, the QCF lacks links between vocational qualifications and professional status, suggesting that professional bodies play a significant role in the UK qualifications system but should not be the appropriate place for positioning memberships and registrations according to Leu (2017).

Quality assurance and credentials frameworks play an important role in establishing the landscape of higher education in the United Kingdom (UK), notably in the university sectors. The constant interaction of quality assurance procedures and credentials frameworks lays the groundwork for sustaining and improving educational standards, ensuring that academic programs are aligned with national norms. Universities in the United Kingdom regularly use these frameworks to design, structure, and review academic programs. The qualification descriptors and level indicators given by these frameworks help institutions maintain consistency and quality across a variety of program offerings according to Lim (2021).

Accreditation bodies and quality assurance agencies in the United Kingdom utilize these frameworks to assess the quality and standards of higher education programs. Institutions seeking certification must demonstrate compliance with the descriptors outlined in credentials frameworks, ensuring that their academic offerings match the established standards for each qualification level. Furthermore, these frameworks give vital help to students, assisting them in grasping the hierarchy of qualifications, accompanying

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learning outcomes, and making educated judgments about program selection (Wang 2019).

The UK credentials frameworks also support the Credit Accumulation and Transfer (CAT) system, which enables students to accrue and transfer credits between institutions. This flexibility encourages a variety of learning paths, such as part-time education, work-based learning, and recognition of prior learning, so increasing accessibility and supporting lifelong learning. Employers benefit from the frameworks because they allow them to grasp the qualifications and competencies associated with various levels of academic attainment, resulting in more informed recruiting and workforce development plans (Leu 2017).

Furthermore, it is critical to discuss the intricate complexities underlying the vital role that these meticulously designed frameworks play in the worldwide educational landscape. The UK qualifications frameworks masterfully orchestrated as these frameworks strategically align themselves with bigger frameworks, most notably the prestigious European Qualifications Framework (EQF), gains undeniable prominence. The importance of this strategic synergy goes beyond rhetoric, serving as a keystone for achieving unprecedented worldwide awareness on a massive scale. This sophisticated interplay of comparability, far from being a passing fad, emerges as a foundation for the frictionless mobility of not only academically astute students but also seasoned professionals beyond the frontiers of international academia. Within this crucible, previously hidden potentials for boosting the worldwide eminence of the United Kingdom's higher education sector emerge (Wang 2019).

Furthermore, a thorough investigation into the labyrinthine regions of institutional collaboration and articulation is required, as these sacred ideals are elevated through the complicated tapestry of qualifying frameworks. These frameworks, when painstakingly created and implemented, become real torchbearers, offering a vital common reference point for the complex processes of recognizing and effortlessly transferring qualifications across the enormous landscapes of universities. The orchestration of institutional collaboration reaches its peak, resulting in a harmonic symphony that echoes across academia. Furthermore, the everlasting ethos of continual development and adaptation serves as a guiding star for the paths of these frameworks. They transform through the lens of periodic reviews, maintaining a constant resonance with the dynamic and changing scene of higher education in the United Kingdom. The symphony of continual improvement resonates throughout educational institutions, guaranteeing that these frameworks are paragons of relevance, responsiveness, and seamless alignment with the ever-changing educational landscape according to Lim (2021).

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A comprehensive grasp of the several ways in which the symbiotic link between quality assurance and credentials frameworks occurs inside the prestigious domain of the university sector acquires critical importance that cannot be understated. It is within this complicated relation that the fulcrum of educational quality maintenance, academic mobility promotion, and the foundation of wise decision-making are realized (Leu 2017).

V. Australian Qualifications Framework (AQF): Perspective from the sector of the universities

A comprehensive system that regulates the qualifications offered by Australian universities is the Australian Qualifications Framework (AQF). It was first introduced in 1995 with the intention of offering a transparent and uniform framework for evaluating degrees between different educational sectors. The Academic, Vocational, and Technical Qualifications (AQF) encompasses all educational levels, from certificates to doctorates. Universities are essential to the AQF because they offer postsecondary education programs and grant credentials that meet its requirements. This entails modifying curricula to satisfy AQF standards without sacrificing academic rigor and excellence, demonstrating the universities' continuous participation in its creation, application, and assessment (Broggian 2019).

All Australian educational qualifications are included in the extensive system known as the Australian Qualifications Framework (AQF). It consists of AQF Levels (10 levels from Certificate I to Doctoral Degree), Qualification Types (Certificates I–IV, Diplomas, Advanced Diplomas, and Associate Degrees), and Learning Outcomes as a key component. The amount of learning is reflected in credit points, yet flexible learning transitions are supported via pathways and articulation (Noonan 2019).

Universities that are part of the Australian Qualifications Framework (AQF) play a crucial role in serving as the main suppliers of qualifications for higher education. By planning, creating, and distributing credentials in accordance with AQF standards, they make sure that their programs meet those standards. Universities strictly evaluate the learning objectives of their students while upholding equity and openness in the procedure. Universities also actively participate in the creation of the AQF by reviewing and debating policies, which helps to shape upcoming changes that will maintain the framework's applicability. In general, universities are significant stakeholders since they are vital to maintaining the AQF's reputation and quality while also giving students access to excellent educational opportunities (Noonan 2019).

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For both universities and students, the Australian Qualifications Framework (AQF) has a number of advantages. It offers transparency and confidence in degrees while guaranteeing the caliber of credentials across the country. Inter-institutional mobility is supported by this system. Additionally, the AQF encourages flexibility in learning by acknowledging a range of credentials, such as training and vocational education, which enables colleges to provide a variety of programs. Universities play a crucial role in facilitating continuing professional development through AQF-aligned programs. It also promotes lifelong learning, enabling people to upskill or reskill throughout their careers. All things considered, the AQF strengthens cooperation between colleges and other educational institutions, resulting in a coherent system of higher learning that is advantageous to both establishments and learners according to Broggian (2019).

The Australian Qualifications Framework (AQF) is difficult to implement at Australian institutions since it must be consistent and aligned with standards, requiring a curriculum review that consumes a lot of resources. AQF requirements necessitate periodic changes due to the challenges of training teaching personnel and navigating complex credit transfer procedures. Working together is essential to guaranteeing the caliber and applicability of credentials within the AQF. Universities interact with a wide range of stakeholders, such as trade groups, government agencies, community organizations, and professional associations. Representatives from the industry work together to build curricula that meet the needs of new skills. In order to improve students' employability and practical experience, it also supports work-integrated learning. Professional associations and government agencies work together to maintain regulatory compliance and standards alignment, respectively, which guarantees quality assurance in higher education according to Broggian (2019).

To guarantee the quality and applicability of qualifications, cooperation between universities and different stakeholders under the Australian Qualifications Framework (AQF) is crucial. Active participation in trade associations, governmental entities, professional associations, and community organizations is required for this. Industry leaders help build curricula, which supports work-integrated learning and improves students' employability and hands-on experience. Maintaining quality assurance in higher education requires cooperation with government agencies to ensure regulatory framework compliance and professional groups to match qualifications with standards. Through the establishment of precise standards and requirements for qualifications, the AQF itself plays a critical role in guaranteeing quality assurance in university education. It helps companies and students comprehend certification levels by offering a thorough framework. The AQF

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enforces compliance with particular learning objectives, guaranteeing that graduates have the requisite abilities, competencies, and characteristics. A strong emphasis on evaluation procedures also helps to improve overall quality assurance in higher education (Noonan 2019).

VI. South African Qualifications Authority (SAQA) and the National Qualifications Framework (NQF): Perspective from the sector of the universities

Two essential elements of South Africa's education and training system are the National Qualifications Framework (NQF) and the South African Qualifications Authority (SAQA). The mission of SAQA, which was founded in 1995 by the SAQA Act, is to supervise and develop the NQF while guaranteeing the validity and comparability of qualifications both domestically and globally. SAQA is essential to the recognition of professional associations, the accreditation of training and education providers, the assessment of foreign credentials, and the upkeep of the National Learners' Records Database (Wedekind 2018).

Established in 1998, the National Qualifications Framework (NQF) provides a structure for classifying and identifying qualifications in a range of education and training domains. It attempts to encourage lifelong learning, advance the caliber and applicability of education, and offer an organized framework for categorizing and certifying credentials. The NQF has ten levels that represent the depth and complexity of learning, starting at Level 1 (Adult Basic Education and Training) and ending at Level 10 (Doctoral degree). A credit and notional hour system is also incorporated into the framework to quantify the amount of learning needed to obtain each qualification according to Moosa (2018).

Important turning points in the NQF's history include its founding in 1995, formal debut in 1998, and ensuing legislative advancements in 2001 and 2012. To improve the functioning of the framework and address issues, the NQF Amendment Act of 2012 was introduced. The NQF's components cover a range of qualification categories, such as degrees, certificates, diplomas, and doctorates. Unit standards are essential since they give certain results and evaluation standards for every certification. SAQA-recognized Quality Councils supervise the creation of credentials and establish benchmarks in particular industries. SAQA and NQF collaborate to standardize qualifications in post-apartheid South Africa, ensuring consistency, quality, and comparability, thereby enhancing the country's education and training landscape (Ntshangase and Msosa 2022).

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In the university sector, the National Qualifications Framework (NQF) and the South African Qualifications Authority (SAQA) are essential. SAQA is in charge of directing the creation and application of the NQF. A thorough framework for quality control and certification recognition in a variety of industries, including higher education, is offered by the NQF. Within the higher education sector, SAQA and the NQF guarantee that all degrees granted by universities are in compliance with both national and international standards. They encourage uniformity in credit accumulation plans, evaluation techniques, and curriculum design. This guarantees that university graduates from South Africa have credentials that are respected on a national and worldwide level (Wedekind 2018).

In South African universities, the National Qualifications Framework (NQF) and the South African Qualifications Authority (SAQA) are essential for guaranteeing high-quality instruction and encouraging lifelong learning. Still, there are a number of issues that make it difficult for them to be implemented effectively. Aligning qualifications across various sectors, such as higher education institutions, career training centers, and industry-specific agencies, is a significant difficulty. To guarantee a smooth integration of credentials inside the NQF, stakeholders must continually collaborate and coordinate. Furthermore, concerns pertaining to recognition of prior learning (RPL) in the context of universities must be addressed immediately (Ntshangase and Msosa 2022).

VII. New Zealand Qualifications Framework (NZQF): Perspective from the sector of the universities

The NZQF comprises several integral components that contribute to its effectiveness. Qualification types span a range including certificates, diplomas, degrees, and postgraduate qualifications, each assigned a specific level from 1 to 10. These levels signify the depth and complexity of learning associated with each qualification. The credit framework, utilizing a credit-based system, quantifies the volume of learning required for a qualification, with one credit generally equivalent to ten notional learning hours (Chan 2016).

The New Zealand Qualifications Framework (NZQF) has significantly impacted universities in New Zealand, focusing on outcomes-based education. Universities are now required to align their curriculum and assessment methods with NZQF levels, ensuring students achieve specific learning outcomes at each level. This shift has led to a more transparent and consistent approach to assessing student achievement, facilitating the recognition of prior learning and enhancing employability. The NZQF has also encouraged collaboration between universities and other tertiary

education providers, making it easier for students to transfer credits between institutions. The NZQF has also stimulated universities to review and enhance their academic programs, investing in curriculum development and quality assurance processes (Barker 2018).

Universities face difficulties in implementing the New Zealand Qualifications Framework (NZQF), especially in terms of matching current qualifications to NZQF levels and criteria. This calls for careful mapping and assessment, which is a labor-and resource-intensive procedure. Universities are under pressure to modify their teaching strategies and assessment procedures in order to align with employer expectations, as the NZQF places a strong emphasis on outcomes-based learning and emphasizes practical skills over theoretical knowledge. Furthermore, the application process is considered difficult for those who want to enter New Zealand because of the substantial documentation requirements. Despite these challenges, the NZQF presents opportunities for universities, offering a clear pathway for students to progress through different education levels and fostering inclusivity by attracting a diverse range of learners from various backgrounds. The framework's support for multiple methods of achieving educational objectives, recognition of prior learning, and flexibility in pathways for individuals with work experience or vocational qualifications contribute to the overall adaptability and inclusiveness of New Zealand universities (Barker 2018).

VIII. The present state of the Jordanian National Qualifications Framework (JNQF)

VIII.1. Introduction

The Jordanian National Qualifications Framework (JNQF) is a key component that shapes Jordan's academic trajectory and is a focal point in the country's changing higher education environment. Jordan's dedication to strengthening its educational sector is embodied in the JNQF, which is a comprehensive framework that navigates the complexity of certification standards. It is based on the ideals of quality assurance and educational excellence. According to Al-Anber et al. (2023), this backdrop examines the current status of the JNQF, dissecting its complexities and throwing light on its implications in relation to Jordan's higher education system.

VIII.2. The current status of qualifications in Jordan

A wide range of academic programs and institutions that each add to the rich tapestry of higher learning characterize Jordan's educational landscape.

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The JNQF serves as a compass in this environment by offering an organized framework for the categorization and acknowledgment of qualifications. According to Zaqaibeh et al. (2023), evaluating the state of qualifications in Jordan now entails closely examining how the JNQF corresponds with the various academic programs, guaranteeing coherence and consistency in the requirements established for various degrees of qualification.

VIII.3. Strengths of JNQF

Jordan's National Qualifications Framework for Higher Education (JNQF) has many advantages that support the country's educational system as a whole. Its ability to offer an organized and methodical approach to program planning and review is one of its main advantages. With qualification descriptors and level indicators at its disposal, the JNQF enables educational establishments to carefully organize their curricula in accordance with nationally accepted standards, guaranteeing uniformity and excellence in a range of programs. According to Al-Anber et al. (2023), this dedication to quality assurance is felt both domestically and internationally, improving Jordanian credentials' standing and encouraging professional and student academic mobility.

The JNQF is unique in that it is a dynamic instrument for ongoing improvement. The framework is updated and reviewed on a regular basis to reflect changes in society demands and the educational environment. Because of its dedication to ongoing development, the JNQF is guaranteed to be current and adaptable to the ever-changing landscape of higher learning. The Jordan National Quality Framework (JNQF) is a proactive framework that contributes to the continuous improvement of educational standards and quality in Jordan by welcoming change and keeping up with developing trends. The JNQF is a keystone in Jordan's quest of educational excellence in higher education because of its diverse qualities, which highlight its substantial influence on program design, worldwide recognition, and adaptability, according to Al-Anber et al. (2023).

VIII.4. Weaknesses of JNQF

Although the Jordanian National Qualifications Framework for Higher Education (JNQF) has many positive aspects, it also has some inherent shortcomings that should be carefully considered. A noteworthy feature concerns possible obstacles to the efficient application and enforcement of the framework's requirements throughout Jordan's heterogeneous network

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of universities. A uniform application of the JNQF's principles may be hampered by institutional variability in capacities, resources, and commitment, which raises questions regarding the coherence and rigor of academic programs provided by various institutions, according to Al-Anber et al. (2023).

The requirement for improved stakeholder participation and communication channels represents another serious shortcoming. Because of the complexity of the JNQF and changing educational paradigms, educational institutions, regulatory agencies, and other stakeholders need to have strong systems in place for continuous communication and cooperation. Lack of communication channels might make it more difficult for the framework to quickly adjust to changing educational requirements and can also make it unclear how to apply and interpret certain qualification descriptors. In order to ensure the successful and equitable implementation of the JNQF across Jordan's diverse higher education landscape, addressing these weaknesses necessitates a strategic approach that includes increased institutional capacity-building, streamlined communication channels, and targeted interventions, according to Al-Anber et al. (2023).

VIII.5. Elements of JNQF

The Jordanian higher education environment is shaped in part by the basic parts that make up the Jordanian National Qualifications Framework (JNQF). These components serve as the framework's skeleton, offering a thorough and organized method for arranging credentials and advancing the caliber of education. The qualification levels, which specify the complexity, breadth, and depth of learning connected to a certain certificate, are one important component. According to Al-Anber et al. (2023), these levels provide a hierarchical framework that makes it easier for students to move from lower to higher qualifications and gives them the information they need to make an informed choice about their educational path. Another integral element is the qualification descriptors, which articulate the learning outcomes and competencies associated with each qualification level. These descriptors serve as a crucial tool for aligning educational programs with national standards, ensuring consistency and quality across diverse institutions. Additionally, the credit system is a fundamental element that quantifies the volume of learning required for a qualification, promoting transparency and facilitating credit accumulation and transfer within and across institutions. The quality assurance mechanisms embedded in the JNQF form another essential element, safeguarding the integrity and

relevance of qualifications through rigorous evaluation processes (Al-Anber et al. 2023).

In addition, the JNQF encompasses a variety of credentials, such as professional, vocational, and academic credentials, encouraging diversity and meeting the demands of the job market as well as the different needs of students. The incorporation of lifelong learning ideas into the framework is an additional crucial component that underscores the significance of ongoing education and skill enhancement outside of conventional academic environments. Al-Anber et al. (2023) assert that these components work together to support the JNQF's efficacy in offering a strong and flexible framework for arranging, identifying, and elevating the caliber of higher education credentials in Jordan.

VIII.6. JNQF Alignment to quality assurance standards issued by Higher Education Accreditation Commission

A key factor in guaranteeing the integrity, legitimacy, and coherence of higher education credentials in Jordan is the alignment of the Jordanian National Qualifications Framework (JNQF) with the quality assurance requirements published by the Higher Education Accreditation Commission (HEAC). As the main accrediting authority, the HEAC establishes strict standards and requirements for assessing and approving programs and institutions of higher learning. Along with these criteria, the JNQF provides a structure that makes it easier to organize and recognize qualifications, strengthening the quality control systems in Jordan's higher education system (Al-Anber et al. 2023).

A key component of alignment is the careful adjustment of JNQF qualification descriptors to meet the standards and expectations of the HEAC for professional, vocational, and academic qualifications. This guarantees that credentials at different levels and disciplines follow nationally accepted norms, fostering consistency and openness in the evaluation and certification procedures. The credit system, where credit values are closely tied to the depth and scope of learning activities, is another area where the JNQF and HEAC standards agree. This is in line with the HEAC's emphasis on educational quality and relevance, as noted by Samawi et al. (2023).

Moreover, the JNQF provides a systematic framework for higher education institutions to self-assess and align their programs with HEAC quality assurance standards. This alignment encourages institutions to continually evaluate and enhance their offerings, fostering a culture of continuous improvement and quality assurance. By harmonizing the JNQF

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with HEAC standards, Jordan establishes a robust foundation for ensuring that qualifications meet established benchmarks, promoting educational excellence, and contributing to the overall enhancement of the higher education landscape in the country (Zaqaibeh 2022).

IX. Jordanian National Qualifications Framework (JNQF): Perspective from the sector of the universities

A model of academic excellence, the Jordanian National Qualifications Framework (JNQF) is a complex and painstakingly constructed framework that is used in Jordan's higher education system. Its influence can be seen throughout the country's vast network of universities. The viewpoint from the university sector reveals a complicated web woven with the subtleties and intricacies of the mutually beneficial partnership between these postsecondary educational establishments and the JNQF (Al-Anber et al. 2023).

At its core, the JNQF stands as an august framework, akin to a scholarly compass, guiding universities through the labyrinthine corridors of academia. It provides a systematic and comprehensive approach, offering a discernible path for categorizing qualifications, from the humble certificates to the loftier echelons of undergraduate and postgraduate degrees. This categorization, couched in the terminology of levels that mirrors the ascending complexity of knowledge and skills acquired, metamorphoses into a universal language, facilitating the evaluation and comparison of academic achievements across disciplines (Al-Mawadiah and Al-Zu'bi 2021).

Universities, those ancient founts of wisdom and thought-provoking conversation, become active players in this academic dance, designing their curricula to move in step with the JNQF's specified levels and learning objectives. As such, their function goes beyond the simple transfer of information; they are now the defenders of academic honesty, charged with the grave duty of ensuring that their services are in perfect harmony with the standards established by the framework (Al-Anber et al. 2023).

In this intricate relation between universities and the JNQF, accreditation, quality assurance, and the relentless pursuit of continuous improvement become the keynotes. These academic citadels engage in a ballet of self-assessment and external evaluation, wherein the efficacy of their programs is measured against the exacting criteria laid out by the framework. This symbiotic relationship fosters an environment of perpetual refinement, propelling academic institutions towards evolution and adaptation in response to the dynamic currents of global education, disciplines (Al-Mawadiah and Al-Zu'bi 2021).

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Outside of academic institutions, the JNQF becomes the pivot, serving as a bridge between scholastic accomplishments on an individual basis and the more general domains of national and worldwide recognition. Universities, in their crucial capacity as custodians of knowledge, skillfully negotiate this complex landscape, enabling the smooth transfer of credits and credentials. Their engagement reaches the international arena, where partnerships, student exchanges, and cooperative research projects are carefully selected with a keen eye toward qualification harmonization on a worldwide basis (Zaqaibeh et al. 2023).

In conclusion, the Jordan Qualification Framework represents educational rigor and vision when seen through the lens of institutions. It is evidence of the academic institutions' steadfast dedication to maintaining high standards, encouraging ongoing development, and making sure Jordanian education is integrated into the larger international academic conversation. The JNQF's symbiotic relationship with the university sector is more than just a partnership; it is a dynamic synergy that drives Jordan's educational landscape to new heights and makes sure that its institutions remain strong in the face of knowledge's ever-evolving currents (Al-Mawadiah and Al-Zu'bi 2021).

X. Conclusions

Ultimately, this study become a lighthouse shedding light on the crucial relationship between quality assurance systems and qualifications frameworks in the context of higher education, for a closer look at how different international qualifications frameworks stack up, including their structures, benefits, and challenges, refer to Table 3 which provides a snapshot of the key elements and issues associated with these frameworks, adding valuable context to our discussion. According to Mokwele and Chetty (2023), the level of attention devoted to these aspects highlights their critical importance in creating an atmosphere that supports academic excellence, institutional credibility, and international recognition.

The empirical evidence amassed throughout this research journey substantiates the assertion that a robust quality assurance apparatus, coupled with a meticulously crafted qualifications framework, forms the bedrock upon which the edifice of higher education can be fortified. The symbiotic relationship between these two pillars engenders an ecosystem wherein academic programs are not only aligned with international standards but are also subjected to rigorous scrutiny, thereby ensuring a perennial commitment to excellence (Mambo et al. 2016).

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Table 3

International qualifications frameworks: structure, benefits, and challenges

Aspect	European Qualifications Framework (EQF)	United Kingdom Qualifications Framework (UKQF)	Australian Qualifications Framework (AQF)	South African Qualifications Authority (SAQA) and National Qualifications Framework (NQF)	New Zealand Qualifications Framework (NZQF)	Jordan National Qualifications Framework (JNQF)
Introduction	Launched in 2008 to unify and compare qualifications across European countries. The EQF revised in 2017	The first partial National Qualifications Framework (NQF) was designed in 1987 for the National Vocational Qualifications (NVQs) and there were just five levels, focuses on unit-based qualifications and credit accumulation.	Introduced in 1995 to provide a transparent, uniform framework for evaluating qualifications across educational sectors in Australia.	SAQA established in 1995; NQF established in 1998 to standardize and enhance qualifications.	NZQF was established in 1989. It became a unified framework in 2010, and was fully integrated into the Act through an August 2011 amendment.	The Accreditation and Quality Assurance Commission for Higher Education Institutions, launched the JNQF in 2019
Framework Levels	8 reference levels based on learning outcomes, from basic to advanced knowledge. learning outcomes-based framework for all types of qualifications serves as a translation tool between different national qualifications frameworks	later it was extended with other qualifications, and revised in 1999 as an 'eight-plus Entry' level NQF. Levels range from Entry Level to Doctoral, including various credit-based units.	10 levels from Certificate I to Doctoral Degree.	10 levels from Adult Basic Education and Training (Level 1) to Doctoral Degree (Level 10).	10 levels, including certificates, diplomas, degrees, and postgraduate qualifications.	The JNQF has 10 levels for academic and vocational pathways. Levels range from basic certificates to doctoral degrees.

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Aspect	European Qualifications Framework (EQF)	United Kingdom Qualifications Framework (UKQF)	Australian Qualifications Framework (AQF)	South African Qualifications Authority (SAQA) and National Qualifications Framework (NQF)	New Zealand Qualifications Framework (NZQF)	Jordan National Qualifications Framework (JNQF)
Credit System	Notional hours and learning outcomes; promotes recognition of various learning experiences.	Credit-based system allowing for accumulation and transfer of credits.	Utilizes credit points to quantify learning, with 1 credit equivalent to 10 notional hours; supports flexible learning pathways and articulation.	Credit and notional hour system to quantify learning.	Credit-based system, with 1 credit typically equaling 10 notional hours.	Credit system to quantify learning and facilitate transfer.
Impact on Universities	Facilitates recognition and mobility across Europe; promotes lifelong learning and flexible learning pathways.	Aligns curricula with frameworks; supports credit transfer and quality assurance.	Essential for planning, creating, and delivering programs; ensures alignment with AQF standards. Universities must adapt curricula and participate in policy development.	Ensures compliance with national and international standards; encourages uniformity and quality.	Encourages alignment with outcomes-based education; enhances credit transfer.	Guides curriculum development and ensures alignment with standards.
Strengths	Enhances transparency, comparability, and transferability of qualifications across Europe.	Facilitates flexible learning paths and international mobility; aligns with EQF.	Promotes transparency, consistency, and flexibility in learning pathways; supports inter-institutional mobility and lifelong learning.	Structured framework for consistency and quality; facilitates international and national recognition.	Outcomes-based education; flexible learning pathways; support for credit transfer.	Organized framework for program planning; dynamic and adaptable.

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Aspect	European Qualifications Framework (EQF)	United Kingdom Qualifications Framework (UKQF)	Australian Qualifications Framework (AQF)	South African Qualifications Authority (SAQA) and National Qualifications Framework (NQF)	New Zealand Qualifications Framework (NZQF)	Jordan National Qualifications Framework (JNQF)
Challenges	Aligning national frameworks with EQF; ensuring clear understanding and application of EQF levels.	Challenges with unitization and credit flexibility; professional status alignment issues.	Resource-intensive alignment and curriculum review; need for continual updates and stakeholder collaboration; complex credit transfer procedures.	Variability in institutional capacities; need for improved stakeholder communication.	Resource-intensive alignment; challenges in adapting teaching and assessment methods.	Issues with uniform application across institutions; need for enhanced stakeholder communication.
Quality Assurance	Encourages clear and consistent interpretation of learning outcomes and competencies; supports lifelong learning.	Quality assurance through frameworks; supports institutional self-assessment and external evaluations.	Universities ensure compliance with AQF standards, participate in policy development, and maintain high-quality educational offerings.	SAQA ensures consistency and quality through Quality Councils; alignment with international standards.	Universities align programs with NZQF levels and learning outcomes.	JNQF aligns with HEAC standards; promotes continuous improvement.
International Recognition	Acts as a translation tool for understanding national qualifications; promotes mobility and workforce recognition.	Aligns with the European Qualifications Framework (EQF); supports global academic and professional mobility.	Enhances national and international recognition of Australian qualifications; supports student and professional mobility.	Ensures recognition of South African qualifications internationally.	Facilitates international credit transfer and recognition.	Aims for international recognition and consistency in qualifications.

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Furthermore, the examination goes beyond theoretical reflection to explore the real-world ramifications for higher education institutions. It outlines practical advice for those involved in education and exhorts them to see quality assurance as a driving force behind ongoing development rather than a red tape obstacle. In turn, the credentials framework appears as a dynamic tool that facilitates the smooth transfer of information and skills on a worldwide scale, rather than just a tool for categorization (Kahn 2016).

As we get to the end of this thorough examination, there is an unmistakable call to action: improving higher education requires embracing a culture of responsibility, transparency, and unwavering quality pursuit. Higher education's future depends on the synthesis of credentials frameworks and quality assurance methods; it is not only an administrative formality. We can only strengthen academic institutions' foundations and make them adaptable to the demands of a constantly changing educational environment by taking a comprehensive strategy. Essentially, Boltonet et al. (2020) research is a stark call to action, pleading with all involved in education to support a paradigm change that will usher in a time when academic credentials will be the gold standard for international recognition and quality will not be negotiable.

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The trajectories of educational administration in Türkiye: The production and dissemination of the field knowledge

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Abstract: The primary objective of applied scientific research is to contribute novel dimensions to the existing theoretical knowledge within a relevant field and its adjacent domains. This serves to guide scholars and practitioners in addressing real-world challenges, fostering a clearer understanding, and establishing a robust foundation for policymaking. This study focuses on profiling Turkish academics engaged in Educational Administration (EA) research and teaching at universities. The aim is to illuminate their educational backgrounds and professional experiences, shaping their researcher identities, whilst unveiling the academic and scientific productivity of the leading professors influencing educational policies. The research delves into the production and dissemination of knowledge within the field, addressing key questions for academic staff: their distribution within EA departments, undergraduate majors, graduate programs, and extramural experiences. Additionally, the study scrutinizes the last five years of academic work for these professors, examining the number and types of manuscripts, books, book chapters, and projects undertaken. The findings underscore the necessity for collaborative efforts in building a theoretical foundation for the field. It contends fostering an egalitarian cooperation amongst all field members, with full professors taking the lead, is crucial for establishing a comprehensive theoretical foundation for EA.

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Keywords: educational administration; field members; academic profiles productivity, dissemination of field knowledge, knowledge production.

I. Introduction

The act of knowing has long preoccupied both the philosophy of science and the sociology of knowledge. In applied fields such as Educational Administration (EA), where the boundaries between academic discourse and professional practice remain porous, these questions become more than philosophical as they shape how the field justifies itself, how it educates its members, and how it intervenes in public life. This paper is situated within these tensions. It intends to explore not only how EA produces and circulates its knowledge, but also how its academic identity is forged, fractured, and contested across conceptual and national terrains.

I.1. Theoretical foundations and knowledge production in educational administration

Understanding and explaining the world through structured knowledge has long been a defining aspiration of scientific endeavor. While the natural sciences often rely on replicable models and stable paradigms, the social sciences, including the field of EA, must contend with fluid, value-laden, and contextually embedded phenomena. Individuals involved in EA research seek to make sense not only of institutional structures, but of human agency, culture, and leadership within educational systems. Science, in this context, serves not merely as a methodological system, but as a refined collective endeavor to produce socially situated understanding.

The applied nature of EA further complicates its epistemological positioning. Although the ultimate aim of applied scientific research is to contribute new dimensions to theoretical knowledge and inform practice and policy, the mechanisms of doing so remain entangled in practical demands and contextual constraints. EA operates within this complexity: it borrows heavily from disciplines such as Public Administration, Sociology, and Management Sciences,[3] yet often struggles to articulate a unified theoretical structure of its own. This has led to what some scholars define as an under-

[3] Ronald Heck and Philip Hallinger, "The Study of Educational Leadership and Management: Where Does the Field Stand Today?," *Educational Management Administration & Leadership* 33, no. 2 (2005): 229–244, https://doi.org/10.1177/1741143205051055.

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theorized field,[4] where borrowed frameworks are continuously adapted, repurposed, or insufficiently synthesized into coherent disciplinary constructs. The question then arises: Have these imported concepts been internalized by the field, or are they temporarily "on loan" from elsewhere?

Another point of tension concerns the epistemic authority and organization of the field. Within the scientific cultures of the social sciences, the distinction between researcher and practitioner, generator and consumer of knowledge, often collapses. As Archer[5] notes, human agency not only reproduces but also reconstructs cultural systems including those of scientific knowledge, making the boundaries of epistemic authority highly contingent. This is especially evident in EA, where knowledge is not solely produced for humans, but also by humans embedded in the very systems they seek to improve. Such intertwined being of subject and object deepens the field's internal ambiguities and raises persistent questions about its autonomy, consistency, and legitimacy.

Knorr Cetina[6] further challenges the conventional understanding of context in scientific practice, asserting context is not an external influence on scientific procedures, but an integral part of their very formation. In the case of EA, this implies that leadership, learning, policy, and organizational culture cannot be studied in isolation from the local, political, and institutional environments in which they are situated. These dynamics, in turn, affect how knowledge is produced, transmitted, and legitimized across different academic settings.

Responding to this complexity, several scholars have emphasized the importance of coherence in theory development. Evers and Lakomski's[7] "coherence criteria": comprehensiveness, consistency, and simplicity, offer a framework to evaluate and build epistemic unity in EA. Bush,[8] on the other hand, highlights the interdependence of policy, research, practice, and theory

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[4] Ruth McGinity, Amanda Heffernan, and Steven Courtney, "Mapping Trends in Educational-Leadership Research: A Longitudinal Examination of Knowledge Production, Approaches and Locations," *Educational Management Administration & Leadership* 50, no. 2 (2022): 217–232, https://doi.org/10.1177/17411432211030758.

[5] Margeret S. Archer, "Structure, Culture and Agency," in *The Blackwell Companion to the Sociology of Culture*, ed. Mark Jacobs and Nancy Weiss Hanrahan (Oxford and Malden, MA: Blackwell, 2005), 17–34.

[6] K. Knorr Cetina, "Epistemic Cultures: Forms of Reason in Science," *History of Political Economy* 23, no. 1 (1991): 105–122

[7] Colin Evers and Gabriele Lakomski, "Science in Educational Administration: A Postpositivist Conception," *Educational Administration Quarterly* 32, no. 3 (1996): 379–402, https://doi.org/10.1177/0013161X96032003005

[8] Tony Bush, "Theories of Educational Management," *International Journal of Educational Leadership Preparation* 1, no. 2 (2006): 1–25.

as the core pillars of educational leadership. Yet, in many national contexts, including Türkiye, these elements have yet to coalesce into a stable epistemic culture. Institutional structures, role multiplicity, and uneven research traditions continue to fragment the field's intellectual landscape.

Against this backdrop, the present study seeks to investigate how academic knowledge in EA is constructed, circulated, and institutionalized within the scholarly community. Whereas the empirical focus is on the case of Türkiye, the underlying aim is to contribute to broader discussions on disciplinary identity, epistemic cultures, and the academic-professional interface in EA. The specific national dynamics shaping these questions will be discussed in a dedicated section that follows the conceptual analysis.

I.2. Conceptual challenges in educational administration: Knowledge types, theory–practice divide, and identity

The field of (EA) continues to evolve under the dual pressures of academic theorization and applied practice. EA aspires to offer systematic and evidence-informed leadership in education, but it oftentimes operates without a consolidated epistemological foundation. Balcı[9] suggests the field is grounded in three overlapping types of knowledge: practical knowledge, gained through everyday experience and interaction with educational settings; professional knowledge, rooted in institutional standards and legal-pedagogical frameworks; and academic knowledge, built through scientific inquiry and theoretical formulation. However, these domains do not always interact in productive ways. Instead, their misalignment frequently exposes tensions between scholarly aims and managerial expectations.

Despite an increasing volume of empirical research, the field has been persistently criticized for its theoretical underdevelopment. McGinity et al.[10] note although methodologies have diversified and publications proliferated, the field remains insufficiently theorized. Many studies continue to draw upon externally sourced frameworks rather than developing contextually grounded theory. Bush[11] emphasizes the interdependence of four foundational elements as policy, research, practice, and theory. But in reality, these dimensions often

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[9] Ali Balcı, "Evolution of Educational Administration as a Scientific Discipline in Turkey," *Educational Administration: Theory and Practice* 14, no. 54 (2008): 181–209.

[10] McGinity, Heffernan, and Courtney, "Mapping Trends in Educational-Leadership Research," 219.

[11] Tony Bush, "Editorial: The Significance of Leadership Theory," *Educational Management Administration & Leadership* 38, no. 3 (2010): 266–270, https://doi.org/10.1177/1741143210362304

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remain siloed. This fragmentation both limits the cumulative development of knowledge and further complicates the field's disciplinary status.

A number of scholars have pointed to this condition as an epistemic crisis. Özdemir[12] associates the problem with a lack of consensus on the field's theoretical core, Waite[13] refers to "paradigm warfare," and Griffiths[14] identifies "intellectual confusion." These metaphors underline the extent to which EA's boundaries remain unsettled. In several contexts, EA is perceived more as a professional practice or an "art" than as a scientific discipline.[15,16] Boyan[17] even questions its eligibility as a research field, given the absence of universally recognized theoretical tenets. These debates raise fundamental concerns about the field's ability to sustain coherent knowledge structures across diverse national and institutional settings.

Contributing to this instability is the persistent theory/practice divide. Numerous scholars argue educational research frequently fails to inform administrative action in schools.[18,19] Academic staff, especially those distanced from everyday school operations, often lack the professional proximity required to produce relevant, grounded knowledge.[20,21] The result is a pattern of partial and unstable identity formation among EA scholars, many of whom oscillate between roles as researchers, lecturers, advisors, and field practitioners, without a unified epistemic framework to anchor their work.

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[12] Murat Özdemir, "Archeology of Epistemic Crisis in Educational Administration," *Educational Administration: Theory and Practice* 23, no. 2 (2017): 281–304.

[13] Duncan Waite, "The Paradigm Wars in Educational Administration: An Attempt at Transcendence," *International Studies in Educational Administration* 30, no. 1 (2002): 66–81.

[14] Daniel E. Griffiths, "Intellectual Turmoil in Educational Administration," *Educational Administration Quarterly* 15, no. 3 (1979): 43–65.

[15] Izhar Oplatka, "The Field of Educational Administration: A Historical Overview of Scholarly Attempts to Recognize Epistemological Identities, Meanings and Boundaries from the 1960s Onwards," *Journal of Educational Administration* 47, no. 1 (2009): 8–35, https://doi.org/10.1108/09578230910928061

[16] Pat Thomson, "Move over Rover! An Essay/Assay of the Field of Educational Management in the UK," *Journal of Education Policy* 15, no. 6 (2000): 717–732.

[17] Norman J. Boyan, *Handbook of Research on Educational Administration* (New York: Longman, 1988).

[18] Ernest L. Boyer, *Scholarship Reconsidered: Priorities of the Professorate* (San Francisco: Jossey-Bass, 1990), The Carnegie Foundation for the Advancement of Teaching, https://www.umces.edu/sites/default/files/al/pdfs/BoyerScholarshipReconsidered.pdf

[19] Thienhuong Hoang, "Recognizing Each Others' Faces in Educational Leadership's Scholarship and Practice," *Essays in Education* 17, no. 1 (2006): 4.

[20] Bush, "Theories of Educational Management," 10.

[21] Fenwick English, "The Point of Scientificity, the Fall of the Epistemological Dominos, and the End of the Field of Educational Administration," *Studies in Philosophy and Education* 21, no. 2 (2002): 109–136.

This complexity is even deepened by the fluid nature of academic identity in higher education. Beauchamp and Thomas[22] argue identity is constructed through interaction with institutional norms, peer groups, and professional expectations. Clarke et al.[23] emphasize identity in academia is shaped through socialization processes, collaborative relationships, and evolving role definitions. In EA, where individuals often combine teaching, supervision, consultancy, and administrative leadership, identity formation becomes a continuous negotiation. As Olsen[24] and Day et al.[25] underline, professional identity is neither static nor wholly individual since it is conditioned by institutional structures and social experiences.

In sum, the field of EA remains conceptually unstable, marked by unresolved tensions between its applied function and its academic aspirations. The need for theoretical consolidation is widely acknowledged, still difficult to achieve given the field's structural fragmentation, paradigm ambiguity, and institutional role diffusion. Contemplating how these challenges manifest in specific national contexts is vital to advance both the theorization and the professional legitimacy of EA. These structural tensions take on distinct forms in specific national contexts. The case of Türkiye offers a compelling example, as examined in the following section.

I.3. The case of Türkiye: Institutionalization, fragmentation, and identity Struggles

The development of EA in Türkiye reflects a complex interplay of institutional efforts, external influences, and evolving academic expectations. Even though the first graduate-level training programs for educational administrators began in the mid-twentieth century, a lack of sustained undergraduate pathways and disciplinary autonomy hindered the formation of a stable academic foundation. In the absence of a unified epistemic

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[22] Catherine Beauchamp and Lynn Thomas, "Understanding Teacher Identity: An Overview of Issues in the Literature and Implications for Teacher Education," *Cambridge Journal of Education* 39, no. 2 (2009): 175–189, https://doi.org/10.1080/03057640902902252

[23] Marie Clarke, Abbey Hyde, and Jonathan Drennan, "Professional Identity in Higher Education," in *The Academic Profession in Europe: New Tasks and New Challenges*, ed. Barbara Kehm and Ulrich Teichler (Dordrecht: Springer, 2013).

[24] Brad Olsen, "How Reasons for Entry into the Profession Illuminate Teacher Identity Development," *Teacher Education Quarterly* 35 (2008): 23–40.

[25] Christopher Day, Alison Kington, Gordon Stobart, and Pam Sammons, "The Personal and Professional Selves of Teachers: Stable and Unstable Identities," *British Educational Research Journal* 32, no. 4 (2006): 601–616, https://doi.org/10.1080/01411920600775316.

tradition, the field has relied heavily on conceptual imports and borrowed legitimacy from neighboring disciplines like Educational Sciences.

The earliest efforts at formalizing EA as a professional and academic territory in Türkiye were closely tied to state-led modernization and bureaucratic reforms. The training programs initiated under the auspices of the Turkish Institute of Public Administration for the Middle East (*TODAİE*) in the 1950s provided a foundational yet bureaucratically framed entry point for the field. It was not until the 1960s that more institutionally integrated academic programs began to emerge. These efforts were further advanced by the establishment of specialized graduate schools and doctoral programs housed within education faculties. Despite these developments, EA in Türkiye has struggled to gain full academic recognition. Until recently, the absence of peer-reviewed journals and professional associations limited scientific/scholarly visibility. The publication of field-specific journals like Theory and Practice in Educational (1995) and Research in Educational Administration and Leadership (2016), and the foundation of associations like *EYAK*, *EYUDER*, and *EYED-DER* (paralleled by events such as *EYK*, *EYFOR,* and *EDK* congresses), represent the attempts to consolidate the field and foster a research-oriented scholarly community. These structures also signal the attempts to create professional platforms for engagement across academia and school leadership. That said, these institutional gains have not fully resolved the field's internal fragmentation. Persistent dependency on external paradigms and a lack of consensus on foundational concepts continue to obscure the field's disciplinary boundaries. Moreover, EA academics in Türkiye are frequently tasked with multiple, often conflicting roles: delivering graduate instruction, advising educational policy, supervising school leaders, and producing research. This multiplicity, being reflective of the field's applied nature, often results in partial or ambiguous professional identities. Ayyıldız and Özdemir[26] emphasize such role fluidity not only dilutes the theoretical focus but also complicates institutional cohesion across and beyond academic and practical domains.

In this sense, the Turkish case illustrates how disciplinary uncertainty, epistemic hybridity, and institutional overload interact to shape the knowledge culture of EA. Rather than viewing Türkiye as an exception, the unique dynamics observed here point to broader structural tensions within the field such as tensions that manifest differently across national systems but share a common concern with epistemic legitimacy and academic autonomy.

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[26] Pınar Ayyıldız and Murat Özdemir, "Knowledge Production About Educational Management in Türkiye: Lecturer Perspectives," *Kastamonu Education Journal* 30, no. 3 (2022): 609–620, https://doi.org/10.24106/KEFDERGI-2021-0037.

I.4. Purpose

The scholarly members of EA, particularly those working within universities and other higher education institutions, bear a critical responsibility in shaping the future of the profession hence the field. They are not only expected to train educational leaders but also to cultivate intellectual autonomy within the field via guiding research that is original, contextually grounded, and theoretically informed. Ideally, these academics are positioned to formulate theory-based responses to administrative challenges at both micro and macro levels, integrate their results/findings into policy discourses, and model the application of knowledge within their own institutional settings. As Oplatka and Arar[27] emphasize, the identity of a field is closely tied to the backgrounds, practices, and scholarly influence of its members. In this regard, the present study struggles to map the academic profiles of Turkish EA scholars currently engaged in teaching and research across higher education institutions. It inspects how their educational trajectories and professional experiences shape their researcher identities, and how senior academics, especially full professors, contribute to the field's knowledge production and its influence on educational policy.

To this very end, the paper addresses the following for the academic staff in question:

- How are they distributed across EA departments in T4,233ürkiye?
- What are their undergraduate majors and graduate training backgrounds?
- What types of extramural (non-university) professional experiences have they acquired?

In addition, the study examines the scholarly production of these academics over the past five years, focusing on:

- The quantity and types of published journal articles,
- The number and genres of books and book chapters authored,
- The nature and scope of research projects they have conducted.

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[27] Izhar Oplatka and Khalid Arar, "The Field of Educational Administration as an Arena of Knowledge Production: Some Implications for Turkish Field Members," *Research in Educational Administration and Leadership* 1, no. 2 (2016): 161–186, https://doi.org/10.30828/real/2016.2.1.

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II. Method

This study, which investigates the profiles of academics in the field of EA, deploys the general survey model. Surveys typically collect information from a large population based on response options specified by the researcher. In most cases, in such studies, researchers are more interested in how the opinions and characteristics of the individuals in the sample are distributed rather than why they occurred in this wat.[28] Thereupon, the present study was carried out in Türkiye and delved into the profiles and productivity of the academics of EA through an analysis of their educational and professional background and checking their academic labor.

II.1. Data collection and analysis

In the current study, the background information that pertains to the relevant academics was accessed through the Higher Education Academic Search of Türkiye (YÖKAKADEMİK, https://akademik.yok.gov.tr/). Several attempts were made to fill in the missing information referring to the website of the institution that the academic in question is affiliated with. Resultantly, the study did not involve any of the academics appointed to professorship or retired after the given date. Four professors, one of whom passed away, and three faculty members whose data could not be obtained, were excluded from the process.

The data obtained were analyzed using descriptive statistics. Descriptive statistics is a type of statistics used to describe the subject under study and make complex and scattered data understandable and systematic. In analyzing the data, the distribution of the lecturers according to their titles, degree information, and according to their experience outside university was reviewed using the methods of descriptive statistics. Besides, the manuscripts published by the professors in the field during 2016-2021 were classified in conformity with the indexes they were scanned against, the books were categorized as translation books, scientific/academic books and textbooks, and the projects were grouped as the ones funded by European Union (EU) and as the ones funded by The Scientific and Technological Research Council of Türkiye (*TÜBİTAK*), also as the ones funded by the relevant higher education institution and all the rest was grouped as 'other projects'.

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[28] Jack Fraenkel and Norman Wallen, *How to Design and Evaluate Research in Education*, 6th ed. (New York: McGraw-Hill, 2006).

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III. Findings and interpretation

In June 2021, 377 academics were recorded as working in the field of EA in Türkiye. The academic staff consists of 111 professors (29.4%), 99 associate professors (26.2%), 98 assistant professors (25.9%), 63 research assistants (16.7%), and 7 lecturers (1.8%). These figures suggest there is a relatively balanced distribution of faculty members, put differently, in the form of professors, associate professors, and faculty members with PhDs.

Undoubtedly, the educational background of the faculty should be considered as well. Accordingly, Chart 1 below shows the degrees of academics working in the field of EA.

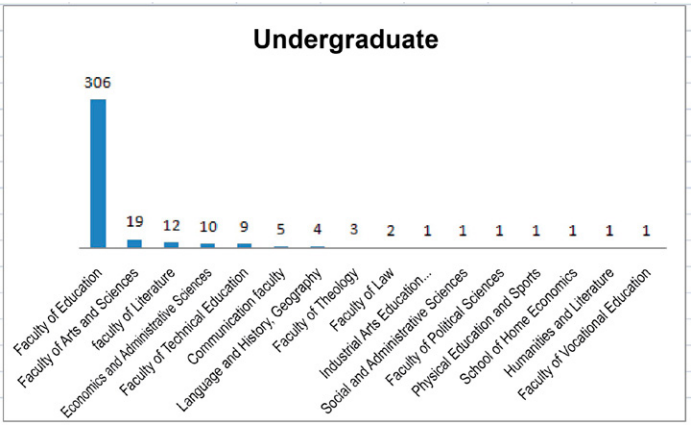


Chart 1

The majors of the academics in the field

Chart 1 demonstrates that the majority of academics in the field of educational administration graduated from the Faculty of Education. With this in mind, another noteworthy issue is the diversity of the faculties from which the graduates earned their degrees. The academics who graduated from 16 different faculties, such as Theology, Communication, Physical Education and Sports, must have continued their postgraduate education in a different program. The information about the post graduate degree, which is considered the starting point of an academic career, is presented in Chart 2. For sure, this does have an impact on the epistemic thinking that is pertinent to the field of EA.

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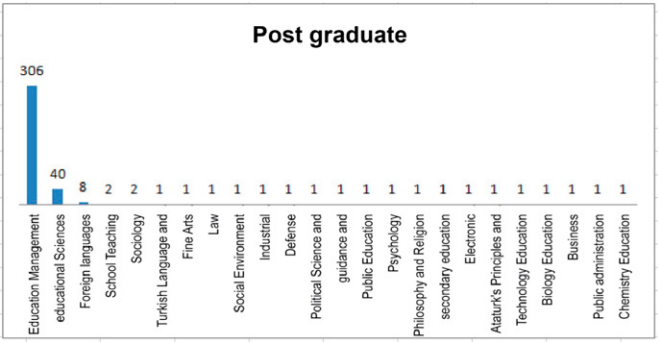
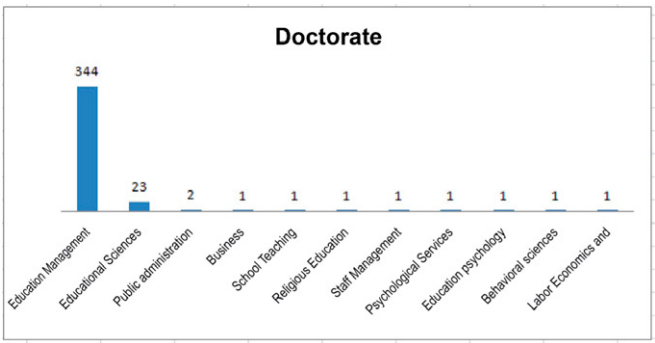


Chart 2

The areas the graduate degrees obtained

It appears that most graduates are from the field of EA, and 19% earned their degrees in 24 different fields. This opens up the discussion about the autonomous being of the field of EA-is it a 'curse or a blessing' for the knowledge produced and disseminated?



Degree	Faculty of education	Educational management	Others
Undergraduate	306	-	71
Post-graduate	-	306	71
Doctorate	-	344	33

Chart 3

The areas the doctoral degrees obtained

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The information on the doctoral degrees, which is the formal final step in the educational process of an academic career, is outlined in Chart 3.

344 of 377 academics as the field members of EA seemed to have received their doctorate from an EA program. Although there is a smaller number (33) of academics from other programs, which are still located under the umbrella; the 'scientific roof' of Educational Sciences, the fact that the individuals who earned their doctorate in other fields such as Business Administration, Religious Education, Psychological Services, and Labor Economics may mean that the number can get higher in time and this must have its own impact on the production and transmission of the knowledge of the field of EA.

The other factors that are eminent in forming a professional identity like the impact of formal education, the informal learning resources being exposed to in time, such as the workplace, development, socialization, getting together with professional learning groups, gaining an awareness of organizational norms, and adaptation deserve attention too. In fact, work experience can be utilized as a concept that is overarching the others. Table 1 illustrates the professional experiences of the academic staff who are members of the field of EA.

Table 1

Work experience of the academics in the field of EA

Professional Duty	f*	%*
No Outside Experience	128	33.9
Teacher	218	57.8
Inspector/Deputy Inspector	43	11.4
School Administrator (Principal/Vice Principal)	33	8.7
Education Specialist/Deputy Education Specialist	12	3.1
Senior Manager at Ministry of National Education (Assistant Undersecretary, General Manager, Provincial/ District Manager/Branch Manager/Assistant)	10	2.6
Other Education Sector	12	3.1
Outside the Education Sector	26	6.8

*Please note that the frequency and percentage values are higher than the total number of the individuals recruited because each individual has work experience in more than one area, and each of these areas is shared.

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Table 1 evidences about one-third of the academics are without any professional experience. That being said, all the experiences mentioned are somewhat based on an academic life. The most common form of professional experience of the remaining two-thirds is teaching, followed by working as an inspector or deputy inspector, as a school administrator, as an education specialist, as a manager in the central or provincial organization of the Ministry of Education, and acting as a professional in varying service areas again of the education areas. Looking at the degrees, this can be found normal. Nonetheless, perhaps the most 'striking' information in Table 1 is that 26 academics worked in non-educational fields prior to their academic careers. Of these, a fair number belongs to the areas that are not directly connected to EA like Health, Banking, Military and Media.

In the second place, the study strived to inquire into the academic and scientific productivity of the professors who are the field members of EA, and who are believed to play a big role in shaping the academic structure in universities alongside having the links to the field at the ministerial level within the last five years then. The academic/scientific productivity was evaluated through the number and type of manuscripts indexed in Web of Science (SSCI), in the National Index (TR Index) and in the field indexes; for the books as books and book chapters that are scientific/academic and as the translated books and lastly, as the number of projects carried out as supervisors for the projects.

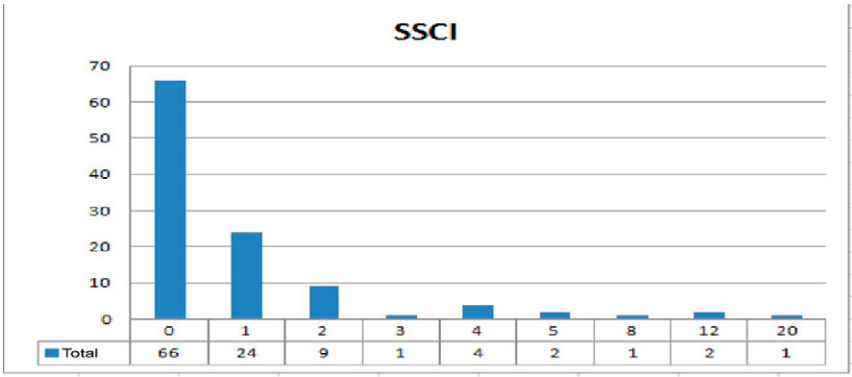


Chart 4

Manuscripts indexed in Web of Science (SSCI) by professors in the last five years

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As can be understood from Chart 5, 111 professors published a total of 123 SSCI-indexed manuscripts in the last five years then. Taking the average of these last five years, the number of manuscripts per professor is 1.1. The number of professors who had not yet published any SSCI-indexed manuscripts then is 66. Another 'surprising' piece of information given in Chart 4 is 3 professors authored 36% of the publications alone. Provided these 3 academics are excluded from the system, the average publication drops to 0.7. On a final note, it might be relevant to note down 2 of the 3 professors with the highest number of SSCI-indexed manuscripts are with no extramural experience.

The figures for the manuscripts indexed in the National Index (TR Index) are presented at Chart 5.

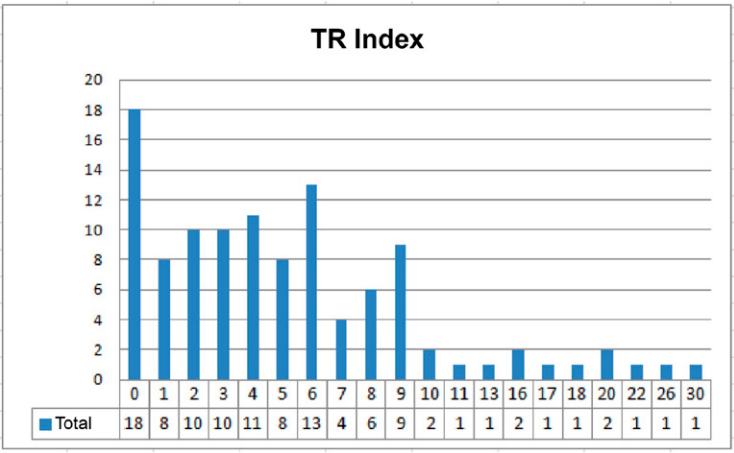


Chart 5

Manuscripts indexed in the National Index (TR Index) by professors in the last five years

Chart 5 exemplifies the professors who published 606 publications in the last five years then actually published an average of 5.5 publications, or about one publication per year. The data sheds light on the fact the quantitative clustering is in the direction of publishing fewer than 10 articles in 5 years. Glancing at the opposite direction, that is, the productivity of the professors with more than 20 publications in the last five years then, it becomes clearer that the average drops to 4.3 for these five years, which hints at that to less than one manuscript per year.

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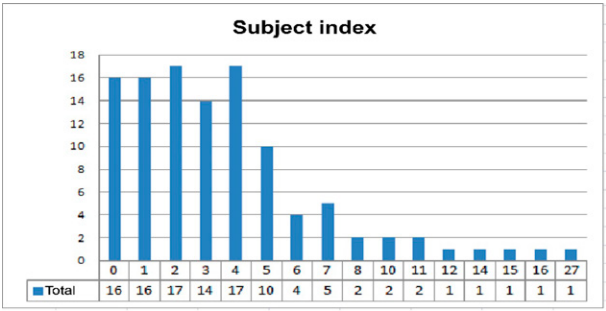


Chart 6

Manuscripts indexed in the Subject Indexes by professors in the last five years

To understand the value and function of the subject indexes for the Turkish academic community is a prerequisite to grasp the situation with Chart 6. It is also significant to first recall that producing subject-indexed work is indeed a must for academic/institutional appointments and promotions in Türkiye. As is made available in Chart 6, 111 professors published 411 manuscripts of this sort in the last five years then. This represents an average of 3.7, and 47 professors' publishing above this average accounts for the 85% of the publications. To put differently, the professors who are in the minority sign the majority of the publications, similar to what was valid for the other indexes.

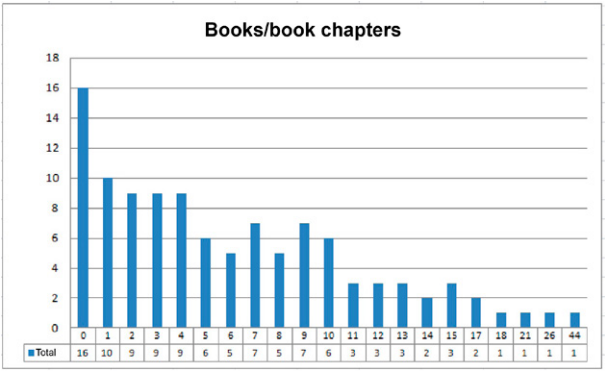


Chart 7

Books/book chapters by professors in the last five years

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The authorship of an entire academic book or book chapter is also a central variable for scientific productivity. Charts 7 and 8 below help understand the productivity of the professors in this regard.

The average number of the professors in the field, in which 688 books/book chapters were authored, is 6.3. The rather uneven distribution recorded for the manuscripts reappears here. The number of professors with no or below-average publications is quite high compared to all. With this being said, according to Chart 7, 16 professors seemingly are without a single book/book chapter for the last five years then, which is just as prominent as that one professor produced 44 books/book chapters.

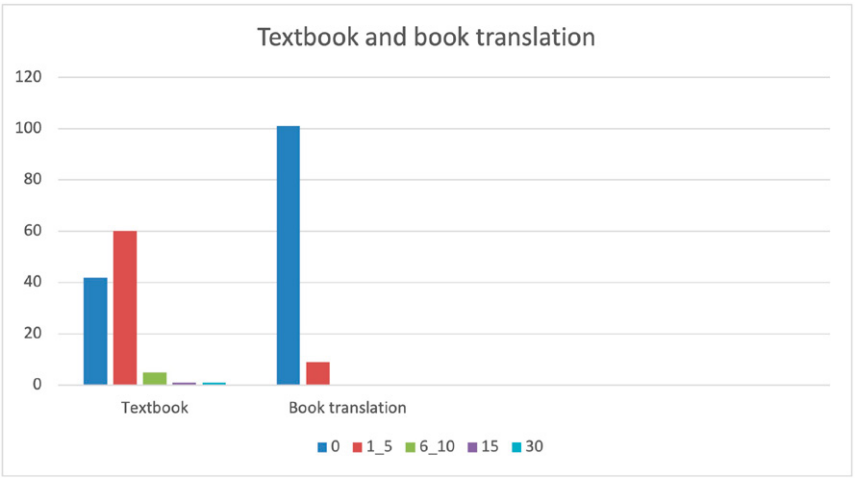


Chart 8

Textbooks and translated books by professors in the last five years

Chart 8 helps us with an overview of 223 textbooks that were written in the last five years then. The average here is 2.04. The lowest productivity was 'achieved' in the translation books. The average of the five years in which 18 books were published is only 0.16. As can be seen from the graph, just 9 academics published works against this background.

The area where the scientific productivity of the professors is the lowest is projects. The number and type of projects in this setting are detailed in Chart 9.

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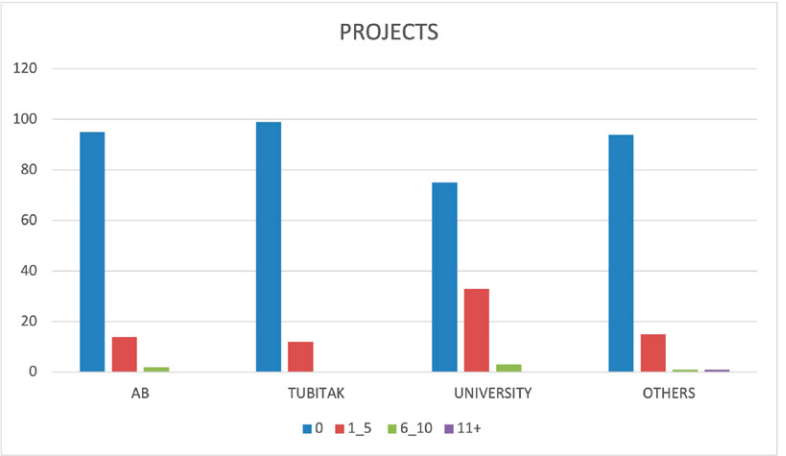


Chart 9
Projects by professors in the last five years

The total number of EU-funded projects in which the professors partook is 31. For these EU projects, where the average is 0.2, it can be grasped 95 faculty members were not involved in any of the projects in the last five years then. Whereas the total number of TÜBITAK-funded projects is 15, the project average is 0.13. At this very low average, 11 professors took part in a TÜBITAK project. University-funded projects attained the highest ratio in all the project types, averaging 0.7 and 78 projects. But for all that, 75 professors did not participate in any project. For the joint projects with other parties like the Development Agency, Ministries and other bodies, the number was 38. In this project venue, the average is 0.3. It should not be forgotten these figures were reported mainly because one professor signed in total 13 projects in the last five years then.

IV. Discussion and conclusion

In our study that investigates the academic profiles of Turkish field members of EA situated in universities, through a number of parameters, to wit, the educational background and professional experiences that are considered as impactful factors on researcher identities, academic productivity, particularly that of those entitled full professorship are interpreted in line with the ongoing epistemic/scientific work within the relevant spheres in Türkiye.

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The first layer checked pertaining to the educational background is the majors of the academics. It is crystal clear even though the graduates cluster mostly under Faculty of Education, there exist dissimilar schools, to illustrate, Faculty of Political Sciences. One can speculate on this situation in changing ways. For instance, having graduates of varying faculties together with the ones from Faculty of Education can indeed be a 'blessing' for the production and dissemination of the knowledge of EA in Türkiye taking into account the potentially enriched viewpoints to be integrated in the epistemic processes. Nonetheless, what has been accentuated recently: "over the last 50 years, the proportion of empirical research has increased and methodological approaches (of data generation and analysis) have diversified, yet the field is persistently under-theorised"[29] implies possessing a rather heterogenous pool of scientific thinking and-doing, which may also be due to owning distinct educational backgrounds, can interfere with 'speaking the same language' that would otherwise pave the way for a harmonious act toward theory making. It is worth noting herein that since the scientific development of the field in Türkiye began relatively later than the West, specifically than the US, striving for a solid theoretical basis for the knowledge of the field is of utmost importance towards a consensus on the knowledge base[30] eschewing an epistemic crisis,[31] refraining from a paradigm warfare,[32] or what Griffiths[33] defines as an intellectual confusion.[34]

The second layer studied in relation to the educational backgrounds of the field members is the areas they received their graduate degrees. The majority seem to be the graduates of the field, yet some others again hold a diversified portfolio. Taking into consideration field-specific knowledge development is merely possible with having a postgraduate degree in the field, especially in Türkiye where there is no undergraduate degree offered for EA, and the fact that there exist field members with degrees from other areas, it might be argued the realms of the field that are mostly handled through the courses given as part of the graduate programs can actually be

[29] McGinity, Heffernan, and Courtney, "Mapping Trends in Educational-Leadership Research," 218.

[30] Kadir Beycioğlu and Burhaneddin Dönmez, "Issues in Theory Development and Practice in Educational Administration," *Educational Administration: Theory and Practice* 47, no. 47 (2006): 317–342.

[31] Özdemir, "Archeology of Epistemic Crisis," 290.

[32] Waite, "The Paradigm Wars in Educational Administration," 74.

[33] Griffiths, "Intellectual Turmoil in Educational Administration," 50.

[34] Hazal Takmak, "The Originality and Autonomy Problem of Educational Administration," *Ege Journal of Education* 20, no. 1 (2019): 113–126, https://doi.org/10.12984/egeefd.452705.

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'missed out'. More radically speaking, a question needs to be posed: Are these field members without a graduate degree in the field "outsiders as epistemic subjects in scientific work" that can be "called both as assets and problems"?[35] What is more, this may result in the "borrowed standpoints"[36] for Türkiye this time, which was raised as an issue around two decades ago for the knowledge production and dissemination of the field of EA.

The third layer is the areas the doctoral degrees obtained. Most field members appear to have received a doctoral degree in EA, but the remaining have done so in other fields, for which one may still think as the neighboring ones though. It is noteworthy to revisit the rather miscellaneous being of the field knowledge as to what these field members with a doctoral degree 'outside the field' bring to the knowledge base. On top of this, since each graduate school has its authentic paradigm on the salient issues about obtaining and internalizing the field knowledge, this may even result from and result in "power differences and political domination"[37] and there is also the likelihood that "there are significant differences in the ways in which scholars create and disseminate new knowledge, and scholars' material practices are shaped by the prevailing epistemic culture"[38] because of what is called as the "human factor",[39] which is extremely interwoven with altering identities and the worldviews.

Another aspect referred to as a check point in this study is the snapshot of the professional profiles of the field members, which lays out their professional backgrounds. Majority used to be teachers and a considerable number is without any previous experience, where the rest is with some experience in the areas that can be named as the sub-areas of the field knowledge entailing the wisdom of practicum. It is still a hot debate that there is a discrepancy between the theoretical and practical knowledge[40,41]

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[35] Dick Kasperowski and Thomas Hillman, "The Epistemic Culture in an Online Citizen Science Project: Programs, Antiprograms and Epistemic Subjects," *Social Studies of Science* 48, no. 4 (2018): 565, https://doi.org/10.1177/0306312718778806.

[36] Heck and Hallinger, "The Study of Educational Leadership and Management," 240.

[37] Göran Collste, "Cultural Pluralism and Epistemic Injustice," *Journal of Nationalism, Memory & Language Politics* 13, no. 2 (2019): 1–12, https://doi.org/10.2478/jnmlp-2019-0008.

[38] Blaise Cronin, "Scholarly Communication and Epistemic Cultures," *New Review of Academic Librarianship* 9, no. 1 (2003): 1–24.

[39] Sedat Gumus, Sukru Bellibas, Emine Gumus, and Philip Hallinger, "Science Mapping Research on Educational Leadership and Management in Turkey: A Bibliometric Review of International Publications," *School Leadership & Management* 40, no. 1 (2020): 23–44, https://doi.org/10.1080/13632434.2019.1578737.

[40] Boyer, *Scholarship Reconsidered*, 12.

[41] Hoang, "Recognizing Each Others' Faces," 4.

which may be adding on the plight on the field. This 'gap' between theory and practice occurring on account of academics' being far away from the system[42,43] can be an(other) outcome of the knowledge produced with the lack of personal experience to be gained 'on site'.

As for the scientific/academic publishing by the field members who are full professors; the indexed manuscripts, books and book chapters, one can think the average numbers are not as high as expected. It would be meaningless to speak again about the role and place of manuscripts and books toward the expansion and deepening as well as the internationalization of the knowledge base of the field of EA as is the case with any other discipline. Remembering the report of Gulbenkian Commission[44] pinpointing the organization of the field members as an invaluable criterion for institutionalizing a branch of science, the vital function of such publishing necessitates a careful enquiry. On account of the fact that the field members, who are the target group, are at the same time the instructors and administrators in their organizations, aside from acting as researchers, their productivity can be impeded by these dynamically changing roles, tasks and duties. However, since a blockage to the 'expected' academic/scientific productivity may be valid about time constraints, the instructor and administrator identities of the field members are valuable assets to the field knowledge that concentrates on education and its management. This is specifically true about the richness/depth of the knowledge base that can be freed from the never-ending dichotomy of theory and practice.

With regard to the field professors' getting involved in academic and scientific projects, it is witnessed the numbers are not satisfactory essentially for Türkiye where the field knowledge is still being shaped and refined amid discussions of innumerable sort. Further, Bush[45] earlier claimed that EA is the total of study and practice focusing on the healthy functioning of schools and educational institutions and it was counted as a professional field of practice involving developmental areas.[46] In consideration of all these, project work comes into view as yet another scientific and academic domain which also meets theory and practice with its inherent being that lays the foundations of theory and practice.

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[42] Bush, "Theories of Educational Management," 20.

[43] English, "The Point of Scientificity," 133.

[44] Gulbenkian Commission, *Open the Social Sciences* (Istanbul: Metis, 1998).

[45] Bush, "Theories of Educational Management," 21.

[46] Nestor R. Balmores, "The Characteristics and Theoretical Orientations of the Knowledge Base of Educational Administration in Journal Articles, 1965–1987: A Content Analysis Study" (PhD diss., University of Cincinnati, 1988).

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V. Implications and recommendations

This paper pursues answers to these questions: (1) How can the scientific knowledge of EA can take up the role of a source of wisdom and become more influential in guiding the decision-making processes taking place in the application of scientific knowledge? (2) (How) can the understanding that dictates the larger division of labor in knowledge production and transmission is by scientists as the generators of knowledge where lay people act as the consumers of knowledge[47] be changed into one spotlighting an equitable approach underlining the ever-lasting dichotomy of EA known as the disparity-if not conflict-between theory and practice? Before reviewing these questions, for the prospective researchers "who would like to go sailing on a non-linear ship to know, to explore and to do educational administration and leadership" [48] we would like to recommend to go for a detailed probe that may permit digging into the topics studied, into the course content offered in the graduate programs of EA in Türkiye also collating the views of the field members and perhaps to deploy a mixed method direction to further ponder over the production and dissemination of the knowledge of the field. Hence, this question deserves to be remembered here: "May it be that those concerned with educational administration have the patience, in other words, and the wisdom to continue a sometimes-troubling conversation and to elude the preemptive epistemic resolutions that are ultimately of less significance than the many?"[49]

When it comes to providing answers to the first question above: "How can the scientific knowledge of EA can take up the role of a source of wisdom and become more influential in guiding the decision-making processes taking place in the application of scientific knowledge?" there are a couple of recommendations that can be made. Speaking of Türkiye, the theoretical basis of the field knowledge can be strengthened by 'all' the field members taking an egalitarian stance. For the scientific productivity of all the members in the field, graduate students, scholars, and the practitioners can start to work jointly toward this aim. As a matter of fact, doing so will be conducive to the production of more realistic and even tangible forms of knowledge within the field while assisting in bridging the existing gap between theory

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[47] Ze Hong and Joseph Henrich, "The Cultural Evolution of Epistemic Practices," *Human Nature* 32 (2021): 622–651, https://doi.org/10.1007/s12110-021-09408-6

[48] Kadir Beycioğlu, "Will Evers & Lakomski Be Able to Find Leadership's Holy Grail?," *KEDI Journal of Educational Policy* 9, no. 2 (2012): 358.

[49] Martin Barlosky, "A Rejoinder to Evers and Lakomski," *Curriculum Inquiry* 25, no. 4 (1995): 473, https://doi.org/10.2307/1180022.

and practice. Albeit this attempt will underscore the contextual/situational field knowledge for Türkiye, over time, internationalization of the knowledge of the field can be possible in this way.

For the latter of the questions directed: "(How) can the understanding that dictates the larger division of labor in knowledge production and transmission is by scientists as the generators of knowledge where lay people act as the consumers of knowledge[50] be changed into one that spotlights an equitable one underlining the ever-lasting dichotomy of EA known as the disparity-if not conflict-between theory and practice?" there is the need to 'amplify' the voices of the immediate-yet often not very much heard-shareholders of the field: teachers, school principals, parents and students with the addition of those of the decision maker bodies and the other managerial parties as the 'users' and producers of the field knowledge.

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[50] Hong and Henrich, "The Cultural Evolution of Epistemic Practices," 624.

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The Tuning Project and the harmonisation and internationalisation of higher education in Chile

Francis Espinoza-Figueroa[1]

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Abstract: This article studies the influences of the Bologna Process, the Tuning Project, and its lines of action upon Chilean domestic policies in Higher Education (HE). The effects of these policies are oriented towards creating a common space for HE. This impact is observable, in the first period (2005-2013), within the organisation and structure of Chilean Higher Education (HE), specifically the constitution of the procedures, as part of what some scholars call 'academic implementation and innovation', i.e., the harmonisation of HE. The second stage (2015–2021) shows a substantial contribution within internationalisation processes of the Chilean HE. Chilean universities use European influences to expand their worldwide attractiveness as seen within the Bologna Declaration and global competitiveness of European higher education. Theoretically, I discuss the Tuning Project as a 'global actor' which plays an influential role or a 'constructive force', impacting policies and strategies of internationalisation, even globalisation of HE in Chile.

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Keywords: Tuning Project, Bologna Process, global actor, internationalisation, globalisation, Higher Education, Chile.

I. Introduction

This article studies the influences of the Bologna Process, the Tuning Project, and its lines of action upon Chilean domestic policies in Higher Education (HE). For the first time, European effects (2005 - 2013) were observed within the constitution of the procedures, the organisation and structure of Chilean Higher Education (HE), as part of what some scholars (Beneitone and Yarosh 2015; Serbati 2015; Pálvölgyi 2017 name 'academic implementation and innovation', i.e., the harmonisation of HE.

The second stage (2015 – 2021) substantially impacts on the internationalisation processes of Chilean universities and HE. I propose that the Bologna Process and the Tuning Process provide a 'language, systems and processes' of competence-based Higher Education that enables dialogue and mutual understanding between countries. Chilean universities use the Bologna Process and the Tuning Process to enhance their global appeal, as reflected in the Bologna Declaration and the global competitiveness of European higher education.[2] After more than 15 years of studying European influences upon Latin America, I argue that the Bologna Process, when implemented or accompanied by the Tuning Project for Higher Education, offers a European-based model from which other regions of the world can reform their Higher Education programmes, taking account of the local context.

Both mechanisms constitute the most noteworthy interstate pact for restructuring the European higher education system, or as Pálvölgyi claims, a fundamental innovation platform nowadays (Pálvölgyi 2017). Furthermore, Adelman says that the EU model means "the most far-reaching and ambitious reform of higher education ever undertaken" (Adelman 2008), or still, the leading and most influential higher education enterprise in the region (Teelken and Wihlborg 2010; Vogtle and Martens 2014; Kushnir, 2015). At least, the Bologna Process constituted "the most significant set of guidelines in higher education in the European context" (Kolokitha 2016). Pálvölgyi claims that for more than 18 years, the Bologna Process has been the 'driving force' behindhand the essential European HE reforms because … "The aims and developments of the Bologna Process fundamentally affect the operation of higher education institutions in Europe, especially their learning and teaching practices" (Pálvölgyi 2017).

[2] "European Commission."

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In contrast, Ruth Keeling argues that Bologna and Tuning only subsidised the establishment of "an emergent policy framework for the EU in higher education" (Keeling 2006). Furthermore, Lažetić (2010) describes Bologna as a transnational, uncluttered, and non-EU policy platform. Supporting this view, Pálvölgyi (2017) reaffirms that Bologna and Tuning occurred independently of the European Union (EU). However, the significance of HE for the Union is already seen in the Lisbon Strategy for jobs and growth (2000). Klemenčič argues that the European Commission's involvement is highly significant because it has advised and financed diverse activities, especially those concerning the planning, editing, and publication of the Bologna Process operation reports (European Commission/EACEA/Eurydice 2018) (Klemenčič 2019). From the beginning and over time, the Union has monitored its progress with profound interest. Its birth is seen at the domestic level, permeating other strata of the EU afterwards.

For a long time, the area of HE has not belonged to traditional capacities for searching European impact upon non-EU countries even though the importance of higher education has been analysed within academic discourses and considering the degree of involvement of some executive actors such as the European Commission or Parliament. HE still needs to be a subject of literary discussion about European influences beyond its borders, as seen in other studies about the EU capabilities: assistance and aid policies, foreign policy, enlargement, pillars, and agreements. However, HE is currently considered a foreign policy tool (Hannah Moscovitz and Hila Zahavi 2019), embracing a political dialogue beyond its frontiers. The political exchange of ideas in higher education is based on what Europeans called the building of a 'single space' (Faber and Westerheijden 2011) or the 'common space' (Zgaga 2006a; Zgaga 2006b; Grek 2008; Espinoza Figueroa 2013) in Higher Education, the European Higher Education Area (EHEA).

As part of a political dialogue, a global strategy for the EHEA was adopted in London (2007). The global condition of the EHEA, acknowledged by the successive declarations and communiques as part of the Bologna Policy Forum[3], contributes to the discussion about defining the Bologna Process as a unique 'international higher education regime' (Zahavi and Friedman, 2019). According to Hunter and De Wit (2016), the EHEA has developed an external distinctiveness for HE institutions in the EU and disseminated academic implementation and innovation structures, i.e., the harmonisation of HE towards other regions beyond Europe.

[3] Leuven Louvain-la-Neuve, 2009; Budapest – Vienna, 2010; Bucharest, 2012; Yerevan, 2015; Paris, 2018.

Nevertheless, Klemenčič (2019) emphasises that although the Bologna Forum plays actorness for a global policy agenda pushing cooperation amongst the EHEA, other regions and international organisations, it is dubitable that the model could launch joint efforts. Furthermore, Zgaga critics the 'export quality' indicator of the 'Bologna Model' worldwide, arguing that there is a contradiction between means and ends, i.e., good intentions versus real effects as well as the market and cultural objectives of European higher education institutions Zgaga 2006b).

I focus the theoretical discussion on the Tuning Project as a 'global actor' playing soft power, or an influential role (Corbett 2011; Halász 2017) and, even more, a different 'constructive force' (Faber and Westerheijden 2011), impacting upon policies and strategies of internationalisation, even globalisation of HE. As a first objective, this article introduces the idea that the European Bologna Process and its outlines (the Tuning Project and the EHEA) have influenced Chilean domestic policies, causing significant effects on the constitution of the public and university (institutional) policies in Chile. After that, I argue that, nowadays, the 'European model' is impacting upon internationalisation processes of Chilean HE, and it is being used for Chilean universities to expand their worldwide degree.

II. Literature review

II.1. The internationalisation of HE, the Bologna Process and the Tuning Project

I argue that the Bologna Process, the Tuning Project and the EHEA are affecting the internationalisation processes of Chilean HE due to its capability for engaging other nation-states, even though Keeling (2006) suggests that the field of higher education is still not measured as part of a European capability. However, Adelman says that the Union has enough know-how for exerting a 'pedagogic expertise' (Adelman 2008) or their capabilities for teaching globally about curricular reforms and other issues[4].

The internationalisation processes embrace new concepts, approaches and mechanisms focused on a global knowledge economy, precisely the effect of globalisation on the knowledge economy Lepori et al. 2022. That is characterised by establishing a broader range of cross borders affairs and non-stop global flows of people, technologies, products, financial capital,

[4] "EHEA."

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information and knowledge, i.e., the era of 'academic capitalism' (van der Wende 2017). As Benitez suggests, internationalisation of HE involves four specific mechanisms: ranking, cooperation, academic mobility (students, researchers, etc.) and curricular reform (Benítez 2019). These apparatuses mean different ways of understanding the historical evolution of the role of Higher Education within the international arena, especially in the European Union. Here, other European expressions of internationalisation contribute broadly to the two mechanisms Benitez describes, cooperation and academic mobility.

According to Kerikmäe (ND), in 2007, the EU officially acknowledged internationalisation prioritising as part of the higher education strategy.[5] In this way, several members of the EU decided to adopt a distinct strategic manuscript about internationalisation, which organised the normative structure for quality assessment, recognition of qualifications, shared programmes and different affairs related to immigration control.

Unlike other previous strategic programmes developed by European Commission, such as SOCRATES (I and II) ERASMUS, 'Bologna – Tuning' has had the capability of creating a proper external dimension (Zgaga 2006a; Zgaga 2006b), which Huisman et al. call 'the spin-off' of the Bologna Process. Nevertheless, the authors question whether the spin-off of this process has triggered similar reforms in other regions (Huisman et al. 2012). But its influence has surpassed the frames of the EHEA, so much so that Moscovitz, Zahavi (2019) and Dang (2015) consider that the Bologna Process is part of the EU's external policies.

Considering the 'global dimension' of the 'European model', Teichler suggests that the Europeanisation processes of HE abroad mean "the regional version of internationalisation or globalisation" (Teichler 2004). Zgaga et al. (2013) argue that the concept of 'Europeanisation' can be understood in a double sense: a.) the EU seen as a 'global region', what scholars denominated the perception of 'looking out' of Europe, and b.) the Union appreciated as European regions, a perspective 'looking within'. Furthermore, Dang describes Bologna as a 'pan-European' project that has meant a very "significant regional reform of higher education which exerts its influence beyond the borders of Europe" (Dang 2015).

Thus, the character of the 'internationaliser' of Bologna – Tuning places the EU within the condition of a 'global teacher' (Adelman 2008). However, Chou and Ravinet claim that regional cooperation in HE is part of the EU and an answer to a more significant phenomenon: globalisation (Chou and

[5] "OECD."

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Ravinet 2017). Cabanda et al. argue that the labour market pushes to increase the competition for talents globally, addressing other political and economic developments in different regions (Cabanda et al. 2019).

Bologna – Tuning – EHEA tools show an 'internationaliser' profile when the EU can impact academic innovation and reforms beyond its borders. Nevertheless, no empirical evidence and few literature reviews justify the discernment of the European model constitutes a 'globaliser' instrument at that level. The discussion can be, here, both mechanisms exert a 'globaliser' force, or at least they are contributing to universities to align with globalisation processes. In that respect, there is enough literature tackling the idea that Bologna and Tuning have been cooperative and exportable enterprises around the world, especially in practical experiences, for instance, the Tuning Project (Beneitone and Yarosh 2015; Serbati 2015; Pálvölgyi 2017; Adelman 2008).

Within the theoretical discussion, I propose the literature on the EU plays a global role in determining whether the Union is leading significant discussions about HE (Mcinerney 2017). These considerations are through different mechanisms, and the Tuning Project is one of the most potent instruments for exerting international actorness. So, I argue that the global role of Tuning can be seen as the exercise of a 'soft power' (Nye 2004) through the EHEA (Wai Lo 2011; Desai Trilokekar 2010; Yang 2010).

II.2. The Tuning Project exerts soft power

In conceptual terms, an influential actor could exert 'soft power'. The idea of 'soft power' refers to the ability of an international actor to transform what others do or form in others and what he/she wants through the cooperation of people rather than coercion (Nye 2004). This notion is already observed in Edward Carr's power over opinion (Carr 1962) and Steven Lukes' third dimension of power (Lukes 1964). The latter is defined as part of the effects of culture, education, and diplomacy, promoting political, economic, and cultural interests (Fraser 1965; Desai Trilokekar 2010). In both perspectives, there is a capacity to persuade other nation-states to adopt the same goals voluntarily. It is not coercion but attraction to a nation's culture, ideas, and policies. From an epistemological basis and including especially the third dimension of Luke's power (1964), Nye associates the whole range of the exercise of power concerning its sources and the range of behaviours that go from the mandate that represents hard power until the integration as the base of soft power (Nye 2004) (see Figure 1 below).

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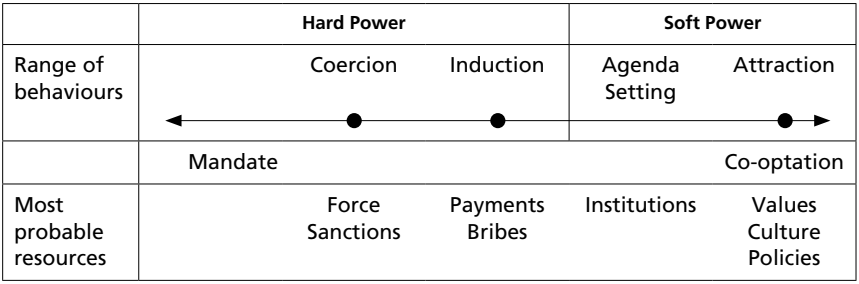


Figure 1

The Analysis of Power Source (Nye 2004; Wai Lo 2011)

Another insight into the exercise of 'soft power' is provided by William Yat Wai Lo, who addresses how global hegemonies are manifested in regional/local agendas (ibidem). Finally, a thought-provoking approach to the development of soft power is given by Ian Manners, creator of Normative Power Europe Theory, NPE (Manners 2001). His theoretical construct represents an amalgam of different meanings, visions, theories, and areas of development that allow the analysis of ideational or ideological aspects of the European Union.

NPE literature incorporates a vast and complex group of scholars working around European Studies, the EU's Foreign Policy, and European Integration theories. Certainly, NPE is a very European sort of scholarship, led by Ian Manners and an elitist cluster of researchers analysing and exploring theoretical and empirical aspects of the nature of the 'European beast' (Risse-Kappen 1996a).

From an empirical point of view (considering my cases of study: Chilean and Mexican HE), I defined the NPE as part of the EU as an influential and ideational actor (Espinoza Figueroa 2013). The normative nature is characterised by fundamental conceptual (definitions), analytical (cases of studies), and epistemological (theoretical involvement) bases of the NPE. In a similar perspective, Hila Zahavi applies NPE to study EU-Israeli relations and Israeli perceptions of the EU and Europe as a whole (Zahavi 2019). She concludes that the HE area constitutes another 'soft policy' for studying European foreign policy and international relations. The conceptual dimension of the term NPE takes over soft power. It is more focused on validating the existence of an intrinsic ethic that adheres to rules and duties and is described explicitly as norms and principles (Manners 2008b; Espinoza Figueroa 2013). Considering the analytical spectrum, one refers to a series of

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procedures that researchers apply to analyse the dissemination of ideas about empirical data and case studies.

In this article, I decided to move forward from NPE to soft power (SF) due to the normal wear of the theory. Certainly, SF is a descriptive rather than normative concept (Winder 2020). However, according to Jiajie He, "… soft power, in most cases, still relies on capacity (or power resources) extended from hard power, where normative power is rooted completely in ideational rather than material resources" (He, 2016). Even more, NPE is seen as more vigorous in its moral objectives, socialising others and influencing perceptions, self-identifications, behaviours, etc., through norms (ibidem). However, Winder argues that the morality of SF is placed in its interdependent character because it can produce different conditions and opportunities where mutual interest can prosper (Winder 2020).

One can recognise that in contrast with NPE, soft power is a theoretical construct that is difficult to use for analysing ideas or volatile content through qualitative instruments. As Wider says, SF constitutes a process that incomes to an end instead of the end itself (ibidem). Furthermore, soft/normative power can be seen as a logic combining discursive processes (like identity processes) with normative procedures (agreements). Nevertheless, in this article, I study SF through its most probable resources, the implementation of policies (in Chilean Higher Education). The European practical expert knowledge provides national implementing agencies with a vital strategic resource for influencing policymaking, even though national agencies are studied primarily as part of a top-down process. Nevertheless, its role in shaping policies needs to be exposed in EU studies.

Thus, first, it is vital to understand how these actors organise feedback from experience in the EU policy process. Within multi-level EU politics, it is a recurring question at what levels and channels different actors mobilise their resources to access the policymaking process, possibly influencing EU policymaking. That constitutes models of learning practices because the European Union has "… the capacity to make and implement policies abroad that promote the domestic values, interests, and policies of the European" (Smith 20202). Raúl Allard Neumann argues that the European Union has a high level of institutionalisation (Allard Neumann 2003). So, countries have consented to transfer determined degrees of 'supra nationality' authorities of the community.

The EU playing a global role is seen when Dang describes the Bologna Process concerning 'cooperation'. She argues that regional cooperation with outsiders of the EU has pushed the European Commission to develop a supranational body in terms of HE, and the countries which were part of the

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Bologna and Tuning became very energetic promoters and diffusers of the 'Bologna thinking' (Dang 2015). That was done through the openness of academic activities, such as colloquia and symposiums, towards agents of other regions around the world[6] and, at the same time, the Union saw the demand of detecting new partner regions, strengthening the interchange of notions and 'know-how' with those new partners[7]. On the same side, Mcinerney talks about Tuning's degrees of proficiency in the HE area, which could imply, in a way, the exercise of a pedagogic force (Mcinerney 2017). Nevertheless, Zgaga (2006a; 2006b) emphasises that there was an unintended will to transform the Bologna Process into a model for regional reforms in HE.

Reflecting on a decade of global implementation González Ferreras and Wagenaar (2023) argue that Tuning shifted the paradigm away from mere structural harmonisation toward outcome-based, student-centred learning and transparent competence profiles. Besides, Tuning was never designed to impose a uniform or prescriptive European curriculum (Wagenaar 2019). Instead, it relies on shared "points of reference" and consensus-driven subject-area profiles that respect institutional and national autonomy. This nuance is vital for the analysis of the EU's "normative and soft power"; rather than exercising a top-down regulatory mandate, Tuning acts through a voluntary, participatory methodology that other global regions choose to adopt or "tune" to their own contexts.

Summarily, I point out that the global role of the European Union is frequently manifested through regulatory and normative diffusion in higher education (HE). While authors like Dang (2015) and Zgaga (2006a; 2006b) highlight how the macro-level Bologna Process catalysed inter-regional cooperation and inspired regional reforms worldwide, scholars of the Tuning Project emphasise a more granular, operational dimension of this soft power. Mcinerney (Mcinerney 2017) argues that Tuning introduced specific degrees of proficiency and competence-based frameworks that functioned as a form of pedagogic force.

However, it is essential to distinguish the broad political ambitions of the European Higher Education Area (EHEA) from Tuning's specific methodological apparatus. As González Ferreras and Wagenaar (2023) note, Tuning achieved global significance precisely because it avoided prescriptive homogenisation. Instead, it provided flexible instruments—such as generic and subject-specific competences, learning outcomes, and reference frameworks—that allowed higher education institutions across

[6] "Berlin Communiqué".

[7] "Bergen Communiqué".

multiple continents to voluntarily reform their curricula (Wagenaar 2019). This distinction explains why the empirical results (see Section IV) demonstrate a genuine, demand-driven global reach rather than a mere imposition of European standards.

III. Methodology

The methodological design was mixed with a predominance of qualitative research. The process of formal data collection and analysis was conducted through a triangulation process. Although the methodological work of this article combines four periods of study, the most relevant information was collected between the second and fourth stages.

Table 1

Data collection

Periods	Projects	Data
1°	**2005 – 2012:** PhD thesis: "European Influence on the development of domestic Policies in Chile and Mexico: the case of Higher Education."	In-depth interviews (15) Documents of analysis (+100).
2°	**2015 – 2018:** Fondecyt Project N° 11150378, "Higher Education (HE) in Chile as an international cooperation strategy: analysis of the American, European and Asian models"	In-depth interviews (50) and Documents of analysis (+100).
3°	**2019:** Short Research stay (DITA), University of Bilbao (Spain).	In-depth interviews (15)
4°	**2020-2021:** CNA (National Commission of Accreditation) Project "Models of internationalisation, a comparative view of our national accreditation systems" (Francis Espinoza F. y Marcelo Lufín V.)	In-depth interviews (65) and Documents of analysis (+288).

Source: own elaboration based on data collection.

The universe/corpus of study of the interviews comprised expert subjects and types of Chilean ES institutions and public employees. The typical subjects included specialists from public service and different universities. In addition, I carried out a diverse search of analysis of documents in English and Spanish. Still, finally, I applied the critical discourse analysis to the

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documents of the 54 universities that the National Commission of Accreditation (CNA) registers, and other resources of study.

Table 2

Grid of Key European Documents for Discourse Analysis

Declarations	Communiqués	Report
Sorbonne (1998).	Prague (2001).	First Report "External Dimension of the Bologna Process" (Pavel Zgaga, 2006).
Bologna (1999).	Berlin (2003).	Looking out: The Bologna Process in a Global Setting On the "External Dimension" of the Bologna Process (Pavel Zgaga, 2007)
Budapest-Vienna (2010).	Bergen (2005).	
	London (2007).	
	Leuven Louvain-la-Neuve (2009).	
	Bucharest (2012).	
	Yerevan (2015).	
	Paris (2018).	
	Rome (2020).	

Source: own elaboration based on data collection.[8]

I analysed interviews and documents from second-order hermeneutics (or reading/translation). For the tabulation and analysis of interviews and documents, I used three matrices plus the initial one (identifying the field and the substantive area research, theoretical codes and units of study). First, a Grounded Theory (GT) coding matrix was applied for a more objective and neutral categorisation survey to survey the various encodings: open, theoretical, and axial (with connections) codes. Then the extracted codes were worked with a critical discourse analysis (CDA) methodology from

[8] Project 'Fondecyt de Iniciación 2015 – 2018'. N° 11150378.

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Teun van Dijk's (1980) socio-cognitive perspective in his macro-structures work to account for the code hierarchies.

Table 3

Grid of Key Chilean Documents for Discourse Analysis

Public Policies	Institutional/University Policies
Chile-Human Resources for the Knowledge Economy	Corporate Development Plan of universities
Higher Education in Chile: Aiming for Quality	Educative Projects/models.
The Higher Education Quality Improvement Program (MECESUP), belonging to the Division of Higher Education at the Ministry of Education in Chile projects presented to the World Bank	Plans of strategic development.
Documentation of Division of Higher Education at the Ministry of Education (MINEDUC).	Additional documents from universities involved and CRUCH
Documentation of National Commission of Accreditation (CNA).	
Ministry of Foreign Affairs (MINREL) Chilean Agency for International Development Cooperation (AGCID).	
Documentation of National Commission for Scientific and Technological Research.	
Documentation of Tuning Latin America Project	

Source: own elaboration based on data collection.[9, 10]

IV. Empirical work and results

I outline two significant phases of the impact of the Bologna Process and the Tuning project:

1. First phase of research (2005 – 2013)[11]

The academic implementation and innovation of Tuning/Bologna. During this period, effects were observed within the organisation and

[9] Ibidem.

[10] Project CNA. "Models of internationalisation, a comparative view of our national accreditation systems 2019 – 2020".

[11] This part is described *in extenso* in Francis Espinoza Figueroa. 2013.

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structure of the Chilean Higher Education (HE) system, i.e., the harmonisation of HE. Furthermore, I worked on the theoretical analysis with Normative Power Europe (NPE)[12] to portray European ideational elements.

From the 2000s until the present day, the growth of precise, fast deviations was observable in many Latin American Higher Education (HE) institutions due to an intervenient variable within the phenomenon, a kind of outside effect. This phenomenon is defined as the appearance of new ideas circulating throughout Latin American Higher Education (HE), especially in Chile. At the outset, these ideas transmuted into a set of procedures, methods and tools applicable to altering Chilean HE. Such statements were not coming, as they usually did, from the US; instead, they were arriving from the EU as part of a more significant phenomenon occurring in Europe, in the form of the Bologna Process and the Tuning Project. They impacted Chilean universities' curriculum and study programmes, finally causing structural changes in Chilean HE. Therefore, structural changes occurred due to the implementation of the Bologna process (and the Tuning Project) in Chilean HE.

At that time, I observed the progress of European notions circulating throughout Latin American Higher Education (HE), as part of the Bologna Process and the Tuning project. These influences manifested as a set of procedures, methods and tools proposed as a model, contributing to the transformation of Chilean HE. Chilean universities showed significant changes in their undergraduate and postgraduate programmes since they allied their systems with the Bologna Process. That was being followed in terms of structure and the whole concept of what Higher Education means, following the construction of a European (Latin American) Education Space.

The effects of the Bologna Process on Chilean HE were detected in the processes of consolidation of the role of the Chilean state and its HE institutions. That was observed in the design of public policies and the planning of institutional policies through formal mechanisms. Concretely, this phenomenon was characterised by the presence of significant changes specifically in three fields of HE: a) the execution of institutional adjustments within the planning of institutional policies, b) the development of specific public policies and c) the use of 'Bologna Language' within institutional and official documents, in speeches and in expressing the opinions of experts and academic authorities (Espinoza Figueroa 2013).

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[12] The notion of Normative Power Europe (NPE), created by Ian Manners (2001) means that the EU plays an international role as an 'ideational' actor characterised by common principles and acting to diffuse norms within the global arena. The theoretical approach combines discursive processes (like identity processes) with normative processes (agreements), constituting models of learning practices.

Regarding Chilean public policies, European ideas had a substantial impact on three main facets: a) the mechanism of allocating public financial resources (MECESUP[13]), b) a new culture of planning and assessing projects for HE, and c) indirectly, the National Accreditation System which started to work under European influence (Espinoza Figueroa 2013). At the university level, European ideas substantially impacted curricular architecture design and curricular re-engineering processes in traditional Chilean universities (see figure below).

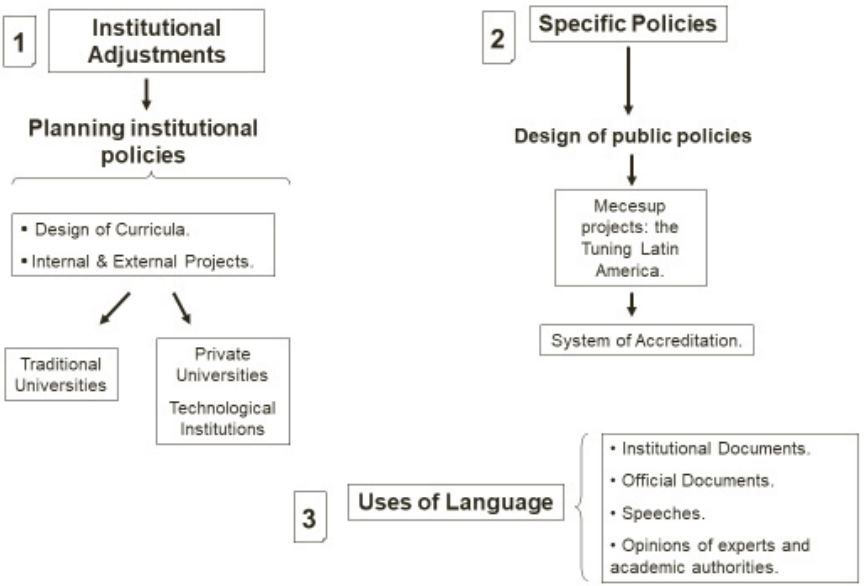


Figure 2

The Strengthening of the Role of State and HE Institutions: 2004 – 2013 (Espinoza Figueroa 2013).

Different changes occurred independently, bearing in mind the timing of effects on both fronts (institutional/university and governmental). For example, while universities worked on teaching, learning, and structuring curricula, the design of public policies focused on diffusing and implementing

[13] Mejoramiento de la Calidad y Equidad de la Educación Superior, in English: the Higher Education Quality Improvement Programme.

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the Bologna Process through ALFA Tuning Latin America Project. Besides this, new actors within Higher Education institutions and governments, such as the Council of Rectors (Vice-Chancellors) of Chilean traditional universities (CRUCH), played a significant role in diffusing and managing European influences or using Latin America Tuning Project as an umbrella to make changes.

Even though these changes represent pragmatic effects, they were oriented to transform HE by continually renovating knowledge. Moreover, these transformations implied constructing a more complex and concentrated conceptual building than hitherto. Therefore, the Bologna process constituted a standard setting. So, Chile followed the European model to design their higher education (see figure below).

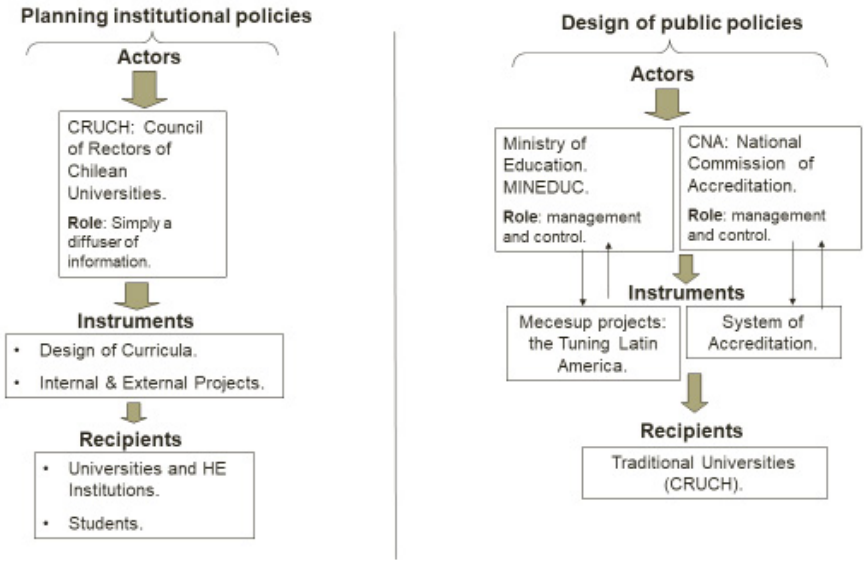


Figure 3

Contextual Map of European Influences on Chilean HE: 2004 – 2010 (Espinoza Figueroa 2013).

Considering empirical approaches, Dang (2015) offers an analysis from a diffusion theory. However, even though she studies five mechanisms, I only include three in this article: (1) socialisation, (2) persuasion, and (3) emulation.

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Taking into account the mechanism called 'socialisation' (ibidem), "the EU often diffuses its policies in complex processes in which several mechanisms are at work simultaneously" (Dang 2015). Here, Q. A. Dang claims that the EU shares its capabilities and 'know-how' on the Bologna Process as part of the development of a common space in HE (EHEA), offering economic incentive[14] and professional socialisation to the Association of Southeast Asian Nations (ASEAN).

The apparatus denominated 'persuasion'[15] is part of a strategy that allows "… the EU diffuses its ideas via socialization and persuasion in institutionalized patterns of political dialogues with third countries and other regions. The Bologna Policy Forum, Tuning (China, Japan, Russia, Latin America, USA, Africa) and the ASEM education forum are examples of such influential political dialogues" (Dang 2015). The author observes that non-state organisations, such as the European University Association (EUA) and the European Network of Quality Assurance in higher education (ENQA), contribute with the Union in exercising a global actorness. These European actors are proactive promotors of the Bologna process in and outdoors Europe.

The final mechanism analysed is 'emulation'[16]. Börzel and Risse (2009; 2012) argue that regional actors worldwide have copied European models in different areas where the Union has been exerting a global actorness. Dang emphasises that "… In particular, the ASEAN has imitated parts of the EU institution (e.g., the committee of permanent representatives, the human rights commission were added to the ASEAN's institutional structure)" (Dang 2015). In that respect, Jetschke et al. (2012) and Wong (2012) assert that those mimetic processes obey the need to grow its international presence in terms of acknowledgement and reputation. In other words, as Börzel and Risse (2009) explain, regional organisations seek to reinforce their efficacy and legitimacy, i.e., their exercise of power through emulating good models of management, an idea that European scholars have named 'the force for good' (Aggestam 2008; Barbé and Johansson-Nogués 2008; Pace 2008).

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[14] "For example, since 2011, the EU has allocated a total budget of Euro 9 million to support the "Intra-ACP Academic Mobility Scheme", which sets up university consortia and facilitates student and staff mobility within Africa and in the Caribbean and Pacific regions. Similarly, in early 2014 the EU also launched a project called "the European Union Support to Higher Education in ASEAN Region (EU SHARE)" with a budget of Euro 9.6 million." (Dang 2015, 770)

[15] That mechanism diffuses ideas as legitimate or true by logical arguments founded on reason.

[16] This process is not doing through an effective advertising of ideas; however, it trusts on the norms of competition and comparison.

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As one grasps above, Adelman (2008) sees the Union as a 'global teacher'. That denotes a notion of the Union spreading and disseminating its model outside the geographical borders of Europe. That shows a potent portrayal of the Union as a worldwide actor, endorsed by exceptional know-how, i.e., a power that establishes a pedagogic potential in its relationships worldwide. Therefore, its authority is not 'deposited' in its material abilities for exercising physical power, but rather it is to be found within its ability to structure/organise (to shape) knowledge.

Pondering the theoretical analysis, I observed that the socialisation process was part of Tuning Latin America without regard to a financial budget. From more qualitative research, I saw socialisation as a European strategy of comradeship, comparable with a mix of admiration and hegemony, as the empirical data shows. According to Dang, these examples can be studied as "… cases of coerced transfer executed in the context of asymmetrical power relations combining socialization and incentives in the form of 'capacity building' for direct export of the European Bologna model" (Dang 2015).

Even though I could not find a proper persuasion mechanism, two dimensions of the presence of the European influence were found: 'positive conditionality' and 'adverse effects'. In the positive conditionality, Tuning Latin America was seen as a space for dialogue and communication. On the other hand, considering the 'adverse effects', the idea of hegemony in a soft way was always implicit.

Regarding the research, I needed help observing the emulation process properly. Nevertheless, I could see a phenomenon of ownership[17] focused on self-identification, a kind of lesson drawing, with normative rationality concentrated on best practices. As Dang says, the EU incites competition among countries and regions which are intending to establish formal relationships with the Union because "competition does not only diffuse ideas as normative standards for political or economic behavior, but also spreads causal beliefs, for example, by learning from the best practice, actors borrow ideas (emulation) to improve their performance in comparison to others" (Dang 2015).

Que Anh Dang (2015) exposes that the main limitation of the diffusion approach is that the agency appears as a passive actor. However, I could

[17] According to the Normative Power Europe theory, the EU plays an international role as an 'ideational' actor characterised by common principles and acting to diffuse norms within the global arena. The theoretical approach combines discursive processes (like identity processes) with normative processes (agreements), constituting models of learning practices.

examine that the construction of a common space for higher education was determined by the effects of adopting the European model on the formulation of domestic policies in Chile. Besides, working with critical analysis of discourse, I could observe the strength of some 'political resistance' along the diffusion way, ideas that I called 'null', or 'adverse effects' and 'mediation process', and they show a critical view of a kind of 'European post-imperialism'. Even though the empirical evidence did not demonstrate a strong opposition, it showed some criticisms of the impact of the European model on Chilean HE.

Table 4

Mechanisms of diffusion

Mechanisms	Rationality of action	Modalities and tools
Direct Influence		
1. Coercion	1. Legal and physical imposition.	1. Coercive authority.
2. Manipulation of utility calculations.	2. Instrumental rationality.	2. Incentives, sanctions.
3. Socialization	3. Normative rationality.	3. Normative pressure, authoritative model.
4. Persuasion	4. Communicative rationality.	4. Reason-giving.
Indirect influence		
5. Emulation		
(a) Functional emulation. (b) Lesson-drawing. (c)Mimicry	(a) Instrumental rationality. (b) Normative rationality. (c) Mimetic/normative rationality.	1. Comparison and competition. 2. Best practice. 3. Demand-driven.

Source: Que Anh Dang (2015) (adapted from Börzel and Risse, 2009, 2012).

The first stage concludes with the contribution of Tuning in the development of the concept of competence (Argüelles 2009; CINDA 2010; CRUCH 2012; Alarcón 2013). Finally, the empirical case of Chilean HE is presented in detail to comprehend the most significant impacts on public and university policies.

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2. Second research phase (2015 – 2021)

The impact on internationalisation policies. The second stage substantially contributes to Chilean universities' internationalisation processes (public and institutional policies). Here, I argue that nowadays, the European model is impacting the internationalisation processes of Chilean HE. Universities are using it to expand their worldwide degree of attractiveness. Therefore, the theoretical approach is soft power, but considering the EU as a global actor, playing an influential role and impacting upon policies and strategies of internationalisation, even the globalisation of HE in Chile.[18]

I call this stage the 'internationalising dimension' of Bologna/Tuning, which is different from what Zgaga (2006a; 2006b) argues, the external facet of Bologna. It coincides with some changes observed within public and institutional (university) policies in Chilean Higher Education after 2011 in terms of internationalising universities beyond student mobility, as seen at the end of the first part of the previous research.

Even though the concept of internationalisation is implicit within the Tuning Project, due to the external dimension of Bologna (ibidem) or the character of worldwide spreadable of the Tuning Project (Beneitone and Yarosh 2015; Serbati 2015; Pálvölgyi 2017), no substantial literature is showing how the 'European model' is impacting upon internationalisation processes within universities and HE institutions globally. For this reason, it is necessary to describe the route of the international arena in Higher Education (HE).

After European Tuning, in 2004, Latin American Tuning was launched, focusing on developing generic competences and four subject areas: Business Administration, Education/Education Sciences, History and Mathematics. Also, experts worked in a Latin American Reference Credit (CLAR) system.

Between 2011 and 2013, Russian Tuning was developed to follow the orientations of the Tempus Programme[19] as part of different projects supported[20]. Parallel to European Tuning within the EU's immediate neighbouring countries, African Tuning was launched in 2010 until now. Its primary focus has been on studying academic load (2013 – 2015) and analysing the undergraduate and graduate programmes. González y Wagenaar

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[18] Project 'Fondecyt de Iniciación 2015 – 2018'. N° 11150378.

[19] That plan started in 1989 and involved countries of Eastern Europe, Central Asia, the Western Balkans and the Mediterranean region, seeking the modernisation of higher education in the EU's immediate neighbouring countries.

[20] Tuning projects were launched and implemented on Lithuania (2009-2012), Australia (2010-2011), Russia (2010-2013), Canada (2011-2012), Africa (2011-2013), Latin America (Tuning America Latina III) (2011-2013), Thailand (2011-2013), the USA (2011-2012), the last one supported by the Obama government and Central Asia (2012-2016).

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(2023) incorporate new initiatives such as regional projects Tuning Asia-South East, TA-SE (2016 – 2019) and Tuning India (2016 – 2018).

Even though the 'Bologna – Tuning' processes have developed a dimension beyond the borders of the European Union, the question is how that has had a significant impact further than the harmonisation of higher education. Some scholars (Beneitone and Yarosh 2015; Serbati 2015; Pálvölgyi 2017) call 'academic implementation and innovation' to the application of the Tuning Project in different world regions. On the one hand, Beneitone and Yarosh (2015) focus on the occurrence or non-appearance of the use of a competence-based student-centred methodology, considering a large-scale study and in-depth analysis. In that study, Serbati (2015) adds the component of student-centred learning through the cases of studies from Tuning Europe, Russia, Africa and Latin America. However, she analyses specific influences on teaching and pedagogical ways. On the other hand, Pálvölgyi (2017) studies the process of the Tuning Project as a multilevel policy application toolset with a global significance.

Besides the initiative of creating the European Higher Education Area (EHEA), Serbati (2015) and Pálvölgyi (2017) have proposed the idea that Tuning constitutes the most effective platform for innovation and implementation environment. They understand innovation when considering Tuning projects as a podium for implementing advanced approaches, mechanisms, structures and (multi) levels policies to construct the 'knowledge building' of contemporary HE.

Nevertheless, one can observe a considerable amount of literature about the strategy (Bologna Process) – and the operation (Tuning project) as a substantial model for reforming higher education. However, few works analyse the actual impact upon public and institutional (university) policies beyond Europe and away from implementation changes and reform in HE. Therefore, I argue here that, nowadays, the European model impacts internationalisation processes within Chilean universities and public policies. This phenomenon is characterised by a more institutionalised flow of academic and student mobility and the internationalisation of research clusters. The effects are seen as part of guiding principles, normative processes and curricular management.

As we can observe, the traceability of the impact of European ideas upon MECESUP/PFI programmes is observable through different mechanisms, which are present in the Bologna/Tuning discourses almost at the same time there (the EU) and here (Chile): accreditation processes (1st Phase, 1999 – 2005), academic innovation (2nd Phase, 2006 – 2011), support of PhD programmes (3rd Phase, 2012 – 2016), academic and student mobility, and internationalisation of research cluster(4th Phase, 2017 at present).

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Table 5

The Higher Education Quality Improvement Program (MECESUP)

PHASES	Processes influenced by European soft power
1st Phase (1999 – 2005): MECESUP 1.	Accreditation processes.
2nd Phase (2006 – 2011): MECESUP 2.	Academic Innovation.
3rd Phase (2012 - 2016): MECESUP 3.	Support of Ph.D. programmes.
4th Phase (2016 – at present): Institutional projects.	— Academic and student mobility. — Internationalisation of research cluster.

Source: own elaboration based on data collection.[21, 22]

Indeed, the impact is visible in constructing a National Academic Credit System (STC – Chile) and processes of academic innovation, support of PhD programmes and internationalisation of HE institutions. According to Argüelles, the strategies proposed by the Chilean governments aim to internationalise the higher education system, for which it has been implementing transformations of an academic, administrative and management nature for some years. In a certain sense, The Bologna process has favoured and accelerated this process because, within its work strategies, there is a lot of similarity with governments and universities' aspirations regarding higher education. Therefore, the European model has encouraged universities to implement programmes that allow mobility and flexibility in a global world and that guarantee the quality of studies. Besides, this process involved adopting new approaches and teaching forms focused on long-life learning. Therefore, analysing the outcomes of the Bologna Process/Tuning Project on Chilean public and institutional policies starts with studying of the actors. The actors involved in the diffusion of ideas in terms of public policies are: (i) the Higher Education Quality Improvement Programme (MECESUP), currently named Programme of Institutional Strengthening (PFI) belonging to the Division of Higher Education at the Ministry of Education in Chile, and (ii) the National Accreditation Commission (CNA).

[21] Project 'Fondecyt de Iniciación 2015 – 2018'. N° 11150378.

[22] Project CNA. "Models of internationalisation, a comparative view of our national accreditation systems 2019 – 2020".

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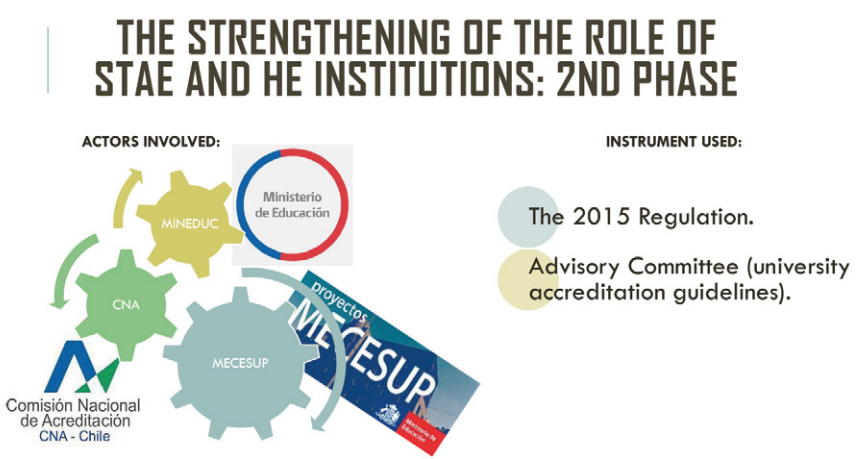


Figure 4

The strengthening of the role of state and the institutions[23]

The effects of the European model upon some Chilean universities are visible as follows, considering the different phases of the development of public policies:

Table 6

Institutional/university policies implemented

Universities	Areas of European Effects	Phases Public Policies
PUC (Pontificia Universidad Católica de Chile).	1. Development of competences and skills. 2. Long-life learning. **3. International competences training.**	2nd Phase (2006 – 2011): Academic Innovation. 4th Phase (2016 – at present): - Academic and student mobility, Internationalisation of research cluster.
UChile (Universidad de Chile).	1. Guiding principles: equity and educational quality. 2. Normative process: inclusive, reflexive and collaborative teaching.	2nd Phase (2006 – 2011): Academic Innovation.

[23] Project 'Fondecyt de Iniciación 2015 – 2018'. N° 11150378.

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Universities	Areas of European Effects	Phases Public Policies
	3. Curricular management: harmonisation degrees: undergraduate and graduate. 4. Structural aspects of the curriculum: competences (general and specific)	
Universidad de Concepción.	1. Long-life learning. 2. Knowledge management. **3. International mobility.**	4th Phase (2016 – at present): - Academic and student mobility, Internationalisation of research cluster.
UTalca (Universidad de Talca).	1. Professional academic training curriculum: basic and fundamental training. 2. Training curriculum: competencies approach. 3. ECTS (European Credit Transferable).	2nd Phase (2006 – 2011): Academic Innovation.
UA (Universidad de Antofagasta).	1. Transfer of Knowledge. 2. Sustainable development. 3. Training curriculum: competencies approach (generic competences). 4. Quality assurance. 5. Knowledge management.	2nd Phase (2006 – 2011): Academic Innovation.
UCN (Universidad Católica del Norte).	1. Training curriculum: competencies approach. 2. Long life learning. **3. Training for the Globalisation.** 4. Quality assurance.	2nd Phase (2006 – 2011): Academic Innovation. 4th Phase (2016 – at present): - Academic and student mobility, Internationalisation of research cluster.

Source: own elaboration based on data collection.[24]

Chilean universities are still implementing their policies as part of the 'academic implementation and innovation' to the application of the Tuning Project in different world regions, i.e. Nevertheless, it is noticeable that other aspects are present within academic discourses such as quality assurance, knowledge management and sustainable development. These facets belong

[24] Project 'Fondecyt de Iniciación 2015 – 2018'. N° 11150378.

to the 'Globalisation era'. Therefore, it is possible to affirm that the Tuning Project (the Bologna Process) plays a role as a 'globaliser actor' within Higher Education beyond the EU borders.

In Figure 5, it is possible to observe a practical description of the Model European, which is impacting through three actors: a.) Tuning that is described, sometimes explicitly and at other times implicitly, in the educational projects of Chilean universities, about all through the Transferable Credit System; b.) the programme Horizon 2020 that works with government agencies such as Conicyt, today ANID; and c.) the Erasmus (+) programme that is directly related to higher education institutions and mobility student.

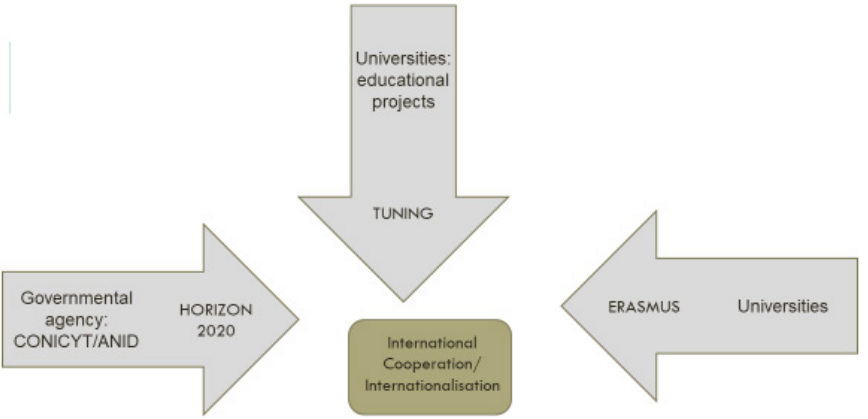


Figure 5

Implementation of the European projects within Chilean HE[25]

Furthermore, European influences contemplate structural variables and various activities associated with quality assurance processes. The Bologna process and other concurrent developments have accelerated the introduction and elaboration of institutionalised quality assurance and management mechanisms. In concrete terms, the European assurance model of quality is mixed through the establishment of mechanisms of formalised external quality control (for example, accreditation of external programmes) and internal quality control mechanisms (Bollaert 2014). These mechanisms are based on specific quality standards, most notably the Standards and Guidelines

[25] Project CNA. "Models of internationalisation, a comparative view of our national accreditation systems 2019 – 2020".

for Quality Assurance in the European Higher Education Area.[26] In this sense, the impacts are observable in the international accreditation mechanisms used by European agencies to define and implement quality assurance processes. For example, the University of Chile is working with the German model to raise internal self-assessment processes and emphasise internal processes since the Germans accredit processes, not their programmes. Other impacts are observable in the international accreditation mechanisms used by European agencies to define and implement quality assurance processes.

Table 7

European accreditation of Chilean universities

Universities	European Agencies of Accreditation
Universidad Adolfo Ibáñez School of Business: MBA and graduate and postgraduate programmes	European Quality Improvement System (EQUIS). The Association of MBAs (AMBA).
Universidad Chileno-Británica de Cultura.	The British Accreditation Council (BAC), agency belonging to the European Association for Quality Assurance in Higher Education (ENQA).
Universidad de La Frontera-UFRO, doctorate programmes	Agency for Quality Assurance-AQAS from Germany.
Universidad San Sebastián	Agency for Quality Assurance-AQAS from Germany.
Pontificia Universidad Católica de Chile-PUC, School of Administration.	European Quality Improvement System (EQUIS) The Association of MBAs (AMBA).
Universidad de Chile, School of Economics and Business	The Association of MBAs (AMBA).

Source: own elaboration based on data collection.[27]

However, according to this research, the mechanisms of impact were seen in three types of effects:

[26] "ENQA."

[27] Project CNA. "Models of internationalisation, a comparative view of our national accreditation systems 2019 – 2020".

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1. The presence of international accreditations affects the internal quality assurance processes regarding regulations, actors, institutions and processes.
2. The search for international standards, for example, the OECD, in postgraduates' review, self-regulation and self-assessment processes, especially for doctorates.
3. The use of international models, specifically those of ANECA, for the international certification of internal quality systems.

Finally, from the 29 universities declared by the CRUCH with internationalisation, five (17%) show a tendency to follow the European model. As mentioned above, this is observed in their educational models associated with the Bologna Process, establishing international agreements and projects such as Erasmus and Alban and European postgraduate accreditations. Table 8 shows universities with a tendency towards the European model:

Table 8

Models of Internationalisation of Chilean Universities

Universities	Models of internationalisation
Universidad de Atacama	European/global.
Universidad del Bío-Bío	European/Latin American.
Universidad Católica de la Santísima Concepción.	European/Internationalist.
Universidad de Concepción	European/Internationalist.
Universidad de La Serena	European.

Source: own elaboration based on data collection.[28]

Although in the documentation on the internationalisation of Chilean universities, the European model quickly appears at the hands of European and Latin American Tuning projects, there is no mention of some impact on the quality assurance and accreditation systems.

[28] Project CNA. "Models of internationalisation, a comparative view of our national accreditation systems 2019 – 2020".

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V. Conclusions

This research piece highlighted the study object, the Bologna Process and the Tuning Project. The research nature of this section was descriptive and analytical, focusing on studying Bologna through the threefold dimension:

(i) The common surface of the process characterised by a structural base that defines the field of Higher Education (HE) as a common space for harmonising curricular reforms and encouraging academic/student exchange.

(ii) An in-depth analysis of 'instituted traces' of the 'Bologna language' to inquire into European discourses of HE as part of the search for empirical evidence that demonstrates the presence of European influences upon non-EU countries.

(iii) A study of the impact of the 'European model' (the Bologna Process and the Tuning Project) upon internationalisation processes of Chilean HE to expand their worldwide degree of attractiveness as seen within the Bologna Declaration and global competitiveness of European higher education.[29] Here, I discussed the Tuning Project as a 'global actor' which plays an influential role (Corbett 2011; Halász 2017), or a 'constructive force' (Faber and Westerheijden 2011), impacting upon policies and strategies of internationalisation, even the globalisation of HE in Chile.

On the one hand, Higher Education (HE) is one of the most fashionable interests in studying global public and institutional policies and international relations. But on the other hand, Latin American universities have experienced similar progressions in Higher Education: they have received overseas prototypes, which were then adapted to their own needs and realities.

As a first objective, this article introduced the idea that the European Bologna Process, the Tuning Project and the EHEA influenced Chilean domestic policies and the effects of these policies in Chilean HE. Considering a second aim, I argued that nowadays, the 'European model' (the Bologna Process, the Tuning Project and the EHEA) is impacting the internationalisation processes of Chilean HE. Chilean universities are using it to expand their worldwide attractiveness, as seen within the Bologna Declaration and the

[29] "European Commission."

global competitiveness of European higher education.[30] Here, I outlined two significant phases of the impact of the Bologna Process and the Tuning project:

During the first phase (2005 – 2013), effects are observed within the organisation and structure of the Chilean Higher Education (HE) system, i.e., the harmonisation of HE. Some scholars (Beneitone and Yarosh 2015; Serbati 2015; Pálvölgyi 2017) use the expression 'academic implementation and innovation' to define the application of the Tuning Project in different world regions where it had taken place.

The main conclusion in this part is that Chilean HE was characterised by the presence of significant changes, specifically in three fields of HE:

a) The execution of institutional adjustments within the planning of institutional policies.

b) The development of specific public policies; and

c) The use of 'Bologna language' in institutional and official documents, in speeches and in expressing the opinions of experts and academic authorities.

The appearance of European ideas 'colouring' dialogues and processes at two levels, public and university/institutional policies in Chilean HE, required a rigorous analysis of soft European capabilities present through a cluster of ideas, norms, principles and values, as within language and discourses. The study of language was fundamental to understanding that European discourses performed semantically as strategies because they have been transmitted as a common language determined by a specific vocabulary. Through that, they have exerted power.

In the second stage (2015 – 2021), I analyse and compare other variables, such as European effects on internationalisation and accreditation processes. The findings substantially contribute to Chilean universities' internationalisation processes (public and institutional policies).

The most significant conclusion is that there is no substantial literature and research gap about how the 'European model' impacts internationalisation processes within universities and HE institutions globally. A topic still not present within the Bologna/Tuning is the impact of the 'European model' upon university rankings, thinking that this attribute could push the European model toward the next step: the globalisation epoch. Therefore, there is no

[30] Ibid.

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empirical evidence currently, and few literature reviews that justify the discernment of the 'European model' means a 'globaliser' instrument at that level. The discussion can be, here, whether Bologna Process and the Tuning Project exert a 'globaliser' force, or at least they are contributing to universities to align with globalisation processes.

For that reason, I discuss Tuning as a 'global actor' playing an influential role (Corbett 2011; Halász 2017), or a 'constructive force' (Faber and Westerheijden 2011) impacting upon policies and strategies of internationalisation, even globalisation. According to Adelman (2008), the concept of the EU as a 'global teacher' denotes a notion of the European Union scattering and shipping its model beyond the geographical frontiers of Europe. Consequently, Europe can be considered a 'model-maker' or 'model-offerer' impacting Latin American HE (from the 'birth' of universities there). At the same time, Latin America has been seen as a traditional 'model-taker'.

Comparing both periods, during the 1st phase, the impact of the Tuning Project is very observable as much as public (domestic) and institutional (university) policies. Nevertheless, one can observe a lack of effects on public policies during the 2nd phase concerning the involvement of actors and the instrument used for incorporating the ideas diffused from Europe. The Tuning project exerted power through institutional adjustment, specific policies and use of language, considering the 1st phase of research. During the 2nd phase, the Tuning Project also exercises power ('global power/role' as 'soft power') through internationalisation processes such as guiding principles, normative processes and curricular management. The highest degrees of impact during the 1st phase were observable throughout universities belonging to the Council of Rectors (Vice-Chancellors) of Chilean Universities (CRUCH). In the 2nd phase, the most significant effects on Chilean HE are more noticeable in public universities than in private HE institutions. Therefore, the state's role is essential in being a channel for the diffusion of European ideas.

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Conceptualising and optimising student workload in Philippine higher education

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Abstract: This study examines how student workload is conceptualised and measured in Philippine Higher Education Institutions (PHEIs). Using a mixed-methods concurrent explanatory design, data were collected from 135 academics across ten public and private universities representing four disciplinary clusters: arts and humanities, social sciences, engineering, technology and physical sciences, and life and health sciences. Qualitative data, obtained through short-response and word-association prompts, were used to elicit academics' conceptions of student workload. For the quantitative component, Bologna-derived tools were employed, including activity-based workload projection and term-based workload calculation. Results indicate that academics predominantly equate student workload with contact time and lesson delivery, with very limited consideration of preparatory and follow-up learning activities. Normative workload estimations demonstrate substantial variability across disciplines, with projected weekly workloads for a typical 24-credit semester ranging from extreme under-allocation to excessive levels that exceed international benchmarks such as the European Credit Transfer and Accumulation System (ECTS). These results indicate systemic non-standardisation and partial accounting of student workload in PHEIs, driven largely by policy frameworks that omit explicit recognition of non-contact learning time. The study argues that without

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an explicit, workload-based credit framework, Philippine degree programmes remain structurally disadvantaged in regional and international mobility and recognition.

Keywords: student workload; workload-based curriculum; higher education; course credit.

I. Introduction

Student workload is a critical element in curriculum design and policy formulation in higher education (Kember 2004; Ruiz-Gallardo et al. 2010). Student workload refers to the total amount of time required for a student to complete the academic requirements of a course (Bowyer 2012). There are two basic components of student workload: contact and non-contact time. Contact time is the scheduled time spent in structured interactions with instructors such as lectures, laboratory sessions, or seminars (Nosair and Hamdy 2017). This typically takes place within physical spaces such as classrooms or laboratories but has also been expanded to include virtual contexts, such as online synchronous meetings (Whitelock et al. 2015). Non-contact time on the other hand is the time students spend on independent learning activities, such as reading, assignments, and research (Ruiz-Gallardo et al. 2015; Scully and Kerr 2014). In most institutional records and academic policies, contact time is generally made more explicit than non-contact time, making the latter more susceptible to open interpretation and non-standardisation. Globally, student workload is considered the currency of internationalisation (Magette and Richardson 2020). The Bologna Process, for instance, identifies student workload as one of the major bases for the European Credit Transfer and Accumulation System or ECTS (Alshamy 2017; Parker et al. 2015; Souto-Iglesias and Romero 2018). Several regions in the world likewise utilise student workload in establishing the mobility and equivalency of degrees and qualifications across regions, including Latin America, Australasia, North America, and East Asia (Ministry of Science, Technology & Innovation 2005). The measurement of student workload plays a vital role as it complements the outcomes alignment and disciplinary requirements in ensuring the credit afforded to the different degrees and qualifications are objectively and consistently determined (Wagenaar 2019). The UNESCO Regional Conventions on Qualifications also emphasise the role of student workload for degree programmes. The Lisbon Convention, which serves as the convergence point for European countries, is one of the most established and active recognition frameworks (Knight 2004; Sekiyama 2018). Currently, the Tokyo Convention is the regional convergence for Asia

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and up to the time of this writing, ASEAN member states have yet to ratify this convention (Ashizawa et al. 2024; Teter and Wang 2021).

In terms of curriculum planning and implementation, workload management serves as a bridge between intended learning outcomes (ILOs) and actual learning experiences. Systematic measurement of student workload enables more realistic planning to ensure the attainment of the desired learning outcomes as it explicitly identifies the time requirement for each activity or deliverable (Ruiz-Gallardo et al. 2010; Scully and Kerr 2014). A balanced workload ensures academic rigour without overburdening students, encourages active participation and engagement, and aligns with institutional goals for learner development. Proper management of workload ensures that students can meet academic requirements without being overwhelmed, encouraging better learning outcomes and improved well-being (Cano et al. 2024). Beyond time investment, student workload also encompasses the complexity and intensity of academic tasks. A well-designed workload facilitates meaningful learning, while a poorly managed workload risks student disengagement or burnout (Kanwal et al. 2023; Parker et al. 2015; Thi and Duong 2024). Student workload consideration for instructors and professors is also a useful tool for the development of reflective practice in teaching. The explicit consideration of the time needed to satisfactorily attain the desired learning outcomes will allow instructors to reflectively select essential teaching-learning activities and assessments (Lyng 2017). Corollary to this, non-essential activities or busy-work requirements will be reduced if not downright eliminated as the instructor becomes increasingly conscientious in ensuring that outcomes are attained without unnecessarily increasing the associated student workload (Chickering and Gamson 1989; Dee 2020; Smaill 2020).

In many Southeast Asian countries in general and the Philippines in particular, student workload has not been given emphasis both in practice and research (Lorenzo 2021). While the ASEAN University Network has a thematic network for the ASEAN Credit Transfer System (ACTS), there is no defined policy about what constitutes an academic credit with respect to the associated workload (Berse 2018; Chao 2017). Country-specific exemplar practices exist such as Vietnam's definition of a standard academic credit as equivalent to 40 hours of learning and Malaysia's integration of Student Learning Time (SLT) that technically translates the provision of non-contact time component in workload allocation (Hanh et al. 2020; Nguyen 2020; Thu 2021). In 2021, the project focused on Comparing the Achievement of Learning Outcomes of Higher Education in Asia (CALOHEA) introduced student workload as one of the recognition mechanisms for programme

internationalisation, mobility, and equivalency (Yusoff 2024). This project led to the development of the ASEAN University Network Qualification Excellence (AUN-QEx) initiative in 2025, which currently conducts mastery training workshops for the development of recognition mechanisms in ASEAN higher education institutions. One of the foundational foci of AUN-QEx is the installation of the culture of measuring and using student workload in the design and implementation of the degree programmes (ASEAN University Network 2025). The importance of student workload consideration in ASEAN was also emphasised in the EU-ASEAN Policy Dialogue conducted through the EU-ASEAN Sustainable Connectivity Package – Higher Education Programme (SCOPE-HE). The current direction of these initiatives highlights the need for ASEAN to develop a systemic approach in policy and practice to ensure that student workload is integrally embedded in programme internationalisation and mobility. This is essentially to ensure that both intra-regional and inter-regional degree recognitions have solid and established bases for crediting and validation (ASEAN Higher Education Space Roadmap 2022).

In the Philippines, Higher Education Institutions (HEIs) generally ascribe to the ASEAN Qualification Reference Framework (AQRF) through the contextualised Philippine Qualification Framework (PQF) (Albia and Chan 2017; Berse 2018; García and Marigmen 2020). Despite this ascription, PHEIs face unique challenges in institutionalising the consideration of student workload in curriculum planning and implementation as the current policy only considers contact time in instructional delivery. This means that the resulting student workload measurement will only include partial data as the current system does not explicitly indicate the non-contact time component of student learning. This poses a significant limitation in terms of programme mobility and equivalency outside of the country since Philippine degree programmes will be categorically classified as credit-insufficient when viewed through the lens of student workload-based qualification crediting.

In practice, PHEIs do not have a defined set of criteria for student workload consideration and utilisation. While the policy indicates the required contact time for both experiential and non-experiential courses, there is no explicit provision for the associated non-contact for the different courses (Largoza and Fernandez 2025). Consequently, institutional policies and instructional practices are heavily structured towards the contact-time requirement of the degree programmes. This creates an imbalance in practice as non-contact time is generally acknowledged as extant but not operationally considered in the actual implementation of the teaching learning process. Student workload could therefore be insufficient if no

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non-contact time is allocated or overdone if heavy non-contact time work is demanded (Nomura et al. 2021). This fundamental limitation is also exacerbated by the unique challenges that persist in managing student workload, given the diversity of institutional capacities, programme designs, and learner demographics.

Given the limitation in policy and literature on student workload in PHEIs, this study intends to examine academics' conception of student workload and their implementation practices in terms of estimating the workload associated with specific teaching-learning activities and assessment tasks.

II. Methodology

The study employed a mixed-method approach using a concurrent explanatory research design (Creswell and Plano Clark 2018). Opportunity sampling was used to determine the main participants of the study (Howard 2022; Wood et al. 2023). A total of 135 academics from ten higher education institutions in the Philippines, comprising three private and seven state universities. Since these academics belong to the different teaching units of their respective universities and teach different courses or disciplines, the categories derived from the Times Higher Education classification of academic disciplines were used. These categories are (1) Arts and Humanities, (2) Social Sciences, (3) Engineering, Technology, and Physical Sciences, and (4) Life Sciences and Health Sciences.

Table 1

Participants Disciplinary Profile and Distribution (N=135)

Years of Teaching	n	% of Total	Cumulative %
1–5	24	17.8	32.6
6–10	36	26.7	59.3
11–15	20	14.8	14.8
>16	55	40.7	100.0

In terms of teaching experience, all participants have been teaching from three to thirty-five years and were clustered into distinct groups. Most of the participants are experienced teachers with more than five years of teaching experience (M=13.9, SD=8.44).

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Table 2

Participants Teaching Experience Profile and Distribution (N=135)

Discipline	n	% of Total	Cumulative %
Arts and Humanities	27	20.0	20.0
Engineering, Technology, and Physical Sciences	40	29.6	49.6
Life and Health Sciences	14	10.4	60.0
Social Science	54	40.0	100.0

For the data collected, the qualitative component allowed the participants to define in their own terms and understanding what constitutes student workload as well as identify the components of this workload with respect to their curricular activities and requirements. They were instructed to provide their conceptual association to student workload and were given relative freedom to express these conceptions in words. The quantitative data were derived from their initial estimations, activity-based projections, and term-specific workload calculations.

A researcher-developed activity focused on imagery generation of a typical higher education student in the Philippine context was used as the main tool for the elucidation of the participants' conceptions of student workload. A specific activity on the development of a synthesis paper as a common undergraduate course requirement was introduced to the participants. They were instructed to describe the activities and processes that a typical higher education student would have to do or undergo to produce an acceptable synthesis paper result. Further, the participants were also instructed to provide the estimated number of hours needed for each identified activity or process leading to the completion of required synthesis paper.

III. Results and discussion

The result of the initial exercise on identifying the steps and processes in the development of an undergraduate synthesis paper by a typical higher education student initially generated a relatively simplistic series of well-defined steps. This conception essentially reflects the expectation of the participants in the process of producing or demonstrating an acceptable level of learning outcome. In the process of contextualising student workload through the lens of the student, the initially proposed four-step process morphed into a complex multi-phased series of events.

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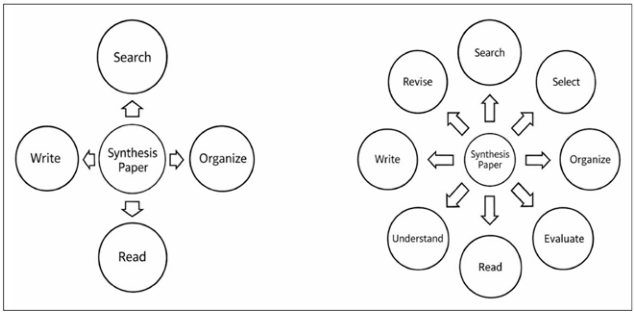


Figure 1

Changes in the identified steps and processes before and after student workload considerations

Note: The object on the left represents the initial process conceptions while object on the right is the resulting process conceptions after workload contextualization

The responses of the participants about their conceptions on what constitutes student workload range from single term to multiple sentences. Each of these responses was grouped together based on word or phrase frequency, and explicit meaning. This allows for the generation of keywords or phrases that adequately reflects the responses of the participants into distinct thematic groups. The word cloud visualisation of these responses is presented below.



Figure 2

Word cloud visualisation of participants' student workload conceptions

Note: Word cloud image using all raw textual data from the participants

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While the word cloud visualisation essentially shows the most closely associated word or concept of student workload for academics in the group, it is important to consider that the different disciplines may have contextual nuances that contribute to their respective conceptions of student workload. Based on the textual responses, categories were developed to cluster the responses in specific groups based on the interpreted focus or area. These groups include (a) workload as contact time, (b) workload as a practical or technical engagement, and (c) workload as assessment driven. Treemap visualisation was used to show how the different disciplinary categories associate student workload based on the grouped responses of their expressed conceptions.

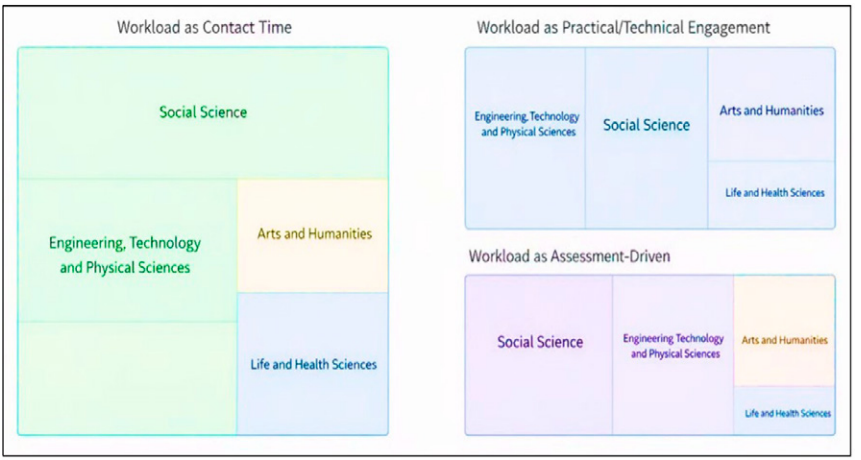


Figure 3

Treemap visualisation of the participants' disciplinary categories and grouped student workload conceptions

Since the student workload estimated for each activity is also categorised in three distinct phases that include preparatory, implementation, and follow-up, packed circle visualisation was used to clearly show how each of the disciplinary clusters associate student workload to these phases. Results clearly indicate that workload is most associated with implementation with less consideration for preparatory activities and even less for follow-up. It is also worth noting that the life and health sciences cluster is only present in the implementation circle and is inherently absent in both preparatory and follow-up circles.

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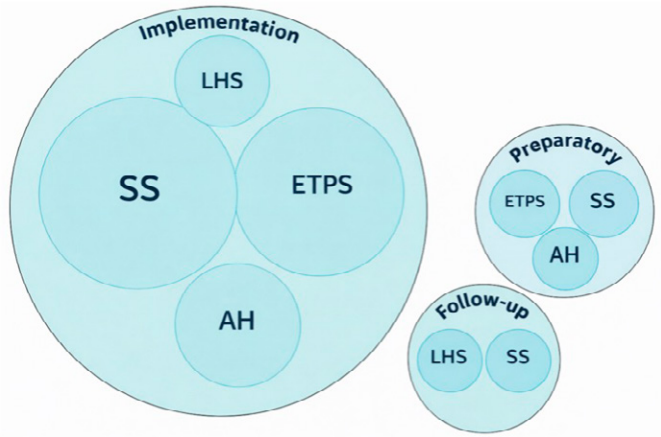


Figure 4

Packed circle visualisation of participants disciplinary categories and time-related workload conceptions

Note: SS – Social Sciences, LHS – Life and Health Sciences, ETPS – Engineering, Technology and Physical Sciences, AH – Arts and Humanities

III.1. Activity-based workload projection

The results of activity-based student workload projection were generally derived from a selected three-week period within the regular eighteen-week allocation of a typical semester. Additional conditions were provided to the participants to consider regular academic weeks that do not include university or community-related activities such as extra-curricular activities or examinations. Moreover, three sets of workload estimations were conducted for each activity namely preparatory, lesson delivery, and follow-up. Preparatory workload would include all activities that are asked of the students in preparation for the actual contact-time. This may include advanced readings and pre-laboratory activities among others. Lesson delivery workload refers to the time that students will spend on actual onsite or online synchronous classes that students will have to attend. As for follow-up workload, this refers to the time students will spend in fulfilling tasks that are done after the lesson delivery. These tasks may include post-lesson activities such as revisions, enrichments, or additional requirements that are still related to the implemented lesson. The aggregated estimations for preparatory,

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implementation and follow-up constitute the reported workload estimation for each activity. The weekly normative value and the projected typical semester value consisting of eight courses or equivalent to 24 credit units' estimation values for each group of disciplines are presented in Table 3.

Table 3

Weekly Normative Student Workload Values of Activity-based Workload Projection

Discipline	n	Mean Normative Estimated Value (3-credit course)	SD	Min–Max (Per Course)	Min–Max (Eight Courses)
Arts and Humanities	27	10.4	3.29	3–15	24–120
Engineering, Technology, and Physical Sciences	40	10.7	3.33	3–16	24–128
Life and Health Sciences	14	11.3	2.23	8–15	64–120
Social Science	54	10.6	3.41	3–16	24–128

III.2. Student workload conception

The most common conception of academics regarding student workload is heavily oriented towards contact time. This is evident in the most common keywords and key phrases that include class, lectures, laboratory work, and examinations are consistent with the general conceptions of academics (Alshamy 2017; Kember 2004; Nomura et al. 2021). Nonetheless, there are also those who included non-contact related responses such as homework, reading assignments, site visits, and studying. One interesting association of student workload is on its assessment-driven interpretation. This conception tends to associate workload with examinations and assessment. While this association is not necessarily erroneous, reducing workload solely for assessment and assessment-related activities underestimates the actual value as it does not adequately consider both preparatory and class-implementation time. Because most assessments especially summative ones are generally conducted after lesson delivery, the risk of excluding preparatory-related workload allocation becomes even more pronounced (Bouwmeester et al. 2019). The idea that student workload is largely determined by contact hours

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or scheduled classes remains a prevalent interpretation among academics and administrative staff in higher education.

Regarding the time element of student workload conception, academics tend to predictably focus on lesson delivery. Very few respondents considered preparatory activities in the estimation process, and the consideration of follow-up is almost non-existent (Fischer et al. 2023; Kenny and Fluck 2022). While this is expected because of academics focusing on contact time activities, it is important to note that the non-consideration of preparatory activities and exclusion of follow-up estimations could dramatically affect the overall estimation or allocation of student workload (Impola 2025; Pardos et al. 2022). As a case in point, the actual class of three hours a week for a typical three-credit course may end up requiring more preparation time from the students as well as additional follow-up deliverables. Taken together, the unaccounted non-contact components for the planned lesson of the week can collectively increase the students' workload to over three times of what has been formally acknowledged and reported.

The policy on credit allocation for PHEIs is essentially contact-centric in nature such that one credit is typically allocated an hour for each week of typical semester in a regular lecture course (Cahapay 2020; Cuaton 2020; Esposo-Betan and Fresnido 2022). There is no national policy that acknowledges the existence of a non-contact component, more so on its regulation with respect to credit assignment (Largoza and Fernandez 2025). This could probably be attributed to the American-derived system whose credit system is derived from the Carnegie unit (Alarcón et al. 2014; Herlehy 1997; Kikomeko et al. 2019). In effect, both contact and non-contact components are treated within the contact-time allocation of the curriculum. The non-contact component of accounting for student workload is essentially treated as a de facto element of curriculum design. While at the outset the exclusion of non-contact time does not affect the attainment of learning outcomes, explicit auditing of the associated workload vis-à-vis the teaching-learning and assessment would indicate otherwise. Student feedback would have been a good starting point but the absence of an explicit policy on student workload standardisation gives very limited bearing if at all included (Huang et al. 2020).

III.3. Normative workload projection

In the context of the study, normative workload estimation is a syllabus-based time value derived from actual teaching-learning activities and

assessments in the courses taught by the participants. All disciplinary categories have relatively similar mean values at ten hours a week and exhibit relatively similar spreads based on their respective standard deviations. For this set of participants, the Life and Health Sciences cluster has the highest mean normative workload per course at 11.3 hours while the Arts and Humanities cluster has the lowest at 10.4 hours. This means that the Life and Health Sciences cluster requires 11.3 hours per meeting on the average, to satisfactorily deliver or demonstrate the expected learning outcome while the Arts and Humanities cluster only requires 10.4 hours. It is important to note that the indicated normative values can be largely affected by the nature and number of teaching-learning activities and assessments in the chosen three-week period of a typical three-credit course. Nevertheless, even the 10.4-hour requirement of the Arts and Humanities cluster remains substantially higher than what is deemed acceptable workload for a typical three-credit lecture course. For a typical semester consisting of approximately eight courses, a 10.4-hour per course would essentially result to workload of 83.2 hours a week. With reference to ECTS for instance, one ECTS credit is around 25 to 30 hours of workload that roughly translates to 40 to 60 hours of academic-related work per week in a typical semester (Renes 2017; Rivadeneyra 2022; Waage and Geirsdóttir 2025).

The workload allocation disparity becomes even clearer if the normative value for a typical three-credit course is extrapolated to a typical student load of eight courses or 24 credit units in one semester. The minimum and maximum values indicated in Table 3 for each discipline show a relatively large range of workload estimates. The minimum values represent the amount of time spent for the entire week if all courses will only consider the currently mandated 1:1 ratio of credit to weekly contact time. This means that if applied, a student taking a 24-credit load for a semester will only work for 24 hours within the entire week – a value that is way lower than other regional standards such as that of ECTS. On the other hand, the maximum values could reach as high as 128 hours for both Social Sciences and Engineering, Technology and Physical Sciences clusters. This value is also way too high for students such that it even exceeds the supposed upper limit of 60 hours a week with ECTS (Nosair and Hamdy 2017; Souto-Iglesias and Romero 2018). Overall, the wide range in the computed normative values strongly indicates that a non-standardised workload allocation could either lead to under- or over-allocation of teaching-learning activities and assessments with over-allocation to be occurring in greater likelihood as the data suggests.

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IV. Conclusion and implications

This study contributes to the scholarship on student workload by demonstrating how credit systems that are formally outcomes-based may nonetheless remain structurally incomplete when workload is operationalised almost exclusively through contact time and selective non-contact activities. In the Philippine higher education context, student workload functions less as an explicit curricular construct and more as an implicit by-product of instructional practice. This partial conception produces significant distortions in workload estimation.

The findings advance a theoretical distinction between *acknowledged workload* and *experienced workload*. While contact time constitutes the former and is clearly regulated within existing policy frameworks, preparatory and follow-up learning activities largely comprise the latter yet remain unstandardised and invisible in credit allocation. This misalignment helps explain the extreme variability observed in normative workload estimates across disciplines and courses. Importantly, the study shows that under- or over-allocation of workload is not an exception but a systemic risk arising from the absence of workload auditing mechanisms.

From a policy perspective, the persistence of a contact-time centric credit framework places Philippine higher education at a structural disadvantage in regional and international recognition systems that explicitly require workload-based transparency, such as ECTS-aligned and ASEAN recognition mechanisms. Without formally recognising non-contact learning time, Philippine degree programmes risk being misclassified as credit-insufficient, regardless of their actual academic rigour. This has direct implications for student mobility, cross-border programme recognition, and institutional participation in emerging ASEAN quality assurance architectures.

The study therefore argues for a recalibration of credit policy from a nominal contact-hour model to an explicit workload-based framework grounded in activity-level estimation. Such a shift does not require increasing academic demands but rather making existing demands visible, bounded, and pedagogically intentional. Embedding workload estimation into curriculum design can function as a regulatory mechanism that aligns intended learning outcomes, teaching–learning activities, and assessment practices, while simultaneously safeguarding student well-being.

At the theoretical level, the study positions student workload not merely as a measurement tool but as a mediating construct between policy, pedagogy, and learner experience. Recognising workload as a regulatory principle enables higher education systems to move beyond compliance-driven curriculum design toward evidence-informed coherence. For Philippine

higher education and similar systems, the institutionalisation of workload-based curriculum design represents a significant enabling condition for sustainable internationalisation, instructional accountability, and equitable student learning.

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Mapping the characteristics of the ideal college student: A bibliometric analysis (1971-2023)

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Abstract: This bibliometric analysis examined the attributes of the ideal College student from 1971 to 2023. It mapped the research landscape, identified influential entities, and revealed trends and gaps in the literature. The findings indicated three phases of research growth: stagnation, growth, and peak production, with a surge of interest in the past decade. The findings suggested that research on the ideal student literature were concentrated in countries with robust resources, research infrastructure, and educational opportunities, such as the US, UK, Italy, Germany, and Australia. However, there was a noticeable underrepresentation of perspectives from countries that historically faced systemic barriers, potentially limiting a holistic understanding of the ideal student. This study uncovered diverse views on the concept of the ideal student, highlighting concerns about the exclusion of specific student groups based on race, gender, social class, or age. It underscored the necessity of developing a comprehensive definition of the ideal student that embraced diversity and promoted equitable educational approaches.

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I. Introduction

Higher education stands as a crucial force in nurturing students' growth and endowing them with the essential knowledge and skills for success (Amirnudin and Saleh 2020). Increasingly, individuals from a wider range of backgrounds are entering higher education. Given the increasing diversity of students, a profound comprehension of the desired traits in university students proves pivotal for effective teaching, learning interactions, and the cultivation of strong student-teacher relationships (Wong and Chiu 2021; Safronova and Klyukina 2021). This understanding not only fosters personal development but also contributes to alleviating anxiety and enhancing learning outcomes. Consequently, there is an escalating emphasis on elucidating expectations in higher education (Wong and Chiu 2021).

The ideal student can be conceptualized as a dynamic space where diverse and desirable characteristics are identified across different groups of students (Wong et al. 2021). This evolving construct has emerged as a central theme in higher education, reflecting how student success is imagined, evaluated, and contested within increasingly diverse academic contexts. In this study, the term "college student" is used in a broad sense, referring to students within higher education more generally. This usage reflects the conventions in the literature, where "college" and "university" students are often discussed interchangeably in relation to the Ideal Student (IS) construct.

I.1. The concept and challenges of IS

First introduced to higher education literature by Katz and Arbib in 1971, the IS concept addresses a significant research gap – the necessity for a clear definition of the student's role. Despite its initial introduction, the IS concept remained largely absent from academic literature for several decades. Over the decades, this concept has evolved and regained scholarly attention. Scholars argue that it significantly influences higher education perspectives. Faculty members, policymakers, the media, and even students themselves are influenced by notions associated with the IS (Brooks, Gupta, Jayadeva et al. 2023). This influence extends beyond academic qualities and encompasses aspects like involvement in social and extracurricular activities. However, as

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Gregersen and Nielsen (2023) suggest, higher education institutions have a responsibility to challenge the existing norms and ideals about students. The aim of elucidating the qualities of the Ideal Student is to promote transparency and clarity regarding desirable attributes so that students, especially those from non-traditional backgrounds, are not disadvantaged by unfamiliarity or inability to navigate the intricacies of higher education (Holmegaard and Johannsen 2023; Esmaeeli et al. 2024).

Alturki and Stuckenschmidt (2021) delineate key traits of the IS, including academic proficiency, motivation, self-directed learning, critical thinking, communication skills, adaptability, time management, and a willingness to learn. Conversely, Koutsouris, Mountford-Zimdars, and Dingwall (2021) argue that prevailing IS discourses marginalize minority groups, perpetuating exclusion and failure among non-conforming students. Nieminen (2022) research supports this argument, highlighting the role of the research field in constructing the IS image and the corresponding "non-ideal student" label, particularly affecting students with disabilities. Chen (2022) examines the experiences of Chinese rural students who face a lack of clarity regarding expectations, leading to feelings of "unbelonging" and being positioned as "others" by peers and higher education staff. Similarly, Levin, Viggiano, López Damián et al. (2017) explore the challenges faced by community college students, particularly adult students and students with disabilities, within the context of IS discourse. These studies highlight the IS concept's influence on equity and opportunities for student success (Wong et al. 2023). The utilization of capital concepts has been prevalent in explaining differences in participation and success in higher education. Bourdieu's exploration of diverse "capitals" offers a fitting and enlightening theoretical foundation (Thomas 2020).

I.2. The Role of cultural and social capital in constructing the ideal student

Bourdieu's theory of cultural and social capital provides a useful framework for understanding how the Ideal Student (IS) construct is formed and sustained. Cultural capital—such as language fluency, academic dispositions, and critical thinking—is often rewarded by institutions, positioning students who possess these attributes as "ideal" (Baker 2019; Wong and Chiu 2021; Archer, Dawson, DeWitt et al. 2015). At the same time, social capital—including peer networks, mentorship, and relationships with faculty—plays a crucial role in shaping students' ability to navigate higher education successfully. Students from privileged backgrounds are

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more likely to accumulate both cultural and social capital, enabling them to embody IS characteristics more easily. In contrast, students from marginalized or underrepresented groups may lack access to these forms of capital, leaving them structurally disadvantaged in meeting IS expectations (Thomas 2020).

Thus, linking cultural and social capital directly to the IS concept demonstrates how educational ideals can reproduce social inequalities, while also pointing to the importance of redefining IS in more inclusive ways. This integration illustrates that the IS construct is socially situated rather than neutral, reinforcing the need to critically re-examine its role within higher education (Brooks et al. 2023).

This review encompasses both explicit definitions and implicit characteristics of the Ideal Student (IS), tracing the evolution of these attributes over time. However, navigating the extensive IS literature poses challenges for researchers and educators, given its vast and scattered nature. Considering the multifaceted nature of the IS concept, it is essential to adopt a systematic approach that not only explores this construct comprehensively but also maps its evolving definitions and patterns across the literature.

I.3. A Bibliometric analysis of the ideal student concept

As Tinzl (2016) points out, the vast scope of IS literature makes it nearly impossible for individual scholars to comprehensively review all relevant publications. In this context, bibliometric analysis provides a structured and quantitative method that complements traditional reviews. It enables the identification of patterns of knowledge accumulation and dissemination, highlighting the most influential contributions, authors, institutions, and countries (Brika, Algamdi, Chergui et al. 2021; Donthu, Kumar, Mukherjee et al. 2021). By systematically mapping dispersed and complex literature, bibliometric analysis also facilitates the examination of related terms such as "competent," "qualified," "excellent," and "desirable," allowing for a more comprehensive and representative picture of how the IS construct has been defined and has evolved across disciplines, regions, and time periods.

Drawing on Bourdieu's theory of cultural capital, this bibliometric review seeks to examine how implicit norms embedded in academic research may reflect and reinforce dominant forms of capital. Bourdieu's framework is used here because it offers a critical lens through which to interpret bibliometric patterns, helping to explain not only what the literature reveals about IS but also how these constructions may perpetuate

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systemic inequalities in higher education. Mapping the evolution of IS-related scholarship allows for a deeper understanding of how this concept may both mirror and reproduce structural inequities within higher education.

The formulation of the following research questions guides the outcomes of the bibliometric analysis:

RQ1. What is the overall volume, growth trajectory, and distribution of IS literature across countries?

RQ2. Which documents and authors have had the most significant influence on IS literature?

RQ3. Across the selected publications, what co-authorship, co-citation, and co-word patterns exist?

RQ4. What are the key clusters or themes in IS literature research?

RQ5. What are the potential avenues for future research on IS?

RQ6. What is the concept and what are the characteristics of IS in the selected relevant manuscripts?

II. Methods

This study employs a quantitative approach, specifically bibliometric methods, to analyze research related to the IS concept. It is important to note that this study focuses on documenting and synthesizing overarching trends in the academic literature on the IS concept. Bibliometric analysis allows for a comprehensive overview of the field, highlighting its evolution and key contributors, rather than providing an in-depth evaluation of single research outcomes (Hallinger and Chatpinyakoop 2019). Figure 1 depicts the stages of performance analysis and science mapping using bibliometric methods.

II.1. Data collection

The data collection process for this study relied on the Scopus citation index database. Scopus was selected as the main source due to its widespread use in bibliometric analysis and its comprehensive coverage of academic fields associated with IS (Hallinger and Chatpinyakoop 2019). Moreover, Scopus provides access to essential bibliographic data required for bibliometric software.

Stage1 Research design		• Aims and scope of the study • Keyword strings and data sources • Appropriate bibliometric methods
Stage2 Data collection	Research strategy	TITLE-ABS-KEY ((“Ideal Student” OR “Good Student” OR “Well Student” OR “Convenient Student” OR “Suitable Student” OR “Desirable Student” OR “Distinguished Student” OR “Qualified Student” OR “Competent Student” OR “Acceptable Student” OR “Appropriate Student” OR “Symbolic Student” OR “Excellent Student” OR “Great Student” OR “Desired Student”) AND (“Higher education” OR university OR college OR academy)) AND (INCLUDE (PUBYEAR, 1971-2023)) AND (LIMIT-TO (LANGUAGE, “English”)) AND (LIMIT-TO (DOCTYPE, “ar”))
	Time span	1971-2023
	Languages	English
	Doc types	Article
Stage3 Data analysis		• Bibliometric analysis – Performance analysis: Publication- related metrics(TP, NCA, SA, CA, NAY, PAY) , Citation-related metrics (TC, AC), Citation-and-publication- related metrics (CI, CC, NCP, PCP, CCP, h, g) – Network Analysis: Co-citation analysis, Co-word analysis, Co-authorship analysis • Content analysis
Stage4 Conclusion		• Analysis and report on the findings • Conclusions and future research directions

Figure 1

The stages of the bibliometric method

The search process followed the PRISMA guidelines for systematic reviews (Hallinger and Chatpinyakoop 2019). On February 20, 2023, a search query was executed within the Scopus database using the designated search terms outlined in Figure 1. The search encompassed publications from 1971 to 2023 in the English language. The initial search yielded 2,293 records. Ultimately, a final sample of 475 articles and reviews was selected

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for bibliometric analysis to ensure the focus remained on well-established, peer-reviewed research (Figure 2).

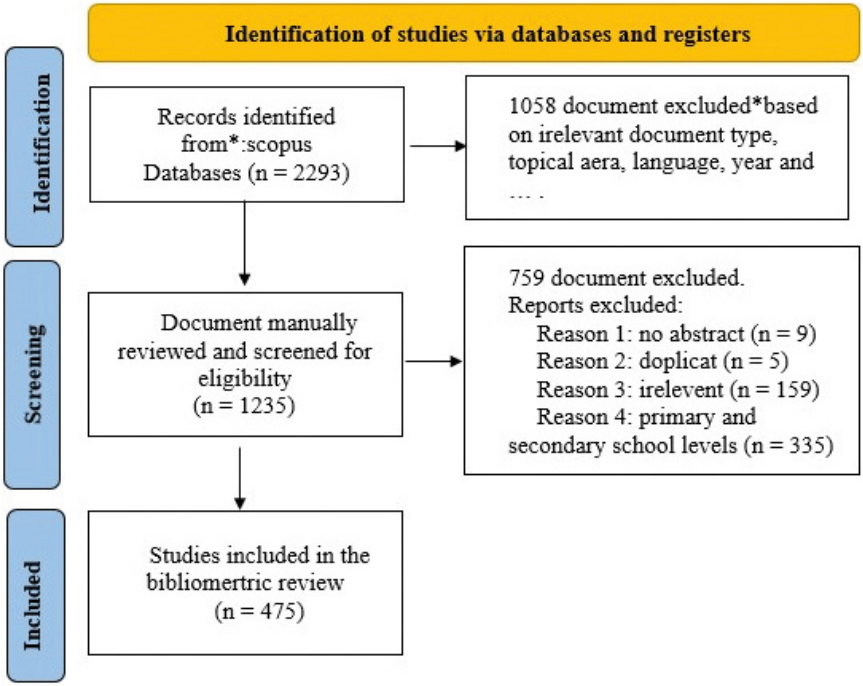


Figure 2

PRISMA diagram describing the collection of IS documents (Hallinger and Chatpinyakoop, 2019)

II.2. Data analysis

During the data extraction process, the downloaded file included metadata for each manuscript in IS literature, such as author names, affiliations, titles, sources, references, keywords, abstracts, and citation counts. We applied descriptive statistics to present an overview of the IS knowledge base. Citation analysis was employed to identify the most influential manuscripts and authors within IS literature by tracing citation networks, which helped pinpoint key works and leading researchers. Additionally, co-citation analysis was used to uncover the intellectual structure and clusters of related manuscripts in the field, thereby revealing central themes in the discourse.

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For these analyses, we used a suite of analytical tools, including R, Biblioshiny, VOSviewer, Mendeley, MaxQDA, and MS Excel. Collectively, these tools facilitated a comprehensive and in-depth mapping of the IS literature.

III. Results

III.1. RQ1. What is the overall volume, growth trajectory, and distribution of IS literature published across countries?

III.1.1. General output and authorship

Table 1 presents the results of a comprehensive analysis of 475 research studies drawn from 347 distinct journals across various fields and disciplines. This dataset includes 1,464 authors, with 111 single-authored documents and 1,353 multi-authored documents.

Table 1

Descriptive statistics of IS

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	1971:2023
Sources (Journals)	347
Documents	475
Annual Growth Rate %	2.7
Document Average Age	8.93
Average citations per doc	24.13
References	19762
Keywords Plus (ID)	1202
Authors' Keywords (DE)	1664
Authors	1464
Authors of single-authored docs	111
Single-authored docs	111
Co-Authors per Doc	3.14
International co-authorships %	11.58
Article	475

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On average, each document in the dataset had 3.14 co-authors. Collectively, the documents contained 1,202 indexed keywords and 1,664 author keywords. The average citation per document was 24.13, underscoring the overall scholarly impact of the IS literature. International collaboration was also notable, with an average of 11.58 international co-authorships per document. Finally, the publication trends indicate a significant increase in IS research output in recent years (Figure 3).

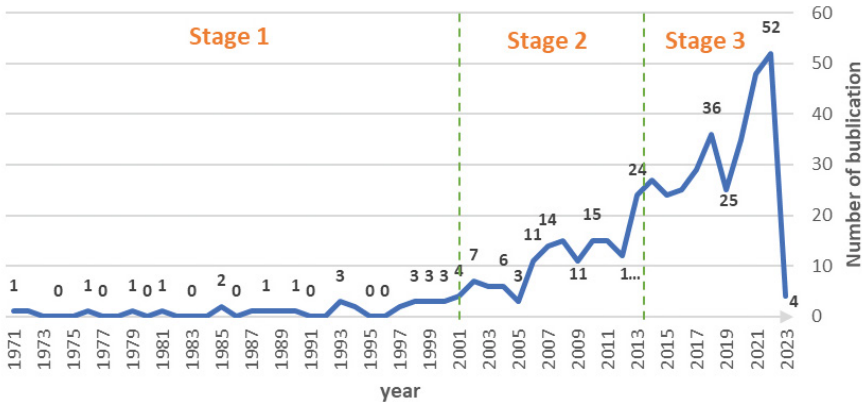


Figure 3

Annual scientific production

III.1.2. Publication trends over time

An examination of publication trends spanning 52 years provides valuable insights into the evolving interest in the IS concept. Remarkably, the majority of publications (69.32%) have appeared within the last decade (2013-2023). This temporal categorization allows for the identification of three distinctive phases in scholarly activity:

Stagnant Phase (1971-2001): The initial three decades witnessed a limited volume of research, with only 24 manuscripts published, reflecting a relative dearth of scholarly exploration.

Phase of Growth (2001-2012): In this period, there was an upswing in research output, with 121 manuscripts published. This phase marked a significant expansion of scholarly interest in the IS concept.

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Peak Exploration (2013-2023): The most remarkable phase, characterized by a surge in research, saw the publication of 330 manuscripts. This phase aligns with the present decade, where IS gained considerable prominence, drawing substantial scholarly attention. The surge in research during this period signifies a substantial transformation in the academic landscape. IS has become a central and globally recognized academic topic.

III.1.3. Geographic distribution of research

Figure 4 illustrates the global distribution of IS publications among countries and regions. Countries marked in darker shades of blue on the map are the more productive ones. Notably, North America, South America, Europe, Australia, and South Asia have made significant contributions to IS.

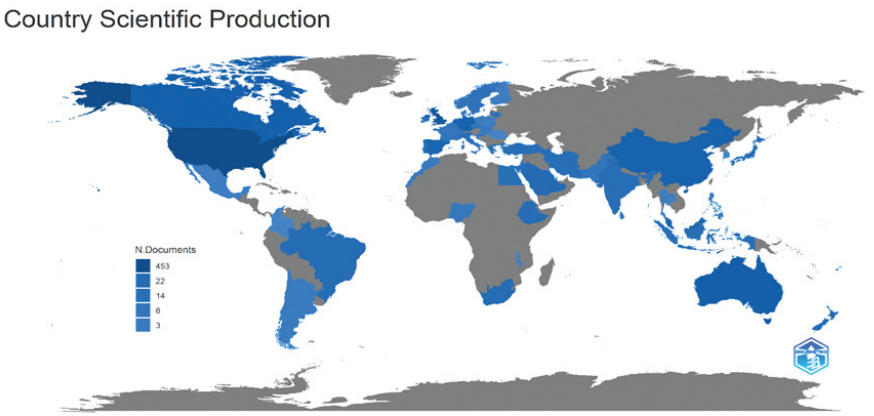


Figure 4

Global geographic distribution of publications

III.1.4. Most productive countries

Table 2 presents the ten most productive countries, highlighting their total publications (TP), total citations (TC), and average citations per manuscript. The United States leads with 453 publications, followed by the United Kingdom and Australia in second and third place, respectively, in terms of TP. In terms of citations, the US (3549), the UK (659), and Italy (465) rank highest.

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Although the US records the largest number of publications and citations, Italy (155.00), Georgia (64.80), and France (43.80) show notably higher average citations per manuscript among the top ten countries/territories. Based on research productivity, the US, the UK, and Australia stand out as the largest contributors. Strong performances are also observed in Canada, China, Germany, and Malaysia.

When considering research impact as measured by average citations, Italy emerges as the most influential, followed by Georgia (64.80), France (43.80), the US (32.60), Belgium (23.00), and the Netherlands (21.70). These findings point to the dominance of Western, high-income countries alongside the relative underrepresentation of other regions, which reflects systemic disparities in research capacity and visibility.

Table 2

Top 10 countries/regions most cited

Country	TP	TC
USA	453	3549
United Kingdom	155	659
Italy	12	465
Canada	70	343
Australia	80	331
Georgia	-	324
China	62	230
Netherlands	45	195
France	6	175
Spain	45	118

TP = Total Publication TC = Total Citations.

III.2. RQ2. What documents and authors have had the most significant influence on IS literature?

III.2.1. Most influential manuscripts in IS literature

Table 3 presents the top ten highly cited manuscripts (each with 89 or more citations), identified from a citation analysis of 268 selected manuscripts with five or more citations. Among these, eight had multiple authors, with a median of three authors per paper.

The three most cited works are: Self-explanations: How students study and use examples in learning to solve problems by Chi et al. (1989), cited 1,761 times. Knowledge tracing: Modeling the acquisition of procedural knowledge by Corbett and Anderson (1994), cited 1,149 times. What Makes a Good Student? How Emotions, Self-Regulated Learning, and Motivation Contribute to Academic Achievement by Mega, Ronconi, and De Beni (2014), cited 459 times.

Table 3

Top 10 References by Citation

Year	Title	Author	TC	TCY
1989	Self-explanations: How students study and use examples in learning to solve problems	Chi et al.	1761	50.31
1994	Knowledge tracing: Modeling the acquisition of procedural knowledge	Corbett and Anderson	1149	38.30
2014	What Makes a Good Student? How Emotions, Self-Regulated Learning, and Motivation Contribute to Academic Achievement	Mega et al.	459	45.90
2010	Linguistic Features of Writing Quality	McNamara et al.	296	21.14
2005	Tracking student behaviour, persistence, and Achievement in online courses	Morris et al.	258	13.58
2015	Modelling Course-Based Undergraduate Research Experiences: An Agenda for Future Research and Evaluation	Corwin et al.	201	22.33
2016	Early Engagement in Course-Based Research Increases Graduation Rates and Completion of Science, Engineering, and Mathematics Degrees	Rodenbusch et al.	196	24.50
2006	Health Information Literacy and Competencies of Information Age Students: Results from the Interactive Online Research Readiness Self-Assessment	Ivanitskaya et al.	173	9.61
2017	Student perceptions of themselves as 'consumers' of higher education	Tomlinson	169	24.14
2013	Digital literacy and informal learning environments: an introduction	Meyers et al.	166	15.09

TCY = Total citations per year.

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The exceptionally high citation counts of Chi et al. (1989) and Corbett and Anderson (1994) can be explained by two factors. First, both were published during the stagnant phase (1971–2001), when only 24 IS-related manuscripts existed, which amplified the influence of individual contributions. Second, their earlier publication dates provided a longer timespan to accumulate citations compared to more recent works.

III.2.2. *Most influential authors in IS literature*

Table 4 presents an overview of the most prolific authors and their citation impact within IS literature. In higher education, Chiu and Wong emerge as the most prolific contributors, each with six publications. Their works from 2020 alone received 50 citations, with four publications indexed in both the h-index and g-index.

Dolan is another highly influential figure, making a substantial impact with three publications in 2015 that collectively amassed 418 citations. All three of Dolan's works are included in both the h-index and g-index.

Atta, though less prolific, has contributed two publications (2018) that together received 10 citations, with both works also recognized in the h-index and g-index (see Table 4).

Table 4

Top 10 most productive authors

	h_index	g_index	TC	NP
Chiu	4	6	50	6
Wong	4	6	50	6
Dolan	3	3	418	3
Atta	2	2	10	2
Charlebois	2	2	5	2
De Jong	2	2	111	2
Finnegan	2	2	296	2
Graham	2	2	254	2
Hermes-Lima	2	2	35	2
Kalauskas	2	2	17	2

NP = Number of publication

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In terms of overall citation influence, Reimann takes the lead, with 1,789 citations attributed to works co-authored with Bassok, Chi, Glaser, Lewis, and Anderson. Corbett also stands out, with two highly cited works (1,761 and 1,149 citations, respectively).

This citation analysis highlights both foundational contributions (e.g., Chi et al. 1989; Corbett and Anderson 1994) and more recent influential works (e.g., Mega et al. 2014; Wong and Chiu 2020), while also underscoring the central role of prolific scholars such as Wong, Chiu, and Reimann in shaping the IS discourse.

III.3. RQ3 and RQ4. Across the selected publications, which co-authorship, co-citation, and co-word patterns exist? What are the key clusters or themes of IS literature research?

III.3.1. Co-authorship patterns

Figure 5 visualizes international co-authorship patterns in IS research, highlighting both the relationships and the intensity of collaboration among countries. In this network, the size of each node represents the number of publications, with larger nodes indicating higher research output (Tao et al. 2021).

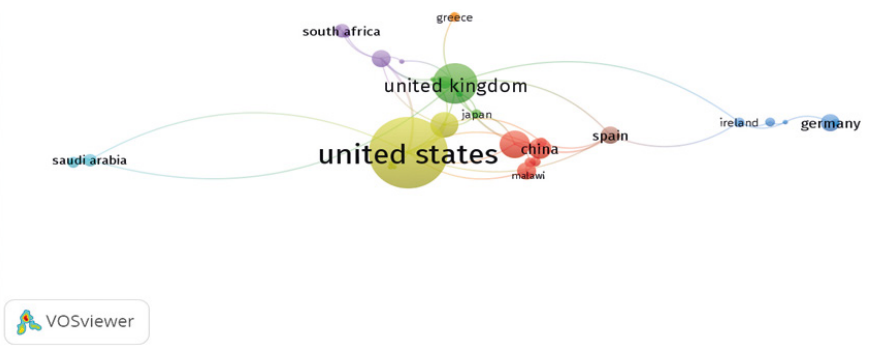


Figure 5

Co-authorship collaboration of the top countries

The analysis shows that the USA and the UK are the most active countries, forming a strong collaborative cluster particularly with Spain and China. A secondary circle of collaboration is observed among countries such as Japan, Hong Kong, the Netherlands, Malaysia, Ireland, Saudi Arabia,

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Germany, South Africa, and Greece, reflecting their growing engagement in international research networks.

The co-authorship landscape is concentrated around a few central hubs (e.g., USA, UK, Canada, China, and Germany) that dominate collaborative activity. In contrast, other countries—including Greece, Japan, Saudi Arabia, Italy, and Denmark—display more limited participation. These patterns suggest that, although IS research has become increasingly global, collaboration remains uneven, with a relatively small number of countries playing a disproportionately influential role.

III.3.2. Co-citation patterns

Frequently co-cited authors tend to align in their perspectives or pursue similar lines of inquiry within a particular field of study (Hallinger and Chatpinyakoop, 2019). Co-citations represent the frequency with which two documents are jointly cited by a third source, often indicating shared conceptual or thematic affinity.

In this context, the co-citation analysis discerns specific models within the IS literature and provides insight into the thematic foci of these models. The resulting authors' co-citation map, as depicted in Figure 6, exhibits three discernible clusters, each denoted by a distinct color. These clusters encapsulate the various conceptual and thematic dimensions of the IS concept and the characteristics associated with it within the relevant literature.

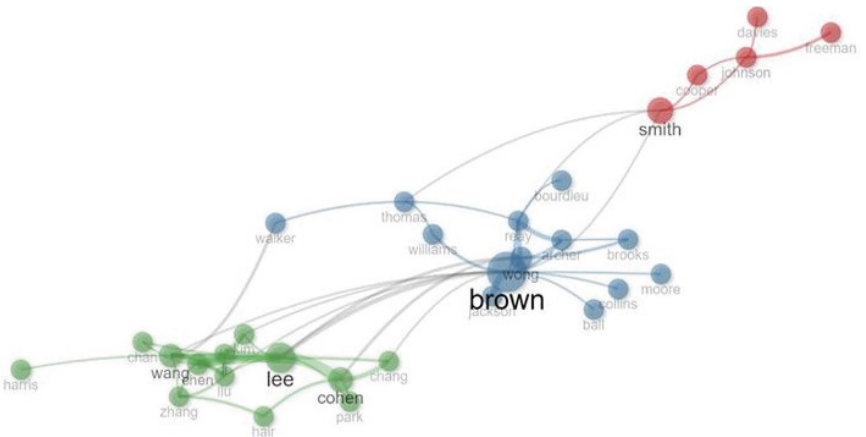


Figure 6

Authors' co-citation map

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By examining the co-citation network and the clustering of authors, it becomes possible to identify and explore the central concepts and characteristics of the IS concept as perceived and elaborated upon by the most relevant manuscripts in the field. These insights facilitate a more nuanced understanding of the evolving IS discourse.

Cluster 1 (Green): Student experiences

As illustrated in Figure 6, Cluster 1—led by Lee and supported by prominent authors such as Chen, Zhang, Liu, Wang, Bowman, and Park—engages with a broad range of topics related to higher education and student experiences. This cluster explores subjects such as the evolving perceptions of IS (Chen 2023), the development of academic self-concept in competitive educational environments, self-assessment processes, curriculum enhancement in engineering education, diversity interactions, online course dynamics, technology-enhanced learning, and language proficiency improvement.

Common threads across these studies show the pivotal role of technology in higher education, the influence of interpersonal relationships on student outcomes, the significance of pedagogical alignment and the continuing need for faculty support. This cluster emphasizes the importance of understanding student motivations and early experiences in shaping career choices and teaching effectiveness. It also highlights variations in participation and outcomes within technology-enhanced learning environments.

Cluster 1 is interconnected with the blue cluster, which concerns the definition and characteristics of IS. This enhances the overall understanding of student experiences, learning outcomes, and both the challenges and opportunities within diverse educational settings.

Cluster 2 (Red): Medical students and education

Cluster 2, under Smith's leadership and featuring contributions from authors such as Johnson, Freeman, Cooper, Davies, and Park, centers on innovative approaches to medical education and clinical training for medical students (Figure 6). This cluster explores themes such as enhancing the quality of learning and student participation in medical education, integrating technology into healthcare education, implementing effective assessment strategies, and emphasizing evidence-based practices and experiential learning.

While Cluster 2 shares an affinity with the blue cluster, which focuses on defining IS characteristics, it extends the concept by emphasizing that

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medical students, in addition to embodying general IS traits, must also acquire specific healthcare skills and clinical training. Consequently, the ideal medical student encompasses both academic excellence and healthcare expertise.

Cluster 3 (Blue): Defining and characteristics of IS

As depicted in Figure 6, Cluster 3 concentrates on the definition and core characteristics of the Ideal Student (IS). Led by Brown and supported by a diverse group of contributors—including Wong, Brooks, Bourdieu, Walker, Moore, Collins, Archer, Reay and others—this cluster brings together two major strands of inquiry. The first adopts a positive perspective, outlining the desirable attributes associated with the Ideal Student, while the second takes a critical stance, interrogating the social and educational implications of constructing such an ideal. The co-citation patterns within the blue cluster accentuate the significance of researchers such as Bourdieu, Brooks, Wong, Reay, and Archer, who have made substantial contributions to the study of IS characteristics. Notably, Wong—identified as one of the most prolific authors in this field—is also located within this cluster (see Table 4). This cluster plays a fundamental role in shaping our understanding of the definition and characteristics of IS, serving as a crucial reference point in the discourse on the Ideal Student.

III.3.3. Co-word patterns

III.3.3.1. *Keyword clusters*

To analyze the co-citation and co-occurrence patterns of keywords in IS literature, the study employed VOSviewer software, enabling a comprehensive analysis. The findings are visualized in a knowledge-domain map that categorizes knowledge into four distinct clusters, each offering insights into different facets of IS research (see Figure 7A).

Cluster 1 (Purple): Higher education focus

This cluster emphasizes higher education and includes keywords such as academic performance (Wong and Chiu 2020), ideal student (Davies 2016; Gregersen and Nielsen 2023; Katz and Arbib 1971; Koutsouris et al. 2021; Obrien, Hirsh, Krupat et al. 2016; Schmitt and Bradburn 2018; Siivonen and

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Filander 2020; Wong et al. 2022), identity (Koutsouris et al. 2021), student experience (Wong and Chiu 2020), student satisfaction (Thomas 2020), and personality (Schmitt and Bradburn 2018; Wong and Chiu 2020). This cluster delves into the multifaceted aspects and characteristics of IS.

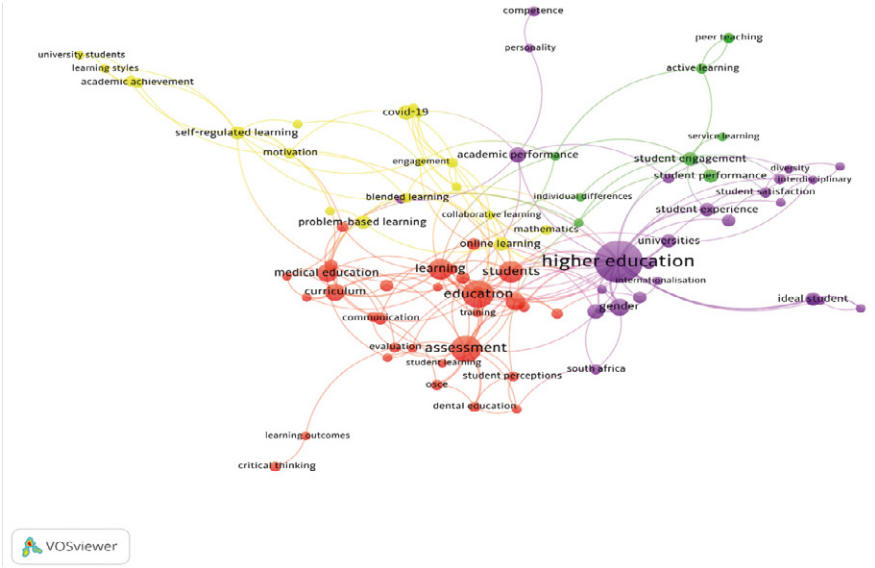


Figure 7A

Keyword co-occurrence network: Network visualization map based on article weights

Cluster 2 (Red): Education and curriculum

This cluster highlights keywords such as assessment, education, learning, curriculum, training, medical education, dental education, collaboration, and critical thinking. These terms reflect the educational and collaborative dimensions of IS literature, with a particular focus on professional and medical education.

Cluster 3 (Yellow): Learning styles

This cluster centers on keywords such as self-regulated learning, problem-based learning, online learning, e-learning, collaborative learning, academic achievement, and COVID-19. It explores the relationship between

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learning styles and academic success, especially in the context of the COVID-19 pandemic.

Cluster 4 (Green): Teaching and engagement

This cluster focuses on teaching and includes keywords such as classroom management, individual differences, student performance, student engagement, technology, and active learning. It primarily addresses classroom dynamics and the factors influencing teaching effectiveness and student learning experiences.

Together, these keyword clusters contribute to a more comprehensive understanding of the multifaceted IS literature, illuminating its various dimensions and the interconnections between them (see Figure 7A).

III.3.3.2. *Temporal evolution of keywords*

Figure 7B presents a temporal co-word map that illustrates the frequency and recency of topics within the IS literature. The color-coded visualization highlights shifts in research trends, offering a dynamic perspective on how IS research has evolved over time.

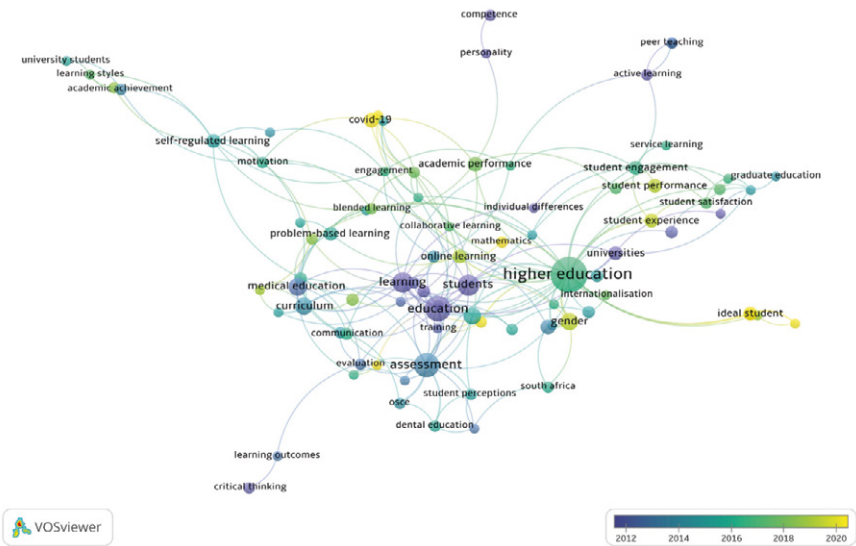


Figure 7B

Keyword co-occurrence network: Temporal overlay on a co-word

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The map shows a transition from deep blue hues to vibrant yellows between 2010 and 2020, reflecting substantial changes in the thematic landscape of IS studies. Dark blue areas indicate the early, foundational focus on university, students, curriculum, teaching, and learning, which formed the core of initial IS research.

Around 2015, the map shifts toward the green spectrum, signaling the growing prominence of themes such as motivation, critical thinking, identity, problem-solving, attitude, self-regulation, and performance. These emerging themes reflect increasing attention to the nuanced characteristics and competencies associated with the Ideal Student.

This temporal analysis vividly demonstrates how IS research has evolved over time, underlining shifting priorities and the emergence of new domains of inquiry, while reinforcing the continued expansion of IS discourse in response to changing educational contexts.

III.3.4. The key clusters or themes of IS literature research

Building on the results of the co-citation and co-word analyses, seven major thematic clusters can be identified in IS research. From the co-citation analysis, three clusters emerged: (1) Student Experiences, focusing on identity, self-concept, and technology-enhanced learning; (2) Medical Students and Education, highlighting clinical training and professional competencies; and (3) Defining IS, balancing positive attributes with critical perspectives rooted in cultural capital and equity. From the co-word analysis, four additional clusters were revealed: (4) Higher Education, emphasizing performance, satisfaction, and personality; (5) Education and Curriculum, focusing on assessment, training, and collaboration; (6) Learning Styles, covering self-regulation, online learning, and responses to COVID-19; and (7) Teaching and Engagement, addressing classroom management, active learning, and technology use.

Together, these clusters illustrate the breadth and evolution of IS research, ranging from definitional debates and student experiences to specialized contexts such as medical education and pandemic-related learning. They highlight both the holistic aspirations of the IS construct and the structural challenges that shape its application across diverse educational settings.

III.4. RQ5. What are the potential avenues for future research on IS?

The analysis of IS literature reveals several promising directions for future inquiry. First, the geographic distribution of publications (Table 2,

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Figure 4) demonstrates a strong concentration of research in high-income Western countries, with limited contributions from underrepresented regions. This imbalance highlights the need for comparative and cross-cultural studies that capture diverse student experiences worldwide.

Second, the keyword evolution (Figure 7B) illustrates a thematic shift from early emphases on curriculum, teaching and learning toward more recent concerns with motivation, self-regulation and identity. Building on this development, future studies could explore how these attributes are shaped by the structural conditions of different higher education contexts. Such conditions include unequal access to institutional resources, variations in academic support systems, socioeconomic disparities and differences in language proficiency, all of which can influence students' opportunities to develop or demonstrate the characteristics associated with the Ideal Student. Examining how these contextual inequalities interact with motivation, identity and self-regulation would offer a more comprehensive understanding of how IS attributes are formed, constrained or enabled across diverse learning environments.

Third, the co-authorship and co-citation analyses (Figures 5 and 6) indicate that a relatively small number of prolific authors and institutions dominate IS discourse. Expanding collaboration networks to include underrepresented scholars and institutions would diversify perspectives and broaden both theoretical and practical contributions to the field.

Finally, the clustering of themes (Figures 7A and 6) suggests that, within the set of publications retrieved through our keyword strategy, explicitly critical perspectives on equity, inclusivity and social justice appear less visible. This pattern should be interpreted with caution, as these concepts were not included among the original search terms and relevant critical work may therefore have been omitted. Future studies would benefit from integrating such perspectives more deliberately to ensure that emerging conceptualisations of the Ideal Student reflect the experiences and challenges of increasingly diverse student populations.

III.5. RQ6. What is the concept and characteristics of IS in the selected relevant manuscripts?

III.5.1. Thematic classification and content analysis

The manuscripts in purple cluster, particularly the most significant ones, underwent comprehensive content analysis[5] to distill key insights and

[5] The qualitative data analysis software MaxQDA 2020 was utilized for the analysis and categorization of these keywords

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objectives related to the definition and characteristics of IS (see Table 5). A clear trend emerged, showing a marked increase in research on this topic between 2018 and the present. Of the 24 manuscripts included in this study, 17 were published during this period. Among them, 20 employed qualitative research methods, while 4 used quantitative approaches.

This analysis delves deeply into IS exploration, shedding light on the evolving discourse surrounding its definition and characteristics. The predominance of qualitative research within this cluster underscores the nuanced and multifaceted nature of the IS concept, reflecting the need for in-depth qualitative examination to fully capture its complexity.

Table 5

Thematic classification of the most significant manuscripts

Central Theme	Theme	Subtheme
Ideal Student	Personality characteristics	Ambitious
		Effort and participation
		Organization and order
		Reflection and innovation
		Thinking
		Progressing
		Being critical
		Reflective
		Engagement and commitment
		Self-awareness
		Positive view
		Self-esteem
		Self-efficacy
		Self-presentation
		Self-regulating
		Caregiver
		Motivated
		Personality attributes

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Central Theme	Theme	Subtheme
		Personal interaction
		Worthy
		Hardworker
		Passionate
	Leadership characteristics	leadership activities
		Strategic approach
		Impression management
		Performer
		Information receiver
		Planner
	Academic characteristics	lifelong learning
		Scientific and research literacy
		Being a student
		Reflective learner
		Active contributor
		Academic skills
		Preparation
		Learner
		practitioner
		learning role model
		Teaching facilitator
		Teacher's mentor
		Curriculum evaluator
		Student involvement
		Learning Skill
	Social characteristics	Employability
		Professional development
		Citizenship

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Central Theme	Theme	Subtheme
		Global participation
		Engaging in social
		Co-creator
		Support others
		Employment skills
		Team player
		Communicatively
		Social involvement
		Conformity to institutional requirements

III.5.1.1. *Positive characteristics of IS*

Manuscripts advocating the positive concept of the IS portray a well-rounded and multifaceted individual (Chiu, Wong and Charalambous 2021; Karakitsiou, Markou, Kyriakou et al. 2012; Kelly, Fair, and Evans 2017; Koutsouris et al. 2021b; Schmitt and Bradburn 2018; Wong et al. 2022; Wong and Chiu 2021). This IS is not merely academically successful but also embodies a wide array of characteristics and skills that extend beyond traditional learning (Gregersen and Nielsen 2023).

Table 6

The most significant articles within cluster3

Authors	Year	Authors	Year
Wong and Chiu	2021	Nieminen	2022
Dzimińska	2022	Koutsouris et al.	2021
Wong et al.	2022	Siivonen and Filander	2020
Wong Betal	2021	Handler et al.	2019
Chiu et al	2021	Madden	2018
Wong and Chiu	2020	Levin et al.	2017
Schmitt and Bradburn	2018	Gregersen and Nielsen	2022
Kelly et al.	2017	Obrien et al.	2016

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Authors	Year	Authors	Year
Karakitsiou et al.	2012	Tomlinson	2017
Brooks et al.	2023	Naidoo and Williams	2015
Wong et al.	2022	Walker et al.	2006
Pawley	2019	Pearce, Down and Moore	2008

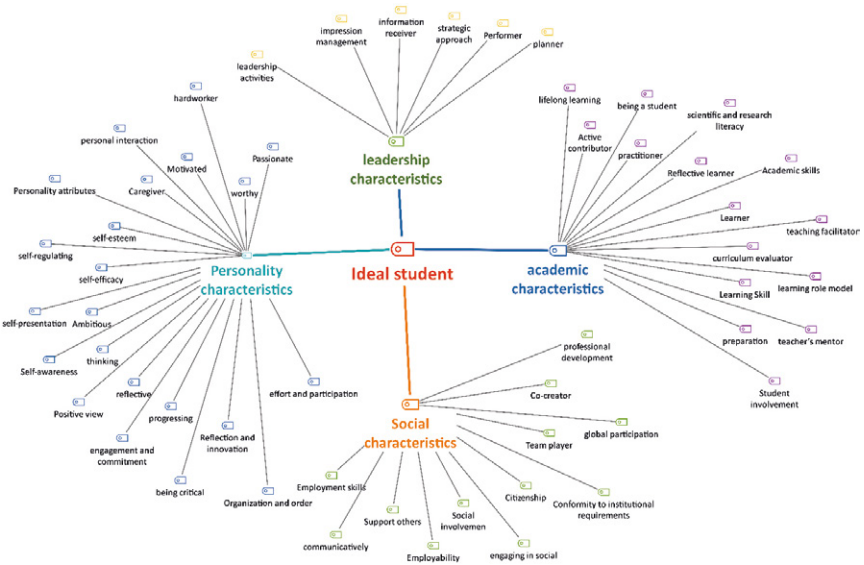


Figure 8

Characteristics of IS based on content analysis

In the content analysis of the 24 referenced manuscripts (See Table 6), 57 initial codes were identified. To provide a comprehensive overview, these codes were grouped into four domains—personality, social, leadership, and academic traits—representing the core dimensions of the Ideal Student (Table 5, Figure 8). Within these domains, personality traits such as resilience, adaptability, and self-motivation appeared most frequently, highlighting the importance of individual persistence and growth. Social traits, including collaboration, communication, and intercultural competence, were also strongly emphasized, reflecting the need for students to engage effectively in diverse educational environments. Leadership traits, such as initiative,

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responsibility, and the ability to inspire peers, appeared less frequently but remained significant in shaping the IS construct. Finally, academic traits such as intellectual curiosity, critical thinking, and achievement orientation were consistently identified as foundational, though often discussed alongside non-academic competencies.

Together, these themes illustrate the multidimensional nature of the IS and point to the growing expectation that higher education should cultivate students who are not only academically capable but also socially engaged, adaptable and prepared for leadership roles.

III.5.1.2. *Critical perspective on IS*

Within this body of literature, the traditional Ideal Student is typically portrayed as academically successful, self-disciplined, reliable, motivated, and able to navigate institutional expectations with ease. This formulation often aligns with dominant cultural and behavioural norms in higher education and assumes consistent educational trajectories and familiarity with academic conventions.

A number of manuscripts adopt a critical stance toward this formulation, suggesting that predefined models of the Ideal Student may produce unintended consequences (Brooks et al. 2023; Handler et al. 2019; Gregersen and Nielsen 2023; Levin et al. 2017; Madden 2018; Nieminen 2022; Pawley 2019; Pearce, Down and Moore 2008; Siivonen and Filander 2020). These studies argue that such expectations can be more difficult for some students to embody, depending on their social positions, educational histories or access to institutional resources. From this perspective, defining the Ideal Student through a narrow or fixed set of traits may overlook the ways in which students from different backgrounds encounter higher education. Critical studies show that such expectations can be more difficult to embody for students whose identities or trajectories do not align with dominant academic norms—for example, those positioned along lines of race, gender or social class (Pawley 2019), students from non-traditional backgrounds (Siivonen and Filander 2020), those with diverse sexual orientations (Handler et al. 2019) or students with disabilities (Nieminen 2022).

The concern raised in this body of work centres on how conventional assumptions about the Ideal Student may privilege particular forms of academic performance and participation, potentially placing some students at a structural disadvantage. Taken together, these critical contributions complicate the optimistic narrative that associates the Ideal Student with personal growth and positive values. They broaden the discussion by drawing

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attention to the diverse ways in which students engage with higher education and by questioning whether traditional assumptions risk perpetuating educational and social inequalities.

IV. Discussion

The comprehensive analysis of 475 research studies focusing on the IS concept offers profound insights into the continually evolving IS research landscape. This discussion explores the key discoveries and their implications:

Temporal evolution of IS research: The analysis spans five decades, from 1971 to 2023, revealing IS literature's dynamic and intricate nature. Notably, the bulk of publications, encompassing 330 manuscripts, have been concentrated within the last decade (2013-2023), signifying a substantial surge in scholarly activity. This surge in research signifies the existence of three distinct phases: the Stagnant Phase (1971-2001), the Phase of Growth (2001-2012), and the Peak Exploration (2013-2023), underscoring the emergence of IS as a central topic of interest for scholars across the globe.

Global interest in IS: The geographic distribution of IS research (Figure 4) shows strong contributions from North America, Europe, Australia, and South Asia, with the United States leading (453 publications), followed by the UK and Australia. However, these patterns are not only about volume. The international co-authorship map (Figure 5) demonstrates that collaboration is also concentrated within a few dominant hubs—particularly the USA and the UK—often working closely with countries like Spain and China. A second circle of collaboration includes regions such as Japan, Hong Kong, the Netherlands, and Malaysia, while large areas of the world—especially much of Africa, the Middle East, Latin America, and parts of Southeast Asia—remain only loosely connected to these networks.

This uneven distribution reflects systemic barriers that shape global knowledge production. Regions with limited research funding, constrained access to high-impact journals, higher publication costs, fewer doctoral training opportunities, and weaker integration into English-medium academic networks often face challenges in disseminating their work internationally (Abouzeid et al. 2022; Scheiner et al. 2024). These structural conditions reduce research visibility and citation impact, even when high-quality scholarship exists within these contexts.

As a result, perspectives from these contexts risk being marginalized, leaving global debates on the Ideal Student concept shaped primarily by high-income countries. Addressing these disparities is therefore essential to

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ensure a more inclusive understanding of student roles and expectations in higher education worldwide (Tomlinson 2008).

Highly cited manuscripts: The top 10 highly cited manuscripts within the IS research field provide valuable insights into the most influential works in this domain. These manuscripts encompass various facets of education, including self-explanatory learning (Chi et al. 1989), knowledge tracing (Corbett and Anderson 1994), and emotional and motivational factors contributing to academic achievement (Mega et al. 2014). Recent years, particularly from 2018 onwards, have witnessed a shift towards exploring student performance, identity, and experiences, thus enriching the discourse surrounding the IS concept.

Prolific authors: The top ten most productive authors in IS literature have made significant contributions to this field. Authors like Wong and Chiu are particularly prolific, each boasting six publications and 50 citations. The number of publications, h-index, and g-index of these authors indicate their considerable influence and impact within the field. Their work, prominently featured in the blue cluster of co-citation analysis (Figure 6), has substantially shaped the discussion surrounding the characteristics and expectations associated with the IS concept.

Keyword analysis: An analysis of keywords co-occurrence has generated a knowledge domain map comprising four distinct clusters, each representing specific dimensions of the IS concept: (1) higher education and student performance, (2) education and curriculum with emphasis on assessment and collaboration, (3) learning styles and online education, and (4) teaching and classroom engagement. These clusters form interconnected hubs of knowledge, where authors and keywords collaboratively shape the thematic landscape. Notably, authors such as Brown, Wong, Chiu, Brooks, and Archer, prominently featured within the blue co-citation cluster, emerge as pivotal figures significantly influencing thematic trends and keyword patterns in the IS research field. Their contributions converge on recurring themes such as student identity, motivation, academic performance, cultural capital, and inclusivity, which mirror the core attributes and critical debates surrounding the Ideal Student construct.

Dynamic research focus and emerging configurations of IS: The thematic evolution of IS research, illustrated in Figure 7B, shows a clear transition across time. Earlier work centred on foundational elements of higher education—university structures, curriculum, teaching and learning—reflecting a primarily cognitive and achievement-oriented view of the Ideal Student. From around 2015 onward, however, a broader set of concerns gained prominence, including identity, motivation, self-regulation, problem-

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solving, and performance. This shift indicates that IS scholarship is responsive to changing educational landscapes and expanding student needs.

These temporal changes are tied closely to a reconceptualization of the Ideal Student itself. Influential authors clustered in the blue co-citation network (such as Wong, Chiu, Brooks, Archer and Brown) have played a key role in extending IS beyond academic capability. Their work links the Ideal Student to constructs such as identity formation, inclusivity, student satisfaction, well-being and the development of personal and interpersonal competencies. The rise of keywords such as academic performance, IS identity, student satisfaction, personality, critical thinking and intercultural competence suggests that contemporary configurations of the Ideal Student combine cognitive benchmarks with social, emotional and behavioural attributes.

Together, these developments show that the Ideal Student is no longer conceived solely as a high-achieving academic performer but increasingly as an adaptable, reflective and socially engaged learner—mirroring broader shifts toward diversity, equity and inclusion within higher education.

Positive and critical perspectives: The academic research landscape of IS is structured around two prevailing themes that also appear in the blue co-citation cluster (Figure 6): a positive perspective and a critical perspective.

The positive perspective emphasizes defining IS and clarifying its roles and attributes. Based on our content analysis of the selected papers, four domains were identified—personality, social, leadership, and academic traits (Table 5)—highlighting the aspiration to nurture well-rounded individuals beyond narrow academic achievement (Gregersen and Nielsen 2023). By contrast, the critical perspective—grounded in Bourdieu's theory of cultural and social capital—interrogates how IS norms can inadvertently reproduce structural inequalities. Educational institutions tend to reward forms of cultural capital (e.g., academic dispositions, language proficiency) that align with dominant middle-class norms, while social capital (e.g., networks and relationships) facilitates navigation of academic settings (Baker 2019; Archer et al. 2015). Students from underrepresented racial, gender, socioeconomic, or non-traditional backgrounds may have less access to these resources, placing them at a structural disadvantage in meeting IS expectations.

This reading aligns with the co-citation map (Figure 6), where authors such as Bourdieu, Brooks, Wong, Archer, and Reay anchor the critical strand, and with the temporal co-word map (Figure 7B), which shows a shift toward identity, self-regulation, and motivation—terms closely tied to capital-based (in)equalities. Empirically, this critical strand foregrounds the

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risks of marginalization for students who do not conform to predefined IS standards—across race, gender, social class, disability, sexual orientation, and non-traditional educational backgrounds (e.g., Handler et al. 2019; Kawas and Wong 2019; Pawley 2019; Madden 2018; Pearce et al. 2008; Nieminen 2022; Siivonen and Filander 2020).

Our findings therefore show the coexistence of an aspirational view (personal growth, broad skill sets, positive values) and a critical view (capital-based exclusions). This duality mirrors our results: Table 5 consolidates the four domains, while Figures 7A–7B and 7 reveal how the field's intellectual structure and keyword evolution have increasingly problematized the neutrality of IS. These domains express the holistic aspirations of higher education—resilience, collaboration, responsibility and intellectual capability—yet, when defined too narrowly or aligned with dominant cultural codes, they risk privileging students who hold accumulated cultural and social capital, such as access to high-quality schooling or dense networks that support leadership and social performance.

Interpreting the findings through a Bourdieusian perspective offers a useful way to understand how structural advantages shape the production and circulation of IS-related knowledge. While the bibliometric data do not directly measure cultural or social capital, the observed patterns—such as the dominance of high-income countries, the concentration of influential authors within particular institutional networks and the uneven visibility of different regions—resonate with Bourdieusian arguments about unequal access to valued academic resources. In this sense, Bourdieu's concepts serve not as variables captured in the dataset, but as a conceptual lens for making sense of how institutional prestige, linguistic advantage and established research networks can influence whose voices shape the Ideal Student debate. Viewed this way, the theory does not claim that the dataset contains capital, but that the global structure revealed by the bibliometric patterns can be interpreted in light of how capital operates in academic fields. This approach allows the discussion to connect empirical patterns with broader sociological concerns about inequality and recognition in higher education research.

A critical implication of our findings is the need to realign the IS construct with principles of diversity, equity, and inclusion (DEI). While traditional definitions of IS often privilege students who already possess dominant cultural and social capital, a more inclusive framing would emphasize adaptability, intercultural competence, resilience, and collaboration—attributes accessible to students from diverse backgrounds. Embedding DEI principles into the IS discourse would not only mitigate the risks of marginalization but also ensure that higher education recognizes and

values multiple pathways to success. In this sense, the Ideal Student should be reconceptualized as a flexible, context-sensitive framework that embraces the richness of diverse student identities and experiences, rather than as a fixed benchmark reflecting middle-class norms.

V. Conclusion and directions for future research

The Ideal Student (IS) is a complex, multifaceted construct that shapes how success is imagined and evaluated in higher education. Our bibliometric mapping shows that scholarly interest in this construct has surged in the past decade and that it is defined across four broad domains—personality, social, leadership, and academic traits—reflecting expectations that extend beyond narrow academic attainment.

Anchoring these findings in Bourdieu's theory helps illustrate why IS is not a neutral descriptor. While our data do not provide student-level evidence, prior sociological research shows that institutions tend to reward forms of cultural capital (e.g., language proficiency, academic dispositions) and social capital (e.g., mentoring, networks) that are more accessible to students embedded in well-resourced educational contexts. Interpreted through this lens, the structural patterns we observed—particularly the dominance of high-income systems and well-connected academic networks—align with broader arguments about how unequal access to valued resources can influence whose experiences and expectations become most visible in IS discourse. In this theoretical sense, students from under-represented racial, gender, socioeconomic, age or non-traditional backgrounds may be located within institutions that have fewer opportunities to shape dominant definitions of the Ideal Student. This perspective also helps explain the post-2015 shift in keywords toward identity, self-regulation, motivation, and student experience, indicating a growing interest in how institutional and structural conditions shape expectations of the IS.

Our results also document a geographic imbalance: output is concentrated in high-income, largely Western systems, while underrepresented regions face barriers (e.g., funding, access to networks and outlets) (Mahdi et al. 2023). This skew limits the visibility of perspectives such as rural, low-income, minority, mature-age, and disabled students in the IS discourse and risks narrowing the construct around dominant norms. Addressing these gaps is necessary for IS to reflect the realities of diverse higher-education contexts.

Implications for policy and practice. The unequal opportunities evidenced in our results (Figures 4–5, Table 2) highlight the need for concrete institutional responses and research agendas that reduce imbalances in

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visibility, collaboration, and access. Institutions should (i) make expectations explicit and culturally legible, (ii) broaden criteria and supports so that valued IS attributes are developed rather than merely presupposed, and (iii) attend to differential access to capital (mentoring, networks, high-impact practices) when designing curricula, assessment, and student-support systems. For instance, the four domains identified in Table 5—personality, social, leadership, and academic traits—can guide universities in designing curricula, mentoring programs, and student-support systems that deliberately foster these attributes across diverse student groups.

Directions for future research.

- Diversify geographies and voices: comparative, cross-regional studies that deliberately include underrepresented systems and student groups.
- Operationalize capital: mixed-methods work that links cultural/social capital to the four IS domains identified here, testing where and how exclusions arise.
- Track change over time: longitudinal designs that connect earlier cognitive emphases with newer identity- and experience-focused strands revealed in our temporal maps.
- Broaden collaboration networks: build co-authorship ties that include scholars and institutions outside dominant hubs to enrich theory and application.

By recognizing multiple pathways to success, the IS can be redefined in ways that better reflect the realities of increasingly diverse student populations. IS is best treated as a contested construct whose meaning is shaped by the distribution of cultural and social capital. Recognizing this shift helps move the field from static ideals toward context-sensitive definitions that widen participation and better reflect the diversity of contemporary higher education.

VI. Limitations

Like any research, this study has certain limitations that must be acknowledged. First, the subjective nature of the Ideal Student (IS) concept means that its definition may vary across stakeholders and cultural contexts, potentially affecting the reliability and generalizability of the findings. Second, the exclusive focus on academic literature may have overlooked valuable perspectives from students, educators, and policymakers, whose insights are essential for a more comprehensive understanding of the IS

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construct. Third, methodological constraints—including the possibility of sampling bias and reliance on predefined search criteria—may have limited the breadth and depth of the analysis. Finally, the overrepresentation of research from resource-rich countries introduces a geographical imbalance that may skew the global understanding of the IS concept. These limitations show that adopting more inclusive, participatory and context-sensitive approaches in future research is essential for achieving a fuller and more equitable representation of diverse perspectives.

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A bottom-up approach for faculty development: A latent class analysis on teaching innovative practices and needs for improvement in higher education

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Abstract: The concept of teaching quality is multifaceted and challenging to quantify. Many researchers advocate for the use of teacher self-assessments as a valuable tool in evaluating teaching effectiveness. In 2016, a collaborative network of seven Italian universities launched the innovative *AsdUni* project, a bottom-up

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initiative aimed at establishing a national, systematic approach to educational development. The project's primary focus was to analyze teachers' beliefs, practices, and needs. As part of this initiative, a comprehensive questionnaire was distributed to all academic staff within the participating universities. The survey concluded with three open-ended questions designed to explore: i) Excellence and innovation in personal teaching practices; ii) Critical issues in day-to-day teaching; iii) Types of support perceived as necessary for enhancing teaching and learning outcomes. Exploiting the rich qualitative data collected through this project and employing advanced statistical methods such as Latent Class Analysis, researchers identified ten distinct clusters of teachers. These clusters represent homogeneous groups based on various combinations of teaching excellences, criticisms, and needs, while exhibiting heterogeneity across clusters. Findings from this study have significant potential to inform and enhance staff development programs. By providing insights into the diverse profiles of teachers, this research enables the design of targeted, multi-level action plans that are tailored to address the specific needs of different teacher groups.

Keywords: faculty development; latent class analysis; multi-level action plans; qualitative research; university.

I. Introduction and theoretical framework

Higher education institutions today are increasingly called upon to rethink their teaching methods. The OECD emphasises the pressing need for countries and universities to fully commit to enhancing teaching quality (Hénard and Roseveare 2012). Similarly, the European strategic framework for cooperation in education and training (ET2020) offers avenues to establish best practices in education policies. In a shifting landscape where teaching and learning processes are evolving, it becomes essential to provide academics with the skills and knowledge they need to perform effectively in their teaching roles. This necessitates a re-evaluation of staff development strategies and initiatives (Postareff, Lindblom-Ylänne, and Nevgi 2007), ensuring ongoing improvement in their teaching practices (Dierdorff and Surface 2008). Particularly in the last decades, the landscape of higher education has changed a great deal and many challenges are appearing in this landscape. Not least those posed by technology and artificial intelligence, which have also been highlighted in the wake of the pandemic (Abu Talib, Bettayeb, and Omer, 2021; Ma, Akram, and Chen, 2024).

First of all, it becomes important to focus on the concept of "good teaching", identifying what quality in higher education means and how it can be operationalised in teaching daily practices (Prosser and Trigwell 1999; Ramsden 2003). Exploiting a wide review of empirical evidence, the "Seven Principles of Good Practice in Undergraduate Education" have been widely

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used as a guide to the improvement of university teaching (Chickering and Gamson 1987). Hénard and Leprince-Ringuet (2008) show that *quality* is a broader term with different meanings, that could refer to the student performance, the output of an educational program, the student learning experience or the teaching itself.

The evolution of teaching in higher education has undergone a significant transformation—from a transmissive model, where the teacher served as a "knowledge holder," to more constructivist and interactive frameworks. Historically, university teaching was largely content-driven, with students playing a passive role in the learning process (Kember and Kwan, 2000). However, the emergence of constructivist theories has gradually shifted the focus toward student-centered approaches, emphasising active and participatory learning experiences (Trigwell and Prosser 1996). This paradigm shift has led, in recent decades, to the creation of tools designed to analyse and better understand teaching practices. Research on higher education teaching approaches has highlighted two dominant strategies: one content-oriented and one focused on student learning (Trigwell, Prosser, and Taylor 1994). The former prioritises the delivery of information from teacher to students, while the latter fosters interaction and active student engagement to enhance their conceptual understanding.

The Approaches to Teaching Inventory (ATI), introduced by Trigwell and Prosser (2004), distinguishes between rigid, transmissive teaching strategies and more flexible, reflective practices. Subsequent advancements in this research include the development of the *How You Teach* questionnaire, which enables teachers to reflect on their teaching approaches and identify their own teaching style (Parpala and Postareff 2022). Postareff and colleagues later refined this tool into the *Higher Education Approach to Teaching* (HEAT), a more detailed and context-sensitive analysis of teaching strategies (Postareff et al., 2024). Achieving teaching quality requires a clear understanding of what constitutes "good teaching" and how it can be embedded in daily practice (Prosser and Trigwell 1999; Ramsden 2003). However, as Hénard and Leprince-Ringuet (2008) argue, quality is a multifaceted concept that can refer to various aspects such as student performance, program outcomes, the learning experience, or the teaching process itself.

Similarly, the notion of teaching excellence is complex and often ambiguous (Gunn and Fisk 2013). Scholars have approached excellence as a nuanced construct, acknowledging its multidimensional nature (Skelton 2005; Trigwell 2001). Nixon (2007) frames excellence as a process of personal growth and flourishing. According to the High Level Group on the

Modernization of Higher Education (2013), the most effective teaching challenges students' preconceived ideas, compelling them to take ownership of their learning and become active agents of change. As Trigwell (2001) suggests, this mindset applies to educators as well, who must engage in ongoing reflection and learning to continuously enhance their teaching throughout their careers.

Empirical evidence further shows that good teaching is influenced not only by the subject matter but also by situational factors such as class size, student abilities, and assessment practices (Hénard and Leprince-Ringuet 2008; Young and Shaw 1999). Therefore, models for academic development must take local priorities and contextual factors into account (Naris and Ukpere 2009; Sorcinelli et al. 2006). Their success also hinges on adapting to institutional dynamics. As the Higher Education Academy notes (Locke et al. 2016), universal in-house or external training programs may not be suitable for every context. Instead, faculty development initiatives should be carefully tailored to address individual needs and provide targeted support at the appropriate times. Furthermore, successful programs must foster collaboration between institutions and their staff; otherwise, if perceived merely as mandatory obligations, they risk resistance or low engagement (Di Napoli 2014). In line with these insights, Sorcinelli et al. (2006) recommend several strategies for educational developers: grounding practices in scholarship, aligning initiatives with institutional goals, considering organisational culture, embracing faculty diversity, and designing inclusive programs. Development efforts must simultaneously address institutional objectives and individual needs, avoiding one-size-fits-all solutions.

Balancing these priorities was central to the research presented here. In 2016, a consortium of seven Italian universities launched a bottom-up initiative – the AsdUni project – aimed at fostering a systemic approach to academic development. The project sought to analyse teachers' beliefs, practices, and needs (Felisatti and Clerici 2020). By leveraging the qualitative data collected and employing advanced statistical methods such as Latent Class Analysis, this research identifies homogeneous groups of teachers based on their practices and needs. These insights can inform the design of customised strategies to enhance teaching quality across higher education institutions.

II. The AsdUni research

The AsdUni study sought to capture the voices of academics, exploring their perspectives on the strengths of their teaching practices, the challenges

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they encounter, areas requiring improvement, and the types of support they desire for professional growth.

Given that staff development initiatives are still in their nascent stages within the Italian academic landscape, it was crucial to gather insights into the preferred forms of support that professors believe would enhance their teaching quality. The data collection aimed to provide a comprehensive overview of both national and local situations, with the goal of informing policies, shaping initiatives, and fostering both local and inter-institutional staff development programs. Indeed, as part of the AsdUni project, a questionnaire was distributed to academics across seven participating universities. This instrument included Likert scales assessing teachers' beliefs, practices, and needs. Additionally, it featured three open-ended questions, which form the core of our study. These questions were designed to explore:

1. Excellence and innovation in personal teaching activities.
2. Critical issues encountered in day-to-day teaching practices.
3. Types of support perceived as necessary for enhancing teaching and learning outcomes.

This approach allowed for a rich, multifaceted exploration of the academic teaching landscape in Italy.

The research gathered data from 4,289 participants through computer-assisted web interviews, achieving an overall response rate of approximately 59% (ranging from 46% to 74% across universities). The final analysis focused on 3,250 teachers who provided relevant responses to at least one open-ended question. The remaining participants either offered general comments unrelated to the study's focus or did not respond.

As illustrated in Table 1, the sample demographics reveal a predominantly male composition. With respect to age, over half of the participants fall within the 46-60 years class, with the remainder evenly split between younger and older age groups. In terms of academic positions, associate professors constitute about 37% of the respondents, while assistant professors and those in temporary positions collectively make up nearly 50% of the sample. The geographical distribution of participants shows a balanced representation, although academics from Central Italian institutions account for approximately half the number of those from Northern or Southern Italy.

Table 1

Summary of the main characteristics of the teachers in the final sample

Characteristic	n	%
Gender		
Male	1815	55.85
Female	1435	44.15
Age class		
30-45	756	23.25
46-60	1698	52.25
61-70	775	23.85
Over 70	21	0.65
Academic role		
Full professor	736	22.65
Associate professor	1226	37.72
Assistant professor	989	30.43
Temporary position	299	9.20
University		
A (Northern Italy)	782	24.06
B (Northern Italy)	555	17.08
C (Central Italy)	474	14.58
D (Central Italy)	141	4.34
E (South Italy)	155	4.77
F (South Italy)	644	19.82
G (South Italy)	499	15.35
Total	3250	100.00

Serbati et al. (2020, 52-58) conducted a thorough content analysis[5] of the open-ended responses from the AsdUni survey. They established three broad

[5] A content analysis is research tool used to discover the presence of certain words or concepts in a qualitative dataset.

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code families corresponding to the main topics of inquiry: excellences, critical aspects, and needs. Each of these families was further subdivided into several Pre-codes, encompassing semantically related concepts, the so-called codes[6]:

a) Excellences: Seven pre-codes, including methodological and instructional choices, in-class activities, and student-focused approaches.

b) Critical aspects: Four Pre-codes, covering areas such as organisational issues and student characteristics.

c) Needs: Five Pre-codes, addressing factors like contextual elements and human/financial resources.

This structured approach allowed for a comprehensive examination of the multifaceted landscape of academic teaching in Italian universities.

III. Methodology

Latent Class (LC) analysis is a powerful statistical method for categorising individuals into hidden or unobservable subgroups (Vermunt and Magidson 2004). In the context of this study, this approach enables us to identify distinct groups of profiles based on various combinations of teaching practices and needs. These subgroups, or classes, essentially form the categories of an unseen categorical variable. Members within a single LC share similar characteristics according to specific criteria, while those in different LCs exhibit notable differences from one another (Collins and Lanza 2010). Unlike traditional clustering techniques, such as principal component analysis or cluster analysis, the LC approach is grounded in statistical modelling, offering a more robust and theoretically-driven method of classification.

Originally introduced by Lazarsfeld (1950) to explain respondent heterogeneity in survey response patterns based on dichotomous items, the latent class analysis has been strongly formalised, extended and further developed (Goodman 1974; Vermunt and Magidson 2003).

LC methodology has found widespread application across various disciplines, including social sciences, behavioral studies, and healthcare research, with education being no exception. The groundbreaking research

[6] Codes are labels that are linked to selected pieces of data derived the analysis of each collected open-ended answer.

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by Aitkin, Anderson, and Hinde (1981) paved the way for the extensive use of LC analysis and latent trajectory class studies in educational contexts, particularly in K-12 education (Bowers and Sprott 2012; Fagginger Auer et al. 2016; Hickendorff et al. 2009; Ing and Nylund-Gibson 2013) and higher education research (Denson and Ing 2014; Pastor et al., 2007; Weerts, Cabrera, and Mejias 2013; Yocarini et al. 2020). Despite its popularity, it is worth noting that the majority of these studies have primarily concentrated on examining student outcomes. Comparatively less attention has been given to investigating teaching styles or instructional practices through this analytical lens (Campbell et al. 2017).

Consider a group of n teachers, where each teacher i is associated with a set of L reporting items. We denote the response to item l for teacher i as y_{il}. This variable takes a value of 1 if teacher i provides a valid answer in Pre-code l, and 0 otherwise. The latent variable is denoted by X, and we assume there are C latent classes.

The probability of observing a specific response pattern $\boldsymbol{y}$, represented as $P(\boldsymbol{Y} = \boldsymbol{y})$, can be expressed as a weighted sum of the probabilities specific to each of the C classes. This formulation allows us to model the heterogeneity in response patterns across different latent classes of teachers.

A fundamental principle in LC models is the assumption of local independence. This means that within each latent class, the L observed variables are considered to be independent of one another (Hagenaars and McCutcheon 2002). In our solution, logistic regression is used to estimate the conditional response probabilities. The likelihood of an individual belonging to a specific latent class x, known as the posterior membership probability, can be calculated using Bayes' theorem. This posterior probability serves as the basis for assigning individuals to latent classes. The most frequently used method for this assignment is the modal approach, where an individual is placed in the class for which they have the highest probability of membership.

More details on this methodological solution are reported in Paccagnella et al. (2021).

The parameters of LC models are typically estimated using maximum likelihood techniques. This process employs a modified version of the Expectation-Maximization (EM) algorithm, as proposed by Vermunt (2003). The LatentGOLD 5.0 software package, developed by Vermunt and Magidson (2013), provides a practical implementation of this algorithm.

Determining the optimal number of latent classes for profiling the sample is a complex task. It generally involves an iterative approach: the process begins by estimating a model with a single latent class, then progressively increases the number of classes one at a time. This continues until a

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satisfactory model fit is achieved, and further increases in the number of classes fail to yield significant improvements in fit.

Upon completion of the model estimation, researchers have access to a comprehensive array of measures and statistics for assessing model fit. It is important to note that these various indicators may sometimes yield conflicting results, necessitating careful interpretation and judgment in the final model selection. The first set includes standard measures, such as the information criteria (BIC, AIC and CAIC are the most used indicators). A second group of indicators is based on classification statistics, such as Classification Errors, Entropy R2 and Standard R2. A third measure relies on the BiVariate Residual (BVR) estimates. As explained above, a key assumption in any LC analysis is the local independence and BVRs are a way to detect whether this assumption is violated. BVRs are conceptually similar to the Modification Indices in the structural equation modeling approach: low values of BVRs indicate good model fit, while large values identify correlations between the associated variable pairs, that have not been adequately explained by the model. As a consequence, violation of the local independence assumption could lead to a poor fit model (Vermunt and Magidson 2013, 25-26). In the current literature, there is not a general rule to assess the smallness of a BVR (Oberski, van Kollenburg, and Vermunt 2013, 268-269), even though van Kollenburg, Mulder and Vermunt (2015, 68) suggest the value of 3.84 for each pair as a benchmark. There are different solutions for solving violation of this assumption: i) increasing the number of LCs: ii) allowing for direct relationships between the two associated items (the so-called direct effects); iii) increasing the number of the latent variables underlying the theoretical framework.

In our work, we place significant emphasis on the size of each Latent Class (LC) as a crucial model indicator. Classes that are excessively small, encompassing only a few individuals, pose practical challenges, especially when the research goal is to develop tailored academic processes that address the genuine needs of these theachers. Furthermore, as the number of LCs increases, there is a higher likelihood of encountering groups that lack distinctly defining characteristics. This phenomenon can complicate the interpretation and practical application of the model results. According to our sample size, we believe that the classes should not have a size lower than 3%, which means a number of teachers approximately equal to 100.

Therefore, we strive for a balance between model fit and practical utility, seeking to identify classes that are not only statistically sound but also substantively meaningful and of sufficient size to inform actionable strategies in educational development.

IV. Results

Based on the classification obtained from the content analysis carried out by Serbati et al. (2020) (see Section II. The AsdUni research) as many dummy variables were created for each teacher as there are Pre-codes (results are summarised in Table 2[7]). Among the declared excellences, the most important category referred to the action of teaching in class, followed by the use of technologies and a specific focus on students' needs, but we cannot forget teachers' features and the relationship with extra-university context. With regards to critical points, the major problems concerned the organisational aspects (rooms, timetable, integration of different modules, etc.), as well as students' features (lack of disciplinary knowledge, low attendance and interaction) and, as a minor aspect, teachers' features. In the case of needs for improvement, once again the contextual factors appeared to be very problematic, together with a desire for more human and financial resources as well the need of training/educational courses.

Table 2

Distribution of the Pre-codes for each of the three code families according to the classification provided by the content analysis (Serbati et al., 2020)

Category	n	%
Excellences		
Relationship with extra-university context	137	2.67
Attention towards students	946	18.44
Teachers' features	264	5.15
Teaching in class	2753	53.66
Use of English (language)	39	0.76
Use of students' ratings about teaching	39	0.76
Use of technologies	952	18.56
Total	5130	100.0

[7] Given the qualitative nature of the collected data, one or more codes can be derived from the answers provided by the teachers to each of the three questions. This explains why the total number of answers is different among code families and, in two cases, larger than the number of teachers who provided useful answers to these questions.

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Category	n	%
Critical Aspects		
Students' features	1530	40.14
Teacher' features	393	10.31
Organisational aspects	1875	49.19
Teaching evaluation	14	0.37
Total	3812	100.0
Needs		
University - community relationship	99	3.16
Training/educational courses	407	12.98
Contextual factors	1703	54.30
Technological aspects	232	7.40
Human and financial resources	695	22.16
Total	3136	100.0

At the same time, some categories show a very low sample size. For this reason, in the *Excellence* family we grouped the Pre-codes "Relationship with extra-university context", "Use of English (language)" and "Use of students' ratings about teaching" in a unique and more generic "Other excellences". In the *Critical Aspects* and *Needs* families we could not pool answers, since we observed only one Pre-code ("Teaching evaluation" and "University - community relationship", respectively) having a limited size. As a result, our LC analysis is based on five variables regarding *Excellences* ("Attention towards students", "Teachers' features", "Teaching in class", "Use of technologies" and "Other"), three variables on *Critical aspects* ("Students' features", "Teacher' features" and "Organisational aspects") and four involving *Needs* ("Training/educational courses", "Contextual factors", "Technological aspects" and "Human and financial resources").

This set of indicators is used to estimate many LC models and their fit is then evaluated and compared to choose the final solution (see Table 3). The information criteria suggested very different solutions for the model specification (large numbers of LCs according to AIC3, low numbers looking at the BIC and CAIC indicators). However, the differences across all estimated models - within each information criteria - were very low: for instance, the CAIC value increased by only 2.37% from model with 4 LCs to

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the one with 15 LCs. The classification statistics suggested the model with 3 classes. However, all models with low numbers of LCs (i.e. until 9) suffered from very high values of BVRs: in such cases, the local independence assumption is hard to be assumed, therefore equation (2) might be no longer valid and it is likely we estimated something different from the model in equation (3). Increasing the number of LCs helped in reducing the value of BVRs, but it did not solve the problem at all. At the same time, as soon as the number of LCs exceeded the value of 10, some clusters appeared to have a small sample size in the corresponding estimated model (apart from just one case).

Table 3

Model fit according to several statistical indicators

Latent class	Direct effect	Information Criteria			Small size group	Classification statistics			Total BiVariate Residuals (BVRs)
		AIC3	BIC	CAIC		Classification errors	Entropy R2	Standard R2	
2	–	– 7065.78	– 23469.78	– 26694.45	0	0.054	0.7969	0.8323	814.48
3	–	– 7392.34	– 23729.89	– 26941.89	0	0.026	0.8939	0.9230	534.58
4	–	– 7501.09	– 23772.52	– 26971.52	0	0.054	0.8886	0.8885	344.36
5	–	– 7573.02	– 23778.32	– 26964.32	0	0.064	0.8552	0.8552	261.51
6	–	– 7617.13	– 23756.31	– 26929.31	0	0.105	0.8094	0.7923	198.77
7	–	– 7653.43	– 23726.49	– 26886.49	0	0.134	0.8084	0.7725	157.08
8	–	– 7698.42	– 23705.36	– 26852.45	0	0.145	0.7966	0.7466	144.55
9	–	– 7725.47	– 23666.28	– 26800.28	0	0.155	0.7871	0.7350	119.48
9	6	– 7859.60	– 23769.89	– 26897.89	0	0.233	0.7069	0.6217	38.36
10	–	– 7752.72	– 23627.41	– 26748.41	0	0.157	0.7928	0.7327	82.71
10	4	– 7823.70	– 23678.05	– 26795.05	0	0.144	0.8084	0.7532	42.20
11	–	– 7758.72	– 23566.62	– 26674.62	1	0.170	0.8021	0.7297	67.96
11	3	– 7883.47	– 23676.77	– 26781.77	1	0.232	0.7050	0.6178	32.29
12	–	– 7749.47	– 23491.92	– 26586.92	2	0.202	0.7600	0.6684	64.60
12	1	– 7867.72	– 23605.07	– 26699.07	1	0.247	0.7202	0.6098	28.21
13	–	– 7763.27	– 23439.58	– 26521.58	0	0.219	0.7508	0.6510	55.43
13	1	– 7806.67	– 23477.90	– 26558.90	2	0.201	0.7755	0.6801	35.54

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Latent class	Direct effect	Information Criteria			Small size group	Classification statistics			Total BiVariate Residuals (BVRs)
		AIC3	BIC	CAIC		Classification errors	Entropy R2	Standard R2	
14	–	– 7756.79	– 23366.98	– 26435.98	2	0.190	0.7730	0.6916	45.70
14	2	– 7796.38	– 23396.40	– 26463.40	2	0.207	0.7429	0.6555	31.33
15	–	– 7746.27	– 23290.34	– 26346.34	4	0.285	0.6990	0.5621	45.03

Summing up, based on all these considerations and the interpretation we can give to each cluster, we decided in favour of the solution with ten LCs and four direct effects: (*Excellences*)Teaching in class & (*Excellences*) Attention towards students; (*Excellences*)Teaching in class & (*Excellences*) Teachers' features; (*Excellences*)Use of technologies & (*Excellences*) Teachers' features; (*Needs*)Technological aspects & (*Needs*)Training/ educational courses. In a LC analysis, it is unusual to identify four direct effects, but in this case all Pre-codes in a family are constructed from the unique answers provided by the teachers through the open-ended questions (as underlined before, more codes might be derived from a single answer). Main results are shown in Table 4, that is cluster size and the individual probability of reporting each occurrence, conditional to belong to the LC. Table 5 reports the main characteristics of the teachers in each class, as proportions of each teacher feature according to the ex-post assignment of individuals to LCs (indeed, individual covariates were not specified in the final estimated model).

Table 4

Size of each latent class and the conditional (to the latent class belonging) probability of reporting each occurrence

Category	Latent Class									
	1	2	3	4	5	6	7	8	9	10
Size (%)	17.8	17.7	15.5	13.6	9.5	7.4	6.1	4.3	4.3	3.7
Excellences										
Attention towards students	0.202	0.306	0.208	0.207	0.270	0.191	0.332	0.452	0.403	0.003
Teachers' features	0.055	0.097	0.074	0.090	0.071	0.047	0.099	0.189	0.079	0.016

Category	Latent Class									
	1	2	3	4	5	6	7	8	9	10
Teaching in class	0.545	0.674	0.619	0.637	0.625	0.616	0.585	0.928	0.683	0.010
Use of technologies	0.148	0.210	0.181	0.240	0.220	0.140	0.201	0.538	0.197	0.994
Other	0.049	0.071	0.078	0.078	0.085	0.068	0.092	0.203	0.097	0.036
Critical Aspects										
Students' features	0.018	0.997	0.978	0.003	0.077	0.002	0.069	0.327	0.994	0.371
Teacher' features	0.001	0.019	0.000	0.000	0.081	0.355	0.989	0.231	0.001	0.117
Organisational aspects	0.559	0.164	0.109	0.996	0.873	0.158	0.097	0.793	0.117	0.471
Needs										
Training/ educational courses	0.135	0.000	0.166	0.012	0.006	0.071	0.289	0.383	0.081	0.063
Contextual factors	0.005	0.995	0.119	0.997	0.313	0.992	0.130	0.474	0.003	0.521
Technological aspects	0.155	0.019	0.103	0.024	0.017	0.022	0.117	0.138	0.017	0.109
Human and financial resources	0.031	0.108	0.004	0.007	0.991	0.000	0.268	0.297	0.906	0.241

Table 5

Distribution of the main features of the teachers belonging to each latent class (in %)

Latent Class	Women	Age class			Academic role			
		Up to 45	46-60	61 or over	Full professor	Associate professor	Assistant professor	Temporary position
1	45.1	26.3	53.9	19.8	18.0	35.4	35.7	10.9
2	42.8	21.4	46.6	32.0	28.9	36.5	27.5	7.1
3	42.2	20.8	52.7	26.5	25.0	36.6	27.3	11.1

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Latent Class	Women	Age class			Academic role			
		Up to 45	46-60	61 or over	Full professor	Associate professor	Assistant professor	Temporary position
4	42.8	22.9	54.7	22.4	19.0	37.6	36.6	6.8
5	40.7	21.6	53.9	24.5	26.5	41.3	24.5	7.7
6	48.8	32.9	46.7	20.4	15.4	38.3	30.9	15.4
7	45.7	23.6	56.8	19.6	18.6	43.2	29.1	9.1
8	56.0	22.0	60.3	17.7	22.0	37.6	34.0	6.4
9	43.6	17.9	50.0	32.1	32.8	37.9	20.0	9.3
10	43.8	21.5	53.7	24.8	19.0	40.5	33.9	6.6

The largest class comprises almost 18% of teachers and the smallest nearly 4%. Only one class (the eighth) is mainly composed of women and only one class (the tenth) is characterised by people with a very low probability of reporting innovative practices in their teaching activities.

In particular, the LC1 cluster is the most numerous and consists of teachers who are moderately likely to identify organisational issues as problematic. This group essentially comprises teachers who do not have a definite and firm view of excellences, weaknesses and needs. They acknowledge having some effective teaching methods (such as, following the most frequent answers of the respondents: continuous update of disciplinary knowledge and course contents; practice and theory interaction; classroom teamwork; case study analysis and discussion; link of course content to real word events; invited stakeholders during classes), but also point out some organisational shortcomings (some respondents say, for instance, that they find rooms and infrastructure not functional, due also to the large amount of students during classes; another problem is the matching of modules, in order to avoid overlapping and to design an appropriate progression of knowledge during the academic pathway). However, no clear overall picture emerges. This may stem from limited teaching experience. In fact, this group is predominantly made up of young people, with a substantial proportion of assistant professors or teachers holding one of the new temporary positions in Italy.

Clusters LC2 and LC3 are quite similar, composed of teachers with a very high probability of identifying criticism of students' characteristics and behaviour. Both groups show a fairly positive self-assessment of their excellent teaching practices, describing the various activities they carry out

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in the classroom (as already reported for LC1), such as disciplinary knowledge and course content, and various teaching methods aimed at actively involving students. At the same time, they report significant problems arising from the students' characteristics and weaknesses, such as lack of prior knowledge, low motivation, poor attendance and participation in class, and student heterogeneity. These classes are also very similar in terms of the individual characteristics of their members (with LC2 including slightly older teachers than LC3), apart from the sample size. The main difference between them lies in the role played by the need for contextual support. In fact, only LC2 teachers ask for assistance in dealing with certain organisational issues, such as the availability and equipment of infrastructures and classrooms, coordination between different courses, more funding to improve the quality of teaching and support for the organisation of workshops and interactive laboratories.

On the one hand, LC4 is similar to LC2 in terms of both self-reported excellent teaching practices and challenging contextual variables. On the other hand, LC4 teachers tend to place blame on organisational problems rather than students, thus emphasising a strong need for organisational support (particularly towards rooms and infrastructures). The main differences between the two clusters concern the age and role of the teachers: LC2 teachers are much older than LC4 ones; in LC2 the proportions of full and assistant professors are quite comparable, while in LC4 the number of assistant professors is almost double the number of full professors.

LC5 is predominantly composed of men, having high probabilities to mention critical issues on organisational matters (similarly to LC4 teachers, in particular with regard to inadequate infrastructures and rooms, lack of coordination between the different courses and lack of funds to improve the quality of teaching) and requests for support on human resources (unlike LC4, LC5 teachers ask for assistance in laboratory activities and the presence of tutors to support students' individual study).

LC6 is characterised by teachers having a high probability of reporting teaching in class excellences' occurrences and the need for contextual support (in particular, with respect to organisational issues). To some extent, this cluster shares similar features with the second and the third classes; they differ each other in the role played by the critical aspects encountered in daily practices. Like the first cluster, LC6 is mainly composed of young people (about one third of them are younger than 46 years), with the highest fraction of teachers holding one of the new temporary Italian positions.

LC7 shows the highest fraction of associate professors and a small proportion of full professors. This cluster is characterised by teachers who

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highlight strong criticism of themselves: in particular, they recognise their own difficulties in involving students, a lack of teaching training and collaboration with colleagues, as well as a very high bureaucratic workload.

The last three classes resemble each other only in their limited size, while they differ in the patterns of the answers given by their component teachers.

The eighth class is distinguished by a non-zero probability (or at least above 20%) for almost all occurrences, with innovative practices in the teaching as the largest. Although successful teaching practices characterise the teachers in this group, they do not show strong skills in the use of technology (such as, the use of multimedia devices, videos, blended-online activities and so on), for these activities. They also express some criticalities in relation to organisational issues (as in many other clusters). This is the only class with a majority of women and the smallest fractions of teachers over 60 years of age and holding a temporary position.

LC9 is characterised by old teachers (this group shows the largest proportion of over 60s and the smallest proportion of under 45s), as well as by the largest fraction of full professors. A strong need of support and assistants distinguishes the people in this cluster. Like the second and the third classes, they face strong problems related to the features of the students.

Teachers in tenth cluster do not show unique or specific individual characteristics, but they reveal two interesting combinations of answers: a high probability in reporting ability to teach with technologies and low probabilities of mentioning successful teaching practices. They also report moderate problems related to the contextual factors.

V. Discussion

Teacher quality is difficult to measure due to its multifaceted nature. For this reason, one promising solution of its study is the use of self-assessments collected among teachers (Goe, Bell, and Little, 2008). To this aim, an innovative Computer Assisted Web Interviewing (CAWI) survey was able to collect opinions and experiences on teaching practices and individual needs in a host of seven Italian universities.

On the basis of an advanced statistical solution that analysed patterns of excellences, criticalities and needs in teaching (in other words, a quantitative solution is used to investigate qualitative data), different clusters of teachers, homogeneous within themselves (with respect to these combinations of experiences) and heterogenous outside them, were identified.

The identification of homogenous groups of teachers can be helpful for the design and implementation of multi-level programmes, able to provide

adequate responses to the real needs of these academics and support their development. These initiatives can be *institutional* (that is, actions are planned within single universities), *inter-institutional* (where more universities can share their expertise and resources to create joint action plans) or *national* (where strategies to support the development of the Italian academic staff can be centrally developed and implemented).

More specifically, at the micro-level, results suggest that some important activities could be implemented within institutions:

- Providing detailed reports to the university management to face criticalities on organisational issues, as well emphasised by teachers belonging to LC4, LC5 and LC8. It is unlikely that all problems that were identified could be immediately solved by the institutional leaders. However, the awareness of academics' perceptions about the most crucial ones may help to map and then focus on the most urgent. Moreover, requests for further support in terms of human and financial resources (i.e., LC5 and LC9) could also become more explicit and possibly stimulate an answer from the university management.
- Providing students' services with specific reports addressing the main problems of that university students, as observed by teachers in LC2, LC3 and LC9. This can be useful for planning initiatives such as increasing student support and guidance, better integration between modules (avoiding overlapping contents) and the development of tutoring actions.
- Introducing formal and informal opportunities to share existing excellences and good practices. Within this approach, faculty learning communities (Cox 2004) and mentoring initiatives and networks (Sorcinelli and Yun 2007) could be developed as opportunities to discuss emerging issues, identify strategies to apply in their own and/or other contexts, and model practice for (junior) colleagues. These could involve teachers from all classes, with a specific focus on those in LC8, who appear to be teaching champions and can act as guides or mentors for others, and those in LC10, who appear to be experts in the use of educational technologies.
- Realising local staff development programmes, seminars and workshops to face key needs that have emerged (i.e., teaching methods, students' engagement, and so on), as well as the creation of centres and services for this purpose. It seems that professors are not fully aware of their development needs in the field of teaching: indeed, in no latent class

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academics show a high probability of expressing their training needs. This could be explained by the Italian cultural tradition, in which research results still play an important role in careers and attention to teaching results has only started to emerge in recent years. However, institutions can promote initiatives to respond to these implicit needs, with the aim of raising awareness of these possibilities for improvement. More specifically, LC1 was found to be composed of teachers who do not have a clear and strong opinion about excellences, weaknesses and needs, being mostly young, inexperienced professors: this group could be involved in entry-level staff development programmes, dedicated to developing key teaching competences (Austin 2003), as well as in orientation programmes dedicated to presenting available resources, organisational aspects, key services, student life and functions and clarifying responsibilities and tasks. Professors grouped in LC7, who have shown a strong criticism of themselves, can benefit from workshops and activities focusing on teaching, learning and assessment methodologies, student engagement strategies and other specific aspects of the teaching practice.

At the same time, at the meso-level, important inter-institutional activities can be supported, with the aim of optimising efforts and resources. For example:

- The implementation of formal and informal initiatives involving professors from two or three institutions, offering shared discussion initiatives in the same subjects or at the interdisciplinary level. This activity could be very useful for academics included in LC2, LC3 and LC9, who tend to blame students for all aspects of inefficiency or difficulties in teaching; a sharing of opinions in different contexts may allow further reflection on this, as well as the identification of possible solutions not previously considered.
- The design and implementation of inter-institutional activities such as trainings, workshops and peer observation sessions on issues of common interest in several institutions, possibly using a common budget and involving academics from different universities with similar interests (i.e., for teachers in LC1 and LC7).

Through a bottom-up approach, this research has given the opportunity to identify teachers' point of view and discover the main needs for improvement and hidden good practices. At the same time, it can create an

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increase of teachers' awareness and motivation to share teaching practices and identify areas of improvement.

V.1. Limitations and future research

Although the response rate within each university was quite good, sample size in some institutions was not large. This suggested analysing the answers of all AsdUni respondents as a whole, without carrying out university-specific estimations. Consequently, specific characteristics of each institution (such as size, teacher composition, educational offer, organisation, management) were not included in the analysis. However, many of these organisational features can be traced back to the national legislation.

Sample selection can be a potential problem. First, the teachers chose to take part in the AsdUni survey or not; second, they answered the last open-ended interview questions; third, in their answers, teachers recorded comments that were truly related to the dimensions under investigation. The risk is that the answers used in our analysis were provided by the most motivated or critical teachers from the various universities.

Then, some Pre-codes had very low sample sizes and this can make it difficult the right estimation of a latent class analysis. For this reason, some categories were grouped together (as the "Other" category among the *Excellence* family) or definitely deleted (as some Pre-codes among the other two families). However, precisely because of this small size, it is difficult to believe that the main results and conclusions can be strongly affected by these choices.

This research paves the way for possible further analysis and research developments. On the one hand, the data collected lend themselves to being investigated within each university, focusing only on the responses of local academics; on the other hand, inter-institutional analyses could delve into other variables, such as the perspectives and opinions of teachers according to disciplines, academic roles, age, gender and so on. On the other hand, in-depth qualitative approaches could be implemented by means of face-to-face interviews and/or focus groups, in order to supplement the data collected and investigate specific issues questions to clarify and detail the codes and categories that emerged.

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Prospective elementary teachers' perceptions of digital literacy as a 21st-century skill

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Abstract: Elementary school teachers are the primary key to the successful use of learning technology, boiling down to digital literacy skills as 21st-century skills. It is anticipated that students' digital literacy will align with the requirements of an evolving educational framework and effectively address the impending difficulties of the future workforce. This study elucidates the conceptualizations of digital literacy among students pursuing the Bachelor of Elementary School Teacher Education Study Program at Universitas Negeri Yogyakarta (UNY). The study employed a quantitative survey methodology, with questionnaires as the primary data-gathering instruments. The sample of this study was 563 prospective elementary school teachers who were undergraduate students in semesters 2 and 4. The data analysis focuses on descriptive statistics, strengthened by qualitative exposure, and testing content validity, construct validity, and instrument reliability. The findings indicate that students hold favorable

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opinions regarding digital literacy from the perspectives of information and data literacy, communication and collaboration, and safety. Furthermore, notable variations exist in students' perspectives on gender-related digital literacy, school level, geographical location, and prior pertinent education. The validity of this research lies in the diversity of students' perceptions of digital literacy. Promoting the cultivation of essential competency areas pertaining to digital competencies, such as digital content production, is crucial, alongside facilitating students' acquisition of knowledge in addressing common technology challenges encountered in their daily lives. It is important to provide training for elementary school teachers in the utilization of information and communication technology (ICT), also in promoting digital competence among female first-year students in certain locations and from rural areas.

Keywords: perception; prospective elementary teachers; digital literacy; 21st-century skills; digital competence.

I. Introduction

Education experiences significant changes, so the challenges that appear must be faced using digital technology.[5, 6] It happens because the education system in the new century positions digital competence as an essential role. This condition has implications for changing learning methods and providing a comfortable, safe, and flexible learning environment for students, making it an urgent effort that educational institutions must carry out.[7] The 21st-century students grow up surrounded by the rapid development of computer networks, which simultaneously increases the popularity of digital competencies in higher education.[8, 9] Another important supporting factor for change is the COVID-19 pandemic, so public attention regarding digital competence has increased.[10]

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[5] Abid Haleem et al., "Understanding the Role of Digital Technologies in Education: A Review," *Sustainable Operations and Computers* 3 (2022): 275–85, https://doi.org/10.1016/j.susoc.2022.05.004.

[6] Santiago Iglesias-Pradas et al., "Emergency Remote Teaching and Students' Academic Performance in Higher Education during the COVID-19 Pandemic: A Case Study," *Computers in Human Behavior* 119 (2021), https://doi.org/10.1016/j.chb.2021.106713.

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[9] Y Zhao et al., "Digital Competence in Higher Education: Students' Perception and Personal Factors," *Sustainability* 13, no. 21 (2021): 12184, https://doi.org/https://doi.org/10.3390/su132112184.

[10] M Iansiti and G. Richards, "Coronavirus Is Widening the Corporate Digital Divide," *Harvard Business Review* (2020), https://hbr.org/2020/03/coronavirus-is-widening-the-

The profile of future teachers is described as digital natives who utilize technology in various daily activities and gain many great benefits in the learning process.[11] In this context, teachers with good digital competence are increasingly needed to play an essential role in improving student competence and effectively utilizing technology in the teaching and learning process.[12, 13] Therefore, Prospective educators are required to possess not only pedagogical competencies, but also digital competencies and a comprehensive understanding of their impact on students' learning practices and interaction with digital culture, or what is often known as TPACK (Technological Pedagogical and Content Knowledge).[14, 15, 16]

Students in Indonesia are expected to master digital literacy today, one of the six essential literacies. The government has implemented the School Literacy Movement at the basic education level. The implementation of this program is a serious and concrete effort as a follow-up based on the results of the reflection evaluation of the average literacy achievement of the Indonesian population compared to the population of other countries in ASEAN, especially the PISA test results regarding students' reading abilities which have not met expectations.[17] The importance of this effort is based on the consideration that elementary schools are the foundation of the literacy movement at the next level of education.

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corporate-digital-divide.

[11] F.D. Guillén-Gámez et al., "A Study on the Actual Use of Digital Competence in the Practicum of Education Degree," *Technology Knowledge, and Learning,* 25 (2020): 667–84, https://doi.org/https://doi.org/10.1007/s10758-018-9390-z.

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[14] Verónica Basilotta-Gómez-Pablos et al., "Teachers' Digital Competencies in Higher Education: A Systematic Literature Review," *International Journal of Educational Technology in Higher Education* 19, no. 8 (2022), https://doi.org/10.1186/s41239-021-00312-8

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[16] Eufrasio Pérez-Navío et al., "University Graduate Students and Digital Competence: Are Future Secondary School Teachers Digitally Competent?," *Sustainability* 13, no. 15 (2021): 1–14, https://doi.org/10.3390/su13158519

[17] Ekene Francis Okagbue et al., "The Effects of Covid-19 Pandemic on the Education System in Nigeria: The Role of Competency-Based Education," *International Journal of Educational Research Open* 4 (2023), https://doi.org/10.1016/j.ijedro.2022.100219.

Various activities in elementary schools as a natural form of strengthening digital literacy include using digital sources to search for information during intracurricular activities, which can also be linked to extracurricular activities. Elementary school students must have ethics and collective awareness in utilizing their digital literacy skills to avoid bullying and addictive games.

Related to the description above, prospective elementary school teachers, as the primary key to the successful use of technology in schools, must be able to facilitate the strengthening of digital literacy. Therefore, students are responsible for improving their critical thinking skills, including their ability in digital literacy. This article aims to present information regarding the perceptions of Elementary School Teacher Education Study Program (PGSD) at UNY students regarding digital literacy as a 21st-century skill.

II. Literature review

Digital literacy, as defined by Gilster.[18], refers to the capacity to comprehend and leverage information in diverse formats originating from different sources when delivered through a computer Meanwhile, UNESCO defines digital literacy as the ability to use digital technology to process information thoroughly-from accessing to creating-in a safe and appropriate manner.[19] Digital literacy objects are constantly moving, so they are difficult to define. It has implications for the level of ambiguity in using the term digital literacy, so it becomes an inherent weakness.[20] This article pertains to the definition of digital literacy suggested by Martin[21] in the context of specific life events, the awareness, attitudes, and capacity of individuals to utilize digital tools and facilities responsibly in order to construct new knowledge and interact with others, and to reflect on the process.

Students in teacher education programs must have digital literacy skills[22] because many changes in skills and experience are required to accommodate

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[18] Paul Gilster, *Digital Literacy* (New York: Wiley., 1997).

[19] UNESCO, "*What you need to know about literacy*," (2025), https://www.unesco.org/en/literacy/need-know.

[20] Z Chase and D Laufenberg, "Embracing the Squishiness of Digital Literacy," *Journal of Adolescent and Adult Literacy* 54, no. 7 (2011): 535–37.

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the needs of their students.[23] In addition, technological development requires heterogeneous skills and operations and the abilities of each individual who operates it. On the other hand, there is a gap in providing facilities to support the digital literacy practices that students need.[24] Students as "digital natives"[25] have striking differences in digital competence with their teachers. Nevertheless, this rationale has faced extensive criticism due to the fact that the extent of information availability and digital proficiency is influenced by variables such as social position, race, and gender, rather than age and educational attainment.[26, 27]

Spires & Bartlett[28] have classified the extent of digital literacy into three distinct dimensions, which emphasize the intricate competencies and proficiencies that students need to develop. These include the ability to locate and use digital material, as well as the capacity to create and distribute digital information. It is essential to master critical and evaluative thinking skills to find and utilize digital content. Creativity, innovation, and understanding the sociological context in producing and disseminating digital content are also important. Price-Dennis[29] and Price-Dennis et al.[30] investigated several initiatives aimed at equipping future teachers to incorporate technology and

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researchgate.net/publication/273313102_Gillen_J_Barton_D_2010_Digital_Literacies_Research_briefing_for_the_TLRP-TEL_Teaching_and_Learning_Research_Programme_-_Technology_Enhanced_Learning_London_London_Knowledge_Lab_Institute_of_Education.

[23] Katarzyna Potyrała and Łukasz Tomczyk, "Teachers in the Lifelong Learning Process: Examples of Digital Literacy," *Journal of Education for Teaching* 47, no. 2 (2021): 255–73, https://doi.org/10.1080/02607476.2021.1876499.

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[28] H. A Spires and M.E Bartlett, *Digital Literacies and Learning: Designing a Path Forward* (Raleigh, NC: The William & Ida Friday Institute, North Carolina State University, 2012), https://www.fi.ncsu.edu/wp-content/uploads/2013/05/digital-literacies

[29] D. Price-Dennis, "Developing Curriculum to Support Black Girls' Literacies in Digital Spaces," *English Education* 48, no. 4 (2016), https://www.jstor.org/stable/26492573

[30] D. Price-Dennis et al., "Learning to Develop A Culturally Relevant Approach To 21st Century Writing Instruction," *Teaching/Writing: The Journal of Writing Teacher Education* 3, no. 2 (2014): 46–77, http://scholarworks.wmich.edu/wte/vol3/iss2/5

revealed a disparity between the accessibility and utilization of digital technology in educational settings.

This difference in ability to use technology is concerning if it is related to its availability and essential role in students' daily lives.[31] In addition, the use of digital technology that is less accommodated in teacher education programs increasingly makes them unable to predict how to apply it in the learning environments (classrooms). Furthermore, empirical evidence indicates that aspiring educators exhibit a heightened level of sensitivity towards the utilization of digital technology when they are familiar with it and actively engage with it.[32, 33] Thus, instruction to learn "about, through, and with technology"[34] and becoming must be carried out continuously, including how to become an active participant in digital literacy practices.[35] The online learning environment[36] also needs to be managed well.

Today's society coexists with information that is generally easily accessible to all citizens.[37] However, "Governments around the world recognize the economic consequences of digitally literate citizens and implement systemic strategies to advance digital literacy"[38] It means that

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[31] Michail Kalogiannakis et al., "Gamification in Science Education. A Systematic Review of the Literature," *Education Sciences* 11, no. 1 (2021): 1–36, https://doi.org/10.3390/educsci11010022.

[32] S Collier et al., "Write for Your Life: Developing Digital Literacies and Writing Pedagogy in Teacher Education," *Contemporary Issues in Technology and Teacher Education* 13, no. 3 (2013): 262-284, https://citejournal.org/wp-content/uploads/2016/04/v13i3currentpractice1.pdf

[33] M Hundley and T Holbrook, "Set in Stone or Set in Motion?: Multimodal and Digital Writing with Pre-Service English Teachers," *Journal of Adolescent & Adult Literacy* 56, no. 6 (2013): 500–9, https://doi.org/https://doi.org/10.1002/JAAL.171

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[35] M Hundley and T Holbrook. "Set in Stone or Set in Motion?: Multimodal and Digital Writing with Pre-Service English Teachers," 500–9.

[36] M.M. Juzwik et al., "Supporting Dialogically Organized Instruction in an English Teacher Preparation Program: A Video-Based, Web 2.0-Mediated Response and Revision Pedagogy," *Teachers College Record* 114, no. 3 (2012): 1–42, https://doi.org/https://doi.org/10.1177/016146811211400307

[37] J. R. Sparks et al., *Assessing Digital Information Literacy in Higher Education: A Review of Existing Frameworks and Assessments with Recommendations for Next-Generation Assessment,* Research Report RR-16-32 (Princeton, NJ: Educational Testing Service, 2016), https://files.eric.ed.gov/fulltext/EJ1124778.pdf

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access to information differs from access to knowledge. Universities need to pay attention to this situation, in which prospective teachers must consciously place themselves, especially in carefully selecting and making decisions regarding scientific information that can be accessed openly.

Information sources from the Internet can provide benefits and risks if it is not used wisely and consciously. Therefore, prospective teachers must be critical and careful in using virtual libraries or indexed journal databases. Many journals of varying quality are available on the Internet, but optimal use requires individuals with digital literacy, despite often being expert users of Facebook or computers.[39, 40]

Proficiency in digital skills is crucial for achieving success in social, academic, and professional domains.[41] Therefore, digital literacy is intricately linked to scientific culture, encompassing both official and informal settings, as well as face-to-face or online learning methods.[42, 43, 44] Various studies that have been studied above convince prospective teachers to become active users of digital technology, use it in the learning environment, and increase self-confidence so they are ready to compete positively in the 21st century.

III. Materials and methods

This survey collects data using a questionnaire adapted from.[45] The grid is then used to develop instruments that students fill out online through Google Forms. The research instrument in showing the role of prospective elementary school teachers in digital literacy practices in social studies learning is formed

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[39] L.M. Jeffrey et al., "Developing Digital Information Literacy in Higher Education: Obstacles and Supports," *Journal of Information Technology Education* 10 (2011): 383–413, https://doi.org/https://doi.org/10.28945/1532

[40] Murray and Pérez, "Unravelling the Digital Literacy Paradox: How Higher Education Fails at the Fourth Literacy." 85–100.

[41] Murray and Pérez, "Unravelling the Digital Literacy Paradox: How Higher Education Fails at the Fourth Literacy." 85–100.

[42] C. Kivunja, "Unpacking the Information, Media, and Technology Skills Domain of the New Learning Paradigm," *International Journal of Sustainability in Higher Education* 4, no. 1 (2015): 166–81, https://doi.org/https://doi.org/10.5430/ijhe.v4n1p166

[43] E.M. Meyers et al., "Digital Literacy And Informal Learning Environments: An Introduction," *Learning, Media and Technology* 38, no. 4 (2013): 355–67, https://doi.org/https://doi.org/10.1080/17439884.2013.783597

[44] D.D. Prior et al., "Attitude, Digital Literacy and Self Efficacy: Flow-on Effects for Online Learning Behavior," *Internet and Higher Education* 29 (2016): 91–97, https://doi.org/https://doi.org/10.1016/j.iheduc.2016.01.001

[45] Zhao et al., "Digital Competence in Higher Education: Students' Perception and Personal Factors," 12184.

from 5 main components, in which 38 statements are contained. Respondents can access the research questionnaire using Google Forms. A Likert scale is used in this questionnaire with four choices: very good, good, bad, and very bad. The aspects of digital literacy measured can be observed in Table 1.

Table 1.

Instrument Grille

Digital Literacy Aspects	Indicator	Statement Number
Information and data literacy (X1)	Browse, search, filter data, information, and digital content	1, 2
	Evaluate data, information, and digital content	4
	Manage data, information, and digital content	3, 5, 6
Communication and collaboration (X2)	Interacting through digital technology	7
	Sharing through digital technology	8, 9
	Collaborate through digital technology	10, 11, 12
	Etiquette	13, 14
	Manage digital identities	15, 16, 17, 18
Digital content creation (X3)	Developing digital content	19, 20
	Integrate and re-elaborate digital content	21
	Copyright and license	22
	Programming	23, 24
Security (X4)	Protect the device	25, 26
	Protect personal data and privacy	27
	Protecting health and well-being	28, 29
	Protecting the environment	30, 31
Troubleshooting (X5)	Troubleshoot technical issues	32, 33
	Identify technology needs and responses	34, 35
	Using digital technology creatively	36, 37
	Identifying digital competency gaps	38

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The alignment of research objectives with research design is very important. Quantitative research design with discriminant analysis is able to direct researchers in choosing the right type of sampling technique. In this case, the sampling technique used is adjusted to the needs of the study, namely purposive sampling, so researchers provide limits on grouping samples based on criteria. The criteria consider prospective teachers who have taken social studies education courses whose lecture process has facilitated several digital literacy skills that are measured. Thus, a sample of 563 future elementary school teachers was obtained, in this case, students in the second and fourth semesters of PGSD UNY. Data collection in the form of questionnaires was carried out online due to the limitations of researchers in reaching various campus units organized by PGSD UNY. Information about the identity and credibility of respondents is confidential.

The data obtained was analyzed using SPSS for Windows, version 26. The analysis only focused on descriptive statistics, strengthened by qualitative exposure, such as doing an interview with a fourth-semester student who scored high. However, validating and ensuring the reliability of the instruments used in the study is crucial to get evidence that the device developed aligns with the goals of measuring and extracting information. The content's validity was established through targeted group conversations with experts in social studies, technology and information, and literacy. Construct validity was conducted through CFA-assisted SPSS for Windows series 26 and LISREL 8.80. Instrument reliability testing was carried out using SPSS for Windows version 26.

IV. Results

Construct validity

Table 2.

KMO and Bartlett's Test scores

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.963
Bartlett's Test of Sphericity	Approx. Chi-Square	13273.501
	Df	666
	Sig.	.000

Table 2 shows a KMO value of 0.963 (>0.5) and a significance level of 0.00 (α<0.05) in Bartlett's Test of Sphericity. This indicates that the chosen sample is appropriate for analysis using factor analysis. Analyzed using confirmatory factor analysis, the factor loadings of each item are shown in Table 3.

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Table 3.
Factor Analysis Results

Item	Loading Factor	Criteria	Item	Loading Factor	Criteria	Item	Loading Factor	Criteria
B_1	.537	Valid	B_14	.610	Valid	B_26	.647	Valid
B_2	.570	Valid	B_15	.623	Valid	B_27	.726	Valid
B_3	.533	Valid	B_16	.734	Valid	B_28	.691	Valid
B_4	.600	Valid	B_17	.549	Valid	B_29	.528	Valid
B_5	.645	Valid	B_18	.587	Valid	B_30	.641	Valid
B_6	.550	Valid	B_19	.588	Valid	B_31	.769	Valid
B_7	.564	Valid	B_20	.426	Valid	B_32	.764	Valid
B_8	.670	Valid	B_21	.499	Valid	B_33	.463	Valid
B_9	.634	Valid	B_22	.505	Valid	B_34	.394	Valid
B_10	.566	Valid	B_23	.827	Valid	B_35	.374	Valid
B_11	.605	Valid	B_24	.818	Valid	B_36	.407	Valid
B_12	.483	Valid	B_25	.660	Valid	B_37	.500	Valid
B_13	.589	Valid						

All valid items are presented in Table 3 because no items are discarded. CFA results show that only 37 items can be used with factor loadings of more than 0.40.

IV.1. Reliability

The Cronbach's Alpha coefficient was used to assess dependability, taking into account the coefficient threshold of 0.70 or above. The following reliability results are divided based on the components that form the role of prospective elementary school teachers.

Table 4.
Instrument Reliability Statistics

Component	N of Items	Cronbach's Alpha
Information and data literacy	11	0.901
Communication and Collaboration	8	0.894
Digital content creation	5	0.841

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Component	N of Items	Cronbach's Alpha
Security	6	0.888
Troubleshooting	7	0.877
The entire instrument	37	0.963

Table 4 displays data that the reliability requirements for the instrument being developed have been successfully fulfilled, both for each component and overall, based on Cronbach's Alpha coefficient results. Therefore, the device can be used to measure perceptions regarding the digital literacy of prospective elementary school teachers.

IV.2. Descriptive analysis

Primary school teacher candidates' perceptions of digital competence were measured using 37 statement items, which were divided into several aspects. Specifically, the competencies assessed include information and data literacy (11 items), communication and cooperation (8 items), digital content production (6 items), security (6 items), and problem-solving (7 items). Respondents were provided with options on a Likert scale of 1 to 4. The scores for SBU, BU, BA, and SBA are 1 (poor), 2 (terrible), 3 (good), and 4 (very good), respectively. To prevent biased responses, this study was undertaken.

Table 5.

Perceptions of Prospective Elementary School Teachers on Digital Competencies

Competencies	Statement Item	SBU	BU	BA	SBA	Mean	SD
Information and Data Literacy	Item 1	0.53	0.36	68.92	30.2	3.29	0.49
	Item 2	0.18	2.31	72.11	25.4	3.23	0.48
	Item 3	0.00	1.60	74.42	23.98	3.22	0.45
	Item 4	0.18	3.73	80.46	15.63	3.12	0.43
	Item 5	0.00	1.78	67.85	30.37	3.29	0.49
	Item 6	0.18	1.95	76.38	21.49	3.19	0.45
	Item 7	0.18	2.13	63.77	33.93	3.31	0.52
	Item 8	0.36	7.28	72.47	19.89	3.12	0.52
	Item 9	0.00	6.04	74.6	19.36	3.13	0.49
	Item 10	0.00	2.31	71.4	26.29	3.24	0.48
	Item 11	0.00	2.49	69.8	27.71	3.25	0.49

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Competencies	Statement Item	SBU	BU	BA	SBA	Mean	SD
Communication and Cooperation	Item 12	0.36	3.20	77.44	19.01	3.15	0.46
	Item 13	0.18	0.36	58.97	40.50	3.40	0.51
	Item 14	0.18	0.53	63.94	35.35	3.34	0.50
	Item 15	0.18	1.95	69.80	28.06	3.26	0.49
	Item 16	0.18	2.84	70.16	26.82	3.24	0.50
	Item 17	0.00	2.13	77.09	20.78	3.19	0.44
	Item 18	0.00	0.53	64.65	34.81	3.34	0.49
	Item 19	0.36	4.09	74.07	21.49	3.17	0.49
Digital Content Production	Item 20	0.53	4.97	74.42	20.07	3.14	0.50
	Item 21	0.18	4.09	77.80	17.94	3.13	0.46
	Item 22	0.18	6.57	77.09	16.16	3.09	0.48
	Item 23	1.42	21.31	66.61	10.66	2.87	0.60
	Item 24	2.31	27.18	61.10	9.41	2.78	0.64
Security	Item 25	0.71	0.36	72.82	26.11	3.24	0.48
	Item 26	0.00	1.07	74.60	24.33	3.23	0.45
	Item 27	0.00	0.18	60.92	38.90	3.39	0.49
	Item 28	0.18	1.42	70.34	28.06	3.26	0.48
	Item 29	0.18	3.73	71.94	24.16	3.20	0.50
	Item 30	0.00	0.53	67.67	31.79	3.31	0.48
Problem-Solving	Item 31	0.53	7.46	74.78	17.23	3.09	0.51
	Item 32	0.53	7.82	74.42	17.23	3.08	0.52
	Item 33	0.18	1.95	75.13	22.74	3.20	0.46
	Item 34	0.00	2.31	73.89	23.80	3.21	0.46
	Item 35	0.00	2.49	69.45	28.06	3.26	0.49
	Item 36	1.78	28.42	59.33	10.48	2.79	0.64
	Item 37	0.00	7.10	76.55	16.34	3.09	0.48

Most students consider themselves good at learning digital competencies, which consists of information and data literacy, communication and cooperation, digital content production, security, and problem-solving. All items formed in this aspect are dominated by more than 65%, responding well to all statements.

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IV.3. Inferential analysis

The subsequent information examines the conditions that impact students' views of digital proficiency, including gender, class, place of residence, formal education, and possession of lecture support equipment.

Gender Factor

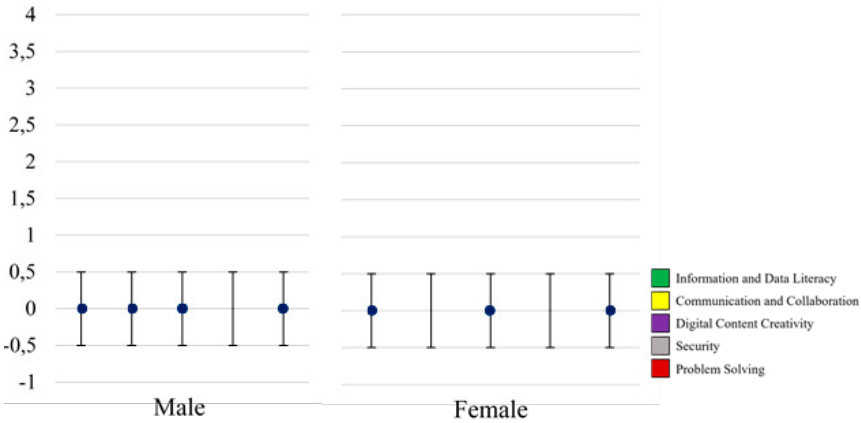


Figure 1.
Student perceptions of digital literacy based on gender

The purpose of testing utilizing the Mann-Whitney U formula is to ascertain if there exist disparities in the perspectives of female and male pupils on the elements of information and data literacy. Gender analysis reveals statistically significant differences (p-value = 0.000). Figure 1 presents a comparison of students' opinions of digital ability based on gender. The average total score of men is 34.87, while women's is 35.51. The gain for each component based on gender has a significance of 0.114 on the information and data literacy component, 0.025 on the communication and collaboration component, 0.152 on the digital content creativity component, 0.995 on the security component, and 0.103 on the problem-solving component. Based on this data, only the security component is able to differentiate student perceptions based on gender. It shows that the difference in students' perceptions of digital competence is apparent from their carefulness in using information and sharing data in the information communication process. On the other hand, the other four components are

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classified as having low competence with far significance when compared to the competence of security components (>0.05). Thus, there is hope for educators to improve students' competence through components that still need to be improved.

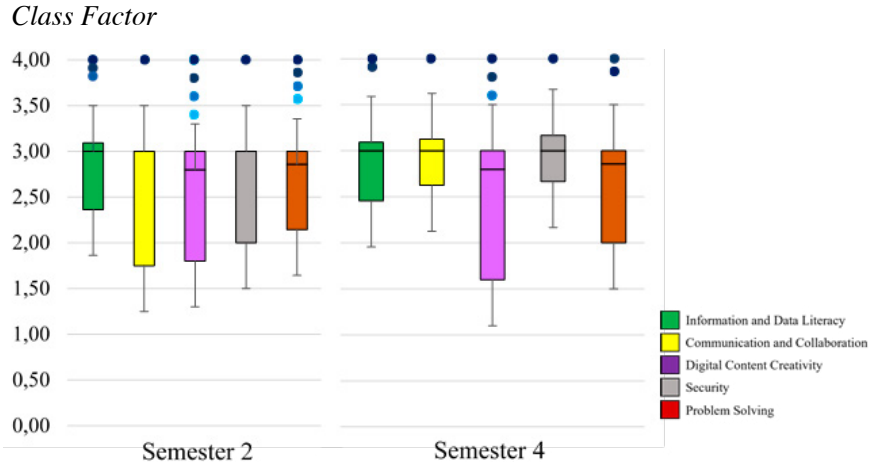


Figure 2.

Students' perceptions of digital literacy based on class distribution

Almost the same as student perceptions in terms of gender, student perceptions based on class distribution, in this case, are based on semester two and semester 4. Both have differences, even though the data processing results show significant differences in the four components, and only one component does not show significance. The next Mann-Whitney U test aims to find out whether there are differences between semester two and semester four students regarding perceptions of each component. The test results are presented in Figure 2. There is a significance level of 0.242 for the information and data literacy component and 0.565 for the communication and cooperation component, the digital content creativity component 0.504, the security component 0.363, and the problem-solving component 0.850. The obtained data show that digital content's problem-solving and creativity components can differentiate student perceptions based on class. The total average score obtained in semester two is 35.27, while in semester four, it is 35.38. Thus, students' perceived digital competence can differentiate the extent of their information and data

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literacy abilities.[46] It is also a foothold for educators, who in this case are lecturers, to explore further the extent of the perspective of female students towards a problem and creativity, so there is no gap with male students.

Factors of Residential Area

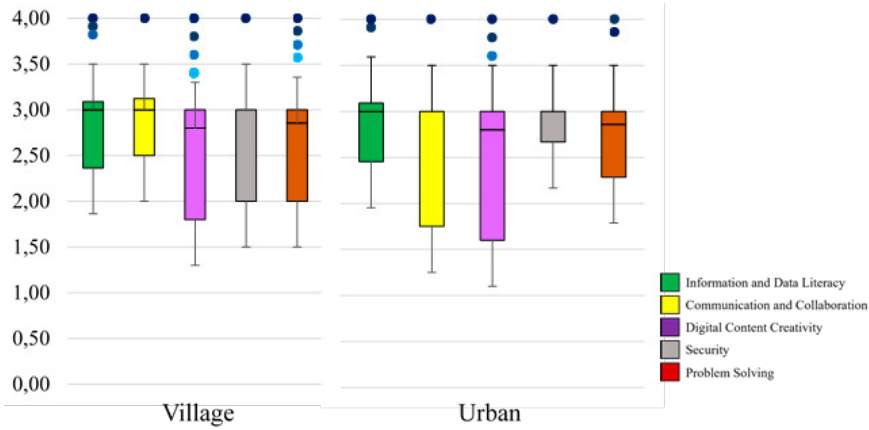


Figure 3.
Students' perceptions of digital literacy based on region of origin

The area of origin is divided into urban and rural. To distinguish students' perceptions, the Mann-Whitney U test aims to determine whether there are differences between students from villages and cities related to each perception in the components. A comparison of students' perceptions of digital competence between regions of origin is presented in Figure 3. There is a significance level of 0.292 for each element in the information and data literacy component, 0.534 in the communication and collaboration component, 0.609 in the digital content creative component, 0.643 in the security component, and 0.688 in the problem-solving component. More clearly, the problem-solving and creativity components of digital content can distinguish student perceptions based on the region of origin. It shows that the perception of digital literacy owned by students is not too strong; it can be distinguished based on students' information and data literacy skills.

[46] S.M. Avdeeva et al., "Digital Transformation of Schools and Student's Information and Communication Literacy," *Voprosy Obrazovaniya / Educational Studies Moscow* 2022, no. 1 (2022): 218–43, https://doi.org/10.17323/1814-9545-2022-1-218-243.

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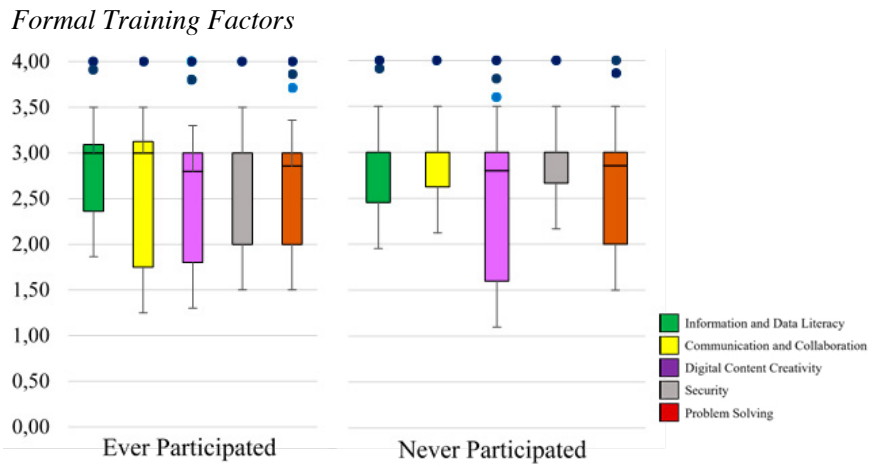


Figure 4.

Students' Perceptions of Digital Literacy Based on Participation in Digital Training

Not all students have attended training related to improving digital competence, so students' perceptions will tend to lead to unbalanced perceptions. However, the analysis results show that the purpose of the Mann-Whitney U test is to ascertain if there are disparities between pupils who have received instruction and those who have not, with regard to each perception of the components. In Figure 4, a comparison of students' opinions of digital proficiency between genders is presented. A significant level of 0.033 is seen in the information and data literacy component, 0.068 in the communication and collaboration component, and 0.552 in the digital content creative component, based on students' involvement in training, 0.064 is seen in the security component, and 0.746 in the problem-solving component. More clearly, the problem-solving component is able to distinguish student perceptions based on student participation in training based on increasing digital competence. Although other components are classified as influential and able to distinguish student groups, only the information and data literacy component is still relatively low and unable to distinguish between the two groups. Becomes a basis for evaluation to explore weaknesses in students' literacy culture.

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Supporting Device Ownership Factors

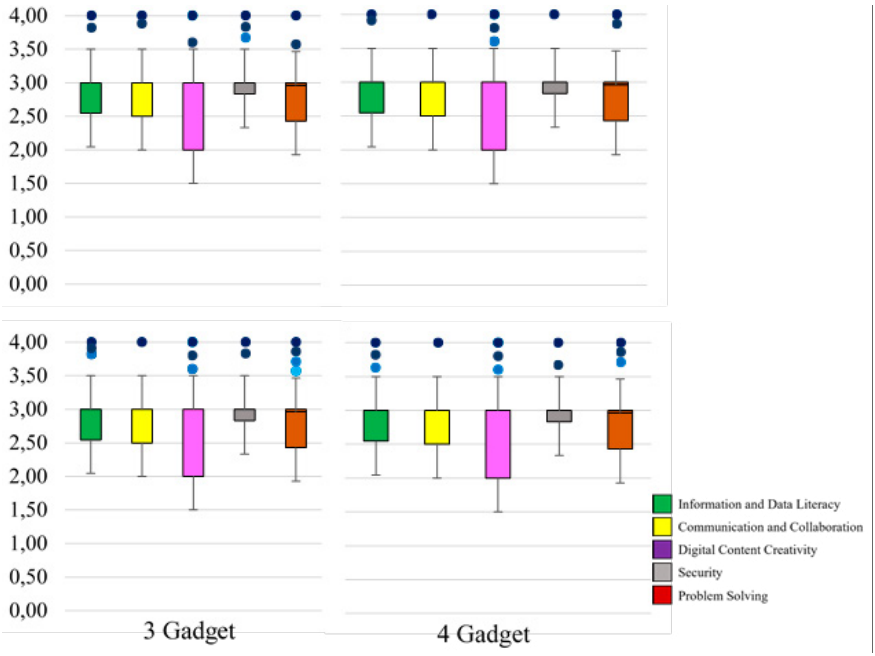


Figure 5.

Students' Perceptions of Digital Literacy Based on Ownership of Learning Support Device

Like the extent of students' abilities in digital-based literacy, not all students have the same learning support devices, so it is possible that the habit of obtaining and processing information digitally may differ. More clearly, the application of Mann-Whitney analysis U testing seeks to ascertain if there are disparities among students with varying quantities of gadgets when it comes to each impression of the component. The comparison of students' opinions of digital competence across different devices is shown in Figure 5. A significant level of 0.895 is seen in the information and data literacy component and 0.830 in the communication and collaboration component when acquiring each component based on the number of devices possessed, 0.441 in the digital content creativity component, 0.969 in the security component, and 0.838 in the problem-solving component. The acquisition of significance in each component that is differentiated based on

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the number of devices owned by students is able to show the extent of the influence of the number of devices on student competence in digital literacy. Perceptions of students in information and data literacy, communication and teamwork, security, and problem-solving are predominantly positive. These four components reflect the purpose of using devices that a student has used. In addition, the component of digital content creativity has a low differentiation test; it is an opportunity for educators to direct learning that is more innovative and creative, produces digital-based works, and is able to explore weaknesses in students' creativity.

V. Discussion

Digital literacy is a critical competency that needs to be developed in students, especially if it is linked to preparing professional resources with academic abilities according to the needs of future society.[47, 48] This started with the situation and conditions of education and learning, which experienced many changes as one of the impacts of the COVID-19 epidemic.[49, 50]

Research that focuses on digital literacy, literacy outcomes, perceptions of it, and the relationship between its dimensions has been carried out by researchers in various countries.[51, 52, 53] The present study enhances the existing research findings, particularly on the digital literacy level of

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[47] F.D. Guillén-Gámez et al., "A Study on the Actual Use of Digital Competence in the Practicum of Education Degree," *Technology Knowledge, and Learning,* 25 (2020): 667–84, https://doi.org/https://doi.org/10.1007/s10758-018-9390-z

[48] E. López-Meneses et al., "University Students' Digital Competence in Three Areas of The Digcom 2.1 Model: A Comparative Study at Three European Universities," *Australasian Journal of Educational Technology* 36 (2020): 69–88, https://doi.org/https://doi.org/10.14742/ajet.5583

[49] Elias G Carayannis and Joanna Morawska-Jancelewicz, "The Futures of Europe: Society 5.0 and Industry 5.0 as Driving Forces of Future Universities," *Journal of the Knowledge Economy* 13, no. 4 (2022): 3445–71, https://doi.org/10.1007/s13132-021-00854-2

[50] Richard Watermeyer et al., "'Education without Limits': The Digital Resettlement of Post-Secondary Education and Training in Singapore in the COVID-19 Era," *Journal of Education Policy* 37, no. 6 (2022): 861–82, https://doi.org/10.1080/02680939.2021.1933198

[51] R. Ata and K Yildirim, "Exploring Turkish Pre-Service Teachers' Perceptions and Views of Digital Literacy," *Education Sciences* 9 (2019): 40, https://doi.org/http://doi.org/10.3390/educsci9010040

[52] K. Martzoukou et al., "A Study of Higher Education Students' Self-Perceived Digital Competences for Learning and Everyday Life Online Participation," *Journal of Documentation* 76, no. 6 (2020): 1413–58, https://doi.org/https://doi.org/10.1108/JD-03-2020-0041

[53] C. Sánchez-Cruzado et al., "Teacher Digital Literacy: The Indisputable Challenge after COVID-19," *Sustainability* 13 (2021): 1858, https://doi.org/https://doi.org/10.3390/su13041858

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Bachelor of PGSD at UNY students as perceived within the higher education setting. The digital literacy of students in the areas of information and data literacy, communication, and cooperation demonstrates robust outcomes, as the majority of students perceive these aspects as beneficial. Students' perceptions of digital literacy are inversely proportional to task complexity. Tasks that increase complexity cause students' literacy levels to decrease.[54,55] Therefore, digital content creation and programming skills that are dynamic, following technological development trends, and other problem-solving skills, especially when encountering technical problems, need to be improved. This study's findings align with Gallego-Arrufat et al.[56] and Martzoukou et al.,[57] the positive perception of the security aspect of digital competence contradicts the results explored by Porlan and Sanchez.[58] However, overall, students' digital literacy level still has the potential to be developed further.

Gender is a research theme widely conducted today.[59] Significant differences regarding digital literacy when examined from a gender perspective have been found by several researchers.[60,61] However, simultaneously, different findings are shown by Galindo-Domínguez and Bezanilla, Gil-Juarez et al, and Prieto et al in which no statistically significant differences exist based on

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[54] M. Cabezas González et al., "Do Gender and Age Affect the Level of Digital Competence? A Study with University Students," *Fonseca Journal of Communication* 15 (2017): 115–32, https://doi.org/https://doi.org/10.14201/fjc201715109125

[55] A. Pérez-Escoda et al., "Digital Skills in the Z Generation: Key Questions for a Curricular Introduction in Primary School," *Comunicar* 49 (2016): 71–79, https://doi.org/https://doi.org/10.3916/C49-2016-07

[56] M. Gallego-Arrufat et al., "Competence of Future Teachers in the Digital Security Area," *Comunicar* 61 (2019): 57–67, https://doi.org/https://doi.org/10.3916/C61-2019-05

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[59] N.C. Dedebali, "Analysis of Digital Literacy and Metaphoric Perceptions of Teacher Candidate," *International Journal of Educational Methodology* 6, no. 1 (2020): 135–45, https://doi.org/https://doi.org/10.12973/ijem.6.1.135

[60] A. Basantes-Andrade et al., "Digital Competences Relationship between Gender and Generation of University Professors," *International Journal on Advanced Science Engineering Information Technology*. 1 (2020): 205–11, https://doi.org/https://doi.org/10.18517/ijaseit.10.1.10806

[61] L.J. Rodríguez-Muñiz et al., "Secondary Mathematics Teachers' Perception of Their Readiness for Emergency Remote Teaching during the COVID-19 Pandemic: A Case Study," *Education Sciences* 11, no. 5 (2021): 228, https://doi.org/https://doi.org/10.3390/educsci11050228

gender.[62, 63, 64] Meanwhile, this study verifies that male students rate themselves higher than female students on one aspect of security.[65]

Many researchers have discovered that digital competencies have been explored based on age gaps. However, research that looked at the issue of digital competency from the different classes' students had taken only found small gaps.[66] Therefore, researchers should take into account the lack of significant age disparity among students when examining variations in views of digital competence between first and second-year students. Research findings provide evidence that second-year (fourth- semester) students show better self-perception in two aspects of digital literacy, including problem-solving and digital content creativity.

Research findings show that where students live influences the digital divide. The causes of the gap from demographic factors arise due to several aspects, such as age, education level, and Internet connections.[67] The digital literacy of students who live in urban areas shows better results in the aspects of problem-solving and digital content creativity. Therefore, these findings are in line with Sánchez-Caballé, Gisbert et al.[68] All students have previous relevant experience through formal training related to the use of ICT and digital competencies. Thus, supporting the findings of Sánchez-Caballé, Gisbert, et al.,[69] the knowledge gained through formal training can influence

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[62] H Galindo-Domínguez and M J Bezanilla. "Digital Competence in the Training of Pre-Service Teachers: Perceptions of Students in the Degrees of Early Childhood Education and Primary Education," *Journal of Digital Learning in Teacher Education* 37, no. 4 (2021): 262–78, https://doi.org/https://doi.org/10.1080/21532974.2021.1934757

[63] A. Gil-Juarez et al., "Digital Gender Gap: A Review and a Proposal," *Education in the Knowledge Society* 12 (2011): 25–53, https://doi.org/https://doi.org/10.14201/eks.8272

[64] J.S. Prieto et al., "Gender and Digital Teaching Competence in Dual Vocational Education and Training," *Education Sciences* 10, no. 3 (2020): 84, https://doi.org/https://doi.org/10.3390/educsci10030084

[65] Ismael Hernández Sempere and Cinta Espuny Vidal, "STEM Studies and Digital Gender Gap in Baccalaureate: The Influence of Digital Competence in the Academic Future," *Edutec*, no. 81 (2022): 55–71, https://doi.org/10.21556/edutec.2022.81.2601

[66] G. Blank et al., "Local Geographies of Digital Inequality," *Social Science Computer Review* 36, no. 1 (2018): 82–102, https://doi.org/https://doi.org/10.1177/0894439317693332

[67] C. Rundel and K Salemink, "Bridging Digital Inequalities in Rural Schools in Germany: A Geographical Lottery?," *Education Sciences* 11, no. 4 (2021): 181, https://doi.org/https://doi.org/10.3390/educsci11040181

[68] A Sánchez-Caballé , M. Gisbert, and F. Esteve, "The Digital Competence of University Students: A Systematic Literature Review," *Aloma Revista de Psicologia Ciències de l Educació i de l Esport* 38, no. 1 (2020): 63–74, https://doi.org/https://doi.org/10.51698/aloma.2020.38.1.

[69] Sánchez-Caballé, Gisbert, and Esteve, "The Digital Competence of University Students," 63–74

the development of students' subsequent digital competencies. Formal training has a beneficial effect on pupils, leading to an increased degree of self-perception as regards their digital literacy.

VI. Conclusion

Multimedia technology is experiencing more rapid and extensive changes, especially in education. Therefore, accurate assessment of students' digital literacy competence is crucial. Results of research can enhance the present state of digital literacy among students. The research results can be followed up to determine the digital literacy perceptions of students in different education systems. Therefore, they might be compared to pupils from various nations or educational settings. Furthermore, study findings can serve as a reference for lecturers and educational institutions, particularly when establishing suitable training and education programs.

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Artificial intelligence in higher education: A foundational analysis of drivers, barriers, and solutions

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Abstract: This foundational study provides an empirical baseline for the drivers and barriers influencing the adoption of artificial intelligence (AI) in higher education across diverse cultural contexts. Drawing on 2021 survey data from 47 educators, administrators, and policymakers across 26 countries, the research employs thematic analysis to systematically map adoption dynamics before the generative AI era. The findings identify personalised learning (12.3% of driver mentions), teaching efficacy (9.2%), and innovative teaching models (8.4%) as the most frequently cited drivers for AI adoption. However, significant barriers persist, including a lack of AI expertise (cited by 38 respondents), inadequate technological infrastructure (33 respondents), and unresolved ethical concerns such as data privacy and algorithmic bias. The analysis reveals stark disparities between well-resourced and under-resourced institutions, highlighting infrastructure deficits and limited technical capacity as

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particularly acute in developing contexts. Proposed solutions encompass investment in high-tech infrastructure, comprehensive training programmes, robust cybersecurity protocols, and clear ethical governance frameworks aligned with transparency, fairness, and accountability principles. This empirical investigation serves as a baseline study, documenting foundational patterns that subsequently informed the theoretically integrated analysis published by Slimi and Villarejo Carballido (2026), which applies the Technology Acceptance Model and the AI Ethics Framework and introduces "Ethical Readiness" as a novel mediating construct. The study concludes that without targeted investment in infrastructure, capacity-building initiatives, and context-sensitive regulatory frameworks, AI's transformative potential may remain unrealised, particularly in under-resourced regions, exacerbating existing educational inequities and widening the global digital divide.

Keywords: Artificial intelligence; higher education; AI adoption; empirical baseline study; cross-cultural perspectives; infrastructure; digital divide.

I. Introduction

This study provides an empirical mapping of the drivers and barriers influencing the adoption of artificial intelligence (AI) in higher education across diverse cultural contexts.[3] Specifically, it investigates how AI is perceived to enhance personalised learning and administrative efficiency, while also documenting the ethical and infrastructural challenges that accompany its adoption.[4] By capturing these dynamics across 26 countries before the widespread adoption of generative AI tools, this research establishes a foundational baseline dataset against which subsequent developments in AI-enabled education can be measured.

The study addresses a critical gap in the literature. While theoretical discussions of AI in education have proliferated, systematic empirical documentation of cross-cultural adoption patterns, particularly in underrepresented regions, remains limited.[5] This investigation addresses that gap by providing observational data on how educators, administrators, and

[3] For foundational discussions of AI in educational contexts, see Rosemary Luckin et al., *Intelligence Unleashed: An Argument for AI in Education* (London: Pearson, 2016).

[4] On the transformative potential of AI in higher education administration, see I. Roll and R. Wylie, "Evolution and Revolution in Artificial Intelligence in Education," *International Journal of Artificial Intelligence in Education* 26, no. 2 (2016): 582–599.

[5] The underrepresentation of non-Western contexts in AI in education research is noted by Olaf Zawacki-Richter, Victoria I. Marín, Melissa Bond, and Franziska Gouverneur, "Systematic Review of Research on Artificial Intelligence Applications in Higher Education—Where Are the Educators?" *International Journal of Educational Technology in Higher Education* 16 (2019): art. 39.

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policymakers across diverse institutional contexts perceive the opportunities and constraints shaping AI adoption.

The findings presented here serve as the empirical foundation for the complementary study by Slimi and Villarejo Carballido, which develops a theoretically integrated analysis applying the Technology Acceptance Model (TAM) and the AI Ethics Framework to explain the psychological and institutional mechanisms underlying these observed patterns.[6] The present study thus functions as the "observational map," systematically documenting the landscape of AI adoption. The complementary study provides the "theoretical compass," offering theoretical synthesis through an "Ethical Readiness" mediating construct.

Since its emergence as a research field in the 1950s, AI has evolved into a field with broad applications, transforming traditional practices in higher education.[7] For example, it enables more flexible and personalised learning environments, automates administrative tasks such as scheduling and grading, and enhances management for educators and students alike.[8] AI also supports admissions, learning, and training services by optimising resource allocation. Scholars argue that AI has considerable potential to transform education.[9] However, despite its promise, AI adoption in higher education has been slower than expected, with major barriers related to ethical concerns, including data privacy, algorithmic bias, and institutional readiness.[10]

This study pursues three interrelated empirical objectives:

1. To identify and categorise the primary drivers shaping AI adoption across diverse higher education contexts.

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[6] Zouhaier Slimi and Beatriz Villarejo Carballido, "A Dual-Framework Analysis of Artificial Intelligence Adoption in Cross-Cultural Higher Education," *Discover Education* 5, no. 1 (2026): art. 406, https://doi.org/10.1007/s44217-026-01415-y.

[7] For historical context on AI development, see Wayne Holmes, Maya Bialik, and Charles Fadel, *Artificial Intelligence in Education: Promises and Implications for Teaching and Learning* (Boston: Center for Curriculum Redesign, 2019); for a philosophical perspective, see Luciano Floridi, *The Logic of Information: A Theory of Philosophy as Conceptual Design* (Oxford: Oxford University Press, 2019).

[8] Anthony Seldon and Oladimeji Abidoye, and Timothy Metcalf, *The Fourth Education Revolution Reconsidered: Will Artificial Intelligence Enrich or Diminish Humanity?* (Buckingham: University of Buckingham Press, 2020).

[9] Luckin et al., *Intelligence Unleashed*.

[10] Víctor González-Calatayud, Paz Prendes-Espinosa, and Rosabel Roig-Vila, "Artificial Intelligence for Student Assessment: A Systematic Review," *Applied Sciences* 11, no. 12 (2021): art. 5467; Wayne Holmes et al., "Ethics of AI in Education: Towards a Community-Wide Framework," *International Journal of Artificial Intelligence in Education* 32, no. 3 (2022): 504–526.

2. To document the structural, infrastructural, and ethical barriers impeding AI adoption; and
3. To map proposed solutions as articulated by educational stakeholders operating across different institutional and cultural settings.

In pursuing these objectives, the study contributes a systematically documented empirical baseline. This baseline captures AI adoption dynamics at a pivotal transitional moment following the initial wave of AI adoption in education but preceding the disruptive entry of large language models in late 2022.[11] As such, these findings provide a valuable historical benchmark for understanding how foundational adoption patterns have subsequently evolved.

II. Literature review: Situating the empirical inquiry

This review briefly contextualises the empirical investigation within existing scholarship on AI in higher education.[12] Rather than reproducing the exhaustive theoretical analysis developed in the complementary study, this section identifies key themes in the literature that inform the present study's empirical focus.

II.1. The emergent role of AI in higher education

Contemporary studies emphasise the increasing role of AI in higher education, stressing its potential to enhance learning outcomes and streamline administrative tasks.[13] Menkhoff and Teo's experiential chatbot workshop, for instance, demonstrates AI's value in helping non-STEM students acquire essential skills, suggesting that AI aligns with broader educational objectives.[14] However, the scalability of such initiatives across disciplines and educational contexts remains empirically under-examined; the present study addresses this gap through cross-cultural data collection.

Katsuragi and Tanaka explore AI applications to improve online student retention, developing a machine-learning model that predicts dropout

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[11] On the significance of the 2022 transition point, see Chung Kwan Lo, "What Is the Impact of ChatGPT on Education? A Rapid Review of the Literature," *Education Sciences* 13, no. 4 (2023): 410.

[12] Holmes, Bialik, and Fadel, *Artificial Intelligence in Education*.

[13] Zawacki-Richter et al., "Systematic Review of Research."

[14] Thomas Menkhoff and Y. Q. L. Teo, "Engaging Undergraduate Students in an Introductory AI Course through a Knowledge-Based Chatbot Workshop," in *ACM International Conference Proceeding Series* (New York: ACM, 2022), 119–125.

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rates.[15] This exemplifies AI's potential to proactively mitigate student disengagement. Yet the effectiveness of such data-driven models depends on robust data infrastructures, which many educational institutions lack, particularly in under-resourced contexts. Documenting these infrastructural disparities constitutes a central aim of this investigation.

II.2. Documented barriers to AI adoption

Teuscher argues that, despite its promise, AI adoption presents significant challenges, particularly as the rapid pace of AI advancements outstrips educational institutions' ability to adapt curricula accordingly.[16] Similarly, Seo designs a big data-based platform that recommends software education curricula tailored to individual learners; however, such data-driven personalisation raises concerns about the accuracy and fairness of automated recommendations.[17]

Shopland et al. report initial survey findings on the limited inclusion of students with disabilities in higher education in India and Bangladesh, and propose accessible open educational resources and AI-based personalisation to support learners facing barriers. At the same time, Xie and Chen emphasise AI's limitations in automated assessment systems, particularly for complex language tasks.[18] These documented challenges provide empirical motivation to systematically investigate how stakeholders across diverse institutional contexts perceive and navigate such barriers.

Collectively, these studies show that technical, pedagogical, and ethical barriers are interdependent and cannot be resolved independently. Prior

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[15] M. Katsuragi and K. Tanaka, "Dropout Prediction by an Interpretable Machine Learning Model towards Preventing Student Dropout," in *Advances in Transdisciplinary Engineering*, vol. 28 (Amsterdam: IOS Press, 2022), 678–683.

[16] Christof Teuscher, "A Golden Age for Computing Frontiers, a Dark Age for Computing Education?" in *Proceedings of the 18th ACM International Conference on Computing Frontiers* (New York: ACM, 2021), 140–143.

[17] J. H. Seo, "Big Data-Based SW Education Curriculum Recommendation Platform Design for Learners," *Journal of Theoretical and Applied Information Technology* 100, no. 16 (2022): 4971–4978.

[18] Nicholas Shopland et al., "Improving Accessibility and Personalisation for HE Students with Disabilities in Two Countries in the Indian Subcontinent – Initial Findings," in *Universal Access in Human-Computer Interaction: User and Context Diversity, Lecture Notes in Computer Science*, vol. 13309 (Cham: Springer, 2022), 110–122; B. Xie and L. Chen, "Automatic Scoring Model of Subjective Questions Based on a Text Similarity Fusion Model," in *Lecture Notes in Electrical Engineering*, vol. 942 (Singapore: Springer, 2022), 58–67.

research has examined these barriers in isolation; this study investigates how they manifest differently across contexts.

II.3. The empirical gap

The literature reveals a consistent pattern: while theoretical discussions of AI's potential and risks are well developed, systematic empirical documentation of cross-cultural adoption patterns, particularly those that capture perspectives from underrepresented regions, remains limited.[19] This study directly addresses that gap by providing observational data that maps how drivers, barriers, and solutions manifest across 26 countries, thereby establishing an empirical foundation for subsequent theoretical synthesis.

II.4. Theoretical frameworks guiding this investigation

While this study functions primarily as an empirical baseline investigation, two complementary theoretical frameworks informed the research design and interpretive lens: the Technology Acceptance Model (TAM) and the AI Ethics Framework.

II.4.1. Technology Acceptance Model (TAM)

Developed by Davis,[20] TAM posits that technology adoption is primarily determined by two perceptual factors: perceived usefulness (the degree to which an individual believes technology enhances performance) and perceived ease of use (the degree to which an individual believes technology is effortless to use). TAM has been extensively validated across educational technology contexts and provides a useful lens for understanding how stakeholders' perceptions of AI's utility and complexity shape adoption intentions. In this study, TAM informed the development of open-ended prompts exploring drivers (reflecting perceived usefulness) and barriers (reflecting perceived ease of use and external constraints).

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[19] Neil Selwyn, *Should Robots Replace Teachers? AI and the Future of Education* (Cambridge: Polity Press, 2019); see also Zouhaier Slimi and Beatriz Villarejo Carballido, "Systematic Review: AI's Impact on Higher Education Learning, Teaching, and Career Opportunities," *TEM Journal* 12, no. 3 (2023): 1627–1637.

[20] Fred D. Davis, "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly* 13, no. 3 (1989): 319–340.

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II.4.2. AI Ethics framework

Building on scholarship examining algorithmic fairness, transparency, and accountability,[21] the AI Ethics Framework emphasises that responsible technology adoption requires attention to ethical principles throughout the implementation process.[22] Key dimensions include:

- *Transparency*: clarity about how AI systems make decisions
- *Fairness*: mitigation of algorithmic bias and equitable outcomes
- *Privacy*: protection of stakeholder data
- *Accountability*: clear responsibility for AI-mediated decisions

These ethical dimensions directly informed the study's investigation of barriers and solutions, particularly in probes regarding data governance, ethical concerns, and regulatory frameworks.

The conceptual framework guiding this investigation is illustrated in Figure 1 in the Appendix.

II.4.3. The empirical-theoretical distinction

This study does not *test* these frameworks, which is the purpose of the complementary study by Slimi and Villarejo Carballido. Rather, the frameworks served as *sensitising concepts* that guided data collection and provided an initial interpretive structure.[23] The present study thus provides the empirical observations that enable subsequent theoretical integration and the introduction of an "Ethical Readiness" mediating construct in that complementary analysis.

III. Methods

III.1. Research design

This study employed a qualitative exploratory design complemented by descriptive frequency analysis.[24] The approach was selected to capture

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[21] Holmes et al., "Ethics of AI in Education"; Floridi, *Logic of Information*.

[22] Holmes et al., "Ethics of AI in Education."

[23] Herbert Blumer, "What Is Wrong with Social Theory?" *American Sociological Review* 19, no. 1 (1954): 3–10.

[24] On qualitative research design, see Virginia Braun and Victoria Clarke, "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology* 3, no. 2 (2006): 77–101.

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rich, context-sensitive perspectives on AI adoption while enabling systematic identification of recurring patterns across diverse institutional and cultural settings. Given the study's aim to establish an empirical baseline, qualitative methods were appropriate for surfacing stakeholder perceptions in their own terms. At the same time, frequency analysis provided a structured mechanism for identifying the prevalence of themes. Terminology is standardised throughout: 'drivers/barriers/solutions' denote the three inquiry domains; 'thematic categories' (e.g., Pedagogical Enhancement) group specific items; 'themes' refer solely to analysis-derived patterns.

III.2. Sampling strategy

Participants were recruited through purposive expert sampling targeting academics, institutional administrators, and policy stakeholders engaged in digital transformation initiatives within higher education institutions.[25] Recruitment leveraged professional networks, academic conferences, and institutional partnerships to identify individuals with demonstrated expertise in educational technology or AI applications (minimum five years' higher education experience). Snowball sampling supplemented initial recruitment, with participants invited to nominate qualified colleagues from their professional networks.

The final sample comprised 47 participants (29 male, 18 female) representing diverse professional roles: faculty members (n=24), academic administrators (n=13), and educational policymakers (n=10). Disciplinary backgrounds spanned education, computer science/information technology, engineering, maritime studies, logistics, business administration, and linguistics, ensuring multidisciplinary perspectives.

III.3. Geographical representation

Respondents were drawn from 26 countries across six world regions, including:

- **Middle East and North Africa** (Oman, UAE, Saudi Arabia, Jordan, Egypt, Tunisia, Morocco)

[25] On purposive sampling strategies, see Kate Kelley et al., "Good Practice in the Conduct and Reporting of Survey Research," *International Journal for Quality in Health Care* 15, no. 3 (2003): 261–266.

- **Europe** (Spain, the United Kingdom, Greece, the Netherlands, Italy, and Ireland)
- **Asia** (India, Pakistan, Malaysia, Singapore, Iran)
- **Sub-Saharan Africa** (Nigeria, Ethiopia, South Africa)
- **North America** (United States, Canada)
- **Australasia** (Australia, New Zealand)

The sampling strategy deliberately over-represented the Gulf region (Oman, UAE) to address the underrepresentation of these contexts in AI in education research. At the same time, the broader international sample supports the cross-cultural transferability of the findings.

III.4. Data collection

Data were collected between January and June 2021 using a qualitative survey administered through Office 365 Forms.[26] The survey instrument comprised 15 items: eight closed-ended questions capturing demographic and categorical data, and seven open-ended prompts addressing perceived drivers, barriers, and solutions for AI adoption in higher education. Open-ended prompts included:

- "What do you perceive as the primary drivers for AI adoption in your institutional context?"
- "What barriers have you encountered or anticipate in implementing AI-enabled systems?"
- "What solutions would you recommend addressing these barriers?"

The survey was conducted in English to ensure consistent interpretation across the multinational sample. While this may have introduced self-selection bias towards participants with higher English proficiency, it was necessary given the absence of translation resources and the need for standardised data collection.

Recruitment faced notable challenges, particularly in Oman, due to cultural differences and low interest in participation, resulting in an estimated response rate of approximately 18%. Nevertheless, the diversity of the final participant pool yielded rich and meaningful insights.

[26] For survey methodology, see Kelley et al., "Good Practice."

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III.5. Data analysis

Thematic analysis followed a systematic four-stage process, drawing on established qualitative research frameworks.[27] Frequency analysis employed two metrics: proportion of total mentions (for drivers, capturing discourse intensity) and proportion of participants (for barriers/solutions, capturing concern prevalence).

Stage 1: Open Coding. Two researchers independently reviewed all survey responses to familiarise themselves with the content. Initial codes were generated inductively, capturing specific statements, concerns, and suggestions expressed by participants. Coding was conducted manually with cross-checking to ensure consistency.

Stage 2: Category Development. Initial codes were clustered into conceptual categories based on thematic similarity. For example, codes such as "lack of server capacity," "insufficient bandwidth," and "outdated hardware" were grouped under the category "inadequate technological infrastructure."

Stage 3: Theme Generation. Categories were further synthesised into overarching themes corresponding to the study's three focal areas: drivers, barriers, and solutions. Theme generation involved iterative refinement, with researchers returning to raw data to verify that thematic representations accurately captured participant perspectives.

Stage 4: Frequency Analysis. To assess thematic prevalence, the frequency with which each theme was mentioned across the participant sample was calculated. This provided a structured indication of which drivers and barriers were most salient to respondents, complementing the qualitative depth with descriptive quantification.

Inter-rater reliability was established through independent coding of a 20% subsample, achieving 84% agreement ($\varkappa = 0.78$), indicating substantial consistency.[28] Disagreements were resolved through discussion.

III.6. Ethical considerations

Ethical approval was granted by the Research Ethics Committee at the National University of Science and Technology, Oman (Approval ID: REC/NUST/AIED/2021/04), operating in accordance with the Declaration of

[27] Braun and Clarke, "Using Thematic Analysis," 87–93.

[28] On inter-rater reliability standards, see J. Richard Landis and Gary G. Koch, "The Measurement of Observer Agreement for Categorical Data," *Biometrics* 33, no. 1 (1977): 159–174.

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Helsinki.[29] Informed consent was obtained digitally from all participants before data collection, with participants informed of the study's purpose, data use, and the guarantees of confidentiality. All data were stored securely on encrypted university servers accessible only to the research team.

Cultural variation in ethical norms was acknowledged methodologically. Open-ended prompts allowed respondents to articulate concerns using locally meaningful frameworks; for example, Gulf respondents emphasised community trust and cultural authenticity, while European respondents focused on GDPR compliance and individual privacy rights. This cultural pluralism in interpreting 'ethics' suggests global frameworks must accommodate context-specific norms rather than imposing Western-centric categories.

III.7. Confidentiality

Confidentiality was addressed by assigning each respondent a code number upon completing the survey and using only that code to indicate their responses. This code was entered on each survey, enabling the researcher to link each survey to its respondent. This link allows the survey results to remain confidential without being anonymous to the researcher. The aggregate data reported contain no individually identifiable information, and the coding system masked individual participant identities. Quotations are attributed only by professional role and country; no names, institutions, or other identifying details are reported.

III.8. Methodological limitations

The study's sample size (n=47), while appropriate for qualitative thematic analysis, limits the generalisability of the statistical results.[30] The purposive sampling approach and deliberate over-representation of the Gulf region mean that the findings are particularly reflective of resource-constrained and Middle Eastern contexts; readers should exercise caution when extrapolating to all global regions. Geographic coverage, while broad (26 countries), omits Latin America and most of East and Southeast Asia

[29] World Medical Association, "World Medical Association Declaration of Helsinki: Ethical Principles for Medical Research Involving Human Subjects," *JAMA* 310, no. 20 (2013): 2191–2194.

[30] On sample size in qualitative research, see Greg Guest, Arwen Bunce, and Laura Johnson, "How Many Interviews Are Enough? An Experiment with Data Saturation and Variability," *Field Methods* 18, no. 1 (2006): 59–82.

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(except Malaysia and Singapore). Findings are most reflective of Middle Eastern, European, and Anglophone contexts; transferability to Latin America, East Asia, or Francophone Africa requires further validation.

Additionally, the 2021 data collection period provides a valuable baseline for pre-generative AI. However, the rapid evolution of AI technologies since 2022 means that specific quantitative distributions should be interpreted as reflecting that transitional period rather than the current landscape.

IV. Findings

Thematic analysis of participant responses revealed three overarching categories: drivers facilitating AI adoption, barriers impeding adoption, and solutions proposed by stakeholders. This section presents findings organised by these thematic domains, with descriptive frequencies indicating the prevalence of each theme across the participant sample.

IV.1. Drivers for AI adoption in higher education

Analysis of driver-related responses yielded five thematic categories, with personalised learning emerging as the most frequently cited motivation. Table 1 presents the complete distribution.

The complete distribution of driver categories and frequencies is presented in Table 1 in the Appendix.

IV.1.1. Pedagogical drivers: Personalised learning as primary motivation

Personalised learning emerged as the most frequently cited driver, accounting for 12.3% of all driver mentions. Participants emphasised AI's capacity to adapt educational content to individual learner needs, pacing, and preferences. A faculty member from Spain noted, "The one-size-fits-all model is obsolete. AI enables us to create learning pathways that respond to each student's progress in real time." This perspective was echoed across institutional types, suggesting a broad consensus on AI's pedagogical potential.[31]

Teaching efficacy (9.2%) was the second most frequently cited driver, reflecting expectations that AI would improve teaching effectiveness through real-time feedback. Innovative teaching models (8.4%) and engagement-focused applications (6.0%) were also prominent. Respondents highlighted

[31] Holmes, Bialik, and Fadel, *Artificial Intelligence in Education*.

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AI's ability to support gamification, simulation-based learning, and interactive content delivery. However, several participants cautioned that these applications require substantial faculty development to implement effectively.

IV.1.2. Institutional drivers: Efficiency and strategic positioning

Administrative efficiency (3.9%) and student retention (1.3%) represented key institutional motivations. A UK-based administrator explained: "Our admissions team spends countless hours on routine queries. AI chatbots have dramatically reduced that burden while improving applicant experience." Predictive analytics for retention were similarly valued, though participants noted these applications depend on robust data infrastructures.[32]

Strategic positioning (6.3%) emerged as a distinctive driver among institutions in competitive international markets. An Australian administrator observed, "Students increasingly expect AI-enabled services. Institutions that fail to deliver risk losing market share."

IV.1.3. Competency and equity drivers: Preparing students and expanding access

Technological skill development (6.5%) and lifelong learning (8.4%) reflected concern for student preparedness.[33] An Indian faculty member stated, "If we're not integrating AI into our curriculum, we're failing our students; they'll enter workplaces where AI is ubiquitous." Affordability and accessibility (5.2%) were mentioned primarily by respondents from under-resourced contexts, who viewed AI as potentially democratising access to quality education.

IV.2. Barriers to AI adoption in higher education

Barrier-related responses clustered into four thematic categories, with expertise and infrastructure deficits most frequently cited. Table 2 presents the complete distribution.

Table 2 in the Appendix presents the full distribution of barrier categories.

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[32] Katsuragi and Tanaka, "Dropout Prediction."

[33] Davy Tsz Kit Ng, Jac Ka Lok Leung, Samuel Kai Wah Chu, and Maggie Shen Qiao, "Conceptualizing AI Literacy: An Exploratory Review," *Computers and Education: Artificial Intelligence* 2 (2021): art. 100041.

IV.2.1. Capacity deficits: The expertise and infrastructure gap

The most significant barriers identified were a lack of AI expertise (38 respondents, 80.9%) and inadequate technological infrastructure (33 respondents, 70.2%).[34] These deficits were particularly acute in under-resourced institutions. An Omani administrator explained: "We have the institutional will, but we lack people who can lead AI implementation. Our IT team is skilled in basic systems, not machine learning." A Nigerian faculty member similarly noted: "Before we can talk about AI, we need reliable electricity and internet. Those basics aren't guaranteed."

IV.2.2. Data governance: Quality and integration challenges

Data-related barriers were cited by more than half of respondents, with 28 (59.6%) highlighting poor data governance and integration, and 13 (27.7%) noting a lack of high-quality datasets.[35] A Jordanian administrator described fragmented systems: "Admissions data, academic records, financial aid, they're in separate databases that don't communicate. AI needs integrated data." These governance deficits were linked to concerns about algorithmic bias and the transparency of decision-making.

IV.2.3. Ethical and regulatory gaps

Ethical concerns (53.2%) and lack of public policy (40.4%) represented significant barriers.[36] A Dutch policymaker articulated the transparency problem: "Commercial AI tools are black boxes. We don't know what data they collect or how they reach decisions. In education, that's unacceptable." Respondents from countries without national AI strategies expressed particular concern about ad hoc, inconsistent approaches to AI governance.

IV.2.4. Cross-cultural disparities in AI adoption capacity

Analysis revealed systematic differences between well-resourced and under-resourced institutional contexts.[37] Respondents from high-income

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[34] These findings are consistent with concerns raised in Teuscher, "Golden Age."

[35] On data governance challenges, see Ben Williamson and Rebecca Eynon, "Historical Threads, Missing Links, and Future Directions in AI in Education," *Learning, Media and Technology* 45, no. 3 (2020): 223–235.

[36] These findings echo concerns raised in González-Calatayud, Prendes-Espinosa, and Roig-Vila, "Artificial Intelligence for Student Assessment."

[37] On global disparities, see UNESCO, *AI and Education: Guidance for Policymakers* (Paris: UNESCO, 2021).

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countries (e.g., Greece, Canada, Australia) primarily cited ethical and regulatory barriers, while those from lower-income contexts (e.g., Nigeria, Iran, Morocco) emphasised infrastructure deficits and lack of expertise. A South African policymaker observed: "The global conversation about AI ethics assumes basic infrastructure exists. In many contexts, we're still building that foundation. The digital divide isn't closing, it is widening."

IV.3. Proposed solutions to adoption barriers

Participants proposed solutions spanning infrastructure, human capacity, and governance domains. Table 3 in the Appendix presents the distribution.

Participants emphasised that solutions must be integrated rather than siloed.[38] An Australian administrator noted: "Investment in infrastructure without training is wasted. Training without governance is dangerous. We need a holistic approach." A Malaysian policymaker reinforced this perspective: "The solution isn't just buying AI tools; it's building institutional capacity to use them responsibly."

IV.4. Summary of empirical patterns

The findings reveal three overarching patterns:

1. **Drivers are predominantly pedagogical and strategic**, with personalised learning, teaching efficacy, innovative teaching models, and lifelong learning most frequently cited.
2. **Barriers are primarily structural and capacity-related**, with expertise deficits and inadequate infrastructure outpacing ethical concerns in frequency, though ethical considerations were deeply felt.
3. **Proposed solutions emphasise systemic capacity-building**, with infrastructure, training, and governance viewed as interconnected prerequisites for responsible adoption.

These patterns exhibit systematic variation across institutional contexts, with under-resourced settings facing more fundamental capacity constraints while well-resourced institutions grapple with ethical and governance

[38] OECD, *OECD Digital Education Outlook 2021: Pushing the Frontiers with Artificial Intelligence, Blockchain and Robots* (Paris: OECD Publishing, 2021).

challenges.[39] This cross-cultural disparity constitutes a central finding with implications for global AI equity.

V. Discussion

This study provides an empirical baseline mapping of the drivers, barriers, and solutions shaping AI adoption in higher education across 26 countries. The findings illuminate systematic patterns while revealing critical disparities between well-resourced and under-resourced institutional contexts. This discussion interprets these empirical patterns, situates them within the broader literature, and articulates their implications for policy and practice.

V.1. Interpreting the driver landscape

The predominance of personalised learning as a driver (12.3%) aligns with existing scholarship positioning learner-centred education as a central promise of AI adoption.[40] However, the findings extend this understanding by revealing that enthusiasm for personalisation is tempered by infrastructural realities. Respondents from under-resourced institutions expressed concern that personalised learning applications remain aspirational in the absence of foundational investment in digital infrastructure and faculty development.

The emphasis on administrative efficiency (3.9%) and strategic positioning (6.3%) reflects institutional pressures in an increasingly competitive global higher education market.[41] This finding corroborates analyses of data-driven business models in educational technology, while adding cross-cultural specificity: strategic drivers were more pronounced among respondents from institutions actively competing for international students, particularly in Australia, the UK, and the Gulf region.[42]

Notably, technological skill development (6.5%) and lifelong learning (8.4%) emerged as frequently cited drivers, suggesting that stakeholders

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[39] United Nations, *Our Common Agenda: Policy Brief 5 – A Global Digital Compact – An Open, Free and Secure Digital Future for All* (New York: United Nations, 2023).

[40] Luckin et al., *Intelligence Unleashed*; Holmes, Bialik, and Fadel, *Artificial Intelligence in Education*.

[41] André Renz and Romy Hilbig, "Prerequisites for Artificial Intelligence in Further Education: Identification of Drivers, Barriers, and Business Models of Educational Technology Companies," *International Journal of Educational Technology in Higher Education* 17, no. 1 (2020): art. 14.

[42] Renz and Hilbig, "Prerequisites."

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view AI not merely as an operational tool but as integral to graduate preparedness.[43] This finding supports arguments that AI literacy constitutes an emerging core competency, while highlighting a potential equity concern: if AI literacy becomes a graduate attribute, institutions lacking capacity to develop such literacy may further disadvantage their students in the labour market.[44]

V.2. Understanding the barrier structure

The finding that lack of AI expertise (80.9%) and inadequate infrastructure (70.2%) constitute the most frequently cited barriers provides empirical confirmation of concerns raised in the literature.[45] However, the data reveal important nuance: these barriers are not uniformly distributed. For respondents from high-income contexts, ethical and regulatory gaps were primary concerns; for those from lower-income settings, basic infrastructural deficits dominated.

Taken together, these contrasts indicate that the global AI adoption landscape is characterised by multiple, qualitatively different challenges rather than a single hierarchy of barriers. Institutions in Nigeria, Iran, and Ethiopia face preconditions that institutions in Greece, Canada, and Australia have already resolved. The implication is stark: without targeted intervention, AI may exacerbate rather than ameliorate existing educational inequalities.[46]

Ethical concerns (53.2%) and data governance challenges (59.6%) were also widely cited, confirming the salience of transparency, privacy, and fairness considerations documented in prior work.[47] Notably, participants expressed these concerns across institutional types, suggesting they represent enduring challenges that transcend local context. However, the absence of clear public policy (40.4%) was particularly acute in countries without

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[43] Ng et al., "Conceptualizing AI Literacy."

[44] On AI literacy as a core competency, see Ng et al., "Conceptualizing AI Literacy"; on its academic integrity implications in the generative AI era, see Deborah R. E. Cotton, Peter A. Cotton, and J. Reuben Shipway, "Chatting and Cheating: Ensuring Academic Integrity in the Era of ChatGPT," *Innovations in Education and Teaching International* 61, no. 2 (2024): 228–239.

[45] Teuscher, "Golden Age"; Seo, "Big Data-Based SW Education."

[46] On AI and inequality, see Virginia Eubanks, *Automating Inequality: How High-Tech Tools Profile, Police, and Punish the Poor* (New York: St. Martin's Press, 2018).

[47] González-Calatayud, Prendes-Espinosa, and Roig-Vila, "Artificial Intelligence for Student Assessment"; Holmes et al., "Ethics of AI in Education."

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national AI strategies, leaving institutions to navigate ethical complexities without regulatory guidance.[48]

V.3. Cross-cultural disparities: The widening digital divide

A central contribution of this study is its systematic documentation of cross-cultural variation in AI adoption capacity.[49] The findings reveal a bifurcated landscape: well-resourced institutions confront challenges of optimisation and governance; under-resourced institutions struggle with foundational capacity.

This pattern has profound implications for global educational equity. As AI-enabled educational tools become increasingly central to teaching, learning, and administration, institutions lacking adoption capacity risk falling further behind. The digital divide, long discussed in terms of internet access and hardware, now encompasses algorithmic literacy, data infrastructure, and AI governance capacity.[50] Without deliberate intervention, AI may accelerate a two-tiered system where technologically advanced institutions capture disproportionate benefits while resource-constrained contexts are left to navigate widening gaps.

V.4. Solutions as systemic capacity-building

Participants' proposed solutions—infrastructure investment (21.3%), training (19.1%), cybersecurity (21.3%), and policy development (12.8%)—reflect an understanding that effective AI adoption requires systemic rather than piecemeal approaches.[51] The emphasis on training across stakeholder groups (students, faculty, administrators) aligns with calls for AI competency frameworks, while the prominence of cybersecurity concerns reflects growing awareness of data protection imperatives.[52]

Notably, only 6.4% of respondents mentioned sustainable AI development, suggesting that environmental and long-term ethical sustainability remain peripheral concerns in current discourse.[53] This

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[48] UNESCO, *AI and Education*.

[49] Slimi and Villarejo Carballido, "Dual-Framework Analysis."

[50] On the evolving digital divide, see Jan A. G. M. van Dijk, *The Digital Divide* (Cambridge: Polity Press, 2020).

[51] UNESCO, *AI and Education*.

[52] On data protection in AI in education, see Williamson and Eynon, "Historical Threads."

[53] On AI sustainability, see Kate Crawford, *Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence* (New Haven: Yale University Press, 2021).

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represents a potential gap, as AI systems carry significant environmental footprints and raise questions about long-term institutional commitment.

V.5. The foundational contribution: Establishing an empirical baseline

This study's primary contribution lies in its systematic documentation of AI adoption dynamics at a specific historical moment: following initial AI adoption in education but preceding the generative AI explosion of late 2022.[54] As such, these findings provide a baseline against which subsequent developments can be measured. The patterns identified—the centrality of personalised learning, the primacy of expertise and infrastructure barriers, and the cross-cultural disparities in adoption capacity—provide durable reference points for understanding how foundational dynamics have persisted or transformed in the generative AI era.

Building on this empirical foundation, Slimi and Villarejo Carballido developed a dual-framework model integrating the Technology Acceptance Model with an AI Ethics Framework, introducing "Ethical Readiness" as a mediating construct linking behavioural intention to responsible AI adoption.[55] The present study thus provides the observational data upon which that theoretical synthesis is constructed.

VI. Implications

The implications of this study can be summarised and categorised into institutional practices, policy development, and future research directions:

VI.1. Institutional practices

Participants' responses point to the perceived potential of AI to improve educational outcomes.[56] Respondents viewed AI as a way to personalise learning, adapt teaching, and optimise administrative processes. For example, AI was seen as able to enhance student learning, particularly in curriculum development and student engagement.

Additionally, respondents identified predictive analytics to flag at-risk students early, which may support retention, especially in online education settings where dropout rates are higher. Institutions may therefore consider

[54] Lo, "Impact of ChatGPT."

[55] Slimi and Villarejo Carballido, "Dual-Framework Analysis."

[56] Holmes, Bialik, and Fadel, *Artificial Intelligence in Education*.

piloting AI-driven tools, paired with evaluation of their effects on learning and retention.

Furthermore, the rapid advancement of AI in educational settings worldwide necessitates integrating AI-revised curricula.[57] This integration is vital across disciplines, from technical fields to the humanities and social sciences, where AI's impact is growing.

VI.2. Policy development

This study highlights several important ethical issues related to the use of AI. The main concerns are algorithmic bias, data privacy, and the potential for surveillance.[58] To ensure that AI technologies are used ethically and fairly, robust governance frameworks are essential. Such frameworks should promote transparency in AI decision-making and, by setting clear rules for data use, guard against biases that could deepen existing inequalities.

Furthermore, this paper emphasises the need for better technological infrastructure to implement AI effectively in higher education.[59] It is essential to prioritise funding and resources to build the infrastructure needed for widespread, successful AI use. Investing in digital infrastructure, such as data management systems and robust cybersecurity measures, will help ensure the safe and effective development of AI applications.

VI.3. Future research directions

This study points to several avenues for further research on AI in educational settings. A key topic is how cultural contexts impact the acceptance and effectiveness of AI in diverse educational settings.[60] Longitudinal studies could clarify AI's advantages and disadvantages over time, and tracking its impact on educational outcomes would be particularly valuable.

Future research should also explore issues beyond this study's specific focus to deepen understanding of the cross-cultural application of AI in higher

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[57] Seldon and Abidoye, and Metcalf, *Fourth Education Revolution*.

[58] On algorithmic bias, see Cathy O'Neil, *Weapons of Math Destruction: How Big Data Increases Inequality and Threatens Democracy* (New York: Crown, 2016); on data privacy, see Williamson and Eynon, "Historical Threads."

[59] OECD, *Digital Education Outlook 2021*.

[60] For cross-cultural research directions, see Geert Hofstede, *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations Across Nations*, 2nd ed. (Thousand Oaks, CA: Sage Publications, 2001).

education. The difficulty in recruiting participants in Oman highlights the importance of cultural considerations in the adoption of AI.

More broadly, cooperation among organisations, decision-makers, and researchers will be necessary to overcome obstacles and capitalise on AI's potential. This study offers an empirically grounded account of the motivators, obstacles, and potential remedies.

VI.4. Policy recommendations

For governments:

- Tiered infrastructure investment prioritising under-resourced institutions;
- National AI literacy frameworks for students, faculty, and administrators; and
- Context-sensitive guidelines addressing privacy, transparency, bias, and accountability.

For institutions:

- Cross-functional AI ethics committees overseeing procurement and impact;
- Phased implementation roadmaps (infrastructure → training → tools → governance); and
- Sustained faculty development programmes with incentives.

For international bodies:

- Direct funding for infrastructure and capacity in under-resourced regions; and
- Global AI ethics clearinghouse for policy models and case studies.

For developers:

- Transparency-by-design with explainable algorithms; and
- Contextual adaptability to linguistic and cultural diversity.

These policy recommendations translate the findings into actionable steps for governments, institutions, international bodies, and developers.

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VII. Limitations

One limitation of this paper is its sample size. The purposive sample (n=47) limits generalisability to the global population. Findings are particularly reflective of resource-constrained and Gulf-region contexts and should not be extrapolated to all educational systems without further validation.

The 2021 data collection period, while providing a valuable pre-generative AI baseline, means the specific quantitative findings reflect the technological and perceptual landscape of that time.[61] The rapid proliferation of large language models after 2022 has dynamically altered variables such as perceived ease of use, amplified academic integrity concerns, and reshaped the discourse around personalisation. Therefore, this study offers a snapshot of a pivotal transitional phase; its primary contribution lies in identifying structural and ethical constants that persist, rather than in providing directly transferable statistical metrics for the current LLM-dominated environment.

Future research could benefit from quantitative analyses, such as regression or correlation analyses, to assess the statistical significance and predictive power of identified drivers and barriers. This would enhance the empirical robustness and generalisability of the findings to larger populations.

The structure and significance of the patterns found align with more recent studies on AI in educational settings, despite the data being gathered in 2021.[62] Although this time lag is acknowledged as a limitation, the results continue to highlight persistent issues and strategic objectives in international AI adoption initiatives.

VIII. Conclusion

To conclude, AI holds considerable potential for enhancing higher education when used ethically and in a contextually appropriate manner.[63] It can encourage diversity, support learning objectives, and increase administrative effectiveness when implemented within robust governance frameworks.

Transparency, algorithmic bias, and data privacy are further issues that require careful management, as the incorporation of AI raises significant ethical challenges. If not adequately regulated and monitored, AI-driven

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[61] Lo, "Impact of ChatGPT."

[62] Lo, "Impact of ChatGPT"; Yogesh K. Dwivedi et al., "So, What If ChatGPT Wrote It? Multidisciplinary Perspectives on Opportunities, Challenges and Implications of Generative Conversational AI for Research, Practice and Policy," *International Journal of Information Management* 71 (2023): 102642.

[63] Floridi, *Logic of Information*.

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platforms could exacerbate existing disparities, particularly in under-resourced areas.

This study highlights the need for international frameworks that prioritise inclusivity, equity, and transparency.[64] The absence of such frameworks may constrain AI's potential and exacerbate existing disparities. Educational institutions, regardless of their current resources and capacities, must therefore secure sufficient training and support to leverage the benefits of AI effectively.

This study's primary contributions are threefold. First, the research provides the first systematically documented cross-cultural mapping of AI adoption dynamics prior to the generative AI era. The findings show that personalised learning, teaching efficacy, and innovative teaching models are the most frequently cited drivers, while lack of expertise, inadequate infrastructure, and unresolved ethical concerns are the most significant barriers.

Second, the research reveals stark disparities between well-resourced and under-resourced institutional contexts. Respondents from high-income countries primarily cited ethical and governance challenges, while those from lower-income settings emphasised basic infrastructural deficits. This bifurcation suggests that without targeted intervention, AI may exacerbate, rather than ameliorate, existing educational inequalities, widening rather than narrowing the global digital divide.

Third, the study documents stakeholder-proposed solutions that emphasise systemic capacity-building: investment in infrastructure, comprehensive training programmes, robust cybersecurity protocols, and clear ethical governance frameworks. These proposed interventions, articulated by practitioners operating across diverse contexts, provide empirically grounded guidance for institutional and policy-level action.

The findings carry urgent implications.[65] Without targeted investment in infrastructure, capacity-building initiatives, and context-sensitive regulatory frameworks, AI's transformative potential may remain unrealised particularly in under-resourced regions. Institutions and policymakers must recognise that AI readiness is not merely about acquiring tools but about building the human, technical, and governance capacities that enable responsible adoption.

This study provides the empirical foundation for the complementary study by Slimi and Villarejo Carballido, which extends the present findings by integrating the Technology Acceptance Model and the AI Ethics Framework into a unified explanatory model centred on "Ethical Readiness"

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[64] United Nations, *Our Common Agenda*.

[65] On the urgency of AI governance, see Dwivedi et al., "So, What If ChatGPT Wrote It?"

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as a mediating construct between behavioural intention and responsible adoption. Together, the two studies constitute a coherent research programme: the present study provides the observational map; the complementary study offers the theoretical compass.[66]

Ultimately, realising AI's potential to enhance higher education inclusively and equitably will require collaboration among policymakers, educators, and technologists guided by empirical evidence of how adoption dynamics manifest across diverse contexts. This study contributes such evidence, establishing a baseline from which future research and practice can proceed.

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[66] Slimi and Villarejo Carballido, "Dual-Framework Analysis."

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Appendix: tables and figures

Table 1

Drivers for AI Adoption – Thematic Categories and Frequencies

Thematic Category	Specific Driver	n	%	Representative Quote
Admissions & Administration	Personalisation of admissions	11	2.9%	"AI enables personalised communication with prospective students, tailoring information to their interests." – Administrator, UAE
	General administrative efficiency	15	3.9%	"AI streamlines our admissions process and reduces manual workload." – Administrator, UK
	Automation of routine tasks	5	1.3%	"Automating scheduling and routine queries frees staff for higher-value work." – Administrator, Oman
	Efficient grading and assessment	7	1.8%	"AI speeds up grading while maintaining consistency across large cohorts." – Faculty Member, Greece

Thematic Category	Specific Driver	n	%	Representative Quote
Pedagogical Enhancement	Personalised learning and adaptivity	47	12.3%	"AI enables us to tailor content to individual student needs in ways impossible at scale before." – Faculty Member, Spain
	Innovative teaching models	32	8.4%	"We need to rethink pedagogy entirely—AI allows for dynamic, responsive teaching methods." – Administrator, Malaysia
	Critical thinking and task-driven learning	21	5.5%	"Students can focus on higher-order thinking when AI handles routine tasks." – Faculty Member, Canada
	Engagement and immersive learning	23	6.0%	"Gamified AI environments keep students motivated and engaged." – Policymaker, UAE
Institutional Positioning	Strategic enhancement and reputation	24	6.3%	"AI adoption signals innovation and attracts international students." – Administrator, Australia
	Teaching efficacy	35	9.2%	"AI helps us improve teaching effectiveness through real-time feedback." – Faculty Member, Ethiopia
Competency Development	Lifelong and competency-based learning	32	8.4%	"AI supports continuous skill development aligned with industry needs." – Policymaker, Greece
	Technological skill development	25	6.5%	"Students need AI literacy to compete in the modern workforce." – Faculty Member, India
	Tangible learning outcomes	18	4.7%	"AI helps students see real-world applications of theoretical concepts." – Faculty Member, Canada

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Thematic Category	Specific Driver	n	%	Representative Quote
	Multidisciplinary education	5	1.3%	"AI enables integration across disciplines, preparing students for complex problems." – Administrator, Singapore
Access and Equity	Reducing administrative burdens	26	6.8%	"Automating routine tasks frees us for meaningful student interaction." – Administrator, Oman
	Affordability and accessibility	20	5.2%	"AI can democratise access to quality education resources." – Policymaker, Nigeria
	Inclusion and accessibility for diverse learners	31	8.1%	"AI removes barriers for students with disabilities and diverse learning needs." – Faculty Member, UK
	Student retention support	5	1.3%	"Predictive analytics help us identify at-risk students early." – Faculty Member, South Africa

Note: Percentages represent proportion of total driver mentions (N=382 statements across 47 participants). Multiple responses per participant were permitted. Within each thematic category, specific driver percentages reflect their share of total mentions, not percentage of participants.

Table 2

Barriers to AI Adoption – Thematic Categories and Frequencies

Thematic Category	Specific Barrier	n	%	Representative Quote
Capacity Deficits	Lack of AI expertise	38	80.9%	"We simply don't have people who understand AI well enough to implement it." – Administrator, Oman
	Inadequate technological infrastructure	33	70.2%	"Our servers can't handle the data processing AI requires." – Faculty Member, Nigeria

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Thematic Category	Specific Barrier	n	%	Representative Quote
Data Governance	Poor data governance and integration	28	59.6%	"Data sits in silos—we can't integrate it effectively for AI." – Administrator, Jordan
	Lack of high-quality datasets	13	27.7%	"Our student data is incomplete and inconsistent." – Faculty Member, Iran
Ethical and Regulatory Gaps	Concerns about ethics and transparency	25	53.2%	"We don't know how algorithms make decisions—that's problematic." – Policymaker, the Netherlands
	Lack of public policy on AI development	19	40.4%	"There's no national framework guiding our AI investments." – Administrator, Ethiopia
	Lack of inclusiveness and equity	11	23.4%	"AI tools don't account for our students' linguistic diversity." – Faculty Member, Morocco
Structural Exclusion	No benefits for marginalised groups	6	12.8%	"AI benefits privileged students; vulnerable populations get left behind." – Policymaker, South Africa

Note: Percentages represent the proportion of participants (N=47) citing each barrier; multiple responses per participant.

Table 3

Proposed Solutions – Thematic Categories and Frequencies

Thematic Category	Specific Solution	n	%	Representative Quote
Infrastructure and Security	Investment in high-tech infrastructure	10	21.3%	"We need government investment in digital infrastructure before AI can work." – Administrator, Ethiopia
	Robust cybersecurity protocols	10	21.3%	"Without security, AI implementation is irresponsible." – Faculty Member, Greece

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Thematic Category	Specific Solution	n	%	Representative Quote
Human Capacity Development	Training for students and staff	9	19.1%	"Everyone needs AI literacy – faculty, administrators, students." – Policymaker, UAE
	Enhancing AI trustworthiness	8	17.0%	"We need transparent, explainable AI that users can trust." – Faculty Member, Canada
Policy and Governance	Clear ethical AI policies	6	12.8%	"National frameworks must guide institutional practice." – Administrator, Malaysia
	Mandatory staff training	5	10.6%	"Training shouldn't be optional – it must be required." – Faculty Member, Spain
	Sustainable AI development	3	6.4%	"We need to consider long-term environmental and ethical sustainability." – Policymaker, UK

Note: Percentages represent the proportion of participants (N=47) citing each solution; multiple responses per participant.

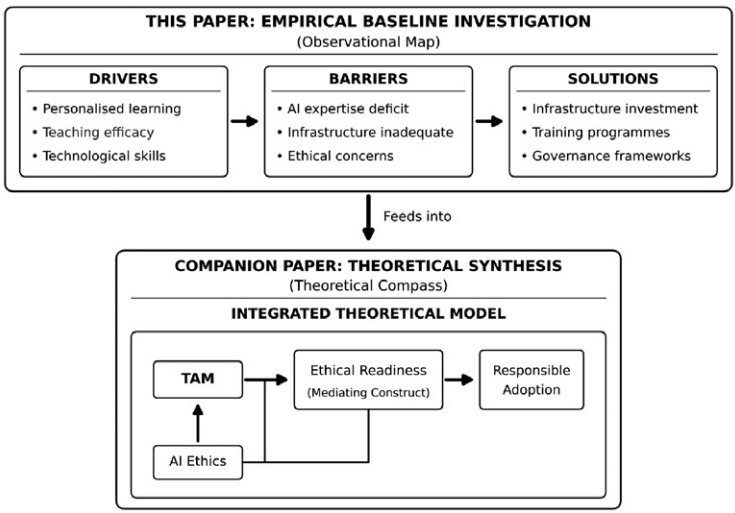


Figure 1

Global AI Adoption Dynamics in Higher Education – A Conceptual Framework

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The Editor hands each manuscript accepted for review to an advisory editor (generally from the Journal's Panel of Advisory Editors), who will control the review and revision process of that manuscript.

The Editor will prepare a decision letter based on the comments of the reviewers and the recommendation of the Advisory Editor, which will be sent to the corresponding author by email.

It is our intention to notify authors of non-reviewed manuscripts within 21 days of submission acknowledgement. For manuscripts accepted for review, the process shall last 6 months. However, due to reasons beyond our control, the whole process (initial screening and peer review) can take longer time to be completed. Our editors and reviewers are indeed very busy people and they carry out their review tasks voluntarily. We therefore invite authors to be patient. If you have not heard from the Editor after 4 months following the submission acknowledgement, please send an inquiry to the Editor (Professor Mary Gobbi, PhD, mary.gobbi@deusto.es) and or Managing Editor (Ladislas Bizimana, PhD, ladislas.bizimana@deusto.es, tuningjournal@deusto.es). We understand that these deadlines may be too long for some authors. We therefore would respect, though regrettably, their decision to withdraw from the process, preferably prior to the peer review stage.

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TJHE
Ethical Guidelines for Publication

TJHE Ethical Guidelines for Publication

FINAL VERSION (MARCH 2015)

Tuning Journal for Higher Education (TJHE), Tuning Journal in short, is an international journal publishing in English original research studies and reviews in all aspects of competence-based, student-centred, and outcome-oriented education reforms at university level across the globe. It is published by the University of Deusto's Publications department on behalf of the International Tuning Academy (Tuning Academy in short), a jointly managed project of the Universities of Deusto (Spain) and Groningen (The Netherlands). The Journal, essentially an open access, online and peer-reviewed publication, is committed to maintain the highest ethical standards. Hence, the involvement of any stakeholder in any function connected with TJHE, including acting as an editor, the reviewing of manuscripts, the management and production of the Journal and the authorship and submission of manuscripts implies acceptance of and adherence to **TJHE Ethical Guidelines for Publication**.

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1.2. The Editorial Board is responsible for setting policy, appointing the Editor and Advisory Editors of the Journal.

1.3. The Editor is responsible for ensuring that publication policies set by the Editorial Board are carried out.

1.4. The Management Board is appointed by the Tuning Academy in consultation with the Universities of Deusto and Groningen.

1.5. The Managing Board is responsible for the commercial management of the Journal and appointing a Managing Editor.

1.6. The Managing Editor is responsible for ensuring that the commercial policies set by the Management Board are carried out.

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b) Author order should be agreed on by all authors as should any changes in authors and order that occur while the manuscript is under review or revision. Changes in authorship must be submitted to the Editor in writing and must be signed by all authors involved.

c) Authors and co-authors should review and ensure the accuracy and validity of results prior to submission; co-authors should have opportunity to review manuscript before submission.

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3.9. Authors are encouraged to disclose major funding sources (e.g., government agencies, private foundations, private industry, and universities) for reported research.

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4.2. A reviewer should decline to review a manuscript if she/he feels technically unqualified, if a timely review cannot be done, or if the manuscript is from a competitor with whom the reviewer has had an acrimonious professional relationship or a conflict of interest as defined above (section 4.1).

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4.5. Reviewers must ask the Editor for permission to discuss the paper with others for specific advice, giving names and reasons for such consultation.

4.6. Reviewers must not pass the manuscript to another to carry out the review without permission from the Editor.

4.7. Reviewers must not use information, data, theories, or interpretations of the manuscript in their own work unless that manuscript is in press, published or the author has given permission to do so.

4.8. Reviewers should clearly support and justify the basis for their review analysis.

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6.3. If an author is determined to have violated the **TJHE Ethical Guidelines for Publication**, TJHE reserves the right to impose sanctions, which may include restriction from further consideration of accepting the author's work, retraction of a published paper, or withdrawal of a submitted paper.

Date: 16 March 2015

Approved by the TJHE Editorial Board and signed on behalf of the Tuning Academy by:

Pablo Beneitone
Director, Tuning Academy (Deusto)



Robert Wagenaar
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