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INTRODUCTION

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Mary Gobbi

Editor

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### Generational differences in University Students: Challenges or opportunities?

#### Introduction

Mary Gobbi\*

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**Abstract:** Three of the eight papers that comprise this Edition of the Journal, focus on different aspects of intergenerational learning. The remaining five papers address internationalisation strategies in Africa; career paths of local and international doctoral students; peer tutoring programmes, perspectives of science teachers, including mathematics and physics, and models of Higher Education. The papers reflect a varied range of participant countries both in terms of the authors, but perhaps more importantly the study sites including several from Latin America (Africa, Chile, Bulgaria, Paraguay, Peru, Spain, Turkey and Uzbekistan). Similarly, the programmes of study range from dental education, geological sciences, teacher education (in various forms), ongoing development of academic staff and the evolution of embryonic Higher Education systems. From these rich and diverse papers, one can see the crucial importance of eliciting, at national level, (1) those factors that are unique to the national context and culture; and (2) those that are like other systems and countries, whether in a historical moment of evolution, or those that resonate with contemporary and parallel contexts. Building the national and international evidence base in Higher Education requires both types of study, if only to satisfy the criterion of generalisablity.

**Keywords:** quality assurance frameworks; internationalisation, intergenerational learning; doctoral education; higher education models.

<sup>\*</sup> Mary Gobbi (mary.gobbi@deusto.es), PhD, is the editor of Tuning Journal for Higher Education since 2019. Emeritus Professor of the University of Southampton (UK), she has been Tuning Nursing co-ordinator since 2003 and is an expert educational developer and evaluator, with extensive national and international experience.

More information about the author is available at the end of this introduction.

The first paper in this edition focuses on the strategic and systems-based dimensions to Higher Education in Africa where the history of Quality Assurance Frameworks is more recent, Lazarus Nabaho, Wilberforce Turyasingura, Ivan Kiiza Twinomuhwezi, Kenneth Alfred Kiiza, Margaret Nabukenya, and Felix Adiburu Andama have reviewed initiatives concerned with internationalisation and the metrics associated with its evaluation (Making the university more international: An exploration of higher education internationalisation strategies in Africa from a continental perspective'). In this study, they deployed the African Quality Rating Mechanism (AQRM), and education framework of the African Union to undertake a descriptive study. Given the colonial histories across the continent, the AORM had been designed within a decolonial lens. The study found that while there were clear face similarities to the historical Anglo-Saxon, Eurocentric models with respect to mobility and the academic research community, the substance of current internationalisation shows attempts to decolonise the Anglo-Saxon models of internationalisation. Probably due to funding processes, there has been an internationalisation of the Bologna Process in Africa. None the less, they note attempts to adapt rather than adopt Global North strategies where common goals exist, for example student mobility within a continent or neighbouring regions. The paper has a strong theoretical thread in its critique of policies, applications and influences.

The next three papers explore different dimensions to intergenerational learning and development.

The importance of data to understand doctoral student education and career trajectories and the relationship with the local and international labour market is evident in our next paper from Paraguay by Laura Diaz Villalba and Montserrat Castelló Badía ('Academic and non-academic career paths of international and domestic PhD holders'). While there is literature regarding those national students who studied abroad or at home, there was little in the Latin American context, especially in the wider labour market—not just academia. In this study 126 Paraguayan doctorally qualified people who graduated between 2012 and 2022 were surveyed with respect to their perceptions of the usefulness of their doctoral education.

Results showed that many graduates were working in a variety of non-academic roles and institutions, with approximately a third of university-based respondents having two jobs. Two thirds had studied abroad. The wealth of data generated in this study reveals the aspirations of the graduates to work in a variety of academic and non-academic roles In Paraguay, participants revealed how they had adapted their doctoral skills to their

Paraguay work contexts but also indicated factors that had helped or hindered transition. The detail in this study provides points of reflection at the national level on how best to support these graduates through doctoral training and post-doctoral employment at organisational and structural levels.

Our next paper is in the field of mathematics education where Aziz İlhan and Serdal Pocanop compared Generation Z and Y mathematics teachers with respect to their understanding of Algebra ('Understanding of Algebra of secondary school mathematics teachers from different generations: A qualitative comparative analysis of the answers'). While it is known that misconceptions can arise in learning mathematics, arithmetic and algebra, there is little data as to whether there are generational differences that influence teachers/students in their thinking skills or modes of learning and teaching. Aziz İlhan and Serdal Pocanop therefore explored algebraic operation skills and awareness levels of mathematics teachers using a phenomenological approach. They found that there were some differences between Generation X and Z in their knowledge and skills with some similarities in misconceptions and mistakes. The implication of these findings —if generalisable— implies that generational differences in teachers, once identified, enables opportunities for professional development to mitigate generational deficiencies. A clear role for teacher education research and practice in mathematics education.

In contrast, Dragomir Iliev, Daniela Ilieva, and Zhelyo Zhelev from Bulgaria found no significant correlations between three generations in either their characteristics or preferred teaching methods in an economic discipline ('Teaching methods through the eyes of Bulgarian students from three generations'). The literature review in this paper provides a good discussion of the preferences of respective Generations in the use of technology and learning strategies. The aim of their survey was to discover whether different generations preferred different pedagogic strategies and whether they were appropriate to the students (Generation Z). Contextual factors were well explained, especially the demographic representation of Bulgaria within Higher Education. In this study, where different generations were learning at the same time and place, they exhibited similar preferences, namely the integration of visual and interactive approaches that enable active engagement and involvement of the audience. The paper provides a detailed account of the methodology and statistical techniques deployed.

Rapid reform has been a feature of recent Peruvian Higher Education in the attempt to improve education quality and regulatory oversight. In this case, there had been concerns in the field of dental education that graduates were not entering the labour market in a timely way and that education itself needed to improve to support better the dental health of the nation. To understand and measure any change in successful graduation, the authors Karla Lucero Avalos-Baltodano, María Claudia Garcés-Elías, Roberto Antonio León-Manco, Esther Noemi Quevedo Fernandez, and Cesar David Roias-Senador deployed the concept of 'terminal efficiency' to retrospectively elicit data concerning student success (Determinants of the successful graduation of undergraduate students from a Peruvian university dental school over six years'). Terminal efficiency is a metric that takes account of programme duration, educational quality and the point at which a student successfully graduates— and in this case enters the labour market as a licensed professional. A cross-section design enabled the analysis of student records during the period 2017-2022. A key finding of the study was the reduction in the time taken for students to graduate from 1.23 years beyond the standard programme length to 0.55 years in 2022. Other data revealed the university trajectory of the students, including information regarding the educational experience and its quality. Together these data provided a platform for identifying educational enhancements to the programme. The authors argue for the application of the concept of 'terminal efficiency'.

Yurdaer Babuçcuoğlu, Uzokovich Maksud Isokov, Munojat Sultanmuradova Bobomuradova, and Jurabekovich Jakhongir *Movlanov*'s case study from Uzbekistan demonstrates how rapid and focussed development can meet a country's labour market needs, maintain a country specific orientation and align itself with international higher education trends. Given Uzbekistan's natural resources and mining industries, specialized expertise was needed for economic growth and positioning in the international labour market. Accordingly in 2020 a University of Geological Sciences was founded with an associated network of specialist academic research institutes. The paper ('Different university model approach in the field of earth sciences') provides a detailed account and analysis of the emergence of the fields of study with both a market driven, research and human resources hybrid model of Higher Education. The organizational structures together enable adaption over time to meet future labour market and economic needs.

Camila Véliz and Oscar Navarrete's study, in Chile, analysed the effects of being a student tutor to other students within a structured university programme that included peer tutoring ('Peer tutoring programmes: comprehensive training and generic competences from the experience of tutors in a Chilean university'). While the benefits of being tutored have been researched, there is little research on the effects on the

student tutors themselves. This study sought to address this gap in a context of competence-based education and a desire to address socio economic inequalities. A critical review of peer tutoring and its relationship to generic competence development in students and concepts of bonding are well explained in the paper. Exploring the experiences with eighteen tutors, some very rich data were elicited that demonstrated the socio educational impact of the peer tutoring bond and the benefits for the tutor. It was also evident that peer tutors improved their generic competences in several domains including leadership and interpersonal skills. A key aspect was that the peer tutor process contributed to improving equity in the Chilean higher education arena.

Our last paper by Marina Martínez-Carmona, Beatriz Bravo-Torija, and Luisa López-Banet addresses the extent to which science teachers can encourage argumentative, evidence-based debate in their classrooms with respect to climate change ('What ideas about climate change do future science teachers possess and how do they integrate them when arguing about greenhouse effect? A case study'). Situated in Spain, this case study summarises the related national educational policies and the shift in pedagogies expected of modern teachers to foster argumentation, application of evidence and debate. The authors note that many teachers may have experienced a more didactic form of secondary education than is now expected. The methods are quite detailed; in that the participant teachers wrote an essay based upon a news item related to climate change. Their findings revealed that many teachers lacked sufficient knowledge about climate change and had difficulty in assessing the quality of the evidence and integrating it within their rationale.

This last paper resonated with so many elements from our earlier papers. Generational differences influence teachers as well as students especially with respect to the use, evaluation, sufficiency and currency of the evidence necessary to evaluate modern trends in society, educational techniques for different cohorts of students but also the science within the discipline.

As countries and institutions make transitions in different era and with different adoption rates of change, then context specific data and evidence are necessary for Higher Education academic staff to make decisions as to improve and inform their curriculum; make the curricula 'fit' for the labour market; and to promote the necessary cognitive skills, behaviours and professional attitudes for the graduates' role the labour market. All the papers in this edition have to some extent added to these debates and dilemmas.

#### 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 10 doctoral students to successful completion