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Resilience and
responsiveness
in challenging times

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Resilience and responsiveness in challenging times

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Tuning Journal for Higher Education (TJHE)

Resilience and responsiveness in challenging times

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Editorial

Mary Gobbi

Editor

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'In war, truth is the first casualty'
Aeschylus -Greek tragic dramatist (525 BC - 456 BC)

In the last editorial (November 2021), writing in the context of the challenges of our times and COVID-19, I wrote, '*Our task is to continue the legacy of discovery; to strive for the (re)gaining of freedoms and to engage -when appropriate- in ideological battles*'. Viewed from May 2022, how ironic, sad, and prophetic were these words, when, on the 4th of February 2022, barely three months later, the Ukraine was invaded by Russia and a bloody war on the continent of Europe still rages. In this catastrophe, the invaders seem to have abandoned international charters and the expected mores of behaviour towards civilians and combatants. We await verification of violations that may be considered war crimes. On the other hand, we witness extraordinary resilience and responsiveness by the Ukrainian people and leaders, and their neighbours who have welcomed refugees. Hence, this edition is dedicated to the casualties of war, displaced peoples, traumatised persons in mind, body, and spirit, and to all those individuals and organisations who are trying to provide support, humanitarian aid and to be peace makers. Let us also not forget those in other theatres of conflict be it civil war, terrorism, invasion, or drug wars (for example, Afghanistan, Colombia, Ethiopia, Eritrea, Myanmar, Yemen).

The qualities of resilience and responsiveness, no matter which comes first, are evident in the articles in this edition. They are discussed in the section introductions and weave their way through the articles in different guises. As educators, our challenge is to help nurture and define these qualities. As academics, we investigate their nature, enabling and inhibiting

factors and propose strategies to mitigate the circumstances that require such resilience and responsiveness. For those in the medical and human sciences, whether as researchers or practitioners, the ability to develop strategies to deal with the legacy of conflicts becomes more pressing. Indeed, we ask ourselves whether 'resilience and responsiveness' are qualities or competences. Analysing the Tuning generic competences,[1] we find these traits, albeit articulated in a different way and perhaps with a degree of complexity rather than simplicity, for example:

- The ability to act with social responsibility and civic awareness
- Determination and perseverance in the tasks given and responsibilities taken
- Ability to act based on ethical reasoning
- Ability to communicate with non- experts of one's field
- Ability to adapt to and act in new situations

Simply put, when enacted, these competences are exhibited by people who are active participants in society and are ethical, responsive, socially aware, effective communicators with experts and non- experts alike. Perhaps it is a timely moment to analyse our curricula and consider the extent to which these competences/ qualities are promoted, measured, and evaluated. Within, and between, subject areas, we require an evidence base to support pedagogical strategies that can successfully enable students to develop and demonstrate these competences and qualities from the undergraduate student to the post-doctoral graduate.

In addition, skills of advocacy blended with subject knowledge are required to raise awareness of the issues underpinning any conflict, likely future actions, and consequences. Here we draw on the expertise of those in international relations, politics, history, and other social scientists who can draw attention to the discourses and rhetoric of the conflict. As Aeschylus stated. 'In war, truth is the first casualty', and we see this exemplified in the Putin discourses where 'invasion' is 'a special operation' to protect people from 'Nazi genocide' and in some reporting of casualty figures by both sides. Academics are, and should be, in the forefront of analysing political rhetoric and data from all stakeholders and pointing out historical connections, inaccuracies, propaganda, uncertainty, ambiguities and drawing attention to powerful networks, influencers and hidden stakeholders (e.g. drug barons, arms dealers). The responsibility of the

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[1] "Generic Competences," Tuning, accessed May 12, 2022, https://unideusto.org/tuningeu/competences/generic.html.

informed academic to be responsive and disseminate the outcomes of such analyses in a fair, balanced, timely manner is crucially important given the speed of communications and the use of various forms of social media. Similarly, persistence and resilience may be necessary when the external climate inhibits the academic discourse.

Higher Education Institutions themselves can facilitate or hinder access to education for displaced people with absent, or inadequate, documentation. Within the context of one subject area (nursing), Cassar[2] identified different ways through which refugees without verifiable documentation may access education and employment, these included aptitude tests, competence assessment, legislative frameworks, supervised and assessed practice, and the use of subject area benchmarks like Tuning competences that, she argued, can provide reference points from which individual assessments can be made. The evidence base in this domain is weak, and many subject areas at local, national, or international level have not developed robust and rigorous strategies to implement practises like accreditation of prior learning, aptitude tests, simulations, supervised academic practice and portfolio evaluation. Hence, the ability of the HEI to be responsive to the needs of displaced students and staff is to some extent dependent upon their existing policies and expertise in these forms of assessment and evaluation. In addition, resources and expertise are needed to provide the socio-emotional and economic support required by students newly arrived from conflict zones.

In the face of adversity or challenge, irrespective of cause, resilience and responsiveness are key qualities and competences required by individual students, staff, departments, institutions, and nation states. The Journal welcomes evidence-based articles from a policy and pedagogic perspective on mechanisms that (1) help students and staff develop resilience and responsiveness; (2) enable the receiving HEI and/or subject area to be responsive in these crisis situations; and (3) international strategies to support HEIs who are continuing to operate within, or adjacent to, conflict zones.

Finally, we extend our deep appreciation and respect to our academic colleagues in areas of conflict for *their* perseverance and responsiveness as they endeavour to support their students, colleagues, and communities. We hope that by the next edition of the Journal, there may be a more positive

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[2] Maria Cassar, "Using the Internationally Recognized Frameworks of Nursing Competences to Address the Challenges of Nurse Refugees without Documentation," *Tuning Journal for Higher Education* 8, no. 1 (November 2020): 53-73, https://doi.org/10.18543/tjhe-8(1)-2020pp53-73.

situation in the Ukraine. Similar to the aftermath of the acute phases of the COVID-19 pandemic, our thoughts would then lead inevitably to the next 'Rs'- the themes of 'Recovery, Rehabilitation and Renaissance'.

Meanwhile, please stay well.

Editorial Team
May 2022

General
Introduction

Resilience and responsiveness in challenging times

General Introduction

Mary Gobbi

Editor

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Abstract: The papers in this Edition of the Journal comprise five 'general papers' and five in the COVID 19 section. Together, the papers clearly illustrate our theme of 'Resilience and responsiveness'. The general papers mark states of transition, whether student, staff, or institution; the capacity and ability of stakeholders to be responsive to trends and more importantly their resilience to unfolding circumstances. Examples of these transitions include, academics learning new ways of education (outcome-based education, measuring aspects of the Bologna Process); institutions sustaining historical models of education, mission, and strategies; students experiencing and reacting to changes in the educational experience as pedagogies, processes, modes of delivery and philosophies change around them. In the COVID-19 section, resilience and responsiveness are evident driven by the need to face the challenges of the moment and times.

Keywords: elitism; reputation; outcome-based education; COVID 19; lifelong learning.

The five papers that comprise the general part of this Edition represent not only a diverse range of countries (Chile, Malaysia, the Philippines, and Turkey) but also themes, namely issues of brand and elitism; the application of different aspects of outcome-based and credit-rated curricula; and post-graduate experiences with learning management systems (LMS).

The first paper '*Elite universities in Chile. Between social mobility and reproduction of inequality*' by Maria Luísa Quaresma and Cristóbal Villalobos presents a fascinating historical account and contemporary analysis of the Chilean system of Higher Education with respect to the concept of 'elite' universities, the massification of education, and the mixed

model of private and public universities with most students attending the latter. For those unfamiliar with the Chilean Higher Education system this is an enlightening and informative read. Using eight case studies of 'elite' programmes/universities, the authors sought to analyse the ethos, mission, and selection of students with an emphasis on student entry characteristics. Using a detailed and comprehensive mixed methods approach, the authors found that, perhaps unsurprisingly, not only did these universities distinguish themselves as a group from other universities, but the elite also differentiated themselves from each other through their ethos. While these 'elite' universities retain their own mission, culture, and structures, their ability to promote social mobility was questioned.

To some extent, this account resonates with other countries where the so called 'elite' endeavour to reproduce their mission and values through the organisation of the university and the recruitment of students. Inevitably, admission requirements and funding mechanisms influence the ability and capacity of students from a range of diverse socio-economic and cultural backgrounds to be successful applicants and, importantly, graduates. In this example from Chile, we see the legacy of history influencing the present. The route whereby approximately 50% of eligible young people are admitted to universities over the past thirty years through changes in political policy is analysed. From the founding of the Universities in the mid-19th Century, the aim of university education was to train and education the 'elite', with only eight universities existing until the 1970s. Augusto Pinochet ruled Chile from 1973- 1990. Prior to Pinochet, tuition was free; post Pinochet reforms meant that the higher education sector expanded with both private and public universities and a fee-paying structure that prevented many from accessing higher education without incurring serious debt within families. This led to political unrest by students and a change in policy. Meanwhile the elite universities sustained their mission leading to a two-track system despite recent attempts to offer financial support to the lower- and middle-income families. This paper tracks these transitions and offers a detailed analysis of relevant international literature which is highly discursive and interesting for those unfamiliar with the topic and Chile. The research gap addressed claims that the 'elite' universities, despite massification of education, were inhibiting social mobility and maintaining inequalities. Following extensive fieldwork including secondary data, observational studies and interviews, the study concluded that the elite universities in Chile still 'perpetuated' their role in social reproduction, despite initiatives to enable access to the elite universities by the institutions themselves. The authors identified areas for further study, including international research to discover the extent to which elite

universities can contribute in a meaningful way to the reduction of inequalities and the promotion of social mobility. Political and policy strategies to enable this merit further discussion in the educational literature, particularly with respect to subject areas 'renowned' for their association with class reproduction from recruitment to the point of entry to the professional labour market.

The second paper similarly contributes to our understanding of the strategic impact of Higher Education, this time in the context of Malaysia where Osama Haniya and Hamdan Said turn the spotlight on international students and the rationale behind their choice of Malaysian High Education (*Influential factors contributing to the understanding of international students' choice of Malaysian higher education institutions: Qualitative study with focus on expected benefits*). This small -scale paper, comprising eighteen participants, offers insights into student perceptions of the university, country, and programme (Business studies) and discusses the extent to which these perceptions are realised.

Haniya and Said's literature review provide a helpful summary on the reasons students seek Higher Education in another country and the economic impact of the students upon the country of destination. The low cost of education in Kuala Lumpur (the capital city) and the investment in Higher Education means that Malaysia is a particularly attractive destination not only in Asia but globally. The paper points out that during recent years, the country has invested not only in the tourist and investment industries, but also in Higher Education and a development strategy that included global recognition that has now been achieved. While there had been Country – based research on the expectations of these international students, there was little evidence concerning the reality of the anticipated benefits, particularly at undergraduate level. The authors clearly articulated the influence of previous researchers in the field and identified that there was a gap in the literature concerning the model of Zeithaml et al.[1] The research sought to address this gap through interviewing international students from different countries, within one university until data saturation was reached. This strategy recognised that international students are not a homogenous group.

The paper offers a very detailed, practical, and theoretical account of the research methodology. For readers unfamiliar with qualitative research, that deals with apparently 'small' samples, thematic analysis, and evaluation,

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[1] Zeithaml et al., *Delivering Quality Service: Balancing Customer Perceptions and Expectations* (New York: The Free Press, 1990).

Hanyi and Said have provided an example of how to produce a research account that others could replicate. The findings were detailed, covering a range of topics that were linked to existing research and the factors from the literature like reliability, assurance, tangibility, empathy, and responsiveness. Key elements of the study findings related to local factors that could improve the offer to international students, namely the physical appearance of the institution's campus, the accuracy of marketing materials and the academic quality of the education. The paper illustrates how these data can help inform decision making at institutional and country level.

The third paper '*Learners' attitude towards outcomes-based teaching and learning in higher education*' by Ruth Ortega-Dela Cruz maintains a focus on student perceptions. This study was concerned with any student attitudes related to the introduction of Outcomes Based Education (OBE) in the Philippines. Located in a state university, the aim was to discover the extent to which learners were accepting and/or resisting the introduction of Outcome Based Education (OBE) and whether there were student or degree level characteristics that influenced any such attitudes. This was investigated using a descriptive cross-sectional research design with correlational statistics. One hundred participants (53% of the population) from the three levels of education (bachelors, masters, and doctoral studies) responded to the survey that was a modified and validated version of a previous tool designed by the author. Free text responses were analysed thematically. The results produced some interesting findings. First, most of the respondents welcomed OBE. For example, they liked the new pedagogies, thought OBE would be better for them academically and help them in the job market. This finding was like other studies in the geographic region. The students reported active engagement with the more 'adult'-centred education strategies accompanying OBE. However, students expressed concern that OBE may not promote values sufficiently as they perceived OBE as being more focussed on skill development.

By providing an in-depth analysis of student attitudes and engagement, the paper shows how eliciting student experience data can be crucial in understanding the enablers and barriers to the introduction of new approaches to education. The students offered a range of perspectives on how OBE required staff to be committed to OBE in practise not just in rhetoric. Crucially, the student comments revealed the extent to which further staff development and student awareness of OBE was necessary if OBE was to be rolled out successfully across the country and different higher education institutions.

Paper Four, by Haşmet Sarıgül, Hakan Eren Şengelen, '*A comparative analysis of the first cycle degree programmes in business in Turkey in terms*

of the number of course units and the student workloads', continues the theme of outcomes-based education through a critical analysis of the impact of the Bologna process upon the curricula within one hundred and forty seven Business Schools in Turkey. The sample represented the different modes of higher education institution, type of curricula and language of instruction at bachelors and masters degree level. Through a comparative process, the authors analysed data concerning programme design with respect to modular content, type, credit rating and the student workload. Comparative analysis included features of difference between public versus foundation business schools and the language of tuition. The methods involved document review, curricula content analysis, and multivariate analysis.

The authors give a useful outline to both the Turkish Higher education system and the European Bologna Process; the latter forming the bedrock of criteria for the analysis. Historically, the credit system used in the Turkish higher education system was based on theoretical or practical class hours per week in which one credit stands for one lecture hour a week. This contrasts with the Bologna model, now being implemented, where one ECTS (European Credit Transfer System) credit stands for 25-30 hours of learning activities linked to the achievement of specified learning outcomes. Data analysis revealed many similarities and differences between the different programmes and the relative composition of accounting, economics, and financial management. For example, data revealed that Foundation Business Schools required more student workload than the public universities. Differences were also found between business schools using Turkish as the language of instruction and those using a foreign language. Turkish education policy determines that all undergraduate programmes should have 25% of the programme in ECTS as elective modules to provide cultural and other opportunities to students. This naturally impacted upon different courses and their composition of core modules- to some extent depending upon the nature of the elective modules.

The paper offers a clear mechanism for conducting such quantitative analyses from the perspective of student workload and experience within a subject area and between different programmes and universities. It also shows how the benchmark of the TUNING subject area competences form a benchmark from which such evaluations can be framed.

Our final paper, returns to public universities in Malaysia where the Unified Theory of Acceptance and Use of Technology (UTAUT) model is used to investigate post graduate students' intention to use Learning Management Systems in *'Factors influencing postgraduate students'*

intention to use learning management system' by Jeya Amantha Kumar, Kamaludeen Samaila, Mas Nida Md Khambari, and Mona Masood. Key elements of the UTAUT model are three concepts; performance expectancy (PE), social influence (SI) and effort expectancy (EE) that are thought to influence students' behaviours and intentions (BI), in this case using the Learning Management System (LMS). The authors summarise the evidence concerning technology platforms and their pedagogical efficacy- factors that are evidenced in the COVID-19 section where studies report on the increased adoption of remote learning during the pandemic. Another model employed to evaluate access and acceptance of technology is the Technology Acceptance Model (TAM). This study builds upon the work of Murathy et al. (2017) who found that Malaysian students preferred conventional learning due to their perception that the LMS could not offer physical- emotional interaction, particularly when there are large classes. Acknowledging that most work in this field has been conducted with undergraduates, they focussed on post graduate students.

The sample was 297 students from a population of 921 postgraduate students undertaking a Master of Education programme, the majority of whom were female (76.2%) with 52% in the age band 26-35 years. These students were required to use LMS as part of the programme. A forty-one item survey was distributed to the students based on six core concepts within TAM and UTAUT, but the moderating variables like age and gender, although data were collected, were excluded for this study. Findings revealed that the three concepts of the UTAUT model did influence behavioural intention to use the LMS with Performance Efficacy having the greatest influence. Unlike some other studies, facilitating conditions did not have any significant influence: this was attributed to the financial standing of the postgraduate students in this study who had access to mobile and other technologies. This study generates relevant information for programme managers who can establish which factors apply to their students and can therefore make pedagogical or other adjustments to support technology adoption. However, generalisability is a problem as the evidence comes from a single programme within a broader university context.

In conclusion, these five papers demonstrate both the micro and macro nature of Higher Education where responsiveness and resilience are key components of not only survival but also quality education. The drive to understand situations, contexts, and institutions is matched only by the importance of understanding student perspectives, and their role in perpetuating current systems or encouraging new modes of education. Our selected papers from this edition give insights into all these dimensions.

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Articles

Elite universities in Chile: Between social mobility and reproduction of inequality

Maria Luísa Quaresma and Cristóbal Villalobos*

Abstract: The Chilean Higher Education System can be considered an exemplary case of massification based on the privatisation and heterogenisation of universities. These processes have created a dual system, with a large group of universities for mass education versus a small group of universities focused on educating elites. In this context, this paper aims to analyse the ethos and missions of elite universities and programmes, their selection mechanisms, and students' socioeconomic and cultural background. Eight case studies were selected, and different data collection techniques were used: interviews with academics, non-participant observations, students' survey and secondary data analysis. Results show that these elite universities (characterised by overrepresentation of students from the upper and middle-upper classes, high levels of excellence and prestige, and academic selection processes or high fees) respond to their own market niche's needs, differentiating themselves not only from 'mass universities' but also from each other. To achieve this, each elite university has its own vision, set of values and practices. Despite these differences, all the elite universities and programmes seek to face the current tertiary massification scenario by opening up to student social diversity ensuring, however, that these changes do not structurally modify their sociocultural composition or their institutional mission.

Keywords: Chile; elite; universities; reproduction of inequality; social mobility; social diversity; selection mechanisms.

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I. Introduction

Within Latin American countries, Chile can be considered an exemplary case of the massification of higher education.[1] In just over three decades, the country has evidenced a gross tertiary schooling rate increase of 612 percent,[2] reaching, since 2007, what Trow has called the system's universalisation stage, which means a gross enrolment ratio greater than 50%.[3] Compared to other countries in the region, the Chilean education system is quite unusual. Between 1842 (the year when University of Chile (UCH) was founded) and 1970, the higher education system was focused on training the elite and there were only eight universities by the end of the 1960s, none of which charged tuition fees.[4] However, during Augusto Pinochet's dictatorship (1973-1989), the Chilean higher education system experienced a drastic reform. It encouraged a self-financing system in universities, which meant the introduction of tuition fees, and it led to an expansion of the higher educational supply, increasing the role of the market and the private sector in providing, financing, and managing the educational system, raising the cost of higher education for families.[5]

After the fall of Pinochet's regime (1990), Chile's tertiary educational policies focused mainly on two goals: i) enhancing institutional accreditation and accountability standards; ii) promoting equity of access and equality of opportunity for all, particularly for students from vulnerable contexts, using financial aid as policy tool.[6] These goals have been spurred mainly through the implementation of a series of financial support policies (loans and, to a lesser extent, scholarships) for low and middle-class families. While these policies have improved the access to university, they have also raised families' economic indebtedness. Consequently, while private spending on higher

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[1] José Brunner and Francisco Ganga, "Dinámicas de transformación en la educación superior latinoamericana: desafíos para la gobernanza," Opción 32, no. 80 (2016): 12-35.

[2] José Salazar and Peodair Leihy, "El largo viaje: Los esquemas de coordinación de la educación superior chilena en perspectiva," Archivos Analíticos de Políticas Educativas 25, no. 4 (2017): 120-142.

[3] Martin Trow, "The Expansion and Transformation of Higher Education," International Review of Education 18, no.1 (1972): 61-84.

[4] José Brunner, "Medio siglo de transformaciones de la educación superior chilena: un estado del arte," in La Educación Superior de Chile: transformación, desarrollo y crisis, ed. Andrés Bernasconi (Santiago: Ediciones UC, 2015), 21-107.

[5] Oscar Espinoza and Luis González, "Equidad en la educación superior de Chile: acceso, permanencia, desempeño y resultados," in La Educación Superior de Chile. Transformación, desarrollo y crisis, ed. Andrés Bernasconi (Santiago: Ediciones UC, 2015), 517-580.

[6] José Brunner, "Educación superior en Chile: instituciones, mercados y políticas gubernamentales, 1967-2007" (PhD diss., Leiden University, 2008).

education in Chile in 2010 reached 1.7 percent of GDP, in Argentina it was at 0.4 percent and in Brazil it was at 0.3 percent.[7]

These changes in the higher education system have generated four main waves of student protests after the return of democracy, with peaks in 1997, 2006, 2011 and, more recently, in 2019. The latter protests led to a referendum on developing a new Constitution to replace the one left by the Pinochet regime.[8] In all the cases, students criticised the commodification of education and protested the expensive tuition fees and high student debts, demanding free and high-quality education.[9] To respond to the students' demands, a set of targeted reforms were promoted, including a decrease in study loan interest rates, more intensive supervision of private universities and, under Bachelet's centre-left government (between 2014 and 2018), the regulation of tuition prices and the approval of a free-tuition law addressed to low-income families.[10] Currently, this policy is focused on students from families that belong to the lowest 60% of households in terms of income, and applies only to a limited subset of institutions, benefiting just over 20% of total enrolment in higher education.[11]

In sum, the massification of the tertiary system, the growth of higher education institutions, and the expansion of educational costs for families are the key characteristics of the Chilean post-dictatorship higher education system. From the perspective of social mobility and reproduction of inequality, these processes create a paradox. On the one hand, the opportunities for entry into the tertiary system have increased for the low and middle socioeconomic groups, reducing the access gap between social classes.[12] On the other hand, access to universities became increasingly differentiated

[7] Espinoza and González, "Equidad en la educación superior de Chile: acceso, permanencia, desempeño y resultados".

[8] Villalobos, Cristóbal, and Camila Ortiz, "Continuidades y rupturas de la protesta universitaria en el Chile postdictadura (1990-2014)," Temas Sociológicos 24, no.1: 89-120.

[9] Jason Delisle and Andrés Bernasconi, "Lessons from Chile's Transition to Free College," Evidence Speaks Reports, 2, no.43 (2018): 1-14.

[10] Maria Verónica Santelices, Ximena Catalán, and Catherine Horn, "Chile's higher education system: Structure and policies behind increased enrrollment," in The Quest for Equity in Chile's Higher Education: Decades of Continued Efforts, ed. Maria Verónica Santelices, Catherine Horn, and Ximena Catalán (Lanham: Lexington Books, 2019), 9-27.

[11] Andrés Bernasconi, "Chile: "The challenges of free college," in International perspective in Higher Education. Balancing access, equity and cost, ed. Jason Desdile and Alex Ushler (Cambridge: Harvard Educational Press, 20019), 109-128.

[12] Espinoza and González, "Equidad en la educación superior de Chile: acceso, permanencia, desempeño y resultados"; Javier Nuñez and Leslie Miranda, "Intergenerational income and educational mobility in urban Chile," Estudios de Economía, 38, no.1 (2011): 195-221.

between two types of institutions: universities whose aim is to educate the masses and a small group of universities focused on the elites' education.[13] So, the Chilean higher education system creates both opportunities and barriers, constituting a case of what Merle has called 'segregated democratisation'.[14] Therefore, several researchers have questioned whether Chilean higher education is effectively contributing to social mobility or, on the contrary, is reproducing social inequalities.[15]

The focus of previous related studies has been mixed. In some cases, the emphasis has been placed on understanding the changes in the distribution of access according to the type of university and student socioeconomic background. Other research, exploring the inequality of educational opportunities in the transition from secondary to tertiary education, concluded that 'less advantaged families have scarce opportunities to access to higher education', mainly enrolling in vocational colleges over universities.[16] Indeed, Chile is one of the OECD countries with the highest levels of school segregation, not only at university but also at primary and secondary levels. The Chilean market-orientated educational system, inspired by the economic neoliberalism implemented during Pinochet's dictatorship in the 1980s, has been pinpointed in the literature as the main factor responsible for the high levels of school segregation, from primary schooling onwards. So, the voucher system implementation, the waves of privatisation, the administration of schools by local municipalities rather than the State, and the student selection mechanisms, such as interviews with students and parents or the application of ability tests, have been identified as key features of this highly unequal school system. These negative consequences are intensified by the high levels of residential segregation that exist in Chile, especially in

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[13] Andrés Bernasconi and Sergio Celis, "Higher education reforms: Latin America in comparative perspective," Education Policy Analysis Archives/Archivos Analíticos de Políticas Educativas 25, no.67 (2017): 1-12; Danilo Kuzmanic, Juan Pablo Valenzuela, Cristóbal Villalobos, and María Luisa Quaresma, "Socioeconomic Segregation in Higher Education. Evidence from Chile (2009-2017)," Higher Education Policy (2021), https://doi.org/10.1057/s41307-021-00258-6.

[14] Pierre Merle, "Democratization or Increase in Educational Inequality? Changes in the Length of Studies in France, 1988-1998," Population 5, no.74-5 (2002): 631-657.

[15] Bernasconi, "Chile: The challenges of free college"; Villalobos, Cristóbal, Ernesto Treviño, Ignacio Wyman, and Judith Scheele. "Social justice debate and college access in Latin America. Merit or need? The role of educational institutions and state in broadening access to Higher Education in the Region," Education Policy Analysis Archives 25, no.73 (2017): 1-26.

[16] Alejandro Sevilla, "Disentangling inequality of educational opportunities: The transition to higher education in Chile" (Phd. Diss. University of Manchester, 2017), 160; Kuzmanic, Danilo, Juan Pablo Valenzuela, Cristóbal Villalobos, and María Luisa Quaresma (2021).

Santiago.[17] In other studies, the focus has been on financial mechanisms and public policy reforms -such as free tuition and their positive impact on student access, and graduation or on the relation between intergenerational income and educational mobility. These studies found low levels of social mobility, even in those cases where young people reached higher levels of education than their parents.[18] Finally, other researchers have put their attention on university access mechanisms and inclusive access programmes, such as loans, scholarships, free tuition and Propaedeutic Programmes implemented over the past decade to promote inclusive access to university.[19]

However, until now, few studies have reflected on the tension between social mobility and social reproduction, taking into account the duality between a large group of universities for mass education versus a small group of universities focused on educating elites.[20] In this paper, the analysis will be focused on this topic, looking at elite universities as a unique place to analyse the dynamics of equity, mobility, and social reproduction in Chile. We aim to analyse the role that elite universities play in the transformation processes of the country's social structure, investigating the institutional, cultural, and social dynamics developed in these institutions. To this end, we explore: i) the characteristics, educational missions and ethos of elite universities in Chile, following not only the Kuh's classical ethos definition of 'a belief system widely shared by faculty, students, administrators, and others',[21] but also its definition as 'core values of the school and to that which is deep and fundamental in its life and work';[22] ii) the student selection mechanisms and notions of equity that are applied by these institutions and; iii) the students' socioeconomic and cultural background in different institutions.

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[17] Claudio Allende, Rocío Diaz, and Juan Pablo Valenzuela, "School segregation in Chile,"; Global Encyclopedia of Public Administration, Public Policy, and Governance, ed. Ali Farazmand (Berlin: Springer, 2018), 1-10.

[18] Nuñez and Miranda, "Intergenerational income and educational mobility in urban Chile".

[19] Villalobos, et al., "Social justice debate and college access in Latin America. Merit or need? The role of educational institutions and state in broadening access to Higher Education in the Region"; Maria Verónica Santelices, Ximena Catalán, and Catherine Horn, Equidad en la educación superior. Diseño y resultados de programas de acceso en universidades selectivas (Santiago: Ediciones UC, 2018)

[20] Villalobos, Cristóbal, Maria Luísa Quaresma, and Gonzalo Franetovic, "Mapeando a la élite en el espacio universitario. Un análisis cuantitativo-multidimensional del caso chileno," Revista Española de Sociología 29, no. 3 (2020): 523-541.

[21] George Kuh. "Ethos: Its Influence on Student Learning", Liberal Education 79, no 4 (1993): 22-31.22.

[22] Terence Mclaughlin, "The educational importance of ethos", British journal of educational studies 53, no. 3 (2005): 306-325, 310.

The paper is divided into four sections, in addition to this introduction. The second section describes the study's conceptual framework, particularly the tension between social mobility and inequality in higher education, as well as the main characteristics of elite universities. The third section explains the methodology of the study, the case study selection, sources of information and analytical approaches used. The fourth section presents the results, organized in three subsections corresponding to the three main objectives described above. Finally, the last section develops some conclusions and reflections in light of the results presented.

II. Theoretical framework

II.1. *Universities, mobility, and social reproduction*

University massification is one of the most relevant developments in educational systems of recent decades.[23] Confirming Trow's predictions, many higher education systems have gone from elite systems to mass systems and, in some cases, to universal access systems. This process has been followed by important changes in the function and logic of higher education systems, at least in three aspects. First, the meaning of the university diploma or degree has changed. In a context of massification, the university degree is no longer only considered as a technique or knowledge credential attached to a certain profession. Now it assumes a symbolic meaning, fundamentally in competitive universities, as a credential of social prestige and of superior personal qualities that facilitate finding employment in an increasingly demanding labour market in soft skills.[24] Secondly, although massification tends to reduce access gaps between socioeconomic groups, educational opportunities in the university field remain unevenly distributed. Hence, working-class students continue to represent a small part of the student population, mostly accessing low-status universities, while upper and middle classes keep on ruling the higher education field.[25] In Chile, for example, while 79 percent of the highest socioeconomic

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[23] Ann-Marie Bathmaker, Nicola Ingram, Jessica Abrahams, Anthony Hoare, Richard Waller, and Harriet Bradley, Higher Education, Social Class and Social Mobility. The Degree Generation (London: Palgrave-MacMillan, 2016).

[24] Phillip Brown, Sally Power, Gerbrand Tholen, and Annabelle Allouch, "Credentials, talent and cultural capital: a comparative study of educational elites in England and France," British Journal of Sociology of Education 37, no.2 (2016): 191-211.

[25] Claire Crawford, Paul Gregg, Lindsey Macmillan, Anna Vignoles, and Gill Wyness, "Higher education, career opportunities, and intergenerational inequality," Oxford Review of Economic Policy, 32, no.4 (2016): 553-575; Diane Reay, Miriam David, and Stephen Ball

quintile students attend selective universities -i.e., institutions with low student acceptance rates-, this percentage decreases to 58% for the poorest quintile.[26] Finally, massification has increased the heterogeneity between institutions and areas of study. Elites tend to be overrepresented in certain universities or programmes. For example, universities like Cambridge and programmes such as Medicine and Economics provide better lifetime earnings perspectives for their students than other institutions and programme paths.[27] Something similar happens in the Chilean case, where programmes such as Medicine, Law or Engineering guarantee a greater economic and social return than Education or Arts, and where degrees in Economics, Engineering or Law from the Pontificia Universidad Católica de Chile (PUC) or the Universidad de Chile (UCH) qualify for careers with the highest salaries within these areas of study.[28]

Taking all this into consideration, how can we understand the role of universities in social mobility and social reproduction today? The academic literature highlights three aspects. Firstly, the processes of massification and universalisation of higher education have generated a differentiation of the objectives of university studies related to the students' social background. So, the answer to why, where or what to study seems to vary strongly according to the social of students, generating differentiated expectations, discourses, and opportunities according to social class. For the lower classes, access to university tends to be seen as an opportunity for upward social mobility.[29] In contrast, for the middle classes, higher education is understood as a protection against the threat of downward social mobility for their children.[30] Finally, for the upper classes, attending university is understood as a process of validation of their privileges, strongly supported by meritocratic discourses - and as a 'natural' path of personal development.[31]

"Making a Difference? Institutional Habitus and Higher Education Choice," *Sociological Research Online* 5, no.4 (2018).

[26] Maria Verónica Santelices, et al, *Equidad en la educación superior*.

[27] Jack Britton, Lorraine Dearden, Neil Shephard, and Anna Vignoles, "How English domiciled graduate earnings vary with gender, institution attended, subject and socio-economic background," *IFS Working Papers*, no.W16/06 (London: Institute for Fiscal Studies, 2016).

[28] Seth Zimmerman, "Elite Colleges and Upward Mobility to Top Jobs and Top Incomes," *American Economic Review* 109, no.1 (2019): 1-47.

[29] Diane Reay, "Working class educational transitions to university: the limits of success," *European Journal of Education* 53, no.4 (2018): 528-540.

[30] Annette Lareau, *Unequal childhoods: Class, race and family life* (Berkeley: University of California Press, 2011).

[31] Shamus Khan, *Privilege: The making of an Adolescent Elite at St Paul's School* (Princeton: Princeton University Press, 2012); Quaresma, Maria Luísa, *Entre o herdado, o*

Secondly, and to respond to the pressure for universities' democratisation, many prestigious universities have implemented several initiatives for facilitating social openness.[32] Concerning the initiatives favouring wider access of lower class students, there is an undeniably fundamental discussion of whether admission should be primarily on the basis of past achievements or also take account of future potential, which would be important but much more difficult to assess. Most elite university initiatives are limited to a specific group of poor students: those with high 'talent' or 'effort'. Using the meritocratic ideology[33] as a mantra, universities have encouraged the 'brightest of the bright' recruitment[34] within disadvantaged groups, promoting competition, innate abilities, and selection. Therefore, these university policies have contributed, although timidly, to decreasing the traditional socioeconomic and cultural homogeneity of these educational spaces as well as to providing some opportunities for the educational mobility of a small number of 'deserving' disadvantaged students.[35] Moreover, popular class inclusion has been carried out overall without transforming the institution`s culture, ethos and policies or processes of teaching-learning. It means that most of these students –or 'strangers in paradise'-[36] are confronted with difficulties that culminate, for many, with abandonment. These students tend to face the dilemma of having a 'habitus divided against itself',[37] and so they need 'superhuman levels of motivation, resilience, and determination, sometimes at the cost of peer group approval' to successfully complete their degrees in these institutions.[38]

Finally, although a university degree is considered a gain for students from a working-class background in terms of prospects for a professional

vivido e o projetado. Estudo de caso sobre o sucesso educativo em dois colégios privados frequentados pelas classes dominantes (Porto: Edições Afrontamento, 2014).

[32] Agnès Van Zanten, "L'ouverture sociale des grandes écoles: diversification des élites ou renouveau des politiques publiques d'éducation?, " Sociétés Contemporaines 78 (2010): 69-96.

[33] Khan, Privilege: The making of an Adolescent Elite at St Paul's School

[34] Diane Reay, Gill Crozier, and John Calyton, ''Strangers in Paradise'? Working-class Students in Elite Universities'," Sociology 43, no.6 (2009): 1103–1121

[35] Agnès Van Zanten, "Educating elites. The changing dynamics and meanings of privilege and power", in Elites, privilege and excellence. The national and global redefinition of educational advantage, ed. Agnes Van Zanten, Stephen Ball, and Bernardette Darchy-Koechlin (New York: Routledge, 2015), 6.

[36] Reay et al., "'Strangers in Paradise'? Working-class Students in Elite Universities", 1104.

[37] Pierre Bourdieu, "The Contradictions of Inheritance", in Weight of the World: Social Suffering in Contemporary Society, ed. Pierre Bourdieu (California: Stanford University Press, 1999), 511.

[38] Reay et al., "'Strangers in Paradise'? Working-class Students in Elite Universities", 1115.

career, the labour market has designed a series of non-educational signifiers to be able to 'distinguish suitable from non-suitable candidates',[39] even if they have the same university credentials. By these means, many students from modest backgrounds who have studied at university (especially in elite institutions) are disadvantaged when they enter the labour market, compared to their wealthier colleagues, whose economic, social, cultural and relational capitals make all the difference in access to top positions in the social structure.[40] As Zimmerman points out, these elite university 'outsiders' tend to receive income levels near the top of the distribution, but not at the top.[41] Additionally, these 'fish out of water' or 'outsiders, inside' experience discrimination and even social marginalisation by the 'legitimate insiders'.[42] Despite having the same university education, students from non-elite backgrounds lack other forms of capital and networks that are relevant in labour markets.[43] In Chile, research has shown the existence of non-educational barriers, such as networks and surnames, in access to the labour market.[44]

II.2. *Elite universities: A characterisation*

Based on academic literature, it can be said that elite universities share three main features. First, they generate the lowest student acceptance rates[45] by applying diverse criteria, such as 'academic potential' or the 'individual talents or interests and accomplishments'.[46] These selection

[39] Gerbrand Tholen, Phillip Brown, Sally Power, and Annabelle Allouch, "The role of networks and connections in educational elites' labour market entrance", Research in Social Stratification and Mobility, 34 (2013): 144.

[40] Britton et al., "How English domiciled graduate earnings vary with gender, institution attended, subject and socio-economic background".

[41] Zimmerman, "Elite Colleges and Upward Mobility to Top Jobs and Top Incomes", 33.

[42] Reay et al., "'Strangers in Paradise'? Working-class Students in Elite Universities", 1104; Reay, "Working class educational transitions to university: the limits of success".

[43] Louise Ashley and Laura Empson, "Differentiation and discrimination: Understanding social class and social exclusion in leading," Human Relations 66 (2013): 219-244.

[44] Nuñez and Miranda, "Intergenerational income and educational mobility in urban Chile".

[45] Aline Courtois, "The global ambitions of Irish universities: Internationalizing practices and emerging stratification in the Irish higher education sector," in Universities and the production of elites. Discourses, policies, and strategies of excellence and stratification in higher education, ed. Roland Bloch, Alexander Mitterle, Catherine Paradeise, and Tobias Peter (New York: Palgrave Macmillan, 2018), 127-148.

[46] Jonathan Friedman, "Producing a global elite? The endurance of the national in elite American and British universities", in Universities and the production of elites. Discourses,

processes generate strong access barriers, which act as filters for excluding candidates without the appropriate profile. This creates an enclave of 'the best and the brightest' that enhances, through a process of 'mirroring and reflecting', the perception that teaching at these universities is more prestigious than at others.[47] The mechanisms used are multiple: rigorous admission exams, high point scores in the final examinations in secondary schools, high tuition fees, strict numerus clausus, and recommendation letters and/or selective interviews all limit the access of a large groups of the population, reducing it to a small number of 'chosen'.[48]

Academic, economic, and social barriers lead to another common elite university feature: the overrepresentation of students from higher social classes,[49] usually coming from the most selective and prestigious (typically private) secondary schools. This is why elite universities tend to have such high economic, social, cultural, academic and dispositional homogeneity within their student body, facilitating the construction of a common collective identity.[50] The fact that some prestigious elite universities, such as Oxford and Cambridge, have a lower teacher-student ratio than other institutions (including other Russell Group ones) can reinforce the students' feeling of belongingness to their university.[51] The elites' identity is also analysed by Mension-Rigau, who points out that there are some elite-specific features such as an individual ethic of work, effort, discipline, and excellence but also social commitment, namely through public service that

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policies, and strategies of excellence and stratification in higher education, ed. Roland Bloch, Alexander Mitterle, Catherine Paradeise, and Tobias Peter (New York: Palgrave Macmillan, 2018), 332.

[47] Mats Alvesson and Maxine Robertson, "The Best and the Brightest: The Construction, Significance and Effects of Elite Identities in Consulting Firms," Organization 13, no.2 (2006): 195-224.

[48] Friedman, "Producing a global elite? The endurance of the national in elite American and British universities"; Bathmaker, et al, Higher Education, Social Class and Social Mobility; Brown, et al., "Credentials, talent and cultural capital: a comparative study of educational elites in England and France"; Courtois, "The global ambitions of Irish universities: Internationalizing practices and emerging stratification in the Irish higher education sector"; Van Zanten, "L'ouverture sociale des grandes écoles: diversification des élites ou renouveau des politiques publiques d'éducation?"; Jerome Karabel, The Chosen: The Hidden History of Admission and Exclusion at Harvard, Yale, and Princeton (Boston: Houghton Mifflin Company, 2005).

[49] Pierre Bourdieu and Jean-Claude Passeron, Les héritiers (Paris: Les Editions de Minuit, 1964).

[50] Bourdieu and Passeron, Les héritiers: Courtois, "The global ambitions of Irish universities: Internationalizing practices and emerging stratification in the Irish higher education sector".

[51] Charlotte Freitag and Nick Hillman, How different is Oxbridge? (Oxford: Higher Education Policy Institute, 2018).

allows them to feel less guilty about their privileged status.[52] The construction of this collective identity begins at home and is reinforced by elite educational institutions. Elite schools and elite universities promote the internalisation of a strong sense of entitlement[53] to occupy positions of power and responsibility and to understand the meaning of certain jobs as prestigious.[54]

A third feature shared by these universities is that they facilitate and, in many cases, guarantee their students' access to political, social, and/or economic positions of power.[55] In Chile, graduates from top universities hold a large proportion of leadership positions in large companies. In the United States, a recent book showed how companies use the institutional prestige of these universities as a filter for choosing the best job candidates.[56] In France, obtaining a qualification from one of the Grandes Écoles is a privileged way to access top-level scientific, political, and administrative positions, as well as leadership positions in the largest economic groups. In 2005, 100 of groups recruited 62 percent of their leaders from this set of graduates.[57] However, as also happens in Chile, there are important differences between courses: a scientific course at École Normale Supérieure gives more prestigious professional opportunities than one in humanities at the same institution. So, graduates from Maths, Physics or Biology are those who most often access top teaching and research positions, compared to graduates from humanities.[58] In the eighties, Baudelot, Raux, Ritz, and Vinh also concluded that there were differences between courses in the same institution (École Normale Supérieure), including courses within the same field of knowledge: for instance, it was easier to reach a prestigious

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[52] Éric Mension-Rigau, Aristocrates et grands bourgeois (Perrin: Éditions Plon, 2007).

[53] Lareau, Unequal childhoods: Class, race and family life, 8.

[54] Amy Binder, Daniel Davis, and Nick Bloom, "Career Funneling: How elite students learn to define and desire "prestigious" jobs'," Sociology of Education 89, no.1 (2016): 35.

[55] Alfredo Joignant, "Tecnócratas, technopols y dirigentes de partido: tipos de agentes y especies de capital en las elites gubernamentales de la Concertación (1990-2010)," in Notables, tecnócratas y mandarines. Elementos de Sociología de las élites en Chile (1990-2010), ed. Alfredo Joignant and Pedro Guell (Santiago: Ediciones Universidad Diego Portales, 2011), 49-76; Zimmerman, "Elite Colleges and Upward Mobility to Top Jobs and Top Incomes".

[56] Lauren Rivera, Pedigree. How Elite Students Get Elite Jobs (New Jersey: Princeton University Press, 2015).

[57] Joel Massol, Thomas Vallée, and Thomas Koch, "Lés élites économiques sont-elles encore si différentes en France et en Allemagne?," Regards sur l'économie Allemande 97 (2010): 5-14.

[58] Pierre Bataille, "Intégrer une Ecole normale supérieure... et après?," Formation Emploi, Revue française de sciences sociales, 129 (2015): 65-86.

position of university professor having graduated in Classical Languages than in Philosophy.[59]

Besides these core characteristics, recent research has shown other features of contemporary elite universities, which are facing increasingly global competition. In the first place, the quality and reputation of teaching staff have been identified as a critical factor for competing in the international arena, which prompts these universities to recruit 'star staff', attracting acknowledged senior international professors[60] or 'research superstars'.[61] In Chile, and according to Brunner's[62] and Muñoz and Blanco's[63] typologies, the oldest and most prestigious elite higher education institutions (founded before 1981) are the main Chilean research universities, which also are recognised for their high standards of academic quality, measured by National Accreditation Commission. Their academics are the authors of more than a half of Chilean research papers and are responsible for most research projects supported by National Fund for Scientific and Technological Development (FONDECYT).

To attract the best academics, elite universities use several strategies. Some of them adopt a dual salary system for domestic and international professors; others make secret salary negotiations or buy professors with time, i.e., allow certain international professors to concentrate their classes in condensed periods of time to avoid their permanent relocation.[64] Elite universities have also promoted specific advertising strategies to attract elites from around the world. Nespor analyses the visibility strategies used by universities, essentially through websites, showing that these institutions project abroad an institutional imagery of success and prestige.[65] As Nespor

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[59] Christian Baudelot, Hélène Raux, Olivier Ritz, and Josianna Vinh , "Que deviennent les normaliens à la sortie de l'école ?," Bulletin de l'Association des Anciennes Elèves de l'ENS, Supplément historique (2005).

[60] Tupac Soulas, "Grasping the global with one foot in China: The rise of Chinese schools of management", in Universities and the production of elites. Discourses, policies, and strategies of excellence and stratification in higher education, ed. Roland Bloch, Alexander Mitterle, Catherine Paradeise, and Tobias Peter (New York: Palgrave Macmillan, 2018), 227-249.

[61] Sydney Freeman, Jr. and David DiRamio, "Elitism or Pragmatism? Faculty Hiring at Top Graduate Programs in Higher Education Administration", Journal of the Professoriate 8, no.2 (2016): 94-127.

[62] Brunner, José, "Tipología y características de las universidades chilenas", Working paper, 2009, retrieved from http://200.6.99.248/~bru487cl/files/2009/02/post_116.html.

[63] Miguel Muñoz and Christian Blanco, "Una taxonomía de las universidades chilenas," Calidad en la Educación 38 (2013): 181-213.

[64] Soulas, "Grasping the global with one foot in China: The rise of Chinese schools of management".

[65] Jan Nespor, "Elite business schools and the uses of visibility," in Universities and the production of elites. Discourses, policies, and strategies of excellence and stratification in

points out, universities instruct '(...) the viewer to understand the effects of schools on their students', who learn to 'to see themselves as members of a community composed of 'incredible' and 'talented' individuals of cohorts defined by their uniqueness'.[66]

This set of particularities makes elite universities a critical space for the study of social inequality. Firstly, the overrepresentation of students from groups of high socioeconomic status and the high financial return of diplomas mean that elite universities are particularly perceived as institutions where education can play a role in social reproduction processes.[67] Secondly, economic, political, and social elites need to formalise their position by attaining university credentials as a way of validating their future position and justifying their privilege through the meritocratic speech.[68] This formalisation mostly occurs in elite universities, which are incubators of the country's future elites.

III. Methods

III.1. Sample

In our research, we studied eight cases that we understood as paradigmatic examples of elite university programmes taught at prestigious universities in Chile. Several criteria were established for the selection of chosen programmes and universities.[69] For the programmes, we selected six that are included in the three main groups where elites tend to study: i) programmes whose graduates tend to have high levels of economic capital and high social recognition, such as Civil Engineering and Medicine;[70] ii) programmes with

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higher education, ed. Roland Bloch, Alexander Mitterle, Catherine Paradeise, and Tobias Peter (New York: Palgrave Macmillan), 251-270; Ronald Barthes, "The rhetoric of the image," in *Visual rethoric in a digital world: a critical sourcebook*, ed. Carolyn Handa (Boston: Bedford St Martin's, 2004), 152-163.

[66] Nespor, "Elite business schools and the uses of visibility".

[67] Pierre Bourdieu, *La noblesse d'Etat. Grandes écoles et esprit de corps* (Paris: Les Editions de Minuit, 1989).

[68] Étienne Gérard and Anne-Catherine Wagner, "Introduction: Élites au Nord, élites au Sud: des savoirs en concurrence", *Cahiers de la recherche sur l'éducation et les savoirs*, 14 (2015): 7-24.

[69] We have decided to use the real names of programmes and universities for two reasons. First, we believe that the unique and paradigmatic characteristics of the cases make it difficult to hide the source. Second, the cases constitute unique institutional realities, which can be understood only through their particular history, mission, and vision. Notwithstanding, the anonymity of the actors within each institution has been duly protected.

[70] Patricio Meller, *Carreras universitarias: rentabilidad, selectividad, discriminación* (Santiago: CIAE / Uqbar Editores, 2010).

Table 1

Characteristics of the selected cases

N	University				Programmes			
	Name	Accreditation (years)	Type of University	Institutional Religiosity	Study programme	OCDE Area	USD Annual Cost*	Students from private secondary schools
1	Pontifical Catholic University	7	Private	Catholic	Drama	Arts and Humanities	4.871	58.3%
2	Pontifical Catholic University	7	Private	Catholic	Civil Engineering	Engineering, Construction and Industry	7.705	75.6%
3	University of Chile	7	Public	Secular	Law	Social Sciences	5.450	45.3%
4	University of Chile	7	Public	Secular	Business**	Business and administration	6.378	63.2%
5	University of Santiago	6	Public	Secular	Medicine	Health	6.236	32.3%
6	University of Los Andes	5	Private	Catholic	Medicine	Health	9.231	92.5%
7	University of Los Andes	5	Private	Catholic	Literature	Arts and Humanities	4.531	90.1%
8	University Adolfo Ibáñez	5	Private	Secular	Business**	Business and Administration	7.386	90.9%

Source: Own elaboration based on Higher Education Information System data.

Notes: *=US$ calculated based on an estimate of November, 2020 (1USD$ = 797 CLP); ** includes the programmes of Economics and Business Administration.

high rates of graduates with greater political and economic power in the country, including Economics and Law;[71] and iii) Arts and Humanities (Literature and Drama) programmes preferred by a segment of the children of the elite.[72] For the universities, five institutions were selected for the research. Chile's two historical universities were chosen: UCH, public, and PUC, private, which have both been in operation for over 100 years, are considered of high academic quality and have an overrepresentation of students from the upper and upper-middle classes. A second public university, Universidad de Santiago (USACH), was also selected. It is nationally known for its academic quality, but it is less elitist than the first two institutions. In addition to elite students, it also attracts students from middle and lower-middle classes who can experience upward social mobility after graduating. Finally, two private universities, in operation for only a few decades, were included (Universidad Adolfo Ibañez, UAI and Universidad de los Andes, UANDES), which are characterised by receiving mainly students from selective private schools and high socioeconomic sectors, being named by Muñoz and Blanco as 'highly elitist' universities.[73] Despite the differences, all cases share the three main characteristics identified in the literature to define elite universities:[74] i) having an overrepresentation of students from the upper and middle-upper class; ii) exhibiting high levels of excellence and academic prestige; and iii) establishing high entry barriers, either through academic selectivity processes or high fees. Table 1 presents the main characteristics of the eight case studies.[75]

III.2. Data collection strategies

To analyse the cases, four techniques were used: i) analysis of secondary data and institutional documents; ii) semi-structured interviews (N=48) with institutional actors (academic deans and teachers); iii) non-participant

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[71] Joignant, "Tecnócratas, technopols y dirigentes de partido: tipos de agentes y especies de capital en las elites gubernamentales de la Concertación (1990-2010)".

[72] Bourdieu and Passeron, Les héritiers.

[73] Muñoz and Blanco, "Una taxonomía de las universidades chilenas".

[74] Bourdieu, La noblesse d'Etat; Khan, Privilege: The making of an Adolescent Elite at St Paul's School.

[75] In Chile, the academic quality of universities is assessed through an accreditation process. The accreditation period varies between 1 and 7 years. Regarding costs, each institution can freely establish the annual cost of its programmes (average cost to all programmes is 2,740 USD per year). Finally, private non-subsidised schools (which represent 8% of school enrolment) concentrate the upper-class students of the country.

observations (N=64) of daily spaces and official ceremonies; and iv) student surveys from different programme areas and universities (N=2.340).

For the analysis of secondary data, we used available information from 2017 provided by Chilean Department of Education (DEMRE) and its Employability and Income database. These sources provided us information about social, academic and economic characteristics of students before they enter the programmes and about their income and employability rates four years after graduating. Additionally, information about the mission, vision and main objectives of the programmes and universities was collected through the institutions' websites.

Furthermore, semi-structured interviews were conducted with key institutional actors in each case, seeking to analyse their values, and perceptions.[76] The interviews included deans and faculty members and addressed topics such as the institution's history, vision and mission, the cultural and socioeconomic origin of their students, and the role played by concepts such as excellence, equity and merit in their institutional values.

Another technique used was non-participant observation. Overall, 64 observations were made. These observations were used to study social spaces and interactions, keeping minimal participation and observer anonymity, and each one took approximately one hour. These observations were developed in two areas: i) daily spaces, such as transit places, institutional buildings or food areas, and ii) institutional ceremonies, such as start of the year, graduations, celebrations, ending year ceremonies.[77] Each observation was systematised through field notes, which were subsequently classified in files. The fields of observation included how students appropriate the space, the dynamics of the meeting, the existing norms, speeches and control measures, the relations between the different actors, and distinctions in clothing or physical appearance.

Finally, a face-to-face survey was carried out on a sample of students from the selected programmes. The survey was conducted between March and September 2018. In two cases, student enrolment was low (PUC Drama and UANDES Literature), so it was decided to apply the survey to all students. In the other cases, two classes were randomly selected from each year. Besides incorporating information that characterised the students' sociodemographic aspects, information on their family and school socialisation were also requested, as well as asking about the reasons for

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[76] Uwe Flick, An Introduction to qualitative research (London: Sage Publications, 2014).

[77] Rosana Guber, "La etnografía. Método, campo y reflexividad", Revista de Antropología Social, 21 (2012): 304-306.

entering university and choosing their programme, their perceptions about the university and their experience as students, their future life projects, their concepts of excellence, merit, inequality and poverty and, finally, their individual tastes, cultural practices, and friendships.

III.3. Data analysis

The comparative case method was used to analyse the information collected. This methodology involves the analysis and synthesis of the similarities and differences between two or more cases that share a common focus or goal. The main purpose of this method is to understand how the different observed units respond to particular structures, contexts, motivations, and logics compared to other units.[78] In our case, and following the objective of the paper, the comparative method was used to contrast how different elite programmes and universities have been able to put into action social mobility and social reproduction processes through specific discourses, actions, and mechanisms, seeking to understand patterns of similarities and differences between them.[79]

The comparative analysis was carried out in two stages, following the recommendation of Stake.[80] During the first stage, each source of information (secondary data, interviews, observations, and surveys) was analysed separately. Subsequently, in the second stage, the data was analysed all together, which allowed to deepen and clarify the results found in the first phase, through a triangulation process.

IV. Results

IV.1. Institutional characteristics and educational missions of elite institutions

As mentioned before, the selected cases are homogeneous compared to non-elitist universities, but they present internal heterogeneity among each other. Understanding these differences is important, because the heterogeneous ethos of universities shapes different institutional visions about social problems and their role in the country's development. Additionally, these

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[78] Hans Schuetze and Maria Slowey, "Participation and exclusion: A comparative analysis of non-traditional students and lifelong learners in higher education", Higher Education, 44 (2002): 309–327.

[79] Flick, An Introduction to qualitative research.

[80] Robert Stake, The art of case study research (Thousand Oaks, CA: Sage, 1995).

different social and ethical values are transmitted to students with equal emphasis than the academic content, shaping heterogeneous elites' profiles. In sum, knowing the elite universities' ethos allows us to better understand their heterogeneity and their educational and social roles, namely those related to mobility and social reproduction processes.[81]

Chilean elite universities present several differences related to their mission and main values and principles and so their education process varies between two poles. On the one hand, in some universities, education is based on the idea of training to participate in social and political life, with an emphasis on the role that students can play in the future of the country. On the other hand, in other universities, education is based on an individual holistic development, focused on developing cognitive and personal skills that will allow students to achieve dominant positions in a specific social field (economic, political, social, etc.), without a particular concern about the transformation of society. Both of these dimensions are part of the elites' educational project.[82]

The educational goal of preparing for social and political commitment is predominant in all the programmes of the historical universities (PUC, UCH, and USACH), although it is especially strong in the last two institutions. The University of Chile is an institution whose aim is 'to teach, research, create and develop sciences, humanities, arts, and techniques to serve the country' (UCH website). In the case of UCH's Law school, education is understood as a public mission orientating students towards participation in political debates and social life. As a UCH Law school academic dean explains, the programme 'has a public mission, so public issues are always debated here; the greater national problems are always being debated and the students participate, as well as the professors'. They explain that students must complete internships (without remuneration) with the Public Defender Service and that academics and students have a preponderant role in several legal reforms carried out in the country.[83] This objective is also found in the same university´s Business school. The focus of this university is on the leadership role that their graduates can (and should) play in public life. As

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[81] Serge Guimond, Guy Begin, and Douglas Palmer, "Education and causal attributions: The development of "person-blame" and "system-blame" ideology," Social Psychology Quarterly, 52 (1989): 126–140.

[82] Quaresma, Entre o herdado, o vivido e o projetado. Estudo de caso sobre o sucesso educativo em dois colégios privados frequentados pelas classes dominantes.

[83] For example, the professors and students of the faculty have actively participated in the public debate regarding the new constitution of the country. This engagement includes the participation in discussions at Congress, press letters and television debates.

one Business school professor indicates, 'We foresee that today, 5, 10, 15 years from now, we will have economists at the Department for Finance, at the Central Bank, at the Department for Economy, at the Department for Social Development, leading the country'. Finally, when it comes to USACH's School of Medicine, we see a different paradigm, as the focus on social issues seems to be related to values such as equality and social justice, promoting a moral spirit of strong social inspiration that was not found in other cases. Regarding the programme's ethos taught to their students, a USACH Medical school academic dean points out that his students 'are students who are able to establish dialogue, (…) they look at medicine in a more social way, probably with more interest and commitment in the communities where they are currently inserted'. In sum, these three universities seek to educate leaders who will use their leadership skills to serve the common good, thus contributing to the rapprochement between these future elites and the rest of the society.

On the other hand, the PUC cases appear as intermediate cases between social and individual education. The social mission is not clearly identified in the institution's mission, which seeks to 'promote the cultivation of science, art and other manifestations of the spirit, as well as the education of higher-level professionals, through teaching, research, creation, and communication' (PUC website, 2019). However, when we analysed the interviews, we concluded that the concern with social issues exists but not as a kind of socially-committed Catholicism. It is based on a conservative religiosity, deeply linked with important personalities of Pinochet's dictatorship, such as Jaime Guzmán, a lawyer, senator and close advisor of the Chilean dictator, who founded the Gremialismo[84] school of thought and a staunchly conservative political party, and who led the creation of Pinochet's Constitution based on economic liberalism ideals. Chilean conservative religiosity, supported by the dictatorship, provides a set of religious narratives to elite members who instrumentalise them to justify their privilege and wealth and to legitimate the socioeconomic status quo.[85] Despite these common features, social concerns are perceived differently in the two PUC courses studied.

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[84] Gremialismo was a right-wing political and economic ideology, deeply inspired in the Catholic social doctrine that claims nationalist-Catholic and anti-communist ideals. This conservative movement played a central role on the opposition to the university reform of the Catholic University of Chile in the 1960s and also led several campaigns against Salvador Allende's government.
[85] Maria Angélica Thumala, Riqueza y piedad. El catolicismo de la elite económica chilena, (Santiago: Editorial Debate, 2007).

In the Engineering school, the educational objectives are orientated such that students understand the 'social role' of their course, contributing to solving technical problems relevant to the country: '[There is] a group of engineers who leave university and do not want to work at USACH or at large companies in Chile. They want to try to change the country (…), to participate in society, to help [Chile] towards change and development' (Academic, Civil Engineering, PUC). In contrast, in the Drama school, the social issue is linked to the idea of educating professionals imbued in a certain reality. Drama students are educated to play a social role as actors, reflecting and promoting social transformation as it can be seen in the following quote: 'The musician's work is not related to politics. On the other hand, in Drama school, the actor is imbued with reality, seeking for a change in this reality and generating speeches of reality' (Academic, Drama, PUC).

Finally, UAI and UANDES seem to be examples of an individual-centred education. The case of the UAI is paradigmatic in this regard because it develops an educational process totally focused on the development of the student's individual abilities: to think critically and creatively, to work collaboratively and to solve problems, following the example of many North American elite universities. As one academic of the UAI Business school states: 'We want for all students to know more deeply what we call the liberal arts, which is to integrate different knowledge not only specific to that programme. The first four years, students have about eight liberal arts courses (contemporary civilisation with a series of classic books), and then students focus directly on their specific branches such as microeconomics, macroeconomics, human resources, etc. The current world is changing, and we want students to be able to look at the problems of the future in a more comprehensive way, considering not only economic knowledge but also that of sociology and psychology. We had the opportunity to visit the University of Columbia, which has been using this liberal arts model for 100 years, and it has been our sponsor and guide towards this implementation.'

This liberal education encouragement is linked to principles such as diversity of thought, inquiry, creation, and entrepreneurship. It is, as a UAI professor says, 'the combination of critical thinking and analytical capacity, with entrepreneurial spirit, with an ethical commitment and with a global vision'. In the perspective of the academics interviewed, this educational model implies the deepening of personal, academic and social skills, and defines individual success and effort as core values. So, the university supports individual initiatives that develop the sense of entrepreneurship. For example, students must develop their own ventures and their start-ups, and are supported by the university in this endeavour. Besides, and differently to

UCH Business School, students have strong training in personal skills, with leadership, and oral expression courses. Finally, the university makes efforts to connect its students with global networks, through internships in different universities (especially in the United States).

The education of individuals perspective is also present at the UANDES, especially in its medical school. In this case, the educational ideal is organised under the idea of holistic education, which implies that students should develop technical competences as well as a set of human qualities and interpersonal skills. As a Medicine professor states, it seeks to train 'doctors who understand it's important to treat well, to be polite, respectful….'. In this instance, the schools' formative culture, shared by academics, is not especially focused on students' social engagement or on the discussion of civic and political issues, as opposed to USACH. Instead, UANDES education culture is focused on moral and ethical issues. As with PUC, this catholic university's conservative ethos can be surprising, since the Latin American Catholic Church has been deeply linked to social and liberation movements. However, UANDES has strong connections with the more conservative forms of Catholicism, such as Opus Dei, which have been supported by Chilean elites.[86] Their adhesion to these new movements is the result of their 'disappointment and resentment' with the 'movement of the Church to the left' during the Allende and Pinochet regimes and the so-called 'red priests', committed to the poor and the defence of human rights.[87]

IV.2. *Selection mechanisms and conceptions of merit and social mobility*

With different ethos and visions, each institution seeks to address one of the classic dilemmas of elite universities: the tension between social inclusion and the preservation of its prestige.[88] This section explores this tension, focusing on two aspects. On the one hand, the selection mechanisms used in each case are described, to analyse their characteristics. On the other hand, and considering these mechanisms, the perceptions that educational actors have of merit, equity, and social mobility are discussed.

Regarding the selection mechanisms, it is important to mention that all these institutions participate in the Unique Admissions System (SUA). This

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[86] Maria Angélica Thumala, "The richness of ordinary life. Religious justification among Chile's business elite," Religion 40, no 1(2010): 14-26.

[87] Thumala, "The richness of ordinary life. Religious justification among Chile's business elite," 17.

[88] Van Zanten, "L'ouverture sociale des grandes écoles: diversification des élites ou renouveau des politiques publiques d'éducation?".

system, which incorporates the majority of Chilean universities (56 institutions), both public and private, requires regular selection processes to be carried out considering three main factors: high school grades; the University Selection Test (PSU) scores; and, since 2013 the Ranking Score of secondary school grades. Despite the above, each institution has the possibility of adding complementary mechanisms to this regular system, thus opening the possibility of differentiation between (elite) universities.

In the selected cases, two additional initiatives to SUA are implemented to balance the pressure to promote access and, at the same time, maintain academic and social prestige. On the one hand, the new private universities (UANDES and UAI) developed a set of financial support for 'talented' students and students who do not have the financial resources to pay for the (high) programme costs. In this way, institutions define educational inclusion primarily as economic levelling and, in some cases, as a strategy to improve the academic quality of the institutions, which usually attract students with lower academic performance compared to traditional universities. Indeed, some private elite university courses (such as Medicine or Business) are the second choice of upper and upper-middle class students whose academic score was lower than the minimum required to be accepted in a public university but whose economic background allows them to attend these high-cost universities. As one UAI Business dean states, 'we have a tremendous challenge in our university, because we know that students always prefer the "classical universities", such as the Catholic University or the University of Chile, and only then comes the UAI'. Therefore, these private universities try to face this challenge by attracting some of the best students, including those who cannot pay their high fees. As a UANDES Medicine dean states: 'We have a scholarship for talented students. There are socioeconomic scholarships, there are performance scholarships, and there are scholarships for alumni'.

On the other hand, historical universities (UCH, PUC, and USACH) have implemented more comprehensive inclusion programmes. As previous studies have described, these programmes have two common characteristics: they seek to support the access of students from low-income families (generally, students from the bottom two socioeconomic groups), generating quotas for those who do not achieve the results in the standardised tests but demonstrate 'academic talent', measured though his academic results in high school,[89] and ii) they develop follow-up mechanisms after admission,

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[89] Each university and programme defines their own criteria for the classification of students and talented students. For example, the Ranking850 Programme (USACH) benefits

through mentoring and/or peer support processes.[90] The idea behind these initiatives is that these talented students can achieve the same results as the rest of the students when they are supported by the institution and by their families. As the PUC Civil Engineering dean states: 'Many efforts are being made so that children from more vulnerable schools and vulnerable economic conditions can come. The Talent and Inclusion programme was started in 2011, based on this: it does not matter the students' grades in the admission tests; what matters is the student's talent[91] (...) [These talented students] enter the programme and then intense support work is done to put them at the same level of knowledge of the "normal" students (...) and after 1 year their academic performance is similar to other students.'

Despite these differences, academics of all programmes share a particular perception about educational inclusion and selection, based on three central ideas. Firstly, it is understood that the inclusion of more vulnerable socioeconomic groups cannot be done at the cost of a reduction in the quality of education, as has happened, according to the most pessimistic voices, with the massification of secondary education.[92] Secondly, educational inclusion does not seek to generate radical transformations in the socioeconomic composition of institutions, but rather to reduce the processes of socio-cultural homogenisation produced by standardised selection tests and, in the case of PUC Civil Engineering, to promote a more balanced gender composition. Finally, inclusion is developed through a logic of merit where it is understood that students who enter through a special path have made an effort and/or have a particular talent.[93] Institutional interviews reflect on these aspects: 'Academic excellence is the basis of our programme (…) We make a lot of social inclusion, but without ignoring the importance of

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students who obtain the highest score in the Ranking Score of Secondary School grades. On the other hand, the SIPPE (UCH) programme is focused on students who are in the top 10% or 20% of grades in their school.

[90] Villalobos, et al., "Social justice debate and college access in Latin America. Merit or need? The role of educational institutions and state in broadening access to Higher Education in the Region".

[91] A talented student is perceived as someone with high interest and good marks in a specific area of knowledge; in other words, a student that cannot belong to the best students in country but is sufficiently good and motivated enough to deserve a chance of attending in this institution.

[92] Quaresma, Maria Luísa, Pedro Abrantes, and João Lopes, "Trayectorias y vivencias escolares en colegios socialmente contrastantes," Andamios 15, no.38 (2018): 365-386.

[93] Villalobos, et al. "Social justice debate and college access in Latin America. Merit or need? The role of educational institutions and state in broadening access to Higher Education in the Region"

academic excellence' (Academic, Law, UCH). Another interviewee also states: 'We value meritocracy, social mobility and equal opportunities in a very important way' (Dean, Business, UCH).

In conclusion, elite institutional universities develop some social inclusion initiatives/policies[94] for a limited number of students, whose fundamental focus is the promotion and incorporation of students who are academically talented and socially vulnerable. These policies seek to expand the social heterogeneity of the institutions, but in a timid and limited way.[95]

IV.3. *Socio-economic and cultural background of students*

With multiple organisational values and identities and different mechanisms of selection, universities receive students with different profiles, even though they belong, overall, to Chilean economic and/or cultural elites. In this sense, this chapter seeks to understand the relation between elite universities and the socioeconomic and cultural background of students.

Table 2 presents descriptive statistics on four variables: i) the percentage of students with a mother who has completed higher education; ii) the percentage of students living in households with monthly incomes above USD 2,600; iii) the percentage of students living in the seven municipalities in Metropolitan Area rated by Ortiz and Escolando as the 'high-income cone' (Lo Barnechea, Providencia, Las Condes, Vitacura, La Reina and Ñuñoa);[96] and iv) the percentage of students who declare to have cultural practices

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[94] In Chile, three groups of initiatives of this type are promoted. Firstly, 13 higher education institutions (mainly universities) have implemented Propaedeutic Programmes, which offer to talented students attending the last year of secondary education (12th grade) in vulnerable schools the possibility to access a training process that ensures direct entry to the university. Secondly, since 2014, the Ministry for Education has implemented PACE, which seeks to ensure effective access to students from vulnerable schools that have demonstrated high performance in their educational contexts. Finally, in the past decade, several selective universities have implemented specific access programmes, such as the Inclusion Talent Programme (PUC), the SIPEE (UCH) or the Ranking 850 Programme (USACH).

[95] For more information about social inclusion initiatives: Otavio Lizama, Francisco Gil, and Beatriz Rahmer, "La Experiencia de la Inclusión en la Educación Superior en Chile" (Santiago de Chile: Editorial USACH, 2018); Alvaro González and Francisco Gil, "Les défis de la transition vers l'enseignement upérieur : idées et évidences depuis le contexte chilien," Synergies Chili, 14 (2018): 47-58; Cristóbal Villalobos, Programas de acceso inclusivo a la Educación Superior para estudiantes vulnerables en Chile (Santiago de Chile: Ministerio de Educación, 2018).

[96] Jorge Ortiz and Severino Escolano, "Movilidad residencial del sector de renta alta del Gran Santiago (Chile): hacia el aumento de la complejidad de los patrones socioespaciales de segregación," EURE, 39, no.118 (2013): 77-96.

qualified as elite (going to the opera, ballet, classical music concerts, photography or cinema art shows). Following Khan's definition, elites are not necessarily at the top in all dimensions of life (political, cultural and economic), but they are at least in some of them. For this reason, the composition of the elite should be an empirical subject of analysis. In our case, we analyse two groups of variables. On the one hand, parents' schooling and cultural practices have been highlighted as variables that allow the characterisation of elites in cultural terms.[97] On the other hand, the income of the families and the place of residence have been taken into consideration as socioeconomic variables that characterise the elites.[98]

Table 2
Economic and cultural capital distribution of students

N	University	Programme	Mother with higher education (%)[a]	Households with income above 2600 USD[a]	High income cone neighbourhoods[b]	Elite cultural practices[b]
1	PUC	Drama	75.0%	33.3%	32.2%	97.2%
2	PUC	Civil Engineering	55.4%	64.4%	36.8%	47.7%
3	UCH	Law	51.5%	34.9%	31.8%	70.4%
4	UCH	Business	49.8%	51.3%	44.5%	45.1%
5	USACH	Medicine	33.3%	30.6%	10.3%	60.2%
6	UANDES	Medicine	67.4%	72.7%	61.6%	49.5%
7	UANDES	Literature	100%	88.6%	49.0%	73.5%
8	UAI	Business	76.3%	82.0%	58.0%	50.3%

Source: Own development.

Notes: a = information collected from the Higher Education Information System;
b = information collected from the survey.

The first broad conclusion refers to cultural capital, as expressed in the percentage of students with mothers with higher education and in the elite

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[97] Bourdieu and Passeron, *Les héritiers.*

[98] Michel Pinçon and Monique Pinçon-Charlot, *Les ghettos du gotha. Comment la bourgeoisie défend ses espaces* (Paris: La Découverte, 2007); Mension-Rigau, *Aristocrates et grands bourgeois.*

cultural practices declared by students. Although all the cases show an overrepresentation of students in both variables (except for USACH), it is possible to observe that the students of courses more linked to the humanities and arts, from both public and private universities (UCH Law, UANDES Literature, PUC Drama), are those who have higher levels of elite cultural practices despite their lower households incomes and the lower proportion of these students living in high income neighbourhoods, compared to other elite course students (see Table 2). So, the explanation for these elite cultural practices is not directly linked to students' financial capital but rather to the osmotic transmission of tastes and practices learned through their families' socialisation processes.[99] As a UCH Law academic indicates, family cultural capital 'is very important (…) [This capital refers to the] student's previous educational level, a kind of culture that has not been explicitly taught but reflects the environment in which you have lived, the possibility that you have had of travelling, of reading… and that reflects the previous culture with which they leave.' From this point of view, cultural capital is perceived as an important asset to enter and remain in certain educational institutions. As Bourdieu and Passeron state, access to the most prestigious universities and academic success are easier when students have familiarity with the dominant culture, which is the culture rewarded by the education system.[100]

Secondly, it is possible to observe that the newest private universities (UAI and UANDES) have the highest representation of students from high-income families and that, in addition, they concentrate an important part of students from a specific geographical sector of Santiago: the high-income cone. This means they are quite homogeneous and hyper-selective universities, attended by an important part of the country's upper class. As a UANDES Medicine academic says: 'Most of the students belong to the most advantaged socioeconomic groups, they are people who come from families with enough resources (…) generally speaking, they are students who come from highly respected schools and belong to high socioeconomic families'.

The PUC Civil Engineering programme could also be added to this group, although the proportion of students from the upper-class neighbourhoods (in the north-east corner of Santiago) is much smaller, probably due to the location of the university (the programme is located in Campus San Joaquín, in the southeast of the city) or the student selection

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[99] Agnès Van Zanten, "A family affair reproducing elite positions and preserving the ideals of meritocratic competition and youth autonomy," in Elites, privilege and excellence. The national and global redefinition of educational advantage, ed. Agnès Van Zanten, Stephen Ball, and Brigitte Darchy-Koechlin (New York: Routledge), 29-42.

[100] Bourdieu and Passeron, Les héritiers.

processes. Either way, the truth is that there is a recognition that an important part of these students would also come from well-off sectors: 'In this respect, the School always has a high preference for students coming from private schools, which exceeds 80% (…) It has always been high, but (…) today that preference has escalated. Why? I am not sure (...) but it could be caused by selection tests (...) that sometimes harm people who are in more vulnerable socioeconomic conditions' (Academic, Civil Engineering, PUC).

V. Conclusions

The study sought to analyse eight paradigmatic cases of elite universities and elite programmes in Chile, accounting for institutional ethos, selection mechanisms and perceptions of equity and their role in the education of Chilean elites. The main objective has been to understand the role of these universities and programmes in the processes of reproduction and social mobility, an especially important issue in the Chilean context, which is characterised by a massification of tertiary education and very high levels of economic inequality.

The analyses reveal two main findings. First, and despite being understood as a selective group of institutions, elite universities and programmes have multiple differences in organisational, cultural, and political terms. In a highly competitive and commodified space such as the Chilean higher education system, these institutions seek to build their own 'market niche', generating distinctions not only with 'mass universities' but also among elite institutions, mobilising for it discourses, different values, and institutional devices. So, each institution seeks to solve the tension between the massification and the preservation of its prestige in a different way. Some universities, like UCH and USACH, put their focus on the public mission and on the education of national leaders, expressing a strong concern for the common good. But, at the same time, they provide some opportunities to a restricted number of lower-middle and lower class students who have proved to be talented and 'deserve' to be part of a 'new elite'. The PUC, despite expressing little concern for a public mission, shares with the previous universities the aim of preparing future leaders and opening itself to social mobility, receiving non-elite talented students. A different case is UANDES, whose focus is on high moral holistic individual education, not giving special attention to openness or the social diversity of its students, thereby facilitating social reproduction processes. Finally, in the case of UAI, its entrepreneurial spirit and connections with economic and financial companies explain the

special focus assigned to the idea of merit and effort, and so to the idea of social mobility as an individual conquer.

These particularities or differences do not imply, however, that, seen as a whole, these institutions do not have some similarities when facing the massification of higher education. This constitutes the second finding of the study. Thus, all universities seek to face the current scenario by opening up -even if with different magnitudes- to the diversity and social heterogeneity of their students; as long as, however, that this change does not structurally modify the sociocultural composition or the mission of the institution. All elite universities and programmes promote inclusive policies to enrol socioeconomically heterogeneous students. However, these policies promote a controlled opening up that allows them to maintain their (symbolic or real) prestige and value. Thus, they adapt to the new national context of massification of higher education but preserving their historical privileges.

These conclusions have important implications for the discussion on mobility, reproduction, and social inequality. Firstly, it is important to highlight that these elite universities do not seek to remain outside the democratisation process of Chilean higher education, being, on the contrary, permeable to it. The discussions towards integration, the selection mechanisms towards social diversity and the evidenced tensions regarding their elite educational mission prove it, showing their concern about social mobility and reproduction. Despite this concern, the universities and programmes studied in this research do not seem to contribute to changing the inequality levels and the low intergenerational mobility in Chile. Recent research by Zimmermann has highlighted the important role that elite universities play in the social reproduction of economic elites;[101] Joignant also found evidence of the social reproduction within political elites.[102] In the same line, studies about social mobility in Chile[103] have confirmed the low levels of mobility existing in the economic and political elites, as well as the difficulties that educational mobility have in becoming engines of social mobility.[104] In this context, this research contributes to conclude that elite universities have not

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[101] Zimmerman, "Elite Colleges and Upward Mobility to Top Jobs and Top Incomes"

[102] Joignant, "Tecnócratas, technopols y dirigentes de partido: tipos de agentes y especies de capital en las elites gubernamentales de la Concertación (1990-2010)"

[103] Pablo Celhay, Claudia Sanhueza, and José Zubizarreta, "Intergenerational mobility of income and schooling: 1996-2006," Revista de Análisis Económico 25, no.2 (2010): 43-63; Florencia Torche, "Unequal But Fluid: Social Mobility in Chile in Comparative Perspective," American Sociological Review 70, no.3 (2005): 422-450.

[104] Nuñez and Miranda, "Intergenerational income and educational mobility in urban Chile"

been able to put an end to their historical role in perpetuating social reproduction in Chile.

Moving towards a deeper understanding of these institutions is, therefore, a relevant issue for future educational research. Thus, little explored aspects in this research, such as the relationship between Chilean elite universities and the world's elite universities, the teaching-learning processes that are developed in these spaces, the organisational functioning aspects of these institutions and the role of elite universities in the production, dissemination and/or consolidation of certain national policies and programmes are interesting topics to investigate in future studies.

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Influential factors contributing to the understanding of international students' choice of Malaysian higher education institutions: Qualitative study with a focus on expected benefits

Osama K. Haniya and Hamdan Said*

Abstract: This research aimed to identify the influential factors contributing to the international students' choice of Malaysian Higher Education Institutions (HEIs), focusing on the expected benefits. Additionally, the study contributes to the development of the higher education sector in Malaysia by providing recommendations to the HEIs based on the students' perceptions. To achieve this purpose, the researchers utilized a qualitative approach through interviews where the study targeted the international students in Malaysia; 18 students were interviewed until saturation was reached. The thematic analysis was utilized to analyze the interviews where five major influential factors were highlighted and investigated: reliability, assurance, tangibility, empathy, and responsiveness. The results showed that the Malaysian universities provide higher than average services to international students, which met most of their expectations; this is clear through the international students' answers to questions under different constructs such as reliability, assurance, tangibles, empathy, and responsibility. The international students believe that the brand image and reputation of HEIs have a positive impact on their choice and expectations, and they believe that Malaysian HEIs are among the world's top universities. The study contributes to Malaysian HEIs in terms of the students' feedback that could be an advantage for existing efforts to develop the academic services of the country.

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Keywords: students' choice; higher education institution; international students; expected benefits; Malaysia.

Introduction

Higher education is the educational stage provided by high schools or other educational institutions. It is one of the crucial roles for students to develop economically and socially.[1] Higher education's main goal is to create and distribute knowledge for personal and social growth. Countries and Higher Education Institutions (HEIs) have acknowledged the importance of international students and their potential economic benefits. Many overseas students wish to study at foreign universities.[2] Foreign students choose HEIs for many reasons, including improving their creativity by exposing them to new experiences, acquiring skills and abilities, increasing their chances of owning high-quality jobs in their communities,[3] assessing the possibility of learning a new language, providing the opportunity to interact with new language and culture,[4] developing skills, and providing the experience of living in a new country.[5]

Studying abroad is a life-altering decision for international students. When students decide to study abroad, they frequently consider the consequences of their decisions. The opportunity to learn about various cultures, improve personally, and learn about people's differences is commonly emphasized in the literature.[6] These opportunities also allow international students to learn

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[1] Mukhtar, Umer, Suleman Anwar, Umaid Ahmed, and Muhammad Awais Baloch, "Factors affecting the service quality of public and private sector universities comparatively: an empirical investigation," *Researchers World* 6, no. 3 (2015): 132.

[2] Yibo Yang, Simone Volet, and Caroline Mansfield, "Motivations and Influences in Chinese International Doctoral Students' Decision for STEM Study Abroad," *Educational Studies* 44, no. 3 (June 30, 2017): 264–78, https://doi.org/10.1080/03055698.2017.1347498.

[3] Philip H. Anderson, Ann Hubbard, and Leigh Lawton, "Student Motivation to Study Abroad and their Intercultural Development," *Frontiers: The Interdisciplinary Journal of Study Abroad* 26, no. 1 (August 15, 2015): 39–52, https://doi.org/10.36366/frontiers.v26i1.354.

[4] Jeffrey R. Watson and Richard L. Wolfel, "The Intersection of Language and Culture in Study Abroad: Assessment and Analysis of Study Abroad Outcomes," *Frontiers: The Interdisciplinary Journal of Study Abroad* 25, no. 1 (March 15, 2015): 57–72, https://doi.org/10.36366/frontiers.v25i1.345.

[5] Anderson, Hubbard, and Lawton, "Student Motivation to Study,"42.

[6] Matthias Hennings and Shin Tanabe, "Study Abroad Objectives and Satisfaction of International Students in Japan," *Journal of International Students* 8, no. 4 (October 1, 2018), https://doi.org/10.32674/jis.v8i4.238.

about views that differ from their own.[7] Nations can further improve brainpower and recruit human capital by engaging in joint education programs and studying abroad.[8]

International students use various variables to decide where to study. Massive infrastructure, quick economic expansion, higher living standards, foreign investment attractiveness for the knowledge industry, and clever management are frequently considered.[9] Those characteristics make countries desirable places to live and invest. International students sometimes lack a particular life plan when migrating to a new country.[10] The new environment may impact the educational process and students' experiments, requiring HEIs to adapt.[11] Ge, Brown, and Durst[12] found that the presence of international students in a safe, comfortable, and respectable setting has a favorable impact on students and vice versa. As a result, the experiences of overseas students should be thoroughly examined.

Studies have shown that studying abroad has some advantages.[13] These benefits include improved education, exposure to outstanding scholars and researchers from around the world, better employment possibilities, and exposure to innovative and sophisticated teaching and learning approaches.[14] HEIs are aware that international students seek higher education institutions with better scientific and research capabilities, higher quality education at

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[7] Irvine Clarke et al., "Student Intercultural Proficiency from Study Abroad Programs," *Journal of Marketing Education* 31, no. 2 (May 2009): 173–81, https://doi.org/10.1177/0273475309335583.

[8] Jane Knight, "Internationalization: Concepts, Complexities and Challenges," in *International Handbook of Higher Education* (Dordrecht: Springer, 2007), 207–27.

[9] Muhammad Zeeshan et al., "Foreign Students' Motivation for Studying in Malaysia," *International Journal of Asian Social Science* 3, no. 3 (2013): 833–46.

[10] Costas Zafiropoulos and Vasiliki Vrana, "Service Quality Assessment in A Greek Higher Education Institute," *Journal of Business Economics and Management* 9, no. 1 (March 31, 2008): 33–45, https://doi.org/10.3846/1611-1699.2008.9.33-45.

[11] Arkorful, Valentina, and Nelly Abaidoo. "The role of e-learning, advantages and disadvantages of its adoption in higher education." *International Journal of Instructional Technology and Distance Learning* 12, no. 1 (2015): 29-42.

[12] Lin Ge, Douglas Brown, and Douglas Durst, "Chinese International Students' Experiences in a Canadian University," *Journal of International Students* 9, no. 2 (May 15, 2019): 582–612, https://doi.org/10.32674/jis.v0i0.272.

[13] D Napitupulu et al., "Analysis of Student Satisfaction toward Quality of Service Facility," *Journal of Physics: Conference Series* 954, no. 1 (January 2018): 012019, https://doi.org/10.1088/1742-6596/954/1/012019.

[14] Tahira Jibeen and Masha Asad Khan, "Internationalization of Higher Education: Potential Benefits and Costs," *International Journal of Evaluation and Research in Education (IJERE)* 4, no. 4 (December 1, 2015): 196, https://doi.org/10.11591/ijere.v4i4.4511.

affordable prices, greater cultural and ethnic diversity, a better climate, and a tourism environment that fosters innovation and learning based on scientific knowledge research, and greater market orientation.[15]

Higher education experiment experiences are vital for evaluating students' experiences in light of projected benefits and acceptance of higher education where HEIs are increasingly focusing on enhancing student outcomes.[16] Malaysian universities are joining this adventure. Malaysia is the ninth greatest study destination globally, while Kuala Lumpur is the first most cheap city for students.[17] Malaysia has one of Asia's most competitive educational, economic, and social environments.[18]

The Malaysian Ministry of Education has sought to reorganize the higher education system to be responsive to the country's development needs according to Vision 2020. Bakar and Mahmood[19] showed that the growth of the information economy and modern social transitions prompted Malaysian HEIs to reinvest in themselves at many levels to be distinguishable globally. This clear purpose-made Malaysia a global hub of higher education.[20] The country has also become a tourist and investment destination, focused on utilizing information and creativity in creating chances and establishing high-risk and profitable ventures.[21]

Current literature focused on the international students' expectations in Malaysia but did not study the perceived benefits from international students'

[15] Mazirah Yusoff, Fraser McLeay, and Helen Woodruffe-Burton, "Dimensions Driving Business Student Satisfaction in Higher Education," *Quality Assurance in Education* 23, no. 1 (February 2, 2015): 86–104, https://doi.org/10.1108/qae-08-2013-0035.

[16] The EvoLLLution, "The Purpose of Higher Education: To Create Prepared Minds," ed. Andrés Fortino, The EvoLLLution, June 26, 2012, https://evolllution.com/opinions/the-purpose-of-higher-education-to-create-prepared-minds/.

[17] Sultana, Seyama, and Abdul Momen. "International student satisfaction and loyalty: a comparative study of Malaysian and Australian higher learning institutions." *Journal of Intercultural Management* 9, no. 1 (2017): 101-142.

[18] Ndanusa, Mohammed Manzuma-Ndaaba, Yoshifumi Harada, Abd Rahim Romle, and Kareem Olanrewaju. "International education as tourism product: The Malaysia experience." *International Journal of Administration and Governance* 1, no. 4 (2015): 74-81.

[19] Bakar, Muhammad Shukri, and Rosli Mahmood. "Linking transformational leadership and corporate entrepreneurship to performance in the public higher education institutions in Malaysia." *Advances in Management and Applied Economics* 4, no. 3 (2014): 109.

[20] Mun Chong Sin, Bin Boon Yusof, and Kit Yeng Sin, "International Students' Satisfaction Level towards Service Quality in Academic Aspect and Loyalty to Universiti Teknologi Malaysia," *International Journal of Academic Research in Business and Social Sciences* 8, no. 10 (October 28, 2018), https://doi.org/10.6007/ijarbss/v8-i10/4783.

[21] Melissa W. Migin et al., "Impacts of Institutional Characteristics on International Students' Choice of Private Higher Education Institutions in Malaysia," *Higher Education Studies* 5, no. 1 (January 20, 2015), https://doi.org/10.5539/hes.v5n1p31.

perspectives. Besides, most of the studies focused on the postgraduates, but the current study dealt with undergraduates.

The assessment of the quality of service has become an essential need for service organizations; that is to say, many organizations are striving to respond to the expectations of the end-users through adopting strategies and techniques that contribute to meeting the desired quality of the users.[22] The importance of the study lies in its objectives to identify the influential factors that enable the HEIs to assess the international students' expected benefits to Malaysian public higher education institutions. Besides, the Malaysian HEIs with primarily international students due to the gap in the literature regarding the international students' choice of HEIs in Malaysia.

Based on the study objectives, the following research questions will be addressed: "What are the influential factors contributing to the understanding of international students' choice of Malaysian higher education institutions?" where this general question can be divided into different sub-questions as follow: How can the Malaysian HEIs meet the expectations of the international students through the tangibility of the physical facilities, the reliability of the services, the responsiveness to their needs, the assurance to abide by high-quality services, and the empathy of the staff and management? The current study results will be valuable to many users, including Malaysian HEIs, international students, and other related stakeholders.

I. Factors influencing expected benefits of international students

When it comes to selecting an educational institution, international students are quite selective. Padlee et al.[23] concluded that when international students choose and decide to study at private universities in Malaysia, their decision is positively influenced by various factors, including influencers, learning environment, university focus, fees, socialization, amenities, and location.

Many HEIs worldwide have evolved into comprehensive educational and course delivery categories. The majority of higher education institutions worldwide provide universities and colleges with several branches and

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22 Shanka, Mesay Sata. "Bank service quality, customer satisfaction and loyalty in the Ethiopian banking sector." *Journal of Business Administration and Management Sciences Research* 1, no. 1 (2012): 001-009.

23 Siti Falindah Padlee, Abdul Razak Kamaruddin, and Rohaizat Baharun, "International Students' Choice Behavior for Higher Education at Malaysian Private Universities," *International Journal of Marketing Studies* 2, no. 2 (October 20, 2010), https://doi.org/10.5539/ijms.v2n2p202.

campuses of reputable international universities. As a result of the competitive atmosphere in the educational industry, this study believes that some HEIs are progressively presenting their students as educational system clients. These institutions must possess the advertising intelligence and data essential to address the issues they face, particularly in the worldwide arena. On the student side, they are inextricably linked to the educational quality and service, as they are considered the primary decision-makers.

Fernandez[24] identified four dimensions in selecting an HEI in his research at the University of Science in Malaysia. In this exploratory investigation, Fernandez explored the factors that influence students' decisions in Malaysia. These criteria included the sources of information, the primary motivations for pursuing higher education overseas, the student's intention to enroll in a private or public university, and the elements associated with a favorable effect on institution selection. The exploratory investigation concluded that the primary motivations for overseas students are to advance their professional prospects and acquire the necessary expertise and knowledge.

The customer's expected benefits are typically the high expectations for the supplied service that indicate the achieved performance. The expected benefits of customers are largely determined by several uncontrollable factors, including previous interactions with other organizations and their marketing strategies, the psychological state of customers during service delivery, the customers' values and background, and the product's image.[25] Additionally, the service's predicted benefits for clients are established through a sophisticated process that extensively incorporates the customers' pre-purchase ideas and the judgments of other persons.[26]

The expected benefits are those advantages students desire or wish to receive from the Malaysian HEIs. In this study, students' expected benefits are associated with various degrees of students' decisions before and after joining Malaysian HEIs, which are associated with previous experiences and the presentation of marketing methods and word-of-mouth communication. The expected benefits from the diversity system and their indicators can be

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[24] Jacqueline Liza Fernandez, "An Exploratory Study of Factors Influencing the Decision of Students to Study at Universiti Sains Malaysia," *Kajian Malaysia: Journal of Malaysian Studies* 28, no. 2 (2010).

[25] Ahmed Beloucif, Messaoud Mehafdi, and Naa Ayeley Komey, "Expectation as a Key Determinant of International Students' Satisfaction," *Journal of Applied Research in Higher Education* ahead-of-print, no. ahead-of-print (June 25, 2018), https://doi.org/10.1108/jarhe-04-2017-0048.

[26] Valarie A Zeithaml, A Parasuraman, and Leonard L Berry, *Delivering Quality Service : Balancing Customer Perceptions and Expectations* (New York: The Free Press, 1990).

approached via the uncontrollable elements of the expected benefits, which include prior experience, marketing, the students' conception of the purchased product or educational service, their behavior, and the service's depiction. Additionally, the influence of expected benefits on students is influenced by word-of-mouth communications, pre-purchase credibility, and the customers' requirements, experiences, and personal conduct.[27]

University's reputation is considered a valuable element for foreign students to judge its quality and reputation based on its' recognition and generally expected benefits. Generally, expected benefits are what the individual thinks or believes will happen in the coming future[28]. On the other hand, Mickelson[29] stated that expected benefits are consistent values indicating the experimental actuality faced by the individual (which, in this case, the international students). For example, how the students think regarding their performance in reality given their socio-economic environment and giving their past and present performance academically. Moreover, this study believes that expected benefits usually involve assessing the likelihood of an event, attitude, or result.[30]

The expected benefits for a certain group of customers are significantly influenced by different factors that apply to international students who are considered customers of the universities.[31] Given that international students are not a homogeneous group and have different cultural backgrounds, educational levels, and social and economic backgrounds,[32] all of these reasons emphasize the need to identify the factors contributing to the understanding of international students' expected benefits.

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[27] Nuria Huete-Alcocer, "A Literature Review of Word of Mouth and Electronic Word of Mouth: Implications for Consumer Behavior," *Frontiers in Psychology* 8, no. 1256 (July 25, 2017), https://doi.org/10.3389/fpsyg.2017.01256.

[28] Gorard, Stephen, Beng Huat See, and Peter Davies, "The impact of attitudes and aspirations on educational attainment and participation." *York: Joseph Rowntree Foundation* (2012).

[29] Mickelson, Roslyn Arlin. "The Attitude-Achievement Paradox among Black Adolescents." *Sociology of Education* 63, no. 1 (January 1990): 44. https://doi.org/10.2307/2112896.

[30] Russell, Marilyn. "Marketing Education." *International Journal of Contemporary Hospitality Management* 17, no. 1 (January 2005): 65–77. https://doi.org/10.1108/09596110 510577680.

[31] Janoskova, Katarina, and Pavol Kral. "Perception of selected sportswear brands with an emphasis on expected benefits and features as a prerequisite for customer satisfaction." In *SHS Web of Conferences*, vol. 74, p. 01008, EDP Sciences (2020).

[32] Bordia, Sarbari, Prashant Bordia, Michael Milkovitz, Yaxi Shen, and Simon Lloyd D. Restubog. "What do international students want? An exploration of the content of international students' psychological contract in business education." *Studies in Higher Education* 44, no. 8 (2019): 1488-1502.

In the same context, other researchers attempted to identify the expectations of international students by exploring certain factors that may impact determining their expected benefits.[33,34,35,36,37] These studies showed that international students' expected benefits of higher education institutions are mainly associated with the education expenses, education quality, academic reputation, offered programs, provided facilities as well as the educational environment, including practical advantages and aesthetic sides.[38] Additionally, international students expect to find a reasonable computer number, internet access, adequate libraries, and physical facilities besides lower education costs.[39] Taking the scope of study discussion to another dimension, Lee et al.[40] identified the expected benefits of studying abroad among American students. They found an additional factor highlighted by previous researchers, i.e., developing creative thinking.

As for the student's choice, the current study showed that expected benefits from the students' perspective mean the students' perception regarding the quality of the service compared to the service offered in their home country. Choosing a given country is not easy; international students pay close attention to naming the nature of the education service offered in the hosting country and the nature of the courses offered in this country.[41]

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[33] Nilsson, Per A., and Nannette Ripmeester. "International student expectations: Career opportunities and employability." *Journal of International Students* 6, no. 2 (2016): 614-631.

[34] Hu, Claire, Christine Min Wotipka, and Wen Wen. "International students in Chinese higher education: Choices, expectations, and experiences by region of origin." In *Global perspectives and local challenges surrounding international student mobility*, pp. 153-178. IGI Global, 2016.

[35] Li, Yue, Nancy Goodrich Mitts, and Susan C. Whiston. "Chinese International Students' Expectations About Career Counseling." *Journal of Career Development* (2019): 0894845319832672.

[36] Chemishanova, Marieta. "International Students' Expectations of and Satisfaction with Academic Advising at a Community College." (2018).

[37] Fleischman, David, Maria M. Raciti, and Meredith Lawley, "Examining international students' expectations of third-party community engagement as a value co-creation mechanism." *Journal for Advancement of Marketing Education* 27, no. 1 (2019).

[38] Biggs, John. *Teaching for quality learning at university: What the student does*. McGraw-hill Education (UK), 2011.

[39] Nadiri, Halil, and Seyed Muhammad Ali Mayboudi. "Diagnosing University Students' zone Of Tolerance from University Library Services." *Malaysian Journal of Library & Information Science* 15, no. 1 (2010): 1-21.

[40] Christine S. Lee, David J. Therriault, and Tracy Linderholm, "On the Cognitive Benefits of Cultural Experience: Exploring the Relationship between Studying Abroad and Creative Thinking," *Applied Cognitive Psychology* 26, no. 5 (July 19, 2012): 768–78, https://doi.org/10.1002/acp.2857.

[41] Price, I. F., Fides Matzdorf, Louise Smith, and Helen Agahi. "The impact of facilities on student choice of university." *Facilities* (2003).

Yusoff et al.[42] showed that students have different expectations regarding the quality of education they will receive from the university. Such expectations can be seen from different aspects, including the quality of academic staff, the content of the courses, and the expectations regarding the physical facilities. Such factors highly affect the decision of the students to enroll in a given university.

One of the core factors, which all international students expect, is the support from their teachers and professors and the support from the staff during their time at the higher education institutions.[43] The current study's findings revealed that some international students from different nations believe that the support services are the most essential as they do not fully know the host country's language or culture; neither do they know their path within this country. In most cases, international students depend heavily on the support services provided to choose a higher education institution.[44] In this respect, Lee et al.[45] showed that if the students have high expected benefits, this would, in return, affect their satisfaction negatively, where some students may have unrealistic expectations, which the university does not fulfill. Eventually, this will result in students' dissatisfaction.[46] Universities should consider the expectations of the students to ensure that their expectations are realistic and can be achieved, thus resulting in student satisfaction.[47]

Many other influential factors can make students eager to study abroad. International students are looking forward to higher education institutions that can assist them in developing new skills that later can enable them to participate in the development of their communities and enhance their employment opportunities in prestigious vacancies.[48] Migin et al.[49] examined the main

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[42] Mazirah, McLeay, and Woodruffe-Burton, "Dimensions driving business student satisfaction," 87.

[43] Ken Zeichner, "Rethinking the Connections between Campus Courses and Field Experiences in College- and University-Based Teacher Education," *Journal of Teacher Education* 61, no. 1-2 (December 30, 2009): 89–99, https://doi.org/10.1177/0022487109347671.

[44] Rodney Arambewela and John Hall, "An Empirical Model of International Student Satisfaction," *Asia Pacific Journal of Marketing and Logistics* 21, no. 4 (October 2, 2009): 555–69, https://doi.org/10.1108/13555850910997599.

[45] Lee, David, and Tracy, "On the cognitive benefits of cultural experience" 768.

[46] Raoul A Mulder, Jon M Pearce, and Chi Baik, "Peer Review in Higher Education: Student Perceptions before and after Participation," *Active Learning in Higher Education* 15, no. 2 (April 16, 2014): 157–71, https://doi.org/10.1177/1469787414527391.

[47] Jean Kesnold Mesidor and Kaye F. Sly, "Factors That Contribute to the Adjustment of International Students," *Journal of International Students* 6, no. 1 (January 1, 2016): 262–82, https://doi.org/10.32674/jis.v6i1.569.

[48] Sultana and Momen. "International student satisfaction and loyalty" 101.

[49] Migin, Falahat, Ab Yajid, and Khatibi. "Impacts of Institutional Characteristics on" 31.

motivations affecting international students in selecting private higher education institutions in Malaysia. Five factors were used to measure the student's choice of the private higher education institution, emphasizing institutional characteristics (cost of education, academic reputation, software, and utilities).

Moreover, the current study benefited from Zeithaml et al.,[50] who proposed five service quality dimensions: Reliability, Assurance, Tangibles, Empathy, and Responsiveness. It is believed that each of those five constructs represents a part of the customer experience. Reliability represents the performance ability of the desired service accurately, reliably, and consistently. Assurance refers to employees' knowledge, courtesy, and skill to carry confidence and trust, while Tangibles are accommodations, facilities, and personnel appearance. For empathy, it is the caring provision and the individualized interest of the customers. And lastly, responsiveness is the readiness to provide immediate service and assist the customers. Additionally, the model of Parasuraman et al.[51] was adopted in this study because it covers many areas related to the objective of the present study, e.g., student expectation and perception, which the study invested in building the constructs. This study discovered the links of those components to international students' satisfaction and loyalty.

The researchers argue that international students' prior characteristics, such as university choice, expected benefits, contentment, and loyalty, significantly impact their future and academic performance. The international students' variables provide a framework for selecting, anticipating, and remaining loyal to the university to complete their studies.

Finally, a review of past studies revealed that none addressed the fifth gap in the Parasuraman model. The current study is the first to address this gap and propose a workable solution accordingly.

II. Methodology

This qualitative study follows a thematic analysis method, one of the most common approaches to analyzing qualitative data.[52] It involves identifying, analyzing, and interpreting themes identified within qualitative data. The accessibility and selection of the international students were granted by Universiti Teknologi Malaysia (UTM). The selection of the participants was

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[50] Zeithaml, Parasuraman, and Berry, *Delivering Quality Service*, 23.

[51] Zeithaml, Parasuraman, and Berry, *Delivering Quality Service*, 25.

[52] Virginia Braun and Victoria Clarke, "Using Thematic Analysis in Psychology," *Qualitative Research in Psychology* 3, no. 2 (2006): 77–101, https://doi.org/10.1191/1478088706qp063oa.

based on the following criteria: willingness to be interviewed, already spent at least 12 months studying at one of the Malaysian HEIs, and being nominated by the country-of-origin international student society. Additionally, the focus of the study was on the international students, not on the selected universities, which is why the researchers selected the sample from UTM, where the sample included students from various countries. Before starting the research procedures, the researchers retrieved all required ethical approvals from the research committee at UTM. Furthermore, participants' names and personal information were not coded to maintain research ethics.

II.1. Sample size justification

The study followed Patton's[53] suggestion to justify the number of participants. In limited time, it is justified to seek depth by interviewing a small number of participants, overtaking many participants, and seeking breadth of the inquiry. Creswell[54] pointed out that it takes time to collect qualitative data and analyze them, so the larger size of the participants, the more difficult it is to analyze. Creswell also suggested the number of participants might range from 1~2 to 30~40.

As shown in figure (1), the researchers in this study started the process of data collection by interviewing the respondents based on their home country until there were no new additions to the collected data. At this point, the researchers moved to another country. This is called saturation (no new data was obtained from the selected respondents regarding adding new individuals to the population). Saturation is used in qualitative research to discontinue data collection and/or analysis as no additional data are found.[55] The saturation was achieved after conducting 18 in-depth interviews with international students, where each interview took 19-30 minutes. The data collection process started by interviewing international students from Bangladesh until saturation, then moved to international students from China until reaching saturation. The same process sequentially continued with international students from Nigeria, Indonesia, Yemen, and Pakistan.

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[53] Michael Quinn Patton, *Qualitative Research and Evaluation Methods*, 3rd ed. (Thousand Oaks, Calif.: Sage Publications, 2002).

[54] John W Creswell and Timothy C Guetterman, *Educational Research: Planning, Conducting and Evaluating Quantitative and Qualitative Research*, 6th ed. (New York, NY: Pearson, 2019).

[55] Benjamin Saunders et al., "Saturation in Qualitative Research: Exploring Its Conceptualization and Operationalization," *Quality & Quantity* 52, no. 4 (September 14, 2017): 1893–1907, https://doi.org/10.1007/s11135-017-0574-8.
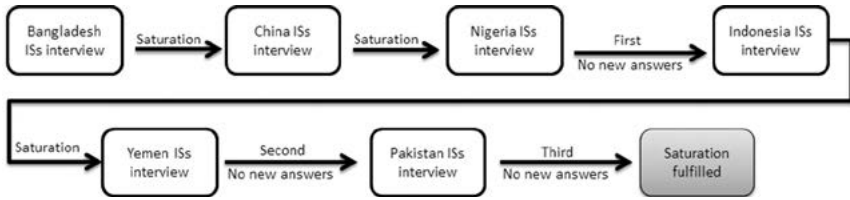
Figure 1

Saturation Technique for Qualitative Study

Table (1) shows the code names and home countries of the students who were interviewed as part of the study.

Table 1

code names and home country of participants

#	Code	Background	Country	#	Code	Background	Country
1	BS	Software Engineering	Bangladesh	10	IM	Civil Engineering	Nigeria
2	NE	Industrial Biology	Bangladesh	11	NM	Civil Engineering	Nigeria
3	SK	Computer Network and Security	Bangladesh	12	II	Computer Science	Nigeria
4	RM	Electrical Engineering	Bangladesh	13	SA	Management Technology	Nigeria
5	MH	Electrical Engineering	Bangladesh	14	AT	Mech. Engineering – Aeronautics	Indonesia
6	AM	Software Engineering	Bangladesh	15	MN	Mechanical Engineering	Indonesia
7	MZ	Human Resource Development Management	China	16	LS	Civil Engineering	Indonesia
8	ZI	Biomedical Engineering	China	17	SS	Software Engineering	Yemen
9	SC	Automotive Engineering (Mechanical Engineering)	China	18	AA	Electrical Engineering	Pakistan

II.2. *Interviews protocol and data analysis*

The interviews were conducted based on the interview protocol of the European Asylum Support Office (2014), which involved different stages. The first stage was the preparation stage, where the interviewer organized the interviews. This stage involved identifying the interviewees, the interview conditions, logistics, and other arrangements. The interviews were conducted at Raja Zarith Sofiah Library, where each interview took 19-30 minutes and included 11 questions, as shown in appendix B.

The researchers provided all logistics to ensure that the interviews were comfortable for the participants. Later on, the opening interviews were organized, which involved establishing and maintaining an atmosphere of trust by introducing the purpose of the study and the questions to be discussed along with the objectives of the study. In addition to ensuring that the interviewee's answers were treated as confidential data, this stage also involved signing an informed consent by the interviewee (appendix A) and taking the participants' permission to record the interviews using an audio recorder. After signing the consent and approving the interview recording, the researchers provided the structure of the ISEB interview. The next stage was the proceeding stage, where the researchers started by asking if the participants had any questions before conducting the interviews. Then the researchers started recording the interview and asked the interview questions. Finally, the researchers concluded the interview after giving the interviewees the chance to add whatever they felt relative to the interview that was not addressed during the interview, including their feedback and recommendations.

ISEB interview included three main parts that are i) introduction, ii) body, and iii) concluding statement. The introduction includes demographic questions and two introductory questions; the body includes ten questions. The concluding statement consists of one question.

After finalizing the interviews, verbatim transcription of research data responses was done, and produced a summary report for the answers of each interviewee. The most popular methods to ensure the validity and reliability of qualitative data include triangulation, receiving feedback from informants, and expert review.[56] To this end, the researchers triangulated the collected data with related literature to ensure that the collected data was verified with other data. In addition to that, the researchers also conducted member checking, which was defined by Simon (2011: P1) as "the process of verifying information with the targeted group; it also allows the stakeholders or participants the chance to

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[56] Simon, Marilyn K. "Validity and reliability in qualitative studies." (2011).

correct errors of fact or error of interpretations." The researchers then contacted each of the participants, showed them the summary report for their interviews, and asked them to sign the report to ensure that the data contained in the report was true and matched with what was obtained in the interview. The researchers believe that such a process is essential in validating the collected data.

The analysis of the data collected from the participants involved different steps that eventually resulted in the provision of sufficient data to support the claims of the study. The researchers started the process by examining the collected data in a thorough and detailed manner to become familiar with the collected data and identify the codes for the data, which would help identify the themes to be used for the analysis. The codes used to classify the collected data were nine codes, namely reliability, assurance, empathy, responsiveness, personal needs, experience, communication, tangibility, and common questions code. The researchers set the initial themes for the qualitative data, wrote them, and set each theme's name. At this stage, the researchers started sorting the collected data into each of the identified themes, which eventually enabled the researchers to identify the themes in the collected data and enabled the drafting of the study results.

III. Results and discussion

The thematic analysis results identified 33 codes related to the factors influencing the international students' choice of HEIs based on their expected benefits to Malaysia's Public HEIs. The major themes were identified based on the dimensions of interview sections, e.g., reliability, assurance, tangibility, empathy, and responsiveness. The interview dimensions were developed based on the literature review performed by the researchers. All these codes were grouped into seven categories. Advanced thematic data analysis constituted five advanced factors: reliability, tangibility, assurance, empathy, and responsiveness. Detailed information about the identified nodes is shown in table (1):

Table 1

Results of Thematic Analysis

No.	Codes	International Students (18)		Category of Theme	Advance Theme
		Source	Reference		
	Malaysian universities are among the world-leading universities.	10	13	Institutional recognition	Reliability

No.	Codes	International Students (18)		Category of Theme	Advance Theme
		Source	Reference		
	Malaysia's higher education system is stronger than my country's higher education system.	13	17	Quality of education	Reliability
	In Malaysia, the standard of higher education is better than that of other Asian countries.	14	30	Quality of education	Reliability
	The university that I have joined in Malaysia deserves to be ranked among the world's best universities.	4	8	Institutional recognition	Reliability
	I trust the higher education system in Malaysia.	9	10	Institutional recognition	Reliability
	The university in Malaysia that I attended achieved what it had expected.	14	18	Institutional recognition	Reliability
	Higher education in Malaysia is of a high standard.	13	17	Quality of education	Reliability
	The learning environment at a university in Malaysia increases my experience of studying.	6	6	Education environment	Reliability
	Studying at a university in Malaysia gives me more advantages than studying in my own country.	13	17	Future opportunity	Reliability
	Studying at a university in Malaysia has opened my eyes to new possibilities.	4	4	Future opportunity	Reliability
	Malaysian universities' academic personnel are proficient in teaching.	8	9	Academic staff qualification	Assurance

No.	Codes	International Students (18)		Category of Theme	Advance Theme
		Source	Reference		
	The Malaysian university academic staff are eligible.	14	17	Academic staff qualification	Assurance
	Malaysian university academic staff make an effort to ensure that students understand the materials for the course.	6	8	Academic staff qualification	Assurance
	The Malaysian university academic staff have wide experience in their respective fields.	8	10	Academic staff qualification	Assurance
	Malaysian university academic workers have high qualifications from well-known universities.	13	16	Academic staff qualification	Assurance
	The Malaysian university's non-academic staff are successful in their work.	11	11	Non-academic staff qualification	Assurance
	The Malaysian university's non-academic staff do their job on time.	8	9	Non-academic staff qualification	Assurance
	The buildings are fitted with new technology at Malaysian universities.	7	9	Infrastructure quality	Tangibility
	Buildings are maintained periodically at Malaysian universities.	7	9	Environment	Tangibility
	Malaysian universities have high-speed internet access.	2	2	Infrastructure quality	Tangibility
	Malaysian universities have an environment for learning that encourages the process of learning.	9	12	Environment	Tangibility
	Malaysian universities have convenient accommodation.	7	7	Infrastructure quality	Tangibility

No.	Codes	International Students (18)		Category of Theme	Advance Theme
		Source	Reference		
	Malaysian university classrooms are fitted with modern facilities.	8	9	Environment	Tangibility
	Wide-ranging references are given by Malaysian university libraries.	4	5	Infrastructure quality	Tangibility
	Malaysian university employees regard students as citizens.	8	9	Communication	Empathy
	Malaysian university workers look after their students	7	7	Friendly welcoming	Empathy
	Malaysian university staff listens to the concerns of students.	3	3	Communication	Empathy
	Foreign students are welcome by Malaysian universities.	8	10	Friendly welcoming	Empathy
	Students may communicate freely with employees of Malaysian universities.	7	7	Communication	Empathy
	The cultural differences between local and international students are known to Malaysian university personnel.	2	2	Individual differences	Responsiveness
	Malaysian teaching workers at universities engage students in lectures.	3	3	Engagement	Responsiveness
	Malaysian university academic staff can be openly dealt with.	6	8	Engagement	Responsiveness
	Non-academic personnel from Malaysian universities can be openly approached.	6	8	Engagement	Responsiveness

Reliability indicates that the person needs to perform their duties dependably and accurately. In their answers to the questions under the reliability dimension, it was clear that the brand image and reputation of HEIs influenced the students' choices and expectations. Reputation influences the students' perceptions and expectations. Thus, the Malaysian HEIs strive to maintain a good reputation and guarantee the high quality of their educational programs. Besides, the students focused on the quality of education provided by the lecturers. International students would have diverse aims on the personal level and several expected benefits related to their education and lives in Malaysian universities. In addition, the overseas students will have expected benefits related to their new educational surroundings, assimilation, and future investment during their time in the Malaysian universities. In this study, international students' discussion on universities generally relates to cost of education, academic reputation, quality of education, programs offered, the facility given, and educational environment, including aesthetic and practical advantages; this discussion was further extended by Biggs and Tang.[57] The assessment of the reliability factor involved assessing the Malaysian HEIs in terms of the quality of the institution, reputation, brand name, ranking, and other relevant matters. The interviews with the students showed that the brand image and reputation of HEIs influence the students' choices and expectations; this finding was supported by Roga et al.,[58] who stressed that academic reputation plays a key role in international students' choices. The students reported that the Malaysian HEIs are among the best in the world regarding academic education, where an apparent theme in the analysis showed that the higher education system in Malaysia is better than the higher education in participants' countries of origin and that the quality of higher education in Malaysia is better than that in other Asian countries. As for those students who are not aware of the rankings of the Malaysian HEIs, the results showed that they seek a Malaysian HEIs among the world's top universities.

The results of the analysis also showed that students trust the higher education system in Malaysia, mainly the students who found what they expected. Positive answers were received from those who study at HEI that

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[57] John B Biggs and Catherine So-Kum Tang, *Teaching for Quality Learning at University : What the Student Does* (Maidenhead, England ; New York: Mcgraw-Hill, Society For Research Into Higher Education & Open University Press, 2011).

[58] Renāte Roga, Inga Lapiņa, and Peeter Müürsepp, "Internationalization of Higher Education: Analysis of Factors Influencing Foreign Students' Choice of Higher Education Institution," *Procedia - Social and Behavioral Sciences* 213, no. 2015 (December 2015): 925–30, https://doi.org/10.1016/j.sbspro.2015.11.506.

have delivered the services with the expected quality. This finding is in line with the findings of Fernandez,[59] who argued that international students seek to improve their professional prospects and obtain the required experience and knowledge, where this can be achieved through meeting their expectations by the Malaysian HEIs.

Another aspect of the analysis is the education environment, where the results of the analysis showed that the learning environment in Malaysian HEIs has contributed to enhancing their study experience; however, this response was moderate. Thus, the Malaysian HEIs need to focus on developing the learning environment to enable the university to deliver better service as per the expectations of the students. Similarly, and with the low response, the students reported that studying in Malaysian HEIs has opened their eyes to new opportunities, which indicates that the Malaysian HEIs should focus on linking the students with the labor market to explore new and innovative opportunities.

Following are the answers provided by the participating students where they indicate the lecturers' professionalism and the positive reputation of the Malaysian HEIs:

> SY, Respondent (Yemen): *"I found that Malaysian universities, especially UTM, were among the top 100 universities."*
> SB, Respondent (Bangladesh): *"The education system here is better than the education system in our country."*
> BB, Respondent (Bangladesh): *"The Malaysian education system is much better than our education system."*
> IN, Respondent (Nigeria): *"UTM is higher than the schools I wanted to go to, so I chose it because of the world ranking."*

The reliability factor was also confirmed by the results of previous studies in terms of the effect of employees' qualifications and characteristics. The study by Baharun, Awang, and Padlee[60] reported the significance of recruiting professional human cadres in the HEIs to establish a good image of the education system at HEIs. Chu *et al*.[61] provided justifications to join the Malaysian HEI: the educational quality and the staff qualifications. It is

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[59] Jacqueline Fernandez, "An Exploratory Study of Factors Influencing the Decision of Students to Study at Universiti Sains Malaysia," *Kajian Malaysia: Journal of Malaysian Studies* 28, no. 2 (2010): 107–36.

[60] Baharun, Rohaizat, Zubaidah Awang, and Siti Falinda Padlee. "International students choice criteria for selection of higher learning in Malaysian private universities." *African journal of Business management* 5, no. 12 (2011): 4704-4714.

[61] Chu, Man Yee, Bi Kai Foong, Chee Liang Lai, and Ai Nee Pang. "Foreign students' enrolment in Malaysian higher education institution." PhD diss., UTAR, 2015

clear that the educational quality and the staff qualifications are two sides of the same coin; the current study also emphasizes this. Also, Morris[62] indicated that the staff's educational performance, educational background, image, condition, and medium of instruction are critical factors that impact the students' choice, as confirmed by the current study.

The assurance factor reflects the credibility, courtesy, competency, and security that international students need to enjoy in Malaysian HEIs to increase their trust and confidence. The assessment of the students' responses regarding the assurance factors revealed seven main themes, as shown in table (1). The results of the assessment of the assurance factor showed that the students believe that the academic staff of Malaysian universities are skillful in teaching and that they are with a high qualification that enables them to deliver the services at the required quality. It was expected by most of the interviewed students to meet highly skilled lecturers and qualified staff. Before arriving in Malaysia, the interviewed students – who majored in several academic fields at Malaysian HEIs- expected to meet skilled lecturers and qualified professors who would put on effective lecturing approaches. The assessment results also showed that the students believe that the lecturers and academic cadres of Malaysian HEIs exert considerable effort to ensure that students comprehend the courses; however, the response rate to questions under this theme was moderate. Thus, it is important to direct the attention of the Malaysian HEIs toward focusing on this aspect. On the one hand, the assessment results showed that the students believe that the academic staff of Malaysian HEIs have high qualifications from well-known universities and have wide experience in their respective fields.

As for the non-academic staff, the assessment results showed that they are efficient in their jobs and do their job timely and with the required quality.

The answers of the students were mostly positive in this regard, and their impressions indicated that:

> MI, Respondent 15 (Indonesia): *"I expected the lecturers to be able to teach the materials I needed to like, cope with engineering subjects and particularly, instead of just learning through a book they should at least provide their knowledge in a way like a university that's very important, from time to time they provide a massive information that from engineering experience."*
>
> RB, Respondent 4 (Bangladesh): *"Teachers have a high level of education. They received their masters and PhDs from European and USA universities."*

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[62] Morris, Huw. "Rankings and the reshaping of higher education: the battle for world-class excellence." (2011): 741-742.

> SN, Respondent 13 (Nigeria): *"There are common things here like a good education and good lecturers, how they teach to make sure that the students understand."*
>
> NN, Respondent 11 (Nigeria): *"I suppose they are well qualified, and their characteristics if they are willing to listen to the student's problems and help them, I think that would be one thing to help the students. I think they are patient and do their work."*
>
> AP, Respondent 18 (Pakistan): *"The management is quite nice."*

On the other hand, one of the students' answers was negative in this regard.

> SB, Respondent 3 (Bangladesh): *"They work too much slowly. The academic staff are good."*

The students were expecting to find trained academic staff who are specialized in what they teach. This is because of the traditional perception that foreign students have when they travel to another country to study; they still believe that the academic staff is better abroad.

However, some of the international students have changed their minds about the teaching staff's qualifications and skills. Contact with lecturers was another issue faced by the students, and their poor English-speaking skills could justify this. English is the main language used in most Malaysian HEIs by international students and academic staff.

In addition, the teaching methods were among the concerns of the students. Most students stated this problem. In addition, the students addressed the behavior of student management and care.

The current study results regarding assurance confirm the results of the previous studies, where Đonlagić and Fazlić[63] showed that assurance is one of the main determinants that students consider to judge the quality of the service. In addition to that, the same results were also confirmed by the study of Shekarchizadeh, Rasli, and Hon-Tat,[64] which showed that international students should receive additional attention from universities. Additionally, similar results were also presented by the study of Pedro, Mendes, and Lourenço,[65] which argued that administrative efforts should be utilized to

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[63] Đonlagić, Sabina, and Samira Fazlić. "Quality assessment in higher education using the SERVQUALQ model." *Management: journal of contemporary management issues* 20, no. 1 (2015): 39-57.

[64] Ahmadreza Shekarchizadeh, Amran Rasli, and Huam Hon-Tat, "SERVQUAL in Malaysian Universities: Perspectives of International Students," *Business Process Management Journal* 17, no. 1 (February 8, 2011): 67–81, https://doi.org/10.1108/14637151111105580.

[65] Pedro, Eugenia, Luis Mendes, and Luís Lourenço. "Perceived Service Quality And Student's Satisfaction In Higher Education: The Influence Of Teaching Methods." *International Journal for Quality Research* 12, no. 1 (2018).

help international students in a good manner; thus, the efforts of the HEIs should be directed toward improving the teaching environment, including selecting the appropriate teaching staff to be able to act according to expectations and applying the appropriate teaching methods to each particular environment.

Tangibles refer to physical facilities, equipment, and the appearance of personnel as a vital determinants of quality service in the HEIs. Through the interviews, it was clear that the students had no expectations about the tangible stuff in Malaysia before visiting the country. The students expressed their interest in well-designed buildings and effective equipment. Following is some of the feedback provided by the students:

> MI, Respondent 15 (Indonesia): "*I love the idea of aesthetic and design. I noticed in the main campus, the doors are quite old as UTM is one of the oldest universities in Malaysia*."
>
> BB, Respondent 1 (Bangladesh): "*The study materials are enough for a student*."
>
> SY, Respondent 17 (Yemen): "*The buildings are generally classical, and I like classical buildings, but when I went to the new library here, I was very impressed by the fact that the building is so wonderful and modern*."

The provision of a successful academic process is interconnected with the well-designed and good appearance of the building and the functioning and up-to-date equipment. Not to mention the role of libraries in providing trustworthy scientific resources. As for the perception of the interviewed students regarding the appearance of physical facilities, equipment, personnel, and communication materials in HEI, the results of the interviews showed that students believe that the study materials and tools are sufficient and of the right quality.

The results also showed that the quality of resources is high. Student NE reported that "the physical facilities, equipment, personnel and communication materials are well maintained, regularly changed out to ensure that there are always new perspectives. Sticking to the same few creates stagnation".

Regarding the internet connection, the students reported that the Wi-Fi needs some improvements in specific areas; it was also reported that the HEIs have good labs. Student MH reported, *"They have good labs. There are too many places so you can work in the library, they have high-speed internet, and you can search for anything. There are many books you can search for anything if you want to read"*.

Students showed that facilities and equipment should be maintained to help them in living, studying, and working in a comfortable environment.

On the flip side, there were some unfavorable responses from the interviewed students. Having said that, student AT reported, "*As for equipment and labs, they look ancient. They might be replaced. Moreover, the painting is ancient. For the roads, I guess there are many holes in the road, it is hazardous. I think it will be very wise to fix that. For buses, I want the buses to be more frequent, so we would not have to wait so long for a bus to come. Every hour a bus would come*".

The presented results agree with the results achieved by Sultana and Momen,[66] which revealed that image and prestige in Australia are significant. In addition to that, the study of Yousapronpaiboon[67] indicated that the expectation of students regarding the quality of education provided by HEI is associated with several factors, where facilities and equipment are the most important ones and related to the tangibility factors and, accordingly, confirming the study results. Morris[68] considered the university's facilities, including campus, laboratory, cafeterias, students' unions, and library, as an essential factor for attracting the international students and influencing their choice of university. Furthermore, Hanasya, Abdullah, and Warokka[69] stated that educational and supportive facilities such as lecture halls, libraries, social spaces, health facilities, laboratories, dining rooms, and the accommodations of the local and international students are essential considerations to meet the students' expectations. These results align with the current study's findings and almost exactly the tangibility factor. In the same respect, Vaz and Mansori[70] found that the physical facilities on the campus play a key role in students' satisfaction. Tangibility has the strongest influence (directly and indirectly) on the students' intention to continue to a higher level of studies and/or spread good word of mouth about the institution to their friends and the society, which confirm the study results.

The study of Ali and Ahmed[71] marked some related factors affecting the expectation of students in terms of the service quality, i.e., perceived

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[66] Sultana and Momen. "International student satisfaction and loyalty" 101.

[67] Khanchitpol Yousapronpaiboon, "SERVQUAL: Measuring Higher Education Service Quality in Thailand," *Procedia - Social and Behavioral Sciences* 116 (February 2014): 1088–95, https://doi.org/10.1016/j.sbspro.2014.01.350.

[68] Morris. "Rankings and the reshaping", 741

[69] Hanaysha, Jalal RM, Haim Hilman Abdullah, and Ari Warokka. "Service quality and students' satisfaction at higher learning institutions: The competing dimensions of Malaysian universities' competitiveness." *The Journal of Southeast Asian Research* 2011 (2011): 1-10

[70] Vaz, Anthony, and Shaheen Mansori. "Malaysian private education quality: Application of SERVQUAL model." *International Education Studies* 6, no. 4 (2013): 164-170.

[71] Ali, Mazhar, and Masood Ahmed. "Determinants of Students' Loyalty to University: A Service-Based Approach." *SSRN Electronic Journal*, 2018.

academic quality, perceived administrative quality, physical facilities, student satisfaction, university image, and university switching cost.

The assessment of empathy refers to caring for the students by providing them with individualized attention and understanding them well. The assessment of the empathy factor results showed that Malaysian university staff respects students as individuals and that they care about their students. While in return, the students believe that the Malaysian university staff does not listen to students' concerns.

As for welcoming international students, the assessment results showed that Malaysian universities welcome international students with a relatively high response rate, as shown in the table above. The assessment results regarding their ability to interact freely with Malaysian university staff showed that the students could interact freely with Malaysian university staff.

The interviewed students were anticipating better-individualized treatment as a general response and were not entirely sure about the HEIs taking care of them. However, some other students were pleased with the care and attention provided by the HEIs, as seen in the answers below:

> MI, Respondent 15 (Indonesia): *"Sometimes they tend to act a little bit angry, they should try to be more patient with students, and treat them nicely and advise them and say that this is the rule and you should follow it."*
> SB, Respondent 3 (Bangladesh): *"I found them lazy, most of the time, I complain, or I went to them for something."*
> SN, Respondent 13 (Nigeria): *"They should provide caring and individualized attention to the international students because we came from different countries. They have to do this by knowing our problems and giving full attention in order to make us better students and by providing good facilities."*
> NB, Respondent 2 (Bangladesh): *"They should bear with us and be patients with the students, especially those who cannot speak Malay."*
> IN, Respondent 10 (Bangladesh): *"When teaching in the class, I think they should provide more attention to the international students, especially when they are doing the explanation because sometimes it is not very clear to the international students because of the way they talk and the English also."*

All in all, the students spoke about the compassion and ability of the staff to support the students. They expected very kind care and assumed that all workers were patients and ready for each student to have individual treatment. Moreover, the students used to think that the citizens of Malaysia were very sweet and welcoming. The prevailing stereotypical picture of Malaysian society could explain such aspirations of the Malaysians and working workers. The results showed that for the HEIs to meet the expectations of

international students better, they should focus on linking the students with their instructors since international students expect higher levels of involvement and interaction from the academic instructors and staff along with more participation, psychological assistance, and support.

Finally, the responsiveness factor evaluation includes measuring the ability to assist students by delivering timely service, which summarizes the principle of responsiveness. The study results showed a lack of knowledge of the cultural differences between local and foreign students at the level of Malaysian university staff. Those students are not interested in lectures. On the other hand, the students indicated that it was possible to interact openly with the academic and non-academic staff.

For most of the students interviewed, the readiness of the HEI to respond to the needs of the students is of high importance. Their experience, however, did not meet their standards, according to the students. Most of the students interviewed talked about the staff's lack of understanding of others' cultures, the quality of services, and visa problems. In addition, some students complained that it takes longer for the HEIs to respond to complaints and other problems.

> MI, respondent 15 (Indonesia): *"They should have experience with cultural differences."*
> SB, Respondent 3 (Bangladesh): *"They should give us better qualities."*
> RB, Respondent 4 (Bangladesh): *"They should give us valid information; sometimes it happens as they don't know so much."*
> ZC, Respondent 8 (China): *"The two sides should communicate more with each other, take advantage of each other's advantages and help each other better."*
> SN, Respondent 13 (Nigeria): *"They should be interested in communication, something like that, and try to give us better services."*
> AI, Respondent 14 (Indonesia): *"I had issues with my visa, and they said that they would take care of it. I was left hanging for around a month, so I had to continuously ask them."*

In the same context, some students reflected on their positive experiences.

> AI, Respondent 14 (Indonesia): *"They are very helpful, they help you right away, and obviously, that wins my trust."*
> NN, Respondent 11 (Nigeria): *"they try to listen and try to help you as possible with anything,"*

From the students' point of view, the responsiveness of the HEIs is measured by the speed and smoothness of the correspondences and students' enrolment procedures, i.e., reply to emails, provision of medical services,

responding to the student's application, and the like. The responsiveness of HEIs or any other types of firms is very significant for customers.

IV. Conclusion

Given the noticeable growth of Malaysia's higher education sector and the increase in the number of international students, the findings of this study may be extremely beneficial for Malaysian HEIs and the Malaysian government in sustaining the sector's prosperity and maximizing its contribution to the country's economy. According to the findings, Malaysian HEIs should pay particular attention to the physical look of their institutions' facilities, as it was determined that these facilities have a significant impact on student loyalty. Besides, it is important to improve the current status of infrastructure at Malaysian HEIs to effectively respond to the expectations of the students through providing continuous maintenance work and follow up.

Malaysian HEIs should invest in their cadres, whether academic or administrative, by strengthening their capacities through systematic capacity-building programs that aim to distinguish the cadre and prepare them to meet the expectations of international students. It was evident that assurance criteria play a significant role in determining acceptance. Establishing a quality assurance committee that oversight every aspect of the HEIs' performance may contribute to the quality of the provided services.

Additionally, Malaysian HEIs should pay particular attention to managing students' expectations by guaranteeing honest and accurate marketing of their services. By managing expectations, universities may ensure that services are stated, retaining student loyalty. State officials can use the study's findings in developing specific legislation that aims to maximize the economic benefits of overseas students and, in turn, contribute to the country's economic development.

Further research could be conducted by replicating them in other states. Additionally, it is worth comparing international students' perceptions of various HEIs, particularly private and public HEIs. Future research could investigate market positioning tactics concerning the expectations of international students and the quality of educational services supplied. Finally, academics and professionals can use the current study's findings to provide a guideline for Malaysian HEIs on improving the quality of services supplied to international students while also increasing student happiness and loyalty. Additionally, this study indicates that additional factors affecting model loyalty be investigated.

Finally, the study had some limitations since the collected statistics are self-reported by international students, and respondents' responses may vary according to their willingness or ability to respond accurately. Respondents may not be sincere in their responses. This study assumed that overseas students diligently distinguish between predicted and perceived benefits throughout data collecting. Lastly, some factors, such as honesty, cannot be quantified to ensure data quality.

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Appendixes

1. Consent form:

Appendix (A) informed consent of the interview

Consent Form

Research Title: International Students' Expected Benefits towards Malaysia Public Higher Education Institutions

Dear Participant,

You are cordially invited to participate in a research study. The purpose of this research study will focus on analyzing international students' expectations of Malaysian higher education in order to suggest a strategy. I am a doctoral student at UTM Johor, Malaysia. This study is being conducted to make a strategy to enhance the satisfaction level of international students in Malaysia.

If you agree to participate in this study, you will be asked to provide demographic information and to do an interview that will take approximately (19-30 minutes). There are minimal risks associated with discomfort to the participants in this study. Study participants may be concerned about the method in which their identities will be protected. You are free to refuse to answer any of the questions that may make you uncomfortable.

You may decline to participate in this study or choose to stop your participation at any point in the research, without penalty or negative consequences of any sort. The benefits of participation include sharing experiences and perceptions. You will receive no monetary compensation for participation in this study.

The study is for research purposes only and not for the decision-making by any organization. The information you provide for this research is anonymous and will be reported as collective summary data only, and no individually identifiable information will be presented. Participants also have the right to review the results of the research.

The records of this study will be kept private. No words linking you to the study will be included in any sort of report that might be published. Research records will be stored securely and only the researchers will have access to the records. All data collected during this study which include interviews will be stored safely at the researcher's residence for one year, and then it will be destroyed, as a means to protect participants as well as preserve the investment in research.

Your decision regarding your participation will not affect your current or future relations with UTM. You can withdraw at any time without damaging

your relations with the university, job, benefits, etc., being affected. Any questions about the gathered data, or requests for a copy of the results may be obtained by contacting the researchers at the contact information shown below:

You can contact XXX or XXX with any questions about this study.

Name of Participant:	
Date:	Signature:

2. Interview form:

Appendix (B) the interview of this study

International Students' Expected Benefits towards Malaysia Public Higher Education Institutions (ISEB) Interview

Name:				
Marital Status:	( ) Single		( ) Married	
Date of Birth:				
Gender:	( ) Male		( ) Female	
Level of Education:	( ) Undergraduate		( ) Postgraduate	
Name of University: UTM				
Major:				
Country of Origin:	( ) Bangladesh	( ) China	( ) Nigeria	( ) Others
	( ) Indonesia	( ) Yemen	( ) Pakistan	
Period spent in Malaysia in months: ( ) Months				

Introduction	Answer
About yourself. Tell me a little about yourself.	
Intro. What is it like to be a student in Malaysia?	
1 Minute. Think of the time when you made the decision to study in Malaysian HEI. Please try to recall all the past memories at that time. Take some time to do that (1min)	

Question	Answer
1. Reliability How can a Malaysian HEI provide the promised service dependably and accurately?	
2. Assurance How should be the qualification and characteristics of the employees of Malaysian HEI?	
3. Assurance How should they act and treat others so they can win your trust and confidence?	
4. Tangibles How should the HEI appearance of physical facilities, equipment, personnel and communication materials looks like?	
5. Empathy How should HEI provide caring and individualized attention to the international students?	
6. Responsiveness How can HEI employees help international students to provide a better service?	
7. Common question Do you remember the moment when you decided to choose a Malaysian HEI over all other options? At that moment. Please tell me your story about how you chose a Malaysian HEI?	
8. Personal needs You know that each one of us has needs, and they could differ from someone to another. How did personal needs influence you or others to choose a Malaysian HEI?	
8. Past experience Where did you study for the last degree? According to your last studying experience, can you tell me how did this experience help you to choose a Malaysian HEI?	
9. Communication Can you tell me how Malaysian HEI has influenced you or others to choose to study in it?	
Concluding Statement Is there anything else you would like to add or share about this topic that you feel is important for me to know?	

I hereby certify that the transcript of the interview is correct, and I understand that it will be used for the purposes of research only.

Name:

Date:

Signature:

Learners' attitude towards outcomes-based teaching and learning in higher education

Ruth A. Ortega-Dela Cruz*

Abstract: As outcomes-based education (OBE) is now being pursued in the Philippine higher education, learners have expressed their varied sentiments to this new approach. This cross-sectional study on the undergraduate and postgraduate learners sought answers as to what attitudes they may foster towards the success of implementing outcomes-based teaching and learning approach in a State University. It also aimed at determining the relationship between learners' demographics, and their attitude towards OBE. Findings reveal that learners have positive attitude towards OBE. Correlation analysis revealed a significant relationship between learners' demographics, and their attitude towards OBE. Analysis of variance reveals significant differences in the attitude of learners across degree levels. As the values formation seems to be a source of dispute among the learners of this new approach, it may also be the source of hope for its brighter future. Taking positively, it simply demands both the learners and educators the kind of character that will help them achieve their goals. For it is within the values of everyone to continue with what the implementers have started while waiting to reap its fruit towards excellence in higher education.

Keywords: Attitude; higher education; learners; outcomes-based teaching and learning; Philippines.

I. Introduction

Outcomes-based education (OBE) is a new approach in the Philippine higher education system. OBE called for the approach shift from teacher-centric

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education to lifelong learning; and from education as transmission of expert knowledge to education as building learner competencies, including learning how to learn.[1,2] This is a learner- or student-centred approach in higher education that entails a shift from a more input-oriented curricular design based on the description of course content, which is developed in terms of learning outcomes. In this approach, students are made aware of what they ought to know, understand and be able to do after completing a unit of study.[3] Pedagogy and assessment are geared towards the acquisition of appropriate knowledge, skills and competencies as defined by disciplinal and multi-disciplinal communities of scholars and professional practitioners. In short, the development of these learning competencies is the expected outcome of higher education programs.

Outcomes-based teaching and learning (OBTL) is a constructive alignment of intended learning outcomes with appropriate outcomes-based assessment methods and teaching and learning activities. This is OBE applied in the classroom level. This is what the higher education system in the Philippines has started implementing after the issuance of Commission on Higher Education (CHED) Memorandum Order No. 46, series of 2012 "Policy Standards to Enhance Quality Assurance (QA) in Philippine Higher Education through an Outcomes – Based and Typology – Based QA.[4]

Implementation of this new approach is in response to the current situation of the country. As early as in 1993, the Educational Commission (EDCOM) of the Senate of the Philippines reported a mismatch between the products of educational system and the needs of the labour market.[5] This has led to slow economic development of the country.[6] Besides, several studies

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[1] Commission on Higher Education (CHED), "Guidelines for the Implementation of CHED Memorandum Order (CMO) No. 46, Series of 2012," (2012 Retrieved 22 May 2020 from https://ched.gov.ph/wp-content/uploads/2017/10/CMO-No.46-s2012.pdf).

[2] Santiago-Arquiza, Glenda, "Toward an Outcomes-Based Education Curriculum, A Philippine Higher Education Institution Experience," (2017 Retrieved from https://stti.confex.com/stti/bc17/webprogram/Paper87354.html).

[3] Castillo, Romer C, "A paradigm shift to outcomes-based higher education: policies, principles and preparations," (*International Journal of Sciences: Basic and Applied Research* 14, no. 1, 2014, 174-186).

[4] Commission on Higher Education (CHED), "Guidelines for the Implementation of CHED Memorandum Order (CMO) No. 46, Series of 2012," (2012 Retrieved 22 May 2020 from https://ched.gov.ph/wp-content/uploads/2017/10/CMO-No.46-s2012.pdf).

[5] Ortega-Dela Cruz, Ruth A, "Perceptions of higher agricultural education toward sustainable agricultural development," (*Higher Education, Skills, and Work-Based Learning*, 10 (1), 2019, 187-202).

[6] Santiago-Arquiza, Glenda, "Toward an Outcomes-Based Education Curriculum, A Philippine Higher Education Institution Experience," (2017 Retrieved from https://stti.confex.com/stti/bc17/webprogram/Paper87354.html).

recognize this slow economic performance to other quality indicators such as inadequate skills and global competencies of the workforce and unemployability of graduates in the global environment.[7]

OBE is no longer new for it has been implemented in the educational systems of the European Union, the United States, Malaysia, South Africa, and Australia as early as 2000.[8] Its full implementation in the University of the Philippines started in 2015.

Thus, this change process also called for the review and revision of the curricular programs as well as developing linkages with other professional institutions and organizations, which serve as the field/laboratory for the learners' practical experiences. Most importantly, it called for a brand of school governance which is transformative in nature. Therefore, OBE will change the focus of educational institutions and their systems from the content to the student.

The result will be vastly different from the ones recent generations attended. Several changes have been observed in most of the higher educational institutions (HEIs) in the country. This is in response to what have been observed by the members of the ASEAN University Network (AUN) from where the University of the Philippines patterned its educational system. For instance, yearly and daily schedules have started to change. Same with the teachers' roles and responsibilities, classroom activities, the evaluation of student performance, and most importantly, the perception of what it means to be an educated person will eventually change. These are just few among the many other factors that need to be altered to fit the needs of the students in response to the demands of the labour market.

These changes in some way or another could lead to the development of certain attitudes among learners who used to be taught and trained by a teacher-centred and content-based educational approach where pen and paper tests are the usual basis of student evaluation.

With this outcomes-based educational approach, the student learning outcomes are evaluated based on their observable behaviour and performance in terms of their acquired knowledge (cognitive), skills (behavioural), and

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[7] Pastrana, Ronald, and Manabat, Alicia, "An Outcomes-Based Education (OBE) Approach & Typology-Based Quality Assurance (QA) System: A Proposed Framework and Transition Strategy for Philippine Higher Education Institution's (HEI) Shift Towards International Standards," (In *Balkan Region Conference on Engineering and Business Education*, vol. 1, no. 1, pp. 639-644, Sciendo, 2014).

[8] Akir, Oriah, Tang Howe Eng, and Senian Malie, "Teaching and learning enhancement through outcome-based education structure and technology e-learning support," (*Procedia-Social and Behavioral Sciences* 62, 2012, 87-92).

attitudes (affective) that provide concrete evidence that learning has occurred in them. Thus, this educational approach does not limit itself to written forms of assessment, but it involves a variety of student evaluation techniques.

This study sought answers as to what extent learners are accepting or resisting this new approach in education (i.e., OBE) and/or what attitudes they may foster towards the success of its implementation in the University of the Philippines Los Baños. Determining their attitude towards OBE is essential for the success of any undertaking to shift to OBE approach since it would consequently determine their knowledge, beliefs, readiness, and acceptance towards this new educational approach.

The school's leadership and administration would then be able to provide ample adjustments based on the stated factors that formulate their attitude towards OBE. Thus, educators would be able to realize what needs to be done to adapt to the OBE system since the study will provide the framework for the assessment of this the new approach.

The learners, as a result of this assessment and in fact OBE's utmost beneficiaries, would be prepared for the real-world demands, as aimed for. Such educational approach will get them to engage in learning activities that are likely to result in achieving the desired outcomes.

This study specifically answered the following research questions:

1. What is the learners' attitude towards outcomes-based education?
2. Is there significant relationship between learners' demographics, and their attitude towards outcomes-based education?
3. Is there significant a difference across degree levels in the learners' attitude towards outcomes-based education?

The following null hypotheses guided the study and were tested at 95 per cent level of significance:

Ho1: There is no significant relationship between learners' age and their attitude towards OBE;

Ho2: There is no significant relationship between learners' level of education and their attitude towards OBE; and

Ho3: There is no significant difference across degree levels in the learners' attitude towards OBE.

I.1. OBE defined

Outcomes-Based Education (OBE) had been defined by various scholars in the field.

OBE curriculum means starting with a clear picture of what is important for students to be able to do, then organizing the curriculum, instruction, and assessment to make sure this learning ultimately happens. There is no single model for OBE, but the OBE purpose will be achieved if educators apply the four basic principles of OBE consistently, systematically, creatively, and simultaneously.[9] These four basic principles include *clarity of focus, designing down*, *high expectation*, and *expanded opportunities*. The *clarity of focus* indicates that teachers should focus on helping students to develop the knowledge, skills and personalities that will enable them to achieve the intended outcomes that have been clearly articulated. The *designing down* means that the curriculum design must start with a clear definition of the intended outcomes that students are to achieve by the end of the program. Once this has been done, all instructional decisions are then made to ensure achieve this desired end result. *High expectations* means that teachers should establish high, challenging standards of performance to encourage students to engage deeply in what they are learning. Whereas, *expanded opportunities* indicates that teachers must strive to provide expanded opportunities for all learners since not all of them can learn the same thing in the same way and at the same time.

OBE was viewed in three different ways – as a theory of education, as a systemic structure for education and as classroom practice.[10] OBE as a theory of education expresses a certain set of beliefs and assumptions about learning, teaching and the systemic structure within which these activities take place. Ultimately, the systemic structure and the classroom practice need to be aligned with the theory in order to have genuine outcomes-based education.

OBE is an approach to education as well as a type of learning process wherein decisions about the curriculum are driven by the exit-learning outcomes that the students should display at the end of the course.[11] It is a term used to imply that everything will be designed and organized around the intended learning outcomes (ILOs), which a learner needs to demonstrate at the

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[9] Spady, William G, "Outcome-Based Education: Critical Issues and Answers," (American Association of School Administrators, 1801 North Moore Street, Arlington, VA 22209, Stock No. 21-00488; $18.95 plus postage, 1994).

[10] Killen, Roy, *Teaching strategies for outcomes-based education*, (Juta and Company Ltd, 2007).

[11] Ortega-Dela Cruz, Ruth A, "Perceptions of higher agricultural education toward sustainable agricultural development," *Higher Education, Skills, and Work-Based Learning*, 10 (1), 2019, 187-202).

end of the learning program.[12,13] In this sense, teachers are expected to clearly state and communicate those ILOs, and minimum acceptable standards for success are established so that students understand what is expected of them. Teachers are then tasked to select instructional strategies that will help students to gain the desired knowledge, skills, competencies, or values. And finally, teachers are to choose assessments that are constructively aligned with the learning outcomes and provide evidence that these have been achieved.[14]

OBE was adopted as an approach that would enable the articulation between education and training, recognition of prior learning, and thus increased mobility for learners between different vocations.[15]

II. Materials and methods

This section presents the research design, sampling technique, data gathering instrument, procedure, and statistical tools used in the study.

II.1. Research design

The study used descriptive cross-sectional research design to analyse the learners' attitude towards outcomes-based education. Descriptive research is used to obtain information concerning the status of the phenomenon and to describe "what exists" with respect to variables or conditions in a situation.[16] Whereas a cross-sectional study begins by selecting a sample population and then obtaining data to classify all individuals in the sample as having exposed to an OBE approach.[17] This type of research often uses questionnaires and interviews to gather information from groups of subjects. Consistent with the

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[12] Ortega-Dela Cruz, Ruth A, "Perceptions of higher agricultural education toward sustainable agricultural development," *Higher Education, Skills, and Work-Based Learning*, 10 (1), 2019, 187-202).

[13] Ortega, Rose Ann A., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcomes-Based Educational Approach in English Second Language Learning," (*American Journal of Educational Research*, 4(8), 2016, 597-601).

[14] Biggs, John, and Catherine Tang, "Teaching for quality learning at university Maidenhead," (*Berkshire, UK: McGraw-Hill Education*, 2007).

[15] Ortega, Rose Ann A., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcomes-Based Educational Approach in English Second Language Learning," (*American Journal of Educational Research*, 4(8), 2016, 597-601).

[16] Creswell, John W., and J. David Creswell, *Research design: Qualitative, quantitative, and mixed methods approaches*, (Sage publications, 2017).

[17] Alexander, Lorraine, Lopes, Brettania., Ricchetti-Masterson, Kristen and Yeatts, Karin, "Cross-sectional studies," (*ERIC notebook,* 2014, 2nd Edition).

literature on research design, this study utilized a survey questionnaire to gather data regarding learners' demographic characteristics as they relate to their knowledge, beliefs, readiness, and acceptance towards implementing this new approach in higher education.

In addition to describing *what is* with respect to the learners' attitude towards implementing this new approach in higher education, this study also utilized a correlational research design to investigate potential relationship between variables of interest.[18]

II.2. Participants

The researcher used simple random sampling of learners of the College of Public Affairs and Development, University of the Philippines Los Baños (CPAf, UPLB). The CPAf offers relevant academic courses on development and governance studies. It is composed of an institute and two centres. Its institute, namely the Institute for Governance and Rural Development (IGRD), offers undergraduate and postgraduate courses in education.[19]

The respondents were composed of 45 undergraduate and 55 graduate learners (i.e., 35 master's (MS) and 20 doctorate (PhD) learners) who were taking education courses during the second semester of the academic year 2017-2018.

A total of 100 respondents participated in answering the survey questionnaire. It represents 56 per cent of the total research population, which is 179. The researcher included students from three levels in higher education such as 55 BS, 35 MS, and 20 PhD to explore any significant difference in the learners' attitude towards OBTL.

II.3. Instrumentation

The instrument was adapted from the previous researcher's study on the "educator's attitude towards OBE".[20,21] This instrument is made up of 50

[18] Creswell, John W., and J. David Creswell, *Research design: Qualitative, quantitative, and mixed methods approaches*, (Sage publications, 2017).

[19] The College of Public Affairs and Development, University of the Philippines Los Baños, Domingo M. Lantican Ave. College, Laguna, Philippines, https://cpaf.uplb.edu.ph/.

[20] Dela Cruz, Ramiro Z., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcome-Based Information Technology Education in the Philippines," (*i-Manager's Journal of Educational Technology* 13, no. 4, 2017, 14).

[21] Ortega, Rose Ann A., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcomes-Based Educational Approach in English Second Language Learning," (*American Journal of Educational Research*, 4(8), 2016, 597-601).

statements that help the educators in examining their attitude towards outcomes-based teaching and learning approach to IT education. These attitudinal statements were based on the OBE principles.[22] The statements include items reflecting to the knowledge and beliefs, feelings, competence, readiness, and acceptance levels of IT educators towards OBE. The researcher also asked one open-ended question that synthesized the respondent's overall impression on OBE.

The instrument had been subjected to validation process and test of reliability which had a total degree (0.79) with a reliability factor of 'acceptable'. But as this study deals with the learners' attitude, the previous instrument for educators was modified accordingly to suit the objectives of the study. The instrument for learners' attitude is composed of 31 statements that assist the respondents in examining their attitude towards this new educational approach. These attitudinal statements are measured using four-point Likert scales ranging from strongly disagree (1) to strongly agree (4). Learners' demographics in terms of age, and level of education as indicated by their degree level were also determined. Since the study used a modified questionnaire, the researcher conducted test of reliability with test-retest and Cronbach-Alpha method. This was administered to a group of 20 students composed of seven BS, seven MS and six doctorate students from another university. The result got a total degree (0.85) with a reliability factor of 'good'.

II.4. *Ethical consideration*

The researcher being a member of the academe made ethical considerations in the conduct of this study. In particular, she asked the consent of the student-respondents first before administering the survey questionnaire to them. Being the program coordinator for education courses, she has a direct contact to these group of learners. The researcher clearly explained to them the objectives of the study. She made assurance that their participation is voluntary in nature and in no way affects their status as learners. The learners have the freedom to withdraw at any time they feel uncomfortable with their participation in the survey. This study covered the learning experiences of the learners during the past semesters, in which the researcher was not yet their teacher. Thus, conflict of interest and potential bias in no way influenced the results of the study.

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[22] Spady, William G, "Outcome-Based Education: Critical Issues and Answers," (American Association of School Administrators, 1801 North Moore Street, Arlington, VA 22209, Stock No. 21-00488; $18.95 plus postage, 1994).

II.5. Confidentiality

Confidentiality was addressed by assigning a code number to each respondent as they complete the survey and using only that code to indicate survey responses. This code was entered on each survey enabling the researcher to link the survey and the respondent. This link allows the survey results to remain confidential without being anonymous to the researcher. Aggregate data reported contain no individually identifiable information. Individual student identities were masked by this code. No individual quotations were used from respondents' responses.

II.6. Data analysis

Quantitative data gathered was analysed using SPSS software. Descriptive statistics such as the mean, frequencies, and percentages were used in tabular presentations of the results. Pearson's chi-square test was utilized to determine the relationship between categorical variables. Whereas Analysis of Variance (ANOVA) was used to determine the significant difference in the attitude of learners across degree levels.

In addition, thematic analysis was applied for responses to open-ended question. The researcher closely examined the qualitative data to identify common themes, ideas, and patterns of meaning that come up repeatedly from the set of texts. These qualitative data were incorporated in the discussion of findings.

III. Results

This section presents the major findings of the study. Quantified data were tabulated, analysed, and interpreted.

Table 1

Demographic profile of learners

Age range	f
19 and below	21
20-30	41
31-40	20
41-50	14
51-60	4
n	100

Degree level	f
Bachelor's Degree	45
Master's Degree	35
Doctorate Degree	20
n	100

Table 1 shows the distribution of the respondents in terms of age and their level of education. Most of their ages ranged from 20-40 years old which is 61 per cent of the total population. A total of 100 respondents participated in filling out the survey questionnaire. Forty-five per cent were taking bachelor's degree 35 per cent of them were taking their masters' degree, while 20 per cent were in their doctorate degree.

III.1. *Learners' attitude towards Outcomes-Based Teaching and Learning*

Attitude is measured using a self-administered questionnaire consisting of 31 attitudinal statements reflecting the learners' knowledge, beliefs, acceptance, and readiness towards outcomes-based education.

Table 2 presents the result based on the order of overall frequencies of strongly agree scale from the highest to lowest value/s computed in each of the statements that quantifies the learners' attitude.

Table 2

Learners' attitude towards OBTL

Item no.	Attitudinal Statements	Degree level			Overall
		BS	MS	PhD	
16	I believe that traditional pen and paper tests are not always beneficial in assessing my competencies as a learner.	28	19	11	58
26	I believe that more research is needed before OBTL can be successfully implemented.	27	21	8	56
7	I believe OBTL will augment the standards of learners' achievements.	13	25	16	54
20	I believe that being co-creator of knowledge and acting as a facilitator in an OBTL requires more preparation time for me as a student than in a traditional content-based classes.	24	16	14	54

Item no.	Attitudinal Statements	Degree level			Overall
		BS	MS	PhD	
5	I believe that OBTL requires more responsibilities from the learners than content driven approaches.	23	18	10	51
14	I believe that an OBTL would not be a waste of time.	17	19	14	50
9	I believe that the OBTL requires that every academic be a specialist in his/her subject field.	16	20	13	49
1	I believe that most OBTL prepares me better for the workplace.	12	20	16	48
23	I believe that my interest in OBTL enhances my ability to be a good facilitator.	14	20	13	47
31	I believe that OBTL will lead to greater efficiency and quality in education.	16	16	14	46
8	I am more interested in OBTL than content driven pedagogical approach in all of my classes.	16	13	14	43
13	I need the support of my colleagues/other classmates with ideas when using OBTL.	14	16	13	43
18	Knowing that OBTL is mandatory motivates me to become more prepared for my classes.	11	16	13	40
10	I believe that student pass rate would increase with OBTL.	8	16	14	38
12	I believe that my academic experience will help me to adapt to OBTL.	11	14	12	37
17	My university has an excellent support system for effective implementation of OBTL.	6	18	13	37
24	The impression that OBTL requires more practical work sessions in class would lead to the abdicating of content responsibilities.	12	13	8	33
19	I have a support system at home allowing me to cope with OBTL in all of my classes.	12	8	12	32
21	I believe that OBE approach is the best solution to address labour mismatch in our society.	5	13	13	31
2	My daily schedule gives me sufficient time as a learner in an OBEdised class setting.	1	16	10	27

Item no.	Attitudinal Statements	Degree level			Overall
		BS	MS	PhD	
4	The possibility that OBE approach may not be accepted by academics, does not impact on my attitude towards OBTL.	7	9	11	27
25	I believe that OBTL is the best approach in higher education.	4	14	9	27
29	I believe that OBTL will provide all learners with equal educational opportunities.	2	13	11	26
3	I believe that our scheduled contact time in various classes is sufficient to OBTL in higher education.	2	13	9	24
27	I believe that an OBTL would require more partnership with industry.	5	9	10	24
22	I believe that it is possible to have large groups/classes using OBTL in higher education.	4	11	8	23
30	It would be easy for me to transform from content-based education to OBTL in higher education.	3	9	10	22
11	I have the available resources to present my outputs in the class using OBTL.	3	5	10	18
15	I can have the available books and other reference materials to comply with the standards of OBE.	7	3	5	15
6	I have conflict of interests between OBTL and the content-based teaching and learning.	4	6	3	13
28	My knowledge of OBE is adequate.	0	3	8	11

Based on the data gathered, majority of the respondents have approving attitude in terms of knowledge, beliefs, and readiness in shifting to outcomes-based educational approaches. Majority of them tend to be more optimistic, positive and are open to curricular reform. Most of them upheld the principles of OBE. And they strongly believed that shifting to OBE approach to teaching and learning will never be a waste of time. Accordingly, they strongly believed that OBE would raise the standards of their academic achievements. As they believed that traditional pen and paper tests are not always beneficial in assessing their competencies, they considered that the OBE would require practical approaches which will need more liaisons with

industries and other institutions/organizations. These would help the learners to acquire and be equipped with the skills they need for their field of work.

III.2. *Relationship between learners' demographics and their attitude towards OBTL*

On the other hand, results of correlation analysis in Table 3 revealed a significant relationship between learners' demographics, and their attitude towards outcomes-based education. That is, there was a highly significant relationship between learners' age and their attitude ^{2}(4, n=100) = 36.700[b], p=.000 as well as a highly significant relationship between learners' degree level and their attitude ^{2}(2, n=100) = 9500[a],p=.009. These statistical findings rejected the Ho1 and Ho2.

Table 3

Significant difference in the learners' attitude across degree Levels

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.537	2	1.268	7.588	.001
Within Groups	16.213	97	.167		
Total	18.750	99			

This further implies that learner's attitude towards OBE changes (either increases or decreases) as the level of his/her age and education changes. Adult learners who are in their higher level of education, the doctorate or PhD learners, find their attitude towards OBE approach more favourable than those who are in their bachelor's degree. Basically, the graduate learners were already in the field and their education and trainings helped increase their knowledge and understanding of OBE. Their experience and expertise in education helped shape their overall attitude towards this educational reform as manifested by their willingness to be challenged and take greater academic responsibility for the sake of achieving quality in education. Likewise, such statistically significant findings were generalizable to a larger population of learners as they find OBE challenging and yet rewarding.

Analysis of Variance as shown in Table 4 indicated highly significant differences in the attitude of learners across degree levels F (2, n=100) = 7.588, p= .001. Tukey's honestly significant difference (HSD) post hoc test specifies that the differences in the attitude occurred between groups of master's and doctorate learners.

Table 4
Relationship between learner's demographics and attitude towards OBE

	Age	Degree level	Attitude
Chi-Square	36.700[b]	9.500[a]	97.220[a]
df	4	2	2
Asymp. Sig.	.000	.009	.000

IV. Discussions

The favourable attitude of learners towards OBTL supports the findings of researchers who found assenting and clear perceptions and awareness among higher education Nigerian students towards OBE.[23] Furthermore, the development and implementation of OBE is perceived to have a positive impact on the education system of other countries such as the Solomon Islands. The learning of OBE is crucial for student's acquisition and mastery of knowledge, understandings, skills and values or attitudes.[24]

Moreover, learners' attitude towards OBE supports the findings of the two separate studies on educators' attitude towards OBE in Information Technology (IT) education and another study on educators' attitude towards OBE in relation to English Second Language (ESL) learning. Similarly, the authors found positive relationship between IT professors' educational attainment and their attitude towards IT education[25] as well as in the other study whose authors found English professors' education positively related to their attitude towards outcomes-based ESL learning.[26]

In view of the OBE principles, acquisition of skills is one of the two basic types of outcomes from any educational system.[27] The first type includes

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[23] Cabaces, Jessica, Blanco, Alexis Jan, Cabañas, John Erick, Casapao, Chester, De Guzman, Jettro, De Villa, Michael Angelo, and Derla, Roy Vincent, "Perception and awareness of Nigerian students towards outcome-based education," (*International Journal of Academic Research in Progressive Education and Development* 3, no. 1, 2014, 208-219).

[24] Daudau, Patrick, "Teachers' perceptions of outcomes-based science curriculum: A case study from Solomon Islands," 2010).

[25] Dela Cruz, Ramiro Z., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcome-Based Information Technology Education in the Philippines," (*i-Manager's Journal of Educational Technology* 13, no. 4, 2017, 14).

[26] Ortega, Rose Ann A., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcomes-Based Educational Approach in English Second Language Learning," (*American Journal of Educational Research*, 4(8), 2016, 597-601).

[27] Killen, Roy, *Teaching strategies for outcomes-based education*, (Juta and Company Ltd, 2007).

performance indicators such as completion or graduation rates, licensure examination results, employment rates, etc. The second type is less tangible and is usually expressed in terms of what students or graduates know, are able to do, or are like as a result of their education. However, when talking about OBE, this second type of outcomes is one that is normally implied.[28]

Assessing the learners' knowledge and belief about OBE could help determine educators' strategies in developing the learners' readiness to accept more responsibilities being co-creators of knowledge in an OBE approach. Learners being co-creators of knowledge is an instructional belief that assumes that learners are not tabula rasa (blank slates) and they do not limit themselves as being recipients of knowledge. Rather they have something meaningful to contribute to a learning experience. They are to find ways on how they could learn more and take advantage of the teaching-learning process. This instructional belief motivates and challenges the learners to think analytically, critically, empirically and outside the box. These favourable responses of learners give support to the educators' attitude towards outcomes-based educational approaches in both English Second Language (ESL) Learning[29] and Information Technology (IT) Education[30]. Students' positive attitude is manifested in their active participation in the learning activities. This active participation of the students was brought by the way teachers manifest a great extent of knowledge and understanding of the OBE approach and its implementation.[31] Although there is a need for trainings and dissemination of OBE best practices, for teachers' overall view on OBE cannot be served by just knowledge, attitudes, and perspectives of OBE principles, but a well-defined role must also be fulfilled.[32]

This is true particularly in terms of teachers' role in conceptualizing, organizing the curriculum, instruction, and assessment to make sure that

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[28] Killen, Roy, *Teaching strategies for outcomes-based education*, (Juta and Company Ltd, 2007).

[29] Ortega, Rose Ann A., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcomes-Based Educational Approach in English Second Language Learning," (*American Journal of Educational Research*, 4(8), 2016, 597-601).

[30] Dela Cruz, Ramiro Z., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcome-Based Information Technology Education in the Philippines," (*i-Manager's Journal of Educational Technology* 13, no. 4, 2017,14).

[31] De Guzman, Marie Fe D., Edaño, Domingo C., and Umayan, Zenaida D, "Understanding the Essence of the Outcomes-Based Education (OBE) and Knowledge of its Implementation in a Technological University in the Philippines," (*Asia Pacific Journal of Multidisciplinary Research* 5, no. 4, 2017, 64-71).

[32] Pepito, Teresita, "Perspectives on outcome-based education among faculty members teaching business courses at a Philippine university," (*The Palawan Scientist* 11, 2019).

learning ultimately happen and that intended learning outcomes are being achieved.[33],[34]

When asked about their overall impression on OBE, 61 per cent of the learners have commendatory impressions on this new approach in higher education. In particular, they viewed OBE as a great and holistic approach to adult learning. It employs good teaching strategies that will help learners achieve their own learning goals and objectives. In response to the open-ended question regarding their over-all impression on OBE, the respondents cited positive remarks such as that the OBE is a better approach for the Philippine educational system, is more suitable today as it prepares learners for their future, is providing the necessary educational opportunities that could cater to the various needs of the learners and is providing a better way of assessing learners' performance. Forty-one per cent of these learners affirmed the educators' positive attitude that this educational approach will truly be helpful and relevant for both educators and learners. It makes the process more systemic, organized, integrative, interactive, goal and outcome-oriented while providing fun and holistic learning experiences.[35] These imaginative ways of organizing instructions and learning experiences enable the learners to use their time creatively and productively.[36] In this sense, the learners are becoming more reflective and independent learners.

In addition to being constructive and transformative, OBE is humanistic in the sense that the educators put primary importance on the development of the learners.[37] Learners across degree levels believe in the following advantages of OBE: (i) as OBE is more geared towards development of the learners, it will let learners keep motivated, and be challenged to interact more and learn from explorations, discoveries and experiments; thus, (ii) it will escalate the effectiveness of teaching and learning process; (iii) it will likewise help future educators in promoting lifelong learning among learners; (iv) it will help

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[33] Killen, Roy, *Teaching strategies for outcomes-based education*, (Juta and Company Ltd, 2007).

[34] Spady, William G, "Outcome-Based Education: Critical Issues and Answers," (American Association of School Administrators, 1801 North Moore Street, Arlington, VA 22209, Stock No. 21-00488; $18.95 plus postage, 1994).

[35] Dela Cruz, Ramiro Z., and Ortega-Dela Cruz, Ruth A, "Educators' Attitude towards Outcome-Based Information Technology Education in the Philippines," (*i-Manager's Journal of Educational Technology* 13, no. 4, 2017, 14).

[36] Spady, William G, "Outcome-Based Education: Critical Issues and Answers," (American Association of School Administrators, 1801 North Moore Street, Arlington, VA 22209, Stock No. 21-00488; $18.95 plus postage, 1994).

[37] Bustamante, Christian Bryan, "Student-Centred and Outcomes-Based Education: A Foucauldian Reading," (*Scientia*, 5 June 2015, 1-23).

strengthen the mastery of the student learning competencies since it highlights active learning; (v) it will drive relevant stakeholders to measure and achieve measurable outcomes to gauge the fruit of learning process; (vi) it will provide a better way to resolve the issue on labour mismatch in the country; (vii) it is beneficial to both teachers and learners for quality and efficient learning and development; (viii) it will help in producing globally competitive learners/ graduates and finally (ix) it will respond to the needs and issues in improving the curriculum and ultimately in the development of society.

These findings uphold the study on the perceptions of customs and administration learners regarding usefulness of OBE.[38] Such study revealed how the respondents believe in the capacity of OBE to provide a learning environment that will help learners develop their knowledge, and skills. But one thing that contradicted with their findings is the way the learners perceive it positively in promoting character formation as future professionals. Contrary to this is the perspective of the learners who believe that there will be accompanying issues behind producing well-skilled learners, graduates or even professionals. They made reference to the issues concerning values that may be experienced by teachers, parents and the community in general. For they believed, OBE focuses more on skills but not on values formation or character development. Of course, for the learning to be holistic and effective, it must incorporate the affective dimension. It is where the essence of real education comes in and something that will bring about change in the learners.

Amidst these leverages of OBE approaches to the education system of the country, some learners still expressed their ambivalence as they compare this new approach to the time-honoured system of the country. Learners indicated unfavourable responses to the statement that talks about their ease of adaptability to transform from content-based education (CBE) to OBE and their conflict of interest between the two approaches.

In their response to an open-ended question about their impression on OBE, learners explicitly mentioned about the importance of content-based education in the country. According to them, it would be a long process before State Universities and Colleges (SUCs) in the country could totally adopt this new approach. They perceived that it is not easy to unlearn things that they are used to. With this, they suggested not to replace CBE completely with OBE. They believed that there must be balance in the application of these two approaches.

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[38] Macatangay, Angelica O., Braza, Lyza D., Gamboa, Maedelyn N., Gonzales, Angie D., Fuentes, Reycon Annabel P., Macalalad, Julia A., Hernandez, Katleen T., Montejo, Jeny Rose B., and Mendoza, Filomena M, "Status of implementation and usefulness of outcomes–based education in customs administration program of one Asian university," (*Asia Pacific Journal of Education, Arts and Sciences* 3, no. 3, 2016, 62-69).

The findings revealed what led the learners to have such ambiguity in their mind. Thirty-three per cent of the respondents admitted that they have inadequate knowledge of OBE as indicated by their disagreement with the statement that speaks about it. This was supported by 16 per cent who indicated "no comment/idea" "none/nothing" or simply leaving the space blank where they were requested to state their opinion on OBE.

Furthermore, there were learners who despite uncertainty, provided suggestion and expressed their wishful thoughts for the success of its implementation. Fifty-six per cent of them strongly believed that more research is needed before OBE can be successfully implemented in the country. Some of them perceived that the Philippines is not yet ready for OBE, and so they called for more trainings to educators before implementing it. For them, proper implementation will be a challenge given the type of learners that they have nowadays. Thus, it is important that a teacher should know and understand very well the concept and principles of OBE before applying it. Again, this is supported by their response to an open-ended inquiry where 21 per cent of them even derided other courses who claim, "they were OBEdised." That is, they were implementing OBE, but in reality, they were still practicing content-based instruction. They challenged them by stating "being OBEdised is not just in paper but must be practiced and observed", as cited by 10 BS, four MS and two PhD learners.

This finding affirms the need for more trainings and dissemination of OBE best practices for all teachers, as well as systemic changes in the entire education system to ensure optimal implementation of OBE in the Philippines.[39]

Significant difference in the attitude of the learners across degree levels was observed since they too have different background characteristics and level of understanding of what it means to OBEdised courses in higher education. Learners under postgraduate degree level may have broader perspectives and have acquired much academic experiences as compared to students under bachelor's degree level, which contributed to their having more positive attitude towards OBTL.

V. Conclusions

The study strengthens the findings of prior research on attitude towards outcomes-based education. A new approach in the Philippine higher education system, which bears varied outlook from Filipinos. Where

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[39] Pepito, Teresita, "Perspectives on outcome-based education among faculty members teaching business courses at a Philippine university," (*The Palawan Scientist* 11, 2019).

additional fresh insights have been presented by learners across degree levels, certain realizations can now be generalized as to how each individual learner perceives an educational reform in the country. And this has to do with the way they are being exposed to the concept of OBE, understanding its principles, and scrutinizing its practices.

OBE is seemingly a simple concept yet requires a very complicated process. Implementing an OBE system for education will pose a great challenge to its end-users as it provides an excellent way for them to reach the optimum result. With this, both the institution and the educators should work hand in hand to enable and encourage all learners to achieve essential outcomes by providing all forms of support they need in doing their part as implementers of this process. At the same time the learners should actively participate in and contribute towards the learning process by fulfilling their role as co-creators and facilitators in this educational approach.

As perceived by the learners, more study should be done first to prove its worth and relevance in the Philippine education system. But how can one know its worth if he will not give OBE a try? As OBE has not yet been implemented for so long in the country nor it has been practiced consistently in its entirety, there is no assurance that the current propositions for OBE are generally true. The values formation and integration that learners may never see in the concept of OBE is something the implementers should shed light on. It is interesting to note that learners like educators, should also be exposed to a kind of seminar-workshop or training, so they will have a concrete grasp of what OBE looks like. Hence, they would not have the feeling that they were being experimented. As the values formation or character development becomes a source of dispute in this new approach, it may also be the source of hope for its brighter future. It simply demands both the learners and educators the kind of character that will help them achieve their goals. For it is within one's resolve and deep commitment to continue with what he has started.

This study provides a means to uncover the attitude of the learners towards the newly implemented approach in the Philippine higher education. Findings of this study provide insights and an avenue for other researchers and practitioners to explore other aspects of OBE. Since the study deals with the case of the Philippine higher education, it limits the generalisability of the findings. Therefore, this calls for more research on OBE as well in the countries where it is recently launched and in the countries with more experience on this approach. In addition, future researchers can expand the number of study participants and investigate the stand of various groups of scholars who belong to other disciplines or field of studies. Evaluating OBE

among the graduates of higher education is another interesting subject of future investigation. For the success of a single educational approach can never be measured by just one trial but by constant inquiry. Such incessant strive for continuing professional development and lifelong learning will eventually lead to reaping the fruit of this pursuit towards excellence in higher education.

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Macatangay, Angelica O., Braza, Lyza D., Gamboa, Maedelyn N., Gonzales, Angie D., Fuentes, Reycon Annabel P., Macalalad, Julia A., Hernandez, Katleen T., Montejo, Jeny Rose B., and Mendoza, Filomena M. "Status of implementation and usefulness of outcomes–based education in customs administration program of one Asian university." *Asia Pacific Journal of Education, Arts and Sciences* 3, no. 3 (2016): 62-69.

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A comparative analysis of the first cycle degree programmes in business in Turkey in terms of the number of course units and the student workloads

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Abstract: This comparative study aims to determine the differences between the curricula of the first cycle degree programmes in business in Turkey in terms of the number of course units and the student workloads. In this context, (1) the courses included in the Bologna course information packages of business schools on their web sites have been examined; (2) course units have been gathered together in content–related groups, (3) the numbers of course units in each content–related group have been determined, (4) total student workload of each content–

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related group has been determined by means of the institutionally allocated ECTS credits, (5) the differences between public and foundation business schools have been tested for each content–related group in terms of total number of course units and total student workload, and (6) the differences between the business schools using Turkish and those using a foreign language as the medium of instruction have been tested for each content–related group in terms of total number of courses and total student workload. The methods used in the research are document review and multivariate analysis. The data of 147 business schools has been used in the study and the outputs of the research reveal that there are significant differences in most of the content–related groups between both the business school groupings described above at points (5) and (6) in terms of the number of course units and student workload.

I. Introduction

The economic environment in the twenty–first century, combined with the dizzying rate of change, puts additional pressure on business education with its diverse stakeholders. The demands are more different than ever, changing constantly, and more complex. Due to the core transformations in the business environment, such as globalisation, new forms of organisations, spread of computerization to almost every field and artificial intelligence applications, the businesses need a workforce which is working at a higher level and has a variety of complex skills and competencies.[1][2][3][4][5] The

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[1] Saad Zighan, and Ahmed El-Qasem, ''Lean Thinking and Higher Education Management: Revaluing the Business School Programme Management,'' *International Journal of Productivity and Performance Management* 70, no. 1 (2021): 675–703, https://doi.org/10.1108/IJPPM-05-2019-0215.

[2] Sherif Kamel, ''The Impact of Business Schools in Transforming the Society Case: AUC School of Business,'' *Journal of Economic and Administrative Sciences* 36, no. 1 (2020): 38–63, https://doi.org/10.1108/JEAS-10-2018-0110.

[3] Donald A. Carpenter, and Vijay K. Agrawal, ''Infusing Information Technology into The Core Business Curriculum: A Change Management Project,'' *The Journal of Business Inquiry* 7, no. 1 (2018): 3–20, https://journals.uvu.edu/index.php/jbi/article/view/161.

[4] Simon O'Leary, ''Graduates' Experiences of, and Attitudes Towards, The Inclusion of Employability-Related Support in Undergraduate Degree Programmes; Trends and Variations by Subject Discipline and Gender,'' *Journal of Education and Work* 30, no. 1 (2017): 84–105, https://doi.org/10.1080/13639080.2015.1122181.

[5] Jiju Antony, ''Readiness Factors for The Lean Six Sigma Journey in The Higher Education Sector,'' *International Journal of Productivity and Performance Management* 63, no. 2 (2014): 257–264, https://doi.org/10.1108/IJPPM-04-2013-0077.

developments occurring in the business environment force business schools to keep up with the changes. In other words, business schools are exposed to important and inevitable changes due to environmental factors that impact their way of administration, integration into technology, pedagogical approaches including experiential learning, collaborative and open learning spaces, ethical practices, and social responsibility. Business education has two major functions: to produce information and to contribute to the development of society while providing a qualified, competent, and skilled workforce for the business world.[6][7][8] Business education should provide theoretical and practical knowledge and skills that lead to better planning, organization, implementation, and control of economic activities not only for the private sector but also for the public and not–for–profit organizations.[9]

For several decades, many business scholars have been particularly critical of the state of business education. However, these criticisms, albeit plentiful, did not reveal an important and sustainable change effect on business education. It is argued that the lack of change depends in part on institutional practices and the absence of a unified framework on how to conduct higher education in the business world.[10] There are also developments in parallel with the decline in the dominance of US business schools. Different regions and countries have started to develop or reaffirm their own business school models.[11] Business schools differ in many aspects such as: private – public, self–standing – embedded in larger universities, theoretically oriented – managerially oriented, religious – secular, small – large, degree awarding – non–degree awarding, with executive education – without executive education, using local language as a medium of instruction – using

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[6] Howard Bowen, *Investment in Learning: The Individual and Social Value of American Higher Education* (New York: Routledge, 1996).

[7] Jing Lu, Chad Laux, and Jiju Antony, ''Lean Six Sigma Leadership in Higher Education Institutions,'' *International Journal of Productivity and Performance Management* 66, no. 5 (2017): 638–650, https://doi.org/10.1108/IJPPM-09-2016-0195.

[8] Joe L. Kincheloe, (2004) ''The Knowledges of Teacher Education: Developing A Critical Complex Epistemology,'' *Teacher Education Quarterly* 31, no. 1 (Winter 2004): 49–66, https://files.eric.ed.gov/fulltext/EJ795234.pdf.

[9] Tuning EU, *Tuning Educational Structures in Europe – Reference Points for the Design and Delivery of Degree Programmes in Business*. Publicaciones de la Universidad de Deusto (2009), 21, http://tuningacademy.org/wp-content/uploads/2014/02/RefBusiness_EU_EN.pdf.

[10] K. Doreen MacAulay, Mark J. Mellon, and Walter R. Nord, ''Reorienting Business Education Through the Lens of Ernest Boyer,'' *American Journal of Business* 35, no. 1 (2020): 45–59, https://doi.org/10.1108/AJB-05-2019-0027.

[11] Howard Thomas, Peter Lorange, and Jaddish Sheth, *The Business School in The Twenty-First Century: Emergent Challenges and New Business Models* (Cambridge: Cambridge University Press, 2013).

a foreign language as a medium of instruction.[12] Moreover, along a continuum, Tuning EU states that business degrees may be classified as environment, enterprise and function–specific oriented business schools.

In this study, aspects of public (PUPBS) and foundation (FOUBS) first cycle degree programmes in business, the first cycle degree programmes in business using Turkish (TRIBS), and those using a foreign language (FLIBS) as the medium of instruction are considered as pairwise independent variables. Foundation universities have been offering educational services and carrying out research activities in many countries for a long time. However, Turkey's first foundation university wasn't founded until 1984. While public universities in Turkey are only autonomous in terms of scientific and educational activities, foundation universities also have financial and administrative autonomy. Another divergence between higher education programmes in Turkey is between programmes using Turkish as the medium of instruction and those using a foreign language as the medium of instruction. With increasing globalization, business education is expected to educate a workforce for a more fiercely competitive international environment.[13]

The business schools, PUPBS or FOUBS and TRIBS or FLIBS may differ in terms of curricula. The quality of the knowledge and skills that students will acquire depends on the course content and curriculum pedagogy. In higher education, the curriculum is considered as the most important component in terms of providing quality and relevant education programmes and services to current and potential students. Regardless of its size, type or origin, the curriculum is considered as the heart and soul of all educational programmes. The curriculum is also very important for effective and efficient higher education.[14],[15] In this context, business schools should develop curricula that will equip students with the knowledge, skills, techniques, attitudes and competencies required by the labour market.[16] To ensure that

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[12] Bodo B. Schlegelmilch, ''Why Business Schools Need Radical Innovations: Drivers and Development Trajectories,'' *Journal of Marketing Education* 42, no. 2 (2020): 93–107, https://doi.org/10.1177/0273475320922285.

[13] Myriam Met, ''Making Connections'' in *Foreign Language Standards: Linking Research, Theories and Practices,* ed. June K. Phillips, and Robert M. Terry (Lincolnwood: National Textbook Co, 1999), 137–164.

[14] Lakshmi Tatikonda, ''Applying Lean Principles to Design, Teach, and Assess Courses,'' *Management Accounting Quarterly* 8, no. 3 (Spring 2007): 27–38, https://www.proquest.com/scholarly-journals/applying-lean-principles-design-teach-assess/docview/222859350/se-2.

[15] Ronald Barnett, and Kelly Coate, *Engaging the Curriculum in Higher Education* (Buckingham: SRHE & Open University Press, 2005).

[16] Gay Crebert, Merrelyn Bates, Barry Bell, Carol-Joy Patrick, and Vanda Cragnolini, ''Developing Generic Skills at University, During Work Placement and in Employment:

students are able to practice to experience their skills from an integrated perspective at various stages throughout their academic programme, creating multi–disciplinary case studies and enterprises to be incorporated across modules at key points of the curriculum are recommended by both researchers and practitioners. A programme that uses an integrative curriculum can provide students with an opportunity to develop interpersonal, communication and leadership skills.[17]

The expectations for knowledge, understanding and application of subject–specific material in the classification developed by the Tuning Subject Area Groups for business and management education for structuring course programmes according to learning outcomes are that learners acquire subject–related core knowledge, understand and be able to broaden and deepen this knowledge with possible vertical, horizontal and diverse orientations according to the needs of the labour market.[18] The academic competencies of the Council of Higher Education (CoHE) in Turkey towards the first cycle degree business and management education knowledge and skills contain similar learning outcomes with the Tuning Business Group. According to CoHE the graduates of the first cycle degree programmes in business and management (1) acquire advanced level knowledge within the field, (2) gain skills to transfer knowledge related to the field to professionals and team members, (3) develop skills to gather, evaluate, interpret, and analyse data, and (4) define problems and offer solutions by using the knowledge and manner obtained within the subject area.

Student workload, which is one of the components of curriculum, has commonly been recognised as a major factor in the teaching and learning environment. The tendency in the literature is distinguishing the student workload as objective, subjective as well as the perceived workload. The objective workload, which will be used as a dependent variable in our study to compare the business schools, is commonly measured as the number of hours that a student objectively spends on the activities for a course. The Bologna Process developed the European Credit Transfer and Accumulation System (ECTS) in order to determine the objective student workload in the European Higher Education Area.

The credit system used in the Turkish higher education system was based on theoretical or practical class hours per week in which one credit stood for

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Graduates Perceptions,'' *Higher Education Research and Development* 23, no. 2 (2007): 147–165, https://doi.org/10.1080/0729436042000206636.
    [17] Michael Tomlinson, ''Graduate Employability: A Review of Conceptual and Empirical Themes,'' *Higher Education Policy* 25, (2012): 407–431, https://doi.org/10.1057/hep.2011.26.
    [18] Tuning EU, *Tuning Educational*, 12, 35.

one lecture hour a week. According to the Bologna Process Turkish universities have converted their credit systems to ECTS measure which refers to the number of working hours including lectures attended, seminars or tutorials, plus independent and private study, preparation of projects, examinations, etc. to complete all learning activities associated with either a course unit or a complete educational programme.[19][20][21][22] While the exact number of hours differs among higher education institutions in Turkey, one ECTS credit can be equal from 25 to 30 working hours as an average, which means between 1,500 and 1,800 working hours in total per academic year depending on the course components. According to Tuning ''ECTS is not only a system for facilitating the mobility of students across Europe through credit accumulation and transfer; ECTS can also facilitate programme design and development, particularly with respect to coordinating and rationalising the demands made on students by concurrent course units''. In other words, ECTS permits us to plan how best to use students' time to achieve the aims of the educational process, rather than considering teachers' time as a constraint and students' time as basically limitless. The Tuning approach specifies that credits can only be awarded to the student when the learning outcomes have been met. In the Tuning project, the knowledge expected to be gained by a graduate, what s/he should understand, and that they can give practical exhibition, and explanation are expressed as the learning outcomes. Competences, in which learning outcomes are subsumed, are developed in each course unit in a programme, and represent a combination of attributes including cognitive and meta–cognitive skills, knowledge and understanding, interpersonal, intellectual, and practical skills, and ethical values.[23]

In terms of the terminology of the Bologna Process, Turkish higher education encompasses all post–secondary higher education programmes consisting of short, first, second, and third cycle degrees. The structure of Turkish higher education is based on one–tier and two–tier systems. The

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[19] Eva Kyndt, Inneke Berghmans, Filip Dochy, and Lydwin Bulckens, ''Time Is Not Enough. Workload in Higher Education: A Student Perspective,'' *Higher Education Research and Development* 33, no.4 (2014): 684–698, https://doi.org/10.1080/07294360.2013.863839.

[20] David Kember, ''Interpreting Student Workload and The Factors Which Shape Students' Perceptions of Their Workload,'' *Studies in Higher Education* 29, no. 2 (2004): 165–184, https://doi.org/10.1080/0307507042000190778.

[21] Asko Karjalainen, Katariina Alha, and Suvi Jutila, *Give Me Time to Think. Determining Student Workload in Higher Education* (Oulu: Oulu University Press, 2006).

[22] European Commission Bologna Working Group, *A Framework for Qualifications of the European Higher Education Area*. Bologna Working Group Report on Qualifications Frameworks (2005).

[23] Tuning EU, *Tuning Educational,* 35.

duration of the one–tier system which includes dentistry, pharmacy and veterinary programmes is five years and 300 ECTS except for medicine which lasts six years and is 360 ECTS. The qualifications of one–tier programmes are accepted as equivalent to the sum of first cycle and second cycle degrees. Short cycle and four–year first cycle degree programmes consist of 120 ECTS and 240 ECTS respectively. The second cycle programmes ending with a thesis have a minimum of seven courses, and non–thesis programmes with a minimum of 10 courses require 120 ECTS.

According to a report by Tuning EU, ''while a number of similarities exist in European institutions regarding first cycle programmes, it is also true within individual countries, and it is not uncommon to find that several variants of the same degree are offered by the same institution''.[24] In this context, this study investigates the curricula of degree business schools in Turkey which are all first cycle higher education programmes based on the one–tier system with 240 ECTS, focusing on the content–related course groups and student workload components in comparison of PUPBS – FOUBS, and TRIBS – FLIBS.

II. Sample and methodology

Business schools were initially identified from the first and second cycle degree programmes module of Higher Education Program Atlas, which is one of the websites of the CoHE by using the keyword ''business'', and it was determined that there were 325 business schools in Turkey as of March 3, 2020. Out of these, the short cycle programmes ($n = 142$) were excluded from the research. Subsequently, the curriculum and course content in the WEB sites of the first cycle degree programmes in business ($n = 183$) were examined, and it was seen that the data to be used in the study were available for 147 of the 183 of the first cycle degree programmes in business. Out of these $n = 104$ were public universities and $n = 43$ were not–for–profit foundation universities. Private for–profit universities do not exist in Turkey as they are not permitted by a higher education law. In addition, $n = 106$ use Turkish as the medium of instruction, and $n = 41$ use a foreign language as the medium of instruction. It was assumed that the information on the WEB sites of the universities were up–to–date, and that the courses were instructed in accordance with the curricula. Turkish Language, and Atatürk's Principles and Turkish Revolution History courses, which CoHE requests to be offered in all higher education programmes in Turkey, were not included in the

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[24] Tuning EU: *Tuning Educational*, 23.

research. The content–related groups (CRGs) and the names of the course units, as determined on the examination of business schools' WEB sites are presented in Table 1 excluding electives since they are too numerous.

Table 1

Content–related groups and names of course units

CRGs	Names of course units
Accounting	Accounting, Principals of Accounting, Financial Accounting, General Accounting, Intermediate Accounting, Corporate Accounting, Managerial Accounting, Cost and Managerial Accounting, Year–End Accounting Procedures, Financial Reporting, Auditing
Behavioural Sciences	Principles of Behavioural Sciences, Introduction to Sociology, Introduction to Psychology, Social Psychology, Organizational Behaviour, Introduction to Behavioural Sciences, Psychology, Sociology
Economics	Introduction to Economics, Microeconomics, Macroeconomics, Principles of Macroeconomics, Microeconomic Theory, Principles of International Economics, Structure of Turkish Economy
Finance	Principles of Finance, Business Finance, Financial Management, Managerial Finance, Corporate Finance, International Financial Management, Financial Analysis, Financial Statement Analysis, Investment Projects Analysis, Financial System and Environment, Capital Markets, Financial Markets and Organizations, Financial Institutions, Money and Banking
Management Information Systems	Introduction to Information Technologies and Applications, Fundamental of Information Technologies, Introduction to Computers and Information Systems, Introduction to Computing for Economics and Management, Art of Computing, Computer Programming for Business Applications, Business Communications, Management Information Systems, Computer Laboratory, Computer Literacy, Business Data Processing and Programming, Computer Applications in Business
Law	Basic Principles of Law, Introduction to Law, Fundamentals of Law, Fundamental Concepts of Law, Business Law, Law for Business and Economics, Law for Managers, Law of Obligations, Obligatory Law, Basic Principles of Commercial Law, Constitutional Law, Labour and Social Security Law, Labour Law

CRGs	Names of course units
Management and Organization	Management and Organization, Management Science, Production and Operations Management, Introduction to Business Administration, Principles of Business Administration, Exploring Business Administration, Business Management, Management of Organizations, Organizational Theory and Design, Organizational Design, Organization Theory, Management Science, Operations Management, Supply Chain Management, Business Model Planning, Strategic Management, Business Ethics and Corporate Social Responsibility, International Management, Quality Management Systems and Standards, Leadership, Leadership and Change Management, Human Resources Management, Social Responsibility and Professional Ethics, Business Policies, Business Policy and Strategic Management, Production Management, Products and Services Management, Contemporary Approaches in Management, Managing Individuals at Work, Labour Relations, Innovation Management, Strategy and Policy
Marketing	Principles of Marketing, Marketing Management, Strategic Marketing Management, International Marketing, Global Marketing, Marketing Strategies, Marketing Applications, Sales Management, Consumer Behaviour
Quantitative Methods	Business Mathematics, Business Statistics, Business Research Methods, Calculus, Calculus for Business, Statistics, Econometrics, Statistics for Business, Statistical Analysis, Financial Mathematics, Mathematics for Business, Introduction to Linear Algebra, Quantitative Methods in Business, Managerial Statistics, Statistics for Social Sciences, Applied Statistics, Introduction to Probability and Statistics, Quantitative Analysis, Quantitative Applications in Business, Quantitative Business Analysis, Research Methods for Business and Economics, Scientific Research and Report Writing, Differential
Foreign Language	English, Business English, Academic English, English for Academic Purposes, Academic Reading and Writing, English for Administrative Purposes, English for Occupational Purposes, Critical Reading and Writing in English, Translation, Advanced English, Academic French, Integrated Language Skills, English and Composition, Professional English
Project–Seminar–Internship	Bachelor of Arts Degree Project, Graduation Project of Business, Capstone Project, Summer Internship, Summer Practice, Independent Study, Business Practice Workshop

CRGs	Names of course units
Others related to the field	Introduction to Business, Fundamentals of Business, Professional Orientation and Introduction to Business Administration, Contemporary Topics in Business, Globalization and International Business, Global Business, Entrepreneurship and New Venture Development, Entrepreneurship, Innovation and Entrepreneurship, E–Commerce and E–Business, Taxation in Business, Introduction to Sustainability, Understanding Politics and Economy, Business Environment in Turkey
Other Course Units	Orientation, Academic and Social Orientation, Introduction to Social Sciences, Humanities / Social Sciences, Academic Presentation Skills, Social Responsibility Project, Business Communication and Negotiation Techniques, History of Civilization, Formation of the Modern World, Making of The Modern World, Modernity and The Consumer Society, Globalization, Turkish Taxation System, World History, History and Philosophy of Social Sciences, History of Science and Technology, History of Civilization and Science, Introduction to Political Science, Introduction to University Life, Critical Reading and Writing in Turkish, Art and Culture, Human Rights and Public Freedoms, Gender Equality, Cultures Civilizations and Ideas, Introduction to Philosophy, Academic Success and Social Life Skills, Career and Life Planning, Exploring Istanbul, Understanding Society and Culture, World Civilizations and Global Encounters, City and Culture Istanbul

Turkey's core, supporting and complementary CRGs offered in the first cycle degree programmes in business align with those offered in the European Higher Education Area. The European Higher Education Area has a wide variety of first cycle business degree programs with specializations in one or other business–specific areas. The core knowledge topics include operations management, logistics, sales, and marketing. Organization, human resource management, finance and accounting, and general management course groups are the supporting modules. Courses on economics and law are widely offered as complementary subjects. Instrumental skills courses are gaining significant importance, and within this framework, information technology and quantitative methods courses are becoming widespread. Apart from these, the courses aiming at improving personal organization and communication skills are included in many of the programmes.[25]

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[25] Tuning EU: *Tuning Educational*, 24.

In the next stage of the study, the data of the course groups were gathered together. To create comparable data, the number of course units and a student's workload for each CRG was selected as dependent variables. The number of credits of the course units allocated according to the European Credit Transfer System (ECTS) was taken into account as the individual student's workload. In most European countries ECTS has been applied to the curricula of universities as both a credit accumulation and transfer system, with learning outcomes and student workload increasingly used as the basis for credit allocation.[26]

Our analysis aims to respond to the following questions: How are the two dependent variables in each CRG affected by either of the two independent pairwise variables? Moreover, if we use statistical software to do this, can we trust the differences in mean values, as yielded by the analysis? In order to answer these questions, we rely on the statistical software "IBM Statistical Package for the Social Sciences" (Version 22) and — more in particular — we use MANOVA–Multivariate Analysis of Variance, the correct statistical tool in our case, since we want to assess the effects of each independent group variable (i.e., PUPBS – FOUBS or TRIBS – FLIBS) on the two measurable dependent variables (i.e., number of course units and ECTS credits in all CRGs.

III. Results

III.1. Exploratory data analysis

The descriptive statistics of the CRGs in terms of the number of course units are given in Table 2. When elective courses are excluded, it is seen that the maximum number of course units (5.56) and student workload (27.47) are in the management and organization CRG as an average. At least one management and organization, accounting and quantitative methods course unit is included in Turkey's first cycle business programmes. These CRGs are among the core and supporting knowledge topics specified by Tuning EU. In a calculation using the table values, it can be observed that the ratio of the mean student workload of the CRGs to the mean number of courses of the business schools in Turkey is 4.73. In other words, all business schools in the study allocate about 5 ECTS as an average to each course unit.

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[26] European Commission/EACEA/Eurydice, *The European Higher Education Area in 2018: Bologna Process Implementation Report* (Luxembourg: Publications Office of the European Union, 2018).

Table 2

Descriptive statistics

	n	x_{min}	x_{max}	$\bar{x}$	s		n	x_{min}	x_{max}	$\bar{x}$	s
ACC	147	1	9	4.46	1.9	ACW	147	4	50	22.76	9.7
BSC	147	0	3	1.58	0.75	BSW	147	0	19	7.21	3.59
ECC	147	0	6	2.8	1.06	ECW	147	0	32	13.8	5.18
FNC	147	0	7	2.93	1.23	FNW	147	0	32	14.8	6.21
MIC	147	0	3	1.11	0.78	MIF	147	0	16	4.1	3.23
LWC	147	0	8	2.97	1.54	LWW	147	0	39	12.63	6.45
MOC	147	2	16	5.56	2.01	MOW	147	7	71.5	27.47	9.7
MRC	147	0	6	2.54	1.14	MRW	147	0	31	12.39	5.88
QMC	147	2	8	5.05	1.33	QMW	147	7	44	24.91	6.3
FLC	147	0	14	1.29	2.18	FLW	147	0	48	4.88	8.52
PIC	147	0	6	0.9	1.16	PIW	147	0	52	5.85	9.25
RFC	147	0	8	2.3	1.18	RFW	147	0	34	11.1	5.79
OTC	147	0	11	1.39	1.61	OTW	147	0	49	5.18	6.41
DEC	147	0	22	11.26	4.08	DEW	147	0	114	52.13	19.8
NEC	147	0	12	1.84	2.88	NEW	147	0	62	7.58	13.21

where; ACC: total number of accounting course units, ACW: a student's workload for total accounting course units, BSC: total number of behavioural science course units, BSW: a student's workload for total behavioural science course units, ECC: total number of economics course units, ECW: a student's workload for total economics course units, FNC: total number of finance course units, FNW: a student's workload for total finance course units, MIC: total number of management information systems course units, MIW: a student's workload for total management information systems course units, LWC: total number of law course units, LWW: a student's workload for total law course units, MOC: total number of management and organization course units, MOW: a student's workload for total management and organization course units, MRC: total number of marketing course units, MRW: a student's workload for total marketing course units, QME: total number of quantitative methods course units, QMW: a student's workload for total quantitative methods course units, FLC: total number of foreign language course units, FLW: a student's workload for total foreign language course units, PIC: project–seminar–internship total number, PIW: a student's workload for total projects–seminars–internship, RFC: total number of the other course units related to the field, RFW: a student's workload for the total other course units related to the field, OTC: total number of other course units, OTW: a student's workload for other course units, DEC: total number of departmental elective course units, DEW: a student's workload for total departmental elective course units, NEC: total number of non–departmental elective course units, NEW: a student's workload for non–departmental elective course units, n is total observations, x_{min} is minimum value, x_{max} is maximum value, $\bar{x}$ is sample mean and s is sample standard deviation.

With reference to the statistics in Table 3 below, it is notable that the mean course unit numbers offered in POUBS are greater than the FOUBS in departmental electives, accounting, behavioural sciences, economics, finance, management information systems, law, management and organization, and quantitative methods knowledge topics. On the other hand, the mean number of course units offered in non–departmental electives, project– seminar– internship, others related to the field, other course units, and foreign language CRGs are higher at FOUBS. First cycle business programmes in public universities include 1.76 times more accounting and law course units on average than foundation business schools. At least one course unit specified as core, supporting and contemporary knowledge topics by Tuning EU is offered at all FOUBS. However, marketing, which is stated as a supporting knowledge module by Tuning EU, is not included among the CRGs in at least one first cycle business programme in public higher education institutions.

Table 3

Course unit number descriptive statistics of POUBS and FOUBS

	POUBS				FOUBS				(:)
	x_{min}	x_{max}	$\bar{x}$	s		x_{min}	x_{max}	$\bar{x}$	s	
ACC	1	9	5.11	1.69	ACC	1	7	2.91	1.39	1.76
BSC	0	3	1.62	0.69	BSC	0	3	1.49	0.88	1.09
ECC	0	6	2.98	1.10	ECC	1	5	2.37	0.82	1.26
FNC	1	7	3.13	1.14	FNC	0	6	2.44	1.30	1.28
MIC	0	3	1.15	0.81	MIC	0	3	1,00	0.69	1.15
LWC	1	8	3.39	1.48	LWC	0	5	1.93	1.14	1.76
MOC	2	16	5.71	1.92	MOC	2	12	5.19	2.18	1.10
MRC	0	6	2.77	1.15	MRC	1	4	2,00	0.93	1.39
QMC	2	8	5.26	1.31	QMC	2	7	4.56	1.26	1.15
FLC	0	10	0.78	1.73	FLC	0	14	2.51	2.63	0.31
PIC	0	6	0.74	1.08	PIC	0	4	1.28	1.26	0.58
RFC	0	8	2.25	1.12	RFC	0	6	2.42	1.31	0.93
OTC	0	8	1.16	1.25	OTC	0	11	1.93	2.16	0.60
DEC	0	22	12.09	4.06	DEC	0	17	9.26	3.41	1.31
NEC	0	10	1.13	1.98	NEC	0	12	3.53	3.89	0.32

(:) is the ratio between means (PUPBS over FOUBS).

As shown in Table 4 below, the mean number of course units offered in law and accounting CRGs in TRIBS are 1.86 and 1.75 times more than FLIBS. Furthermore, on average, there is a greater number of course units in FLIBS in management and organization, foreign language, project–seminar–internship, other course units, and non–departmental topics while TRIBS offer more course units in the CRGs other than the ones mentioned above.

Table 4

Course unit number descriptive statistics of TRIBS and FLIBS

	TRIBS				FLIBS				(:)
	x_{min}	x_{max}	$\bar{x}$	s		x_{min}	x_{max}	$\bar{x}$	s	
ACC	1	9	5.07	1.72	ACC	1	7	2.9	1.37	1.75
BSC	0	3	1.60	0.70	BSC	0	3	1.51	0.87	1.06
ECC	1	6	2.93	1.04	ECC	0	6	2.46	1.05	1.19
FNC	0	7	3.14	1.21	FNC	1	6	2.39	1.12	1.31
MIC	0	3	1.11	0.78	MIC	0	3	1.1	0.77	1.01
LWC	1	8	3.41	1.49	LWC	0	5	1.83	1.00	1.86
MOC	2	16	5.40	1.99	MOC	2	10	5.98	2.02	0.90
MRC	0	6	2.71	1.10	MRC	1	5	2.12	1.14	1.28
QMC	2	8	5.27	1.35	QMC	2	7	4.49	1.10	1.17
FLC	0	14	0.92	2.12	FLC	0	10	2.22	2.07	0.41
PIC	0	4	0.77	1.02	PIC	0	6	1.22	1.42	0.63
RFC	0	8	2.34	1.09	RFC	0	6	2.2	1.38	1.06
OTC	0	8	1.16	1.28	OTC	0	11	1.98	2.15	0.59
DEC	0	22	11.57	4.15	DEC	0	18	10.5	3.84	1.11
NEC	0	12	1.58	2.69	NEC	0	10	2.49	3.28	0.63

(:) is the ratio between means (TRIBS over FLIBS).

The statistics in Table 5 below show that the lowest mean student workloads are at the foreign language CRG (2.98) in PUPBS and management information systems CRG (4.47) in FOUBS. Not considering elective

courses (which alone cover about 25% of the credits total, see also below), the highest mean student workload is at the management and organization CRG in both PUPBS (11.56% of the total) and FOUBS (11.16%). As to the main differences, we can notice that the workloads of POPBS students at department electives and accounting subject groups as an average are 4.08 percent (9.78 ECTS) and 4.19 percent (10.06 ECTS) heavier than those attending FOUBS. On the other hand, the workload of FOUBS students at non–departmental electives course group are 4.86 percent (11.67 ECTS) heavier as an average than the POUBS students should cope with.

Table 5
Student Workload descriptive statistics of PUPBS and FOUBS

	PUPBS				FOUBS				Differences	
	x_{min}	x_{max}	$\bar{x}$	(%)	x_{min}	x_{max}	$\bar{x}$	(%)	$d\_(\%)$	d ECTS
ACW	6.00	47.00	25.70	10.71	4.00	50.00	15.64	6.52	4.19	10.06
BSW	0.00	15.00	6.98	2.91	0.00	19.00	7.77	3.24	−0.33	−0.79
ECW	0.00	28.00	13.87	5.78	4.00	32.00	13.65	5.69	0.09	0.21
FNW	5.00	32.00	15.42	6.43	0.00	30.00	13.29	5.54	0.89	2.13
MIW	0.00	15.00	3.95	1.65	0.00	16.00	4.47	1.86	−0.21	−0.51
LWW	2.00	39.00	14.17	5.91	0.00	25.00	8.91	3.71	2.19	5.27
MOW	9.00	71.50	27.75	11.56	7.00	58.00	26.79	11.16	0.40	0.96
MRW	0.00	31.00	13.18	5.49	3.00	21.00	10.49	4.37	1.12	2.69
QMW	7.00	37.00	24.83	10.34	9.00	44.00	25.12	10.47	−0.12	−0.29
FLW	0.00	48.00	2.98	1.24	0.00	44.00	9.49	3.95	−2.71	−6.51
PIW	0.00	52.00	4.42	1.84	0.00	36.00	9.29	3.87	−2.03	−4.87
RFW	0.00	34.00	10.53	4.39	0.00	30.00	12.47	5.19	−0.81	−1.94
OTW	0.00	22.00	4.28	1.78	0.00	49.00	7.37	3.07	−1.29	−3.09
DEW	0.00	114.00	54.99	22.91	0.00	77.00	45.21	18.84	4.08	9.78
NEW	0.00	40.00	4.16	1.73	0.00	62.00	15.84	6.60	−4.86	−11.67

x_{min} and x_{max} represent minimum and maximum values respectively. $\bar{x}$ is the sample mean. s stands for sample standard deviation. (%) represents the percentage of the CRGs' total workload over 240 ECTS. $d\_(\%)$ is the difference between the percentages (each CRGs workload total over 240 ECTS) of PUPBS and FOUBS. d ECTS display the percentage difference translated into ECTS.

The similarities and differences are further illustrated by Figure 1 below. The most noticeable observation is the percentage of the departmental and non–departmental elective course unit's total workload over 240 ECTS in both POUBS (24.64%) and FOUBS (25.44%). The most likely reason for this formation is the proposal of CoHE to Turkish higher education institutions to allocate at least 25 percent of the total ECTS credits in their programmes to elective courses to provide cultural depth and opportunity to give knowledge in different disciplines to the students. Although both school types place strong emphasis on departmental elective courses, the mean student workload of the total non–departmental elective course units in FOUBS is 3.82 times higher than the POUBS. Percentages of each of the departmental electives, management and organization, and quantitative methods CRGs' student workloads over 240 ECTS are higher than 10 percent for both school types.

(percentages out of 100%, i.e. subject unit workload over 240 ECTS)
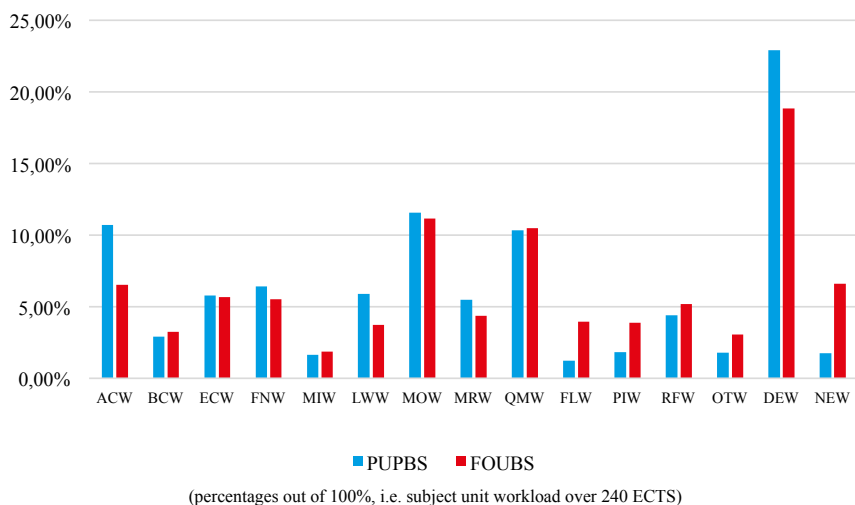
Figure 1

Subject group profile in PUPBS and FOUBS in terms of ECTS workload

From Table 6 and Figure 2, it can be observed that the workloads of TRIBS and FLIBS students are equal at economics CRG, and the ECTS differences are relatively low (below 5 ECTS) in 10 of 15 CRGs. The most noticeable observation is that the accounting CRG mean workload of TRIBS students is 9.42 ECTS higher than that of TRIBS students. In terms of non–

departmental electives, FLIBS students' mean workload is 6.17 ECTS higher than those in TRIBS. As in PUPBS and FOUBS, percentages of each of departmental electives, management and organization, and quantitative methods CRGs' student workloads over 240 ECTS are higher than 10 percent for both TRIBS and FLIBS.

Table 6
Student workload descriptive statistics of TRIBS and FLIBS

	TRIBS				FLIBS				Differences	
	x_{min}	x_{max}	$\bar{x}$	(%)	x_{min}	x_{max}	$\bar{x}$	(%)	$d\_$(%)	d ECTS
ACW	4.00	47.00	25.39	10.58	6.00	50.00	15.96	6.65	3.93	9.42
BSW	0.00	19.00	6.96	2.90	0.00	19.00	7.85	3.27	–0.37	–0.89
ECW	3.00	28.00	13.80	5.75	0.00	32.00	13.80	5.75	0.00	0.00
FNW	0.00	32.00	15.46	6.44	5.00	27.00	13.09	5.45	0.99	2.38
MIW	0.00	15.00	3.67	1.53	0.00	16.00	5.22	2.17	–0.65	–1.55
LWW	2.00	39.00	14.26	5.94	0.00	22.00	8.41	3.51	2.44	5.85
MOW	7.00	71.50	26.30	10.96	10.00	47.00	30.51	12.71	–1.76	–4.22
MRW	0.00	31.00	12.88	5.37	4.00	27.00	11.15	4.64	0.72	1.73
QMW	7.00	44.00	25.06	10.44	12.00	38.00	24.54	10.22	0.22	0.52
FLW	0.00	44.00	3.30	1.38	0.00	48.00	8.98	3.74	–2.36	–5.67
PIW	0.00	52.00	5.29	2.21	0.00	35.00	7.28	3.03	–0.83	–1.99
RFW	0.00	34.00	11.06	4.61	0.00	30.00	11.20	4.66	–0.06	–0.14
OTW	0.00	22.00	4.02	1.67	0.00	49.00	8.20	3.41	–1.74	–4.18
DEW	0.00	114.00	52.10	21.71	0.00	87.00	52.20	21.75	–0.04	–0.09
NEW	0.00	62.00	5.86	2.44	0.00	50.00	12.02	5.01	–2.57	–6.17

x_{min} and x_{max} represent minimum and maximum values respectively. $\bar{x}$ is the sample mean. s stands for sample standard deviation. (%) represents the percentage of the CRGs' workload total over 240 ECTS. $d\_$(%) is the difference between the percentages (each subject unit's workload total over 240 ECTS) of TRIBS and FLIBS. d ECTS display the percentage difference translated into ECTS.

(Percetntages out of 100%, i.e. subject unit workload over 240 ECTS)
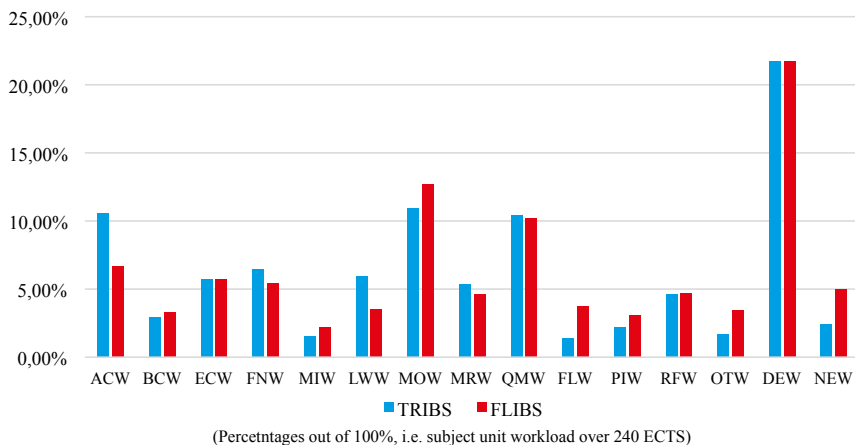
Figure 2

Subject group profile in TRIBS and FLIBS in terms of ECTS workload

III.2. Outputs of MANOVA

As we saw above, the results of our study are given in terms of the means of the dependent variables and their differences in each CRG for both independent variables. However, this is not enough to validate possibly found mean differences. The MANOVA package includes the so–called tests, which allow the correct interpretation either confirming or not confirming the meaningfulness of the results. Without entering the appropriate details, the MANOVA package may rely on at least four different tests, among which we prefer to use the Pillai's trace test. As the other tests, our preferred test yields two additional numbers: the test statistic F (also named coefficient F) and the associated probability value p. These two values must be read and assessed together. In the case of Pillai's trace test, if F is in the interval from 0 to 1, we cannot exclude the Null Hypothesis, i.e., that the result — i.e., the mean difference — doesn't tell us anything. Otherwise, (F>1) we may be on the correct path to detecting a meaningful difference: then we have to check the value of p, which — if lower than an appropriate value (e.g., 0.05 or 0,01) — confirms that the result is meaningful. The Pillai's trace statistics for POUBS – FOUBS (F = 2,151.37, p = 0.000) and TRIBS – FLIBS (F = 2,211.,49, p = 0.000) indicate that there are significant differences between school types in terms of the total workload of a student and the number of course units offered in CRGs.

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We now present the pairwise MANOVA results (Table 7) for POUBS – FOUBS, revealing significant differences in the number of course units and in the student workloads: the found differences are respectively 11 and 8 out of the 15 CRGs. While the POUBS in Turkey include significantly in their programmes a higher number of course units in accounting, economics, finance, law, marketing, and quantitative methods CRGs than FOUBS, the number of course units offered in foreign languages, project–seminar–internship, other courses and non–departmental elective CGSs are significantly less in PUPBS compared with FOUBS. The findings reveal that the differences between PUPBS and FOUBS in behavioural sciences, management information systems, management and organization, and others related to field CRGs are not meaningful in terms of both variables. Moreover, the workloads of students at PUPBS and FOUBS in economics, finance, and quantitative methods CGSs do not differ significantly. The student workloads of PUPBS are significantly lighter than FOUBS in foreign languages, project–seminar–internship, other courses, departmental and non–departmental electives, and heavier in accounting, economics, law and marketing courses CRGs.

Table 7

Relationships between pairs of means (PUPBS – FOUBS)

Number of Course Units				Student Workload (ECTS)			
Dep. Var.	F	p	d_	Dep. Var.	F	p	d_
ACC	56.500**	0.000	2.199	ACW	41.881**	0.000	10.062
BSC	0.875	0.351	–	BSW	1.470	0.227	–
ECC	10.751**	0.001	0.609	ECW	0.052	0.821	–
FNC	10.341**	0.002	0.693	FNW	3.648	0.058	–
MIC	1,193.000	0.277	–	MIW	0.765	0.383	–
LWC	33.811**	0.000	1.464	LWW	23.352**	0.000	5.266
MOC	2,101.000	0.149	–	MOW	0.299	0.585	–
MRC	15.135**	0.000	0.769	MRW	6.632*	0.011	2.694
QMC	8.947**	0.003	0.701	QMW	0.064	0.801	–
FLC	22.050**	0.000	–1.733	FLW	20.055**	0.000	–6.508
PIC	6.858**	0.010	–0.539	PIW	8.878**	0.003	–4.868

Number of Course Units				Student Workload (ECTS)			
Dep. Var.	F	p	d_	Dep. Var.	F	p	d_
RFC	0.621	0.432	–	RFW	3.457	0.065	–
OTC	7.224**	0.008	–0.767	OTW	7.385**	0.007	–3.093
DEC	16.152**	0.000	2.831	DEW	7.767**	0.006	9.781
NEC	24.446**	0.000	–2.400	NEW	28.193**	0.000	–11.674

d_ is the mean difference (PUPBS – FOUBS). ** is very significant (p = 0.000 to 0.01), and * is significant (p = 0.01 to 0.05). No asterisk means that the coefficient is not significant at 0.05 level.

Table 8

Relationships between pairs of means (TRIBS – FLIBS)

Number of Course Units				Student Workload (Credits)			
Dep. Var.	F	p	d_	Dep. Var.	F	p	d_
ACC	51.969**	0.000	2.164	ACW	34.235**	0.000	9.423
BSC	0.441	0.508	–	BSW	1,838.000	0.177	–
ECC	6.056*	0.015	0.471	ECW	0.001	0.998	–
FNC	11.940**	0.001	0.751	FNW	4.427*	0.037	2.377
MIC	0.012	0.913	–	MIW	7.069**	0.009	–1.550
LWC	39.257**	0.000	1.576	LWW	28.928**	0.000	5.850
MOC	2,488.000	0.117	–	MOW	5.765*	0.018	–4.215
MRC	8.152*	0.005	0.586	MRW	2,589.000	0.110	–
QMC	11.061**	0.001	0.786	QMW	0.201	0.655	–
FLC	11.191**	0.001	–1.295	FLW	14.298**	0.000	–5.674
PIC	4.496*	0.036	–0.446	PIW	1,369.000	0.244	–
RFC	0.443	0.507	–	RFW	0.017	0.897	–
OTC	7.975**	0.005	–0.815	OTW	13.618**	0.000	–4.176
DEC	2,175.000	0.142	–	DEW	0.001	0.980	–
NEC	2,937.000	0.089	–	NEW	6.695*	0.011	–6.166

d_ is the mean difference (TRIBS – FLIBS). ** is very significant (p = 0.000 to 0.01), and * is significant (p = 0.01 to 0.05). No asterisk means that the coefficient is not significant at 0.05 level.

Again, in order to validate the differences in the number of course units and student workloads in each CRG, a second pairwise MANOVA was applied to the data of first cycle degree programmes in business using Turkish and a foreign language as the medium of instruction. The findings presented in Table 8 reveal significant differences in 9 and 8 of the 15 CRGs in terms of the number of course units and the student workloads, respectively. The number of courses offered by TRIBS in 5 CRGs (accounting, economics, finance, law, marketing) is significantly higher, and in 3 CRGs (foreign language, project–seminar–internship, others) lighter than FLIBS. CRGs that do not differ between the TRIBS and FLIBS in terms of the number of course units offered are behavioural sciences, management information systems, management and organization, other courses related to the field, departmental electives, and non–departmental electives. Although the workload of management information systems, management and organization, foreign languages, others, and non–departmental electives CRGs are significantly lighter for the students at the TRIBS, their workload is heavier in accounting, finance, and law CRGs than the students at FLIBS. The differences regarding student workloads between the behavioural sciences, other courses related to the field, and departmental electives CRGs are not meaningful between TRIBS and FLIBS.

IV. Discussion

Rapid changes in technology and the economy, competitive pressure in the global environment, developments in the field of financial reporting and auditing have affected the content of business activities as well as the accounting process in businesses, and the importance of accounting information and reports has increased. Accordingly, there is a need for professional accountants who can carry out the accounting and financial reporting activities of the companies effectively and who have a good command of national and international regulations. Accounting courses curricula should be set to ensure that students receive an education that prepares them to begin careers as accounting professionals.[27] Although there is no business school that does not include accounting course in its curricula, results of the study have shown that one of the most distinctive CRG between the first cycle degree programmes in business in Turkey is accounting. In

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[27] Timothy J. Fogarty, ''Surrender Dorothy? A commentary on Rebele and St. Pierre,'' *Journal of Accounting Education* 48, (December 2019): 71–79, https://doi.org/10.1016/j.jaccedu.2019.100637.

terms of both the number of courses and student workload, PUPBS and TRIBS differ significantly from FOUBS and FLIBS respectively.

According to a number of scholars, behavioural science courses should be included in business schools' curriculum to provide the students a convincing explanation of why behavioural factors such as organizational culture, employee and customer relations, intercultural communication, and organizational learning are among the foundation of sustainable competitive advantage in businesses.[28][29][30][31] There is no significant difference between business schools in Turkey in the behavioural science CRG in terms of the number of course units and student workload. However, there are no more than three behavioural science course units in the curricula of the first cycle degree programmes in business: this fact occurs for $n = 6$, while 11 schools do not include any course units in behavioural science CRG in their curricula.

Economics is of considerable importance to businesses and business is one of the primary centres of economic power.[32] While economics is primarily concerned with the concepts of scarcity and opportunity costs, the challenges and success of economic systems and their impact on the living standards of society, business deals particularly with organising and allocating a firm's scarce resources so as to achieve the objective of the individual firm which generally creates maximisation of its profits. In this context, economics is considered as one of the CRGs that must be included in a business school's curricula. Outputs of the research on economics CRG reveal that there is no significant difference between business schools in Turkey except for the difference between public and foundation first cycle programmes in business in terms of number of course units, where public first cycle degree programmes in business offer more economics courses than foundation first cycle programmes.

Whether it is a large multinational company or a local micro business, finance is considered as the core of decision–making and without financial

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[28] Sara L. Rynes, and Christine Q. Trank, ''Behavioral Science in the Business School Curriculum: Teaching in A Changing Institutional Environment,'' *Academy of Management Review* 24, no. 4 (1999): 808–824, https://doi.org/10.5465/amr.1999.2553255.

[29] Mark A. Huselid, ''The Impact of Human Resource Management Practices on Turnover, Productivity, and Corporate Financial Performance,'' *Academy of Management Journal* 38, no. 3 (1995): 635–672, https://doi.org/10.5465/256741.

[30] Frederick F. Reichheld, *The Loyalty Effect: The Hidden Force Behind Growth, Profits, and Lasting Value* (Boston: Harvard Business School Press, 1998)

[31] Theresa M. Welbourne, and Alice O. Andrews, ''Predicting the Performance of Initial Public Offerings: Should Human Resource Management Be in the Equation?'' *Academy of Management Journal* 39, no. 4 (1996): 891–919, https://doi.org/10.5465/256716.

[32] John P. Owen, ''The Role of Economics in Education for Business Administration,'' *Southern Economic Journal* 24, no. 2 (1958): 353–361, https://doi.org/10.2307/1055067.

management a business cannot exist. In addition, students make small or large financial decisions in their lives both in university and after graduation just as businesses make on a daily, weekly, and yearly basis. It is determined that the curriculum of all first cycle degree programmes in business in Turkey include at least one finance course unit. The results reveal that the curricula of PUPBS and TRIBS include more finance course units than FOUBS and FLIBS respectively, and a TRIBS student's workload is significantly heavier than a FLIBS student.

Effective use of information systems is one of the keys to success in all organizations, whether they are for–profit or not–for–profit organizations. In this respect, the curriculum of management information systems courses mainly focuses on the business applications of technology. However, the management information systems courses' curricula should be updated regularly in line with the rapid and significant technological changes, new business models and processes. In addition, the students must have gained the skills to regularly update their knowledge after graduation so not to quickly become obsolete in the workforce.[33] The only difference in the management information systems CRG is that the student workload is significantly heavier in FLIBS than TRIBS. As in the behavioural sciences CRG, there is no more than three management information systems course units in the curricula of business schools ($n = 6$) in Turkey. Thirty–one of the business schools do not include any management information systems course units in their curricula.

Law is a core requirement at most competitive first cycle degree programmes in business and essential to educating successful professionals, managers, and leaders of the future. This basic tenet is reflected in the presence of business law in the core as well as in the elective curriculum at the top thirty first cycle degree programmes in business ranked by Bloomberg Business Week, as it is nearly universal that these schools include course unit(s) in law in the core curriculum.[34] Although there is no first cycle degree programme in business in Turkey that does not include law course units in their curricula, one of the most distinctive CRGs which significantly differs

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[33] Rassule Hadidi, and Daniel Power, ''Management Information Systems (MIS) Curricula Development, Management, And Delivery - Possible Sharing Economy Solutions,'' *Journal of the Midwest Association for Information Systems* 1, (2019): 1–9, https://aisel.aisnet.org/jmwais/vol2019/iss1/1.

[34] Christine Neylon O'Brien, Richard E. Powers, and Thomas L. Wesner, ''Benchmarking and Accreditation Goals Support the Value of an Undergraduate Business Law Core Course,'' *Journal of Legal Studies Education* 35, no. 1 (2018): 171–189, https://doi.org/10.1111/jlse.12074.

between business schools in terms of number of course units and student workload variables is law. In terms of both independent variables, it was determined that the public first cycle degree programmes in business and those using Turkish as the medium of instruction differs from the foundation business schools and those using a foreign language as the medium of instruction, respectively.

Management refers to all activities which enable employees to cooperate and direct them towards a purpose. Organization is important for employees to play an active role in accordance with their structure and to work harmoniously with other employees. Organization management in a business refers to the art of bringing people together in a common platform to ensure that they work towards a predefined common goal. Organization management ensures optimum use of resources through rigorous planning and control in the workplace. The only differentiation in the management and organization CRG is that the workload of the students of TRIBS is significantly heavier than the students of FLIBS. The highest number of course units are included in management and organization among CRGs.

Conceptual and theoretical knowledge of the marketing field can be useful for long term. However, professional and technical skills are changing rapidly, especially due to the speed of change in technology. For example, many of the techniques currently used for database marketing are different from those five years ago, and most likely five years from now will differ from those used today. Businesses demand graduates who can use technology in a scalable way to implement their strategies and operations[35]. Marketing is one of the CRGs where significant differences were revealed between business schools' curricula in Turkey. In the marketing CRG, the number of course units offered by PUPBS is significantly higher, and the workload of students of PUPBS is heavier than FOUBS students. Although there is no significant difference between TRIBS and FLIBS in terms of student workload, the number of marketing course units offered in TRIBS is significantly higher than FLIBS.

The importance of quantitative methods in terms of objective and conscious decision making is indisputable. From this point of view, the effectiveness of businesses using these techniques becomes important in increasing their competitiveness. The primary goal of the quantitative methods courses is teaching mathematics, statistics, econometrics, and other

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[35] Regina Pefanis Schlee, and Katrin R. Harich, ''Knowledge and Skill Requirements for Marketing Jobs in the 21st Century,'' *Journal of Marketing Education* 32, no. 3 (2010): 341–352, https://doi.org/10.1177/0273475310380881.

data analytics courses in the field of business to improve students' practical skills so they can apply this knowledge in the business functions. Although the outputs of the research reveal that there is no significant difference between first cycle degree programmes in business in Turkey in terms of student workload variable, in terms of the total number of course units' significant differences were determined in both school types. PUPBS offer significantly more quantitative methods course units than FOUBS, and the curricula of TRIBS significantly include more quantitative methods course units than FLIBS.

Internships, which provide students with the opportunity to apply knowledge gained from the classroom and help to develop essential skills such as critical thinking, communication, and problem solving, increase their marketability.[36] Projects help students to improve their designing, imagining, planning, and constructing skills as well. It also makes the student the central focus by establishing an interdisciplinary connection.[37] In Turkey, the workload of students at FOUBS for projects, seminars and internships are significantly heavier than the students of PUPBS.

Elective courses not only help students get more knowledge about their core fields, but also help them to recognize and test their interests and abilities, and develop skills in various fields. CoHE encourages Turkish higher education institutions to allocate at least 25 percent of the total ECTS credits in their programmes to elective courses to provide cultural depth and opportunity to get knowledge in different disciplines to the students. On the examination of the research results regarding the departmental electives which support core courses, it is seen that there are no significant differences between TRIBS and FLIBS in terms of both variables. On the other hand, the number of departmental elective course units offered to the students by PUPBS in Turkey is significantly higher than FOUBS. The opposite is the case for non–departmental elective courses, and the curricula of foundation business schools include significantly more non–departmental elective course units. While the students' workloads for non–departmental elective courses are significantly heavier in FOUBS than PUPBS, the workloads of the students of FLIBS are significantly heavier than the students of TRIBS.

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[36] Mamie Griffin, and Pedro Coelhoso, ''Business Students' Perspectives on Employability Skills Post Internship Experience: Lessons from the UAE,'' *Higher Education, Skills and Work-Based Learning* 9, no. 1 (2019): 60–75, https://doi.org/10.1108/HESWBL-12-2017-0102.

[37] Nurdan Kalaycı, ''An Application Related to Project Based Learning in Higher Education Analysis in Terms of Students Directing the Project,'' *Education and Science* 33, no. 147 (2008): 85–105, http://egitimvebilim.ted.org.tr/index.php/EB/article/view/691/139.

V. Conclusions

In this study, the differences between the curricula of first cycle degree business schools in Turkey were explored in terms of the number of course units and student workload. In the first stage, business schools' course information packages were examined, and it was seen that there are 147 schools that provide sufficient data. In the following stage, the number of course units and the total student workload in each content–related group were determined within the scope of the European Credit Transfer System. Finally, first cycle business schools in Turkey were subjected to multivariate analysis in terms of the total number of course units and total student workloads for each content–related group.

The results of the study using the multivariate analysis approach show that the number of accounting, economics, finance, law, marketing, and quantitative methods course units offered in public first cycle degree programmes in business in Turkey is significantly higher than foundation first cycle degree programmes in business. On the other hand, the curricula of foundation business schools in Turkey include significantly more course units in foreign language, project – seminar – internship, other courses, and non–departmental electives content–related groups than in public business schools. Student workloads, which is the other dependent variable used in the research, is significantly heavier in accounting, economics, law, marketing content–related groups in public first cycle degree programmes in business in Turkey. And foundation business schools' student workloads for foreign language, project – seminar – internship, other courses, departmental and non–departmental electives content–related groups are heavier. Those which do not differ significantly between public and foundation first cycle degree programmes in business in terms of both dependent variables are behavioural sciences, management information systems, management and organization, and others related to field content–related groups.

The second multivariate analysis has been conducted between the business schools using Turkish and a foreign language as the medium of instruction. While the number of course units offered in accounting, economics, finance, law, marketing, and quantitative methods content–related groups are significantly higher in the business schools using Turkish as a medium of instruction, the business schools using a foreign language as the medium of instruction offer significantly more course units in management and organization, foreign language, project – seminar – internship, and departmental electives content–related groups. While the workload of finance and law content–related groups are heavier for the students at the business schools using Turkish as the medium of instruction, the students at

the business schools using a foreign language as the medium of instruction have a heavier workload for management and information systems, management and organization, foreign language and non–departmental electives content related groups. The differences in behavioural sciences, other courses related to the field, and departmental electives content related groups are not significant in terms of both variables.

The findings of this study indicating significant differences between public and foundation business schools, and between business schools using Turkish and a foreign language as a medium of instruction are not unexpected as their aims, structures, contents, and subject–specific and general learning outcomes may diverge. Tuning EU does not propose one single standard for the aims, structures, contents, and subject–specific and generic learning outcomes that should be achieved due to the universal characteristics and multidisciplinary nature of business schools. Considering the differences of the weights of the total ECTS's and the total number of course units offered in the content related areas, it can be said that Turkey's first cycle programmes in business quantitatively adopt this proposal. However, what makes a business degree programme transparent and comparable is not only adopting the European Credit Transfer and Accumulation System, but it is also associated with the learning outcomes and competencies of the subject areas and course units. In the Tuning project, the knowledge level expected to be gained by a graduate, what s/he can understand and give practical exhibition and explanation are expressed as the learning outcomes. Competencies, in which learning outcomes are subsumed, are developed in each course unit in a programme, and represent a combination of attributes including cognitive and meta–cognitive skills, knowledge and understanding, interpersonal, intellectual and practical skills, and ethical values. In this respect, comparative studies between business schools in terms of competencies and learning outcomes, teaching–learning processes and assessment methods will complement this research.

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Factors influencing postgraduate students' intention to use learning management system

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Abstract: Learning management systems (LMS) are continuously being implemented in tertiary institutions to manage and strengthen educational activities. LMS such as Moodle facilitates the management of learning content, collaboration, and communication. However, there have been limited studies examining factors influencing postgraduate students' intention to use LMS in Malaysian universities, as studies mainly concentrate on undergraduates' use intentions. Therefore, this study investigates factors influencing the behavioural intention to use LMS based on the Unified Theory of Acceptance and Use of Technology (UTAUT) model. The results indicated performance expectancy (PE) followed by social influence (SI) and effort expectancy (EE) as the factors influencing the behavioural intention (BI) to use LMS. Concurrently, facilitating conditions (FC) were found not to influence BI, and we denote that socio-economy standings and maturity influence their

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overall acceptance of the LMS. Practical and theoretical implications are discussed accordingly.

Keywords: LMS; UTAUT; technology acceptance; postgraduate; Malaysia.

I. Introduction

The recent advancement of technological innovations has triggered a gradual change from the conventional teaching method towards modern methods that adopt online learning. These methods range from learning management systems (LMS), blended learning, mobile learning, and flipped learning as a means to introduce technology in the classroom. Henceforth, most higher education institutions has resorted to benefit from this need by integrating a platform to support multiple online resources such as a LMS.[1] LMS is a web-based application used to organize, implement, manage, and assess learning content.[2] It has been widely used to support e-learning worldwide[3] and successfully implemented in Malaysian HEIs.[4] It is a system created to assist administrators, teachers, and students in accessing and managing online learning services,[5] data and contents, and are available as an open source platform (e.g. Moodle, Google Classroom, Dokeos, and Claroline) or commercially (e.g. Blackboard and WebCT).

In Malaysia, most public universities use Moodle as their official LMS[6,7] due to its scalability and free access.[8] LMS allows instructors to share, upload,

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and interact with students, whereas students at the receiving end have easy access to these learning interactions[9] and communicate with their lecturers.[10] These attributes facilitate collaboration,[11] engagement,[12] create a flexible learning environment,[13] and monitor progress and assess performance.[14] Despite these benefits, some challenges still hindered students from using LMS effectively. LMS has been found to have implementation issues such as technical setbacks, lack of proper implementation policies, unengaging,[15] and mobile accessibility.[16] Moreover, LMS is also perceived as a course-centered platform with high reliability to the internet connection for successful implementation.[17] Furthermore, instructors have been found to treat LMS as a learning content repository and henceforth lack initiatives to design interactive content that promotes interaction through the platform.[18] Due to this, empirical

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findings in Malaysia indicated that HEI students are more favourable towards conventional learning because LMS has been perceived as incapable of offering physical-emotional interaction, especially for a vast number of learners simultaneously.[19] Therefore, we theorised that even if the acceptance of e-learning has been universal, there is not much understanding of the factors affecting the intention and use of LMS.[20] Similarly, these assessments have been consistent with empirical findings on postgraduates in Malaysia as reported by[21] highlighting limited studies that warrants further investigation.

Furthermore, LMS are usually adopted as a formal learning platform to enhance content delivery, assessment, and manage learning activities for postgraduates.[22] Therefore,[23] claims that identifying factors influencing LMS intention and use for postgraduate students may be novel in improving any existing e-learning system in higher education. Moreover, this is further amplified with limited studies on postgraduates' use of LMS and the tendency to assume homogeneity of use behaviour between undergraduates and postgraduates.[24] In addition such investigations, especially using the adoption model, may highlight their intention to exploit LMS functions and use it effectively.[25] For this purpose,

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[19] Muruthy and Yamin, "The Perception and Effectiveness of Learning Management System (LMS) Usage among the Higher Education Students," *Journal of Technology and Operations Managemen* 12, no. 1 (2017): 86–98.

[20] Moreno, Cavazotte, and Alves, "Explaining University Students' Effective Use of e-Learning Platforms," *British Journal of Educational Technology* 48, no. 4 (2017): 995–1009. https://doi.org/10.1111/bjet.12469.

[21] Raman et al., "Usage of Learning Management System (Moodle) among Postgraduate Students: UTAUT Model," *Hamdard Islamicus, XLIII* (1) (2020); Zainuddin, Idrus, and Jamal, "Moodle as an ODL Teaching Tool: A Perspective of Students and Academics," *Electronic Journal of E-Learning* 14, no. 4 (2016): 282–90; Teo et al., "Factors That Influence University Students' Intention to Use Moodle: A Study in Macau," *Educational Technology Research and Development* 67, no. 3 (2019): 749–66.

[22] Mpungose and Khoza, "Postgraduate Students' Experiences on the Use of Moodle and Canvas Learning Management System," *Technology, Knowledge and Learning*, September 29, 2020. https://doi.org/10.1007/s10758-020-09475-1.

[23] Ghavifekr and Mahmood, "Factors Affecting Use of E-Learning Platform (SPeCTRUM) among University Students in Malaysia." *Education and Information Technologies* 22, no. 1 (2017): 75–100. https://doi.org/10.1007/s10639-015-9435-z.

[24] McKeown and Anderson, "UTAUT: Capturing Differences in Undergraduate versus Postgraduate Learning?" *Education and Training* 58, no. 9 (2016): 945–65. https://doi.org/10.1108/ET-07-2015-0058.

[25] Moreno, Cavazotte, and Alves, "Explaining University Students' Effective Use of e-Learning Platforms," *British Journal of Educational Technology* 48, no. 4 (2017): 995–1009. https://doi.org/10.1111/bjet.12469.

we used the Unified Theory of Acceptance and Use of Technology (UTAUT) model.

II. Unified Theory of Acceptance and Use of Technology (UTAUT) Model

UTAUT and Technology Acceptance Model (TAM) are two prominent models used in assessing users' acceptance and adoption of technology. TAM was one of the earliest models used for evaluating users' intention, acceptance, and adoption of new technology. It has been applied in much scientific research,[26] however, researchers have debated the implication of TAM due to its limited insight into users' perspectives.[27,28] Therefore, we considered UTAUT as a better alternative. UTAUT was introduced by,[29] who proposed a combination of TAM, Theory of Planned Behaviour (TPB), Social Cognitive Theory (SCT), and the model of PC utilization (MPCU). The model is predicted to be able to explain 50% of the variance in user intention[30] and is a reliable model for measuring the level of technology acceptance, adoption, and actual usage. Primarily, the model comprises six core variables, namely performance expectancy (PE), effort expectancy (EE), social influence (SI), facilitating condition (FC), and behavioural intention (BI), and actual use (USE). In addition, the model also considers moderating variables such as gender, age, experience, and voluntariness. Nevertheless, moderating variables were defered and only main constructs

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[26] Chauhan and Jaiswal, "Determinants of Acceptance of ERP Software Training in Business Schools: Empirical Investigation Using UTAUT Model," *International Journal of Management Education* 14, no. 3 (2016): 248–62; Abdel-Maksoud, "The Relationship between Students' Satisfaction in the LMS 'Acadox' and Their Perceptions of Its Usefulness, and Ease of Use," *Journal of Education and Learning* 7, no. 2 (2018): 184.

[27] Šumak et al., "Differences between Prospective, Existing, and Former Users of Interactive Whiteboards on External Factors Affecting Their Adoption, Usage and Abandonment," *Computers in Human Behavior* 72 (2017): 733–56. https://doi.org/10.1016/j.chb.2016.09.006; Tsai et al., "Nursing Staff Intentions to Continuously Use a Blended E-Learning System from an Integrative Perspective," *Quality and Quantity* 52, no. 6 (2018): 2495–2513. https://doi.org/10.1007/s11135-017-0540-5.

[28] Ajibade, "Technology Acceptance Model Limitations and Criticisms: Exploring the Practical Applications and Use in Technology-Related Studies, Mixed-Method, and Qualitative Researches," *Library Philosophy and Practice* 00, no. 00 (2018): 1–13.

[29] Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *Journal of the Association for Information Systems* 17, no. 5 (2016): 328–76.

[30] Venkatesh et al.. "Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead," *Journal of the Association for Information Systems* 17, no. 5 (2016): 328–76.

were used to determine behavioural intention as validated in other empirical LMS studies conducted in Malaysian HEI.[31,32,33]

III. Hypotheses development

The hypotheses development is discussed based on the main latent variables used to predict behavioural intention

III.1. Behavioural Intention (BI)

BI is defined as intentions or motivational factors that reflect efforts to perform a behaviour.[34] In terms of technology usage, BI can be refered to as the users' intention to use technology.[35] For this study, BI is defined as the postgraduates' interest in using the LMS. Previous studies had shown that LMS provided a convenient avenue for higher education students to access online learning materials and improve their academic performance.[36,37]

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[31] Raman and Rathakrishnan, "Blended Learning via Google Classroom: English Language Students Experience Based on UTAUT Model and Flow Theory," *Hamdard Islamicus, XLIII* (1) (2020).

[32] Annamalai et al., "Investigating the Use of Learning Management System (Lms) for Distance Education in Malaysia: A Mixed-Method Approach," *Contemporary Educational Technology* 13, no. 3 (2021). https://doi.org/10.30935/cedtech/10987.

[33] Kumar and Bervell, "Google Classroom for Mobile Learning in Higher Education : Modelling the Initial Perceptions of Students," *Education and Information Technologies*, 2020. https://doi.org/10.1007/s10639-020-10163-x.

[34] Fishbein and Ajzen, *Belief, Attitude, Intentions and Behavior: An Introduction to Theory and Research*. Reading, WA: Addison-Wesley, 1975.

[35] Teo, "A Comparison of Non-Nested Models in Explaining Teachers' Intention to Use Technology," *Educational Technology Research and Development* 67, no. 3 (2019): 749–66. https://doi.org/10.1007/s11423-019-09650-x.

[36] Raman et al., "Usage of Learning Management System (Moodle) among Postgraduate Students: UTAUT Model," *Asian Social Science* 10, no. 14 (2014): 186–92. https://doi.org/10.5539/ass.v10n14p186; Zainuddin, Idrus, and Jamal, "Moodle as an ODL Teaching Tool: A Perspective of Students and Academics," *Electronic Journal of E-Learning* 14, no. 4 (2016): 282–90; Ghavifekr and Mahmood, "Factors Affecting Use of E-Learning Platform (SPeCTRUM) among University Students in Malaysia," *Education and Information Technologies* 22, no. 1 (2017): 75–100. https://doi.org/10.1007/s10639-015-9435-z.

[37] Zainuddin and Perera, "Supporting Students' Self-Directed Learning in the Flipped Classroom through the LMS TES BlendSpace," *On the Horizon* 26, no. 4 (2018): 281–90. https://doi.org/10.1108/OTH-04-2017-0016.

III.2. *Performance Expectancy (PE)*

Performance expectancy has been one of the core constructs of the UTAUT model and refers to the extent to which people are convinced that technology helps enhance their activities and improve their job performance.[38] Previous literature indicated that PE and BI were correlated in both intended and compulsory settings[39,40] Furthermore, PE was found to strongly influence learners' intention to use technology.[41] Besides, PE has been found to effect postgraduate students' BI,[42] but[43,44] claimed otherwise. Nevertheless, due to the novelty of this study, we hypothesized a significant effect on BI as the use of the LMS is an important aspect that facilitates teaching and learning. Hence, this study projected the following hypothesis:

H1: Performance expectancy has a significant effect on postgraduate students' behavioural intention to use LMS.

[38] Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly: Management Information Systems* 27, no. 3 (2003): 425–78. https://doi.org/10.2307/30036540.

[39] Dwivedi et al., "A Meta-Analysis of the Unified Theory of Acceptance and Use of Technology (UTAUT)," *Governance and Sustainability in Information Systems. Managing the Transfer and Diffusion of IT*, 2011, 155–70; Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly: Management Information Systems* 27, no. 3 (2003): 425–78. https://doi.org/10.2307/30036540.

[40] Eraslan Yalcin and Kutlu, "Examination of Students' Acceptance of and Intention to Use Learning Management Systems Using Extended TAM," *British Journal of Educational Technology* 50, no. 5 (2019): 2414–32. https://doi.org/10.1111/bjet.12798.

[41] Chao, "Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model," *Frontiers in Psychology* 10, no. July 2019 (July 16, 2019): 1–14. https://doi.org/10.3389/fpsyg.2019.01652; Khechine et al., "UTAUT Model for Blended Learning: The Role of Gender and Age in the Intention to Use Webinars," *Interdisciplinary Journal of E-Skills and Lifelong Learning* 10 (2014): 033–052. https://doi.org/10.28945/1994; Samsudeen and Mohamed, "University Students' Intention to Use e-Learning Systems," *Interactive Technology and Smart Education* 16, no. 3 (2019): 219–38. https://doi.org/10.1108/ITSE-11-2018-0092.

[42] Moreno

[43] Bakar, Razak, and Abdullah, "Assessing the Effects of UTAUT and Self-Determination Predictor on Students Continuance Intention to Use Student Portal," *World Applied Sciences Journal* 21, no. 10 (2013): 1484–89. https://doi.org/10.5829/idosi.wasj.2013.21.10.2920.

[44] Raman et al., "Investigating the Influence of Intrinsic Motivation on Behavioral Intention and Actual Use of Technology in Moodle Platforms," *International Journal of Instruction* 15, no. 1 (2022): 1003–24. https://doi.org/10.29333/iji.2022.15157a.

III.3. *Effort Expectancy (EE)*

Effort expectancy is a critical factor cited in the UTAUT model. It has been defined as "the degree of ease associated with the use of the system".[45] It is an important variable that profoundly contributes towards determining users' behaviour to use technologies[46] and significantly correlated with students' use of LMS.[47] In contrast, EE has also been found to have no significant effect on postgraduates' behavioural intention to use LMS as reported by.[48] Nevertheless,[49,50,51] described EE as the core determinant of behavioural intention to use an information system. Therefore, we stipulate the need to explore this relationship based on the original context of the UTAUT model based on the following hypothesis is proposed:

> H2: Effort expectancy has a significant effect on the postgraduate students' behavioural intention to use LMS.

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[45] Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly: Management Information Systems* 27, no. 3 (2003): 425–78. https://doi.org/10.2307/30036540.

[46] Ifinedo, "Acceptance and Continuance Intention of Web-Based Learning Technologies (WLT) Use among University Students in a Baltic Country," *The Electronic Journal of Information Systems in Developing Countries* 23, no. 1 (2006): 1–20. https://doi.org/10.1002/j.1681-4835.2006.tb00151.x.

[47] Lwoga and Komba, "Antecedents of Continued Usage Intentions of Web-Based Learning Management System in Tanzania," *Education and Training* 57, no. 7 (2015): 738–56. https://doi.org/10.1108/ET-02-2014-0014; Samsudeen and Mohamed, "University Students' Intention to Use e-Learning Systems," *Interactive Technology and Smart Education* 16, no. 3 (2019): 219–38. https://doi.org/10.1108/ITSE-11-2018-0092.

[48] Khechine et al., "UTAUT Model for Blended Learning: The Role of Gender and Age in the Intention to Use Webinars," *Interdisciplinary Journal of E-Skills and Lifelong Learning* 10 (2014): 033–052. https://doi.org/10.28945/1994; Raman et al., "Usage of Learning Management System (Moodle) among Postgraduate Students: UTAUT Model," *Asian Social Science* 10, no. 14 (2014): 186–92. https://doi.org/10.5539/ass.v10n14p186.

[49] Venkatesh, Thong, and Xu, "Unified Theory of Acceptance and Use of Technology: A Synthesis and the Road Ahead," *Journal of the Association for Information Systems* 17, no. 5 (2016): 328–76.

[50] Chao, "Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model," *Frontiers in Psychology* 10, no. July 2019 (July 16, 2019): 1–14. https://doi.org/10.3389/fpsyg.2019.01652; Chauhan and Jaiswal, "Determinants of Acceptance of ERP Software Training in Business Schools: Empirical Investigation Using UTAUT Model," *International Journal of Management Education* 14, no. 3 (2016): 248–62. https://doi.org/10.1016/j.ijme.2016.05.005.

[51] Annamalai et al., "Investigating the Use of Learning Management System (Lms) for Distance Education in Malaysia: A Mixed-Method Approach," *Contemporary Educational Technology* 13, no. 3 (2021). https://doi.org/10.30935/cedtech/10987.

III.4. *Social Influence (SI)*

Social influence is a crucial determinant for predicting users' behavioural intention to use technology. It is referred to as the extent to which a person perceives colleagues/superiors can influence him or her to use technology.[52] SI significantly impacted the adoption and acceptance of technology in both intended and compulsory settings.[53] Furthermore, SI was among the core factors that influenced postgraduates' use of LMS[54] and boosted their intention to use it.[55] Study reported that SI had a strong relationship with users' technology usage and strongly influenced students' intention to use technology in HEI.[56] Consequently, the following hypothesis was formulated:

H3: Social influence has a significant effect on postgraduate students' behavioural intention to use LMS.

III.5. *Facilitating condition (FC)*

Facilitating condition (FC) is defined as the extent to which a person trusts that technical and organizational infrastructure exists to encourage the use of technology.[57] It has been found to influence postgraduates' intention to use technology.[58] Nonetheless, FC was also found to not significantly affect

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[52] Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly: Management Information Systems* 27, no. 3 (2003): 425–78.

[53] Pardamean and Susanto, "Assessing User Acceptance toward Blog Technology Using the UTAUT Model," *International Journal of Mathematics and Computers in Simulation* 6, no. 1 (2012): 203–12; Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly: Management Information Systems* 27, no. 3 (2003): 425–78.

[54] Raman et al., "Usage of Learning Management System (Moodle) among Postgraduate Students: UTAUT Model," *Asian Social Science* 10, no. 14 (2014): 186–92. https://doi.org/10.5539/ass.v10n14p186.

[55] Samaila, Abdulfattah, and Amir, "Learning Management System Usage with Postgraduate School : An Application of UTAUT Model," *International Journal of Education and Evaluation* 3, no. 12 (2017): 38–49.

[56] Binyamin, Rutter, and Smith, "The Students' Acceptance of Learning Management Systems in Saudi Arabia: A Case Study of King Abdulaziz University," *INTED2017 Proceedings* 1, no. 3 (2017): 9324–33; Samsudeen and Mohamed, "University Students' Intention to Use e-Learning Systems," *Interactive Technology and Smart Education* 16, no. 3 (2019): 219–38. https://doi.org/10.1108/ITSE-11-2018-0092.

[57] Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly: Management Information Systems* 27, no. 3 (2003): 425–78. https://doi.org/10.2307/30036540.

[58] Raman et al., "Usage of Learning Management System (Moodle) among Postgraduate Students: UTAUT Model," *Asian Social Science* 10, no. 14 (2014): 186–92. https://doi.org/10.5539/ass.v10n14p186.

students' intention to use LMS[59] but was not specific for postgraduate students. Therefore, the present study hypothesized that facilitating conditions could significantly affect students' behavioral intention to use of LMS. Therefore, the following hypothesis was proposed:

> H4: Facilitating condition has a significant effect on the postgraduate students' behavioural intention to use LMS.

Consequently, this study aims to investigate postgraduate students' use of LMS in Malaysia's public university, based on PE, EE, SI, and FC towards BI. Therefore, we decided to exclude moderating variables as we focus the study on the intention to use the LMS. Various studies did not include moderating variables to identify use behaviour as these factors were uncontrollable aspects of usage in their context.[60,61] Therefore, we adopted the same strategy as we deemed these factors unreasonable as a future consideration towards the platform's design, especially when the use is compulsory. The conceptual model proposed in this study is represented in Figure 1.

Figure 1
Conceptualised Model

[59] Lwoga and Komba, "Antecedents of Continued Usage Intentions of Web-Based Learning Management System in Tanzania," *Education and Training* 57, no. 7 (2015): 738–56. https://doi.org/10.1108/ET-02-2014-0014.

[60] Efiloğlu Kurt and Tingöy, "The Acceptance and Use of a Virtual Learning Environment in Higher Education: An Empirical Study in Turkey, and the UK," *International Journal of Educational Technology in Higher Education* 14, no. 26 (2017): 1–15. https://doi.org/10.1186/s41239-017-0064-z.

[61] Blut et al., "Meta-Analysis of the Unified Theory of Acceptance and Use of Technology (UTAUT): Challenging Its Validity and Charting a Research Agenda in the Red Ocean." *Journal of the Association for Information Systems* 2, no. 5 (2021): 1–128.

IV. Methodology

In this study, we define the postgraduate students as mandatory users of the university's LMS to complete compulsory courses for their Master of Education. This study adopts a quantitative approach where the survey questionnaire was distributed electronically to all postgraduate students in the education faculty through email using Google Forms. In the email, students were informed about the research purpose, and by answering the questionnaire, they provide consent to be part of the study. Furthermore, all participation is based on a voluntary basis, and we explained that the study abides by the university's ethical standards to ensure anonymity and confidentiality. The study was conducted based on the approval of the research committee of the institute.

Table 1

Cronbach's Alpha Coefficient of the Variables

Construct	Cronbach's Alpha Value
Behavioural intention	.932
Performance expectancy	.954
Effort expectancy	.930
Social influence	.876
Facilitating condition	.884

The questionnaires were distributed twice with an interval of three weeks to ensure a better response rate. There were two sections in the questionnaire where the first section was related to the demographic details of the respondents, whereas the second part reflected the factor influencing the intention to use LMS. The items for PE, EE, SI, FC, and BI were adapted from.[62] The 41-item questionnaire was measured based on a Likert scale ranging from 1-*strongly disagree* to 5-*strongly agree* and will take 15 to 20 minutes to complete. The data collected were analysed using the Statistical Package for the Social
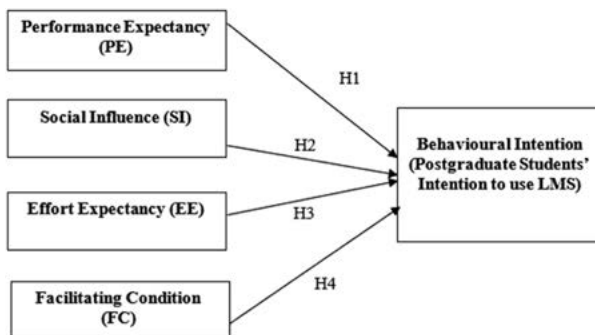
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[62] Lwoga and Komba, "Antecedents of Continued Usage Intentions of Web-Based Learning Management System in Tanzania" *Education and Training* 57, no. 7 (2015): 738–56. https://doi.org/10.1108/ET-02-2014-0014; Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly: Management Information Systems* 27, no. 3 (2003): 425–78. https://doi.org/10.2307/30036540; Wang and Wang, "An Empirical Study of Instructor Adoption of Web-Based Learning Systems." *Computers and Education* 53, no. 3 (2009): 761–74. https://doi.org/10.1016/j.compedu.2009.02.021.

Sciences version 22 (SPSS), in which the 297 respondents showed high reliability[63] based on the Cronbach's alpha value (Table 1). Next, to predict factors influencing postgraduate BI to use LMS, a multiple regression analysis was employed to investigate the influence of PE, EE, SI, and FC relationship with the intention to use LMS. Multiple regression is able to analyse the relationship between BI and the other factors simultaneously.[64]

V. Results

Based on the total population of 921 postgraduate students, 297 students participated in this study. As shown in Table 2, the majority of the students were female (n = 211, 76.2%), while the rest were male (n = 66, 23.8%). 52.0% of the respondents were between the ages of 26-35 years old (n=144), while 3.6%, the smallest group, were above 46 years old.

Table 2

Demographic profile of the respondents

Demographic Information	Frequency (f)	Percentage (%)
Gender		
Male	66	23.8
Female	211	76.2
Age		
25 and below	79	28.5
26- 35 years old	144	52.0
36-45 years old	44	15.9
46 and above	10	3.6

Based on the analysis, PE (β = .436, p <.000) was the most crucial factor in predicting postgraduate students' intention to use LMS, followed by SI (β = .232, p <.000) and EE (β = .193, p <.003) (Table 3). The value of the standardized beta coefficient (β) determines the strength of the relationships between both variables. Meanwhile, the result also showed that FC had no

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[63] Abbott, *Understanding Educational Statistics Using Microsoft Excel and SPSS*. New Jersey: JohnWiley & Sons, Inc, 2011.

[64] Muijs, *Doing Quantitative Research in Education with SPSS*. London, Thousand Oaks and New Delhi: Sage Publications, 2004.

impact on postgraduate students' intention to use LMS ($\beta = -.037, p <.505$). Figure 2 reflects graphical representation of the standard regression analysis. The model was also found to be highly significant at $F(1, 4) = 2490.753, p < 000$ as reflected in Table 4.

Table 3

Multiple Regressions for Dependent Variable

Model		Unstandardized Coefficients		Standardized Coefficients β	t	Sig.
		β	Std. Error			
1	(Constant)	.976	.166		5.880	.000
	Performance Expectancy	.367	.049	.436	7.469	.000
	Social Influence	.237	.060	.232	3.966	.000
	Effort Expectancy	.199	.067	.193	2.985	.003
	Facilitating Condition	-.035	.053	-.037	-.668	.505

Table 4

Model significance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	5547.311	4	1386.828	2490.753	.000[b]
	Residual	151.447	272	.557		
	Total	5698.758	276			
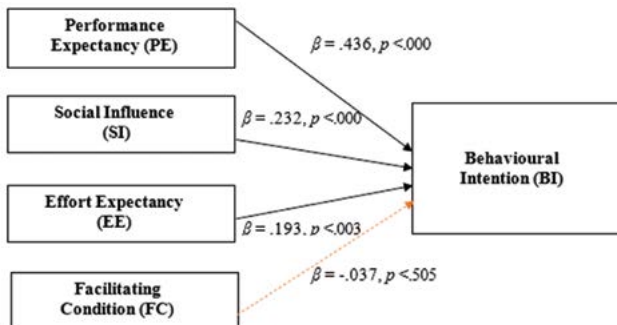
Figure 2

Result of standard regression analysis

Next, a stepwise regression analysis (Table 5) describes model 1 representing PE as explaining 48% of the variance (R^2 change = .483), model 2 representing SI explained 5% of the variance (R^2 change = .050), and model 3 representing EE explaining less than 2% of the variance (R^2 change = .015). Finally, the conceptual model was found to explained 54% of the variance (adjusted R^2 = .541). According to,[65] the total variance values can be categorized as weak (0.25), medium (0.5) and substantial (0.75). Therefore, the model's in-sample explanatory power has been found to be moderate. Furthermore, Table 6 showed that the three variables predicted the students' intention to use LMS at a 0.05 level of significance. Therefore, the absolute values of the standardized estimate (β) of these predictors were presented as follows: PE (β = .695, t =16.015, p <.05), SI (β = .291, t = 5.392 p <.05), and EE (β = .174, t = 2.997, p <.05). The predictor that explained the highest variance in postgraduate students' intention to use LMS was PE, followed by SI and lastly EE.

Table 5

Stepwise Regression Result

Mo-del	R	R^2	Adj-usted R^2	Std. Error Estimate	Change Statistics				
					R^2 Change	F Change	df^1	df^2	Sig. F Change
1	.695ᵃ	.483	.481	.56787	.483	256.479	1	275	.000
2	.730ᵇ	.532	.529	.54093	.050	29.074	1	274	.000
3	.740ᶜ	.547	.542	.53322	.015	8.983	1	273	.003

Table 6

Multiple Regressions on the Dependent Variable

	Unstandardized Coefficients		Standardized Coefficients	T
	B	Std. Error	B	
Performance expectancy (PE)	.584	.036	.695	16.015
Social influence (SI)	.298	.055	.291	5.392
Effort expectancy (EE)	.179	.060	.174	2.997

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[65] Hair, Ringle, and Sarstedt, "Partial Least Squares Structural Equation Modeling: Rigorous Applications, Better Results and Higher Acceptance," *European Business Review* 31, no. 1 (2019): 2–24. https://doi.org/10.1108/EBR-11-2018-0203.

Figure 3 demonstrates that PE has the maximum influence in predicting postgraduate students' intention (BI) to use LMS. In the same vein, postgraduate students' intention to use LMS was influence by SI. The figure further explains that EE is the third factor that significantly affects the postgraduates' decisions on using LMS.
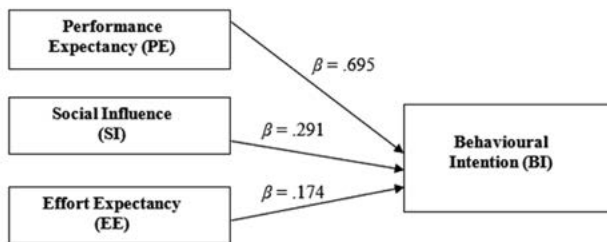
Figure 3

Model of Postgraduate Students Intention to Use LMS

VI. Discussion

This study reveals that not only PE but SI and EE are also among the factors that contribute to postgraduate students' intention to use LMS. These findings indicate that postgraduate students relate the platform's usefulness to access learning content as their main reason to use the LMS. The findings of this study correspond with that in,[66] who argued that PE plays a vital role in determining students' intention to use technology. As for LMS, empirical findings have also indicated that PE cannot be overlooked as an important factor.[67] It is understood that postgraduate students perceived the LMS as an essential instrument that can enhance their collaboration, learning activities, efficiency, and effectiveness in completing their course work.

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[66] Dwivedi et al., "A Meta-Analysis of the Unified Theory of Acceptance and Use of Technology (UTAUT)," *Governance and Sustainability in Information Systems. Managing the Transfer and Diffusion of IT*, 2011, 155–70; Venkatesh et al., "User Acceptance of Information Technology: Toward a Unified View," *MIS Quarterly: Management Information Systems* 27, no. 3 (2003): 425–78. https://doi.org/10.2307/30036540.

[67] Raman et al., "Usage of Learning Management System (Moodle) among Postgraduate Students: UTAUT Model," *Asian Social Science* 10, no. 14 (2014): 186–92. https://doi.org/10.5539/ass.v10n14p186; Samaila, Abdulfattah, and Amir, "Learning Management System Usage with Postgraduate School : An Application of UTAUT Model."

At the same time, SI was the second strongest influencer for postgraduate students' intention to use LMS. SI relates to postgraduates perception of their peers and lecturers need to use the LMS. According to,[68] LMS should not only be viewed as a database of learning contents but also as a platform that supports interaction and collaboration, especially as postgraduate are autonomous learners. In this study, the weak significant relationship may have been attributed to less awareness of their peers' need for using the platform for teaching and learning. Moreover, postgraduates have been found to welcome the idea of independent learning due to the flexibility that fits with their work and family schedule[69,70] which may have contributed towards the insignificant relationship. Furthermore, empirical findings also described postgraduate students as not having emotional relationship or connectedness when using the LMS and tend to ignore such non-formal relationships.[71] Hence, they tend to view the LMS as just a learning tool and not a tool for socialising and communicating with their peers. However, such relationships are more successfully built through social media platforms such as WhatsApp or Facebook, where there is the ease of accessibility through mobile devices that permits non-restricting and informal communication compared to a Moodle-based LMS.[72]

Subsequently, EE, which denotes ease of using the LMS to achieve their learning goals, was also found to influence postgraduate students' intention to use LMS. We deemed this outcome as related to the mandatory nature of using the LMS and not having a choice in selecting the learning platform. The results of this study are in congruence with the findings in,[73] indicating a

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[68] Moreno, Cavazotte, and Alves, "Explaining University Students' Effective Use of e-Learning Platforms," *British Journal of Educational Technology* 48, no. 4 (2017): 995–1009. https://doi.org/10.1111/bjet.12469.

[69] McKeown and Anderson, "UTAUT: Capturing Differences in Undergraduate versus Postgraduate Learning?" *Education and Training* 58, no. 9 (2016): 945–65. https://doi.org/10.1108/ET-07-2015-0058.

[70] Kite et al., "Exploring Lecturer and Student Perceptions and Use of a Learning Management System in a Postgraduate Public Health Environment," *E-Learning and Digital Media* 17, no. 3 (2020): 183–98. https://doi.org/10.1177/2042753020909217.

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[72] Kumar, Silva, and Prelath, "Implementing Studio-Based Learning for Design Education: A Study on the Perception and Challenges of Malaysian Undergraduates." *International Journal of Technology and Design Education* 31, no. 3 (July 15, 2021): 611–31. https://doi.org/10.1007/s10798-020-09566-1.

[73] Chauhan and Jaiswal, "Determinants of Acceptance of ERP Software Training in Business Schools: Empirical Investigation Using UTAUT Model"; Abdel-Maksoud, "The

significant relationship between EE and learners' intention to use technology.[74] added that even if postgraduate students appreciate LMS's flexibility, ease of navigation, and managing their learning, they still favour face-to-face teaching and view the LMS only as a supplementary learning tool. We also agree with,[75] indicating that the mandatory use of e-learning platforms acts as a conditioning of behaviour that may have influenced how they perceive EE's relationship with intention. Furthermore, questioning if EE or habit is a better predictor of BI in a mandatory setting.[76]

We also observed that FC, which was significant in determining BI,[77] was non-significant in our study. Nevertheless, the findings of this study did not differ from,[78] indicating that FC was ineffective in determining students' use of modern technology. Subsequently, even if evidence shows that technical infrastructures, Internet, computer, and wireless facilities are the primary resources to access LMS,[79] it did not influence postgraduate students' intention to use LMS. Furthermore, according to,[80] FC determines behavioral

Relationship between Students' Satisfaction in the LMS 'Acadox' and Their Perceptions of Its Usefulness, and Ease of Use"; Chao, "Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model," *Journal of Education and Learning* 7, no. 2 (2018): 184; Lwoga and Komba, "Antecedents of Continued Usage Intentions of Web-Based Learning Management System in Tanzania," *Education and Training* 57, no. 7 (2015): 738–56. https://doi.org/10.1108/ET-02-2014-0014.

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[75] Annamalai and Kumar, "Understanding Smartphone Use Behavior among Distance Education Students in Completing Their Coursework in English: A Mixed-Method Approach," *Reference Librarian* 61, no. 3–4 (2020): 199–215. https://doi.org/10.1080/02763877.2020.1815630.

[76] Kumar et al., "Behavioral Intention to Use Mobile Learning : Evaluating the Role of Self-Efficacy, Subjective Norm, and WhatsApp Use Habit," *IEEE Access* 8 (2020): 208058–74. https://doi.org/10.1109/ACCESS.2020.3037925.

[77] Moreno, Cavazotte, and Alves, "Explaining University Students' Effective Use of e-Learning Platforms," *British Journal of Educational Technology* 48, no. 4 (2017): 995–1009. https://doi.org/10.1111/bjet.12469.

[78] Lwoga and Komba, "Antecedents of Continued Usage Intentions of Web-Based Learning Management System in Tanzania," *Education and Training* 57, no. 7 (2015): 738–56. https://doi.org/10.1108/ET-02-2014-0014; Hsu, "The Acceptance of Moodle: An Empirical Study Based on UTAUT," *Creative Education* 3, no. 8 (2012): 44–46. https://doi.org/10.4236/ce.2012.38b010.

[79] Mpungose and Khoza, "Postgraduate Students' Experiences on the Use of Moodle and Canvas Learning Management System," *Technology, Knowledge and Learning*, September 29, 2020. https://doi.org/10.1007/s10758-020-09475-1.

[80] Maruping et al., "Going beyond Intention: Integrating Behavioral Expectation into the Unified Theory of Acceptance and Use of Technology," *Journal of the Association for*

expectation and not BI. Besides, the demographic profile indicated that most respondents were above 26 years old, indicating mature students who may also have better financial standing in supporting their technical needs than undergraduates. Additionally, they might have the means to obtain these functionalities on their own by purchasing a laptop and subscribing to internet access independently. Nevertheless, FC is not always related to technology access and computers; it also relates to academic support that the student perceives that they receive to support their learning. Another study conducted by,[81] also indicated that undergraduates do not relate FC towards BI but towards the actual use of the system.

Therefore, based on these findings, the original model indicated that 54% of students' behavioural intention to use LMS to be influenced by PE, SI, and EE but not FC. While the study indicated medium predictive power, this did not vary from another study similar study in the Malaysian context indicating 52% of variance.[82] PE strength was further strengthened when FC was removed from the model where the path coefficient value increased from β = .436 to β = .695, indicating that the primary influence is the usefulness in the mandatory setting. Nevertheless,[83] claim that postgraduate students usually have better acceptance of LMS than undergraduates due to having high regards on the value of the LMS regardless of EE. Nevertheless,[84] added that the LMS value is only seen as a repository for course material without pedagogical implications. When compared to undergradute's intention to use LMS, a study by[85] indicated that SI followed by FC were better predictors compared to PE in which the model predicted 70.1% of BI. The difference can be attributed towards the perceived value that the postgraduates have on

Information Science and Technology 68, no. 3 (2017): 623–37. https://doi.org/10.1002/asi.23699.

[81] Ain, Kaur, and Waheed, "The Influence of Learning Value on Learning Management System Use: An Extension of UTAUT2," *Information Development* 32, no. 5 (2016): 1306–21. https://doi.org/10.1177/0266666915597546.

[82] Raman et al., "Usage of Learning Management System (Moodle) among Postgraduate Students: UTAUT Model," *Asian Social Science* 10, no. 14 (2014): 186–92. https://doi.org/10.5539/ass.v10n14p186.

[83] McKeown and Anderson, "UTAUT: Capturing Differences in Undergraduate versus Postgraduate Learning?" *Education and Training* 58, no. 9 (2016): 945–65. https://doi.org/10.1108/ET-07-2015-0058.

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[85] Haron et al., "MOOC : A Technology Adoption Using UTAUT Model at Public Universities." *Test Engineering and Management* 83, no. 3146 (2020): 3146–51.

the LMS compared to the undergraduates. Nevertheless, the R^2 value is often determined by the number of predictive variables[86] and medium predictive variance may stipulate the need for additional variables to be added towards the model.

VII. Practical and theoretical implication

This study provides findings that LMS managers, faculty members, and university management might use to improve LMS for lifelong learning. While, postgraduate students' behavioural intention to use LMS is influenced mainly by PE and not EE or SI, there is a need to consider how the system's usefulness can be further improved to aid postgraduate students in achieving their learning goals. Undoubtedly, most lecturers and students view the LMS as a repository of learning contents; however, with the availability of new integrations and APIs, the possibilities of creating an engaging learning experience is more realistic.

Moreover, there is no doubt that social influence contributes positively to determining postgraduates' behavioural intention to use LMS. The LMS is capable of providing access to developing an online learning community. Therefore, university management should introduce policies that will encourage both course instructors and students to use the LMS to promote cognitive, social, and affective learning outcomes. Next, with respect to the theoretical implication, this study identified that only 54% of the variance in the dependent variable is explained by the three predictors (i.e., performance expectancy, social influence, and effort expectancy). This implies that other elements such as convinence, personal innovativeness, and technology fit could be explored in the future as it relates to PE.

VIII. Conclusion, limitation, and future research

The result highlighted that PE, SI, and EE as factors that influence behavioural intention to use LMS among postgraduate students. While, FC had no significant influence, we deduced this to the expected positive financial standing of a postgraduate student and the affordance of technology and mobile learning. However, we also recommend further investigation by exploring other factors such as perceived enjoyment, family support, and other constructs in influencing their intention. Next, as this study only reflects postgraduates from

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[86] Hair et al., "When to Use and How to Report the Results of PLS-SEM," *European Business Review* 31, no. 1 (2019): 2–24. https://doi.org/10.1108/EBR-11-2018-0203.

one faculty and does not compare the use of LMS between full-time and part-time students, future studies should include various backgrounds and compare the different learning modes. The authors also recommend that for students to fully understand the importance of LMS and accept the use of LMS, teachers/instructors play a significant role in promoting the successful use of the platform. Furthermore, a mixed-method approach comprising observation and interviews could be employed in further studies to obtain data in dissimilar ways. We also agree with[87] that research should also look into the personal experience and socio-economic background and warrants further exploration. As such, the result of this study may not be generalized to all backgrounds.

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COVID-19 experiences, impact, and implications for higher education

COVID-19 Special Section: Introduction

Emerging from the pandemic: Can the future be resilient, proactive, and sustainable?

Anca Greere

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Abstract: This introduction to the Special Section on COVID-19 experiences, impact, and implications for higher education emphasises the importance of recognising the opportunities and challenges posed by the pandemic experience, especially through emergency remote teaching and learning arrangements, and outlines various studies conducted to pinpoint recommendations for future action within higher education. The conclusions reached reinforce the notion that solutions are context-dependant and culture-specific; still, a high degree of transferability is exhibited across the four continents represented in the Special Section.

Keywords: Emergency remote teaching and learning; COVID-19 higher education response; transferability in higher education; overcoming pandemic challenges; stakeholder engagement.

In November 2021, when the Tuning Journal for Higher Education (TJHE) devoted its first section on COVID-19 experiences in higher education, with a view to documenting the challenges the higher education community had been confronted with and the emerging lessons which it could strategically take into the future, it seemed likely that the end of the pandemic was within reach. There was already a sense of confidence that it would not be long before higher education sectors could make relevant decisions about the various experiences they would want to retain and build on for the future, and the ones they would want to discard and eventually leave in the past. The pandemic resembled crisis management and exposed higher education to risks which had not been anticipated in many contexts. Some institutions likely performed better, usually

by virtue of their pre-pandemic status (i.e. where digitalisation was already a prominent feature), rather than due to thoroughly planned risk responses. Strategically, the main priority was continuity of higher education. Operationally, this resulted in a variety of solutions on the ground. Some such solutions would be deemed temporary, while others had already been recognised as having the potential to morph into more permanent actions, which institutions could see as beneficial for the future. Strengthened resilience and increased responsiveness could serve as targets while the "new normal" would be crafted. The encouragement for more proactive engagement with decision-making seemed most timely, with institutions and sectors possibly able to identify if or how they may wish to reposition themselves regionally or globally.

However, just days from the publication of the TJHE volume 9 (1), the world was thrown back into restrictions and lockdowns following the discovery of the Omicron strand, forcefully pushing higher education back into the uncertainty loop and delaying yet again the much awaited emergence from the pandemic. The TJHE continued to receive and review articles beyond the deadline that had been originally set, in recognition of the fact that pandemic realities still required a strong platform for international exchange of practices and solutions to facilitate a smooth emergence towards the much desired post-pandemic future.

Importantly, the COVID-19 Special Section in this current edition of the TJHE spans international higher education contexts, across multiple continents (Europe, Africa, the Middle East and South America), as it brings together diverse opinions, multiple voices and various perspectives to foster academic reflection, detailed analysis and on-going dialogue which can underpin decisions about the future. As the five articles included originate in very different national settings, we are, yet again, reminded of the value of assessing context specific elements and culturally relevant features in any attempt to compare and validate proposed changes, strategic and operational, which may stand the test of time. Readers will surely appreciate the innovative responses, the focussed approaches, the impactful analyses and the significant findings derived from the COVID-19 pandemic experiences, as highlighted in the following articles. The themes tackled move between overarching perspectives and detailed scrutiny and pinpoint challenges experienced by stakeholders, predominantly teachers and students. The implications of COVID-19 lockdowns are fully considered in outlining pandemic realities in the various national contexts. The conclusions are highly transferable and allow other contexts across the world to benefit from philosophical insights, social considerations, development opportunities and pragmatic solutions, which all have the aim to ensure education achieves its goals irrespective of the harsh circumstances it may face.

The first article *'Virtual education during COVID-19 in higher education: A systematic review'* sets the scene for and provides a bird's eye view of challenges encountered and valuable lessons learned during COVID-19. Co-authored by Fatima del Socorro Torres-Caceres, Juan Méndez-Vergaray, Edith Gissela Rivera-Arellano, Mildred Jénica Ledesma-Cuadros, Yolanda Josefina Huayta-Franco, and Edward Flores, the article proposes a systemic review of virtual higher education during the COVID-19 pandemic by applying a dedicated search methodology across the following platforms: Scopus, EBSCO, Springer Open, ProQuest, and One File. Out of 230 studies identified between May 10, 2021 and June 4, 2021, 45 were declared eligible for analysis with a view to formulating conclusions on online teaching and learning, digital competence tutoring and technological tools, as manifested during remote educational delivery under the COVID-19 pandemic. The studies were in English and Spanish and were interpreted qualitatively, thus allowing for an in-depth perspective into relevant themes.

Pertinently recognising that educational innovation promoting virtual delivery comes with demands on educational resources, improved ICT literacy and a stronger focus on accessibly, flexibility and agility in rolling out teaching and learning activities, the authors set out to ascertain the expectations placed on staff and students and to determine how realistic they can be in context. It is found that, although accompanied by many challenges, online teaching and learning is noted by a majority of studies to constitute a prospect for future developments, saving time and resources and emphasizing autonomy and self-regulation of students. Deploying digital competencies and the need to engage with multiple parallel tools are reported to have enhanced the educational experience. Still, it is highlighted that digitalization expectations increased workload and continuous professional development requirements during the COVID-19 lockdowns, while frequently determining teachers to self-train if they wanted to perform to standard. Interestingly, the study also flags a mismatch between the expectations of educational designers and the realities relating to digital competencies of the young generations, with there being the (sometimes) wrong assumption that modern-day students require little, if any, training to use educational tools.

Although not the prime focus of the study, an important outcome results from the identification of research tools used to analyse COVID-19 realities linked to educational innovation and sheds light in relation to methodological preoccupations and opportunities available during the pandemic and the themes likely to be scrutinized for investigation.

The second article *'Revealing invisibility: Interpreting social and behavioral aspects of the Coronavirus pandemic through student documentary*

photography' takes us to Europe and the Czech Republic as authors Ivo Jirásek and Bohuslav Stránský delve into student reactions to a very strict lockdown imposed by authorities and the options available to facilitate continuity of professionally-oriented, practice-based activities which were deemed imperative for the achievement of learning outcomes. The authors outline the creative solutions applied and the outstanding results which saw Digital Photography students complete assignments as visual narratives or photo novellas, accompanied by verbal commentaries, to reflect the social situation during the COVID-19 crisis.

Art education recognised as a profoundly practice-driven activity, if it is to be successful, the article demonstrates that solutions can be found to compensate the lack of availability in regards internships or the difficulties to sustain laboratory/project-based learning. Such solutions also emphasize the social and citizenship skills which can be accelerated during crisis situations, allowing stronger introspection and self-awareness by comparison with behaviour generated in "normal" circumstances. With the article focusing on identifying the themes, which emerged as part of such assignments, and the social implications of the lockdown context, it is important to note the transferability of the study. As such, the study has the capacity to prompt other practice-based domains to innovate and be creative in order to enable students to have practice exposure and the opportunity to acquire underpinning social skills. Beyond the pragmatic level which addresses an imminent educational gap created by the COVID-19 crisis, the authors also pose a number of philosophical questions aimed at raising awareness about the implications for education, specifically, and societal rights and obligations, more broadly. The article concludes with an invitation to make more use of imaginative opportunities, for education in general, and of the connection between artistic imagination and verbal interpretation, specifically as part of the pedagogical process in art programmes.

In the third article *'Emergency remote teaching and learning during COVID-19 pandemic: Efficacy of a four-stage model'* Seena Joseph, Robyn Thompson, Subashnie Soobramoney, and Jeanette Wendy Wing present the COVID-19 situation as experienced in South Africa and evaluate the emergency remote teaching model implemented, in consequence. The four stage model is described to have consisted of: preparation, synchronous and asynchronous teaching and learning, e-assessments, and reflections, with the involvement of both lecturers and students. The evaluation is qualitative and quantitative and seeks to comparatively analyse the degree of implementation of the model for the 2019 and 2020 academic years, aiming to ascertain levels of development and progress from one year to the next. The study

acknowledges the differences between properly planned online education and emergency remote teaching as rolled out during the pandemic and aims to determine what opportunities may be opened for higher education having gone through the experience of emergency remote teaching and learning.

Overall, it is established that emergency remote teaching served its purpose to allow lecturers and students to progress with planned activities and that the four stages were relevant to ensure consistency and continuity of application. Furthermore, the experience gained is seen to open up the opportunities for pedagogical restructure where a multimodal approach is deemed suitable and can enhance post-pandemic education. As such, the detailed analysis provides transferable recommendations to Learning Management System developers aiming to enhance the design of online classrooms for a successful implementation of multimodal teaching and learning.

The fourth article *'UAE-based first-year university students' perception of lifelong learning skills affected by COVID-19'* is set in the United Arab Emirates. The author, Tanju Deveci, looks at students' perception of lifelong learning skills and the way these might have been affected by the COVID-19 experience, but also how their presence may have facilitated students to navigate the COVID-19 restrictions. The study chooses first-year students recognising that they may have been exposed to a greater risk due to their limited tertiary education experience. Using both quantitative and qualitative data collection tools, aspects such as adaptable learning strategies and goal-setting are investigated to ascertain if the capacity to apply autonomous, self-directed learning was influenced by the unprecedented COVID-19 situation. Interestingly, the study found that under COVID-19 lockdowns students did not manifest any major lapses, and that those who considered having strong lifelong learning skills prior to the pandemic found themselves performing better in response to the expectations set under emergency remote teaching and learning conditions. The study also distinguishes between male and female students and does find some significant differences, with female students finding it more difficult to maintain longer term motivation and to goal-set appropriately. In conclusion, recommendations are formulated towards institutions, generally, and teachers, specifically, in how such findings may be brought into the design of teaching and learning. This impacts on how individual and collective interactions with students might need to be adjusted for best possible results when lifelong learning skills are also targeted for the achievement of learning outcomes, which they are, indeed, in many university settings.

The final article *'Emergency remote education: A perspective of its potentialities and limitations in a Peruvian university'* included in the

COVID-19 Special Section explores emergency remote education through its potentialities and limitations. The Peruvian authors, Israel Barrutia Barreto and Santiago Saturnino Patricio Aparicio, set the background by recognising that a clear understanding of the potentialities and national limitations of each education system in each country facilitated plans of action which could render remote teaching successful in context. Emergency remote education was assumed with restrictions of technological, educational, personal, and social character that did not allow normal development of the learning process during the pandemic.

The study investigates the experiences of 123 teachers and seeks to articulate relevant conclusions which could support future-proofing actions. Amongst potentialities, flexibility and infrastructure are identified; but, it is acknowledged that these also pose elements of limitations, such as time management, study habits and attention span, and accessibility and connectivity, which need careful consideration in context. Digital competencies of both teachers and students and the scarce level of social interaction caused by social isolation are also classed as limitations, and would require increased attention for future developments. The authors conclude that emergency remote education is a valid option and should be considered as policy for the prevention of new events that may generate possible educational interruptions or even require mandatory lockdowns, and agree that such an approach can enhance resilience and offer more sustainability.

Notable, all articles consider future developments and propose that the findings uncovered be used as guidance for any similar crisis situations, with mandatory isolation, which may present themselves in the future. It is evident that, from the perspective of the institutions and the researchers, better risk identification and crisis management are necessary; more policy and planning to mitigate such circumstances of prolonged disruption are essential to avoid the unpreparedness the world of higher education was confronted with under COVID-19. The reactions of teachers and students play a key role in ascertaining what measures need to be in place and what adjustments could facilitate the guarantee of continuity and quality into the future.

The COVID-19 pandemic has clearly raised awareness about the need to future-proof through resilient educational responses and sustainable educational offerings. Notwithstanding the challenges that the higher education sector was confronted with, the COVID-19 experience has also revealed a large pool of opportunities, which institutions and governments may wish to proactively embrace. However, if strategic goals are to be re-visited, it remains important for studies such as these presented here to

draw attention to the complexities which have been experienced and to make realistic recommendations which truly justify change in context and culture.

Clearly, emergency remote teaching and learning is not a viable substitute for properly planned and intentionally offered blended or online education, and where decisions are taken to continue with blended or online educational scenarios, the recommendations are strongly pointing towards the need to approach such decisions strategically and in full awareness of the lessons learned. It would be unfortunate for institutional and national contexts to not afford themselves relevant reflection time and proper consideration for how they may wish to position themselves into the future. It would be even more unfortunate to leap into decisions which cannot be strategically justified and which do not resemble the mission and vision of institutional and national cultures.

If at the end of the November 2021 issue, I noted that: "it seems common sense to affirm that, at the current moment, anyone invested in higher education who is still postponing to make strategic decisions in anticipation of post-pandemic times is choosing to ignore the obvious signs of opportunity and the predictive prompts for change," adding also that "…while 2020 and much of 2021 was, unavoidably, spent in a reactive mode, [for] 2022, a shift towards more proactive tactics will be an advantage", it now becomes equally important to encourage for such decisions to be the result of ample consultations that ensure all stakeholders are included as partners in the ongoing debate and as co-creators of the future. The options on the table evidence online, blended, hybrid and in-person delivery or a mix of all of the above as feasible and desirable, depending on context, culture, and, why not, ambitions. Multimodality is highly likely to stay into the future penetrating a variety of national contexts and educational cultures. Therefore, it is important that we, as a sector, responsibly and collectively reflect on the lessons learned and assure how multimodality is retained, and that it justifiably is retained, to enhance the quality of educational experiences.

The call for contributions for the COVID-19 Special Section has now closed, but the dialogue needs to continue. Therefore, we invite higher education institutions, quality assurance agencies, ministerial bodies, industry representatives, and other stakeholders to continue with this thematic area and TJHE will review and publish any COVID-19 related articles in the general section.

COVID-19 Articles

Virtual education during COVID-19 in higher education: A systematic review

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Edith Gissela Rivera-Arellano, Mildred Jénica Ledesma-Cuadros,
Yolanda Josefina Huayta-Franco, and Edward Flores*

Abstract: The objective of the present systematic review aimed to analyze studies linked to online teaching-learning, digital competence tutoring, and technological tools in virtual education during COVID-19 in higher education. The suggested methodology by the PRISMA declaration was pursued; the information search was conducted in Scopus, EBSCO, Springer Open, ProQuest, and One File. The target period ranged from May 10, 2021, to July 4, 2021; the identification, screening, eligibility, and inclusion for its progress were performed. The search produced a total of 230 studies, with 45 remaining. The inclusion criteria included original peer-reviewed research articles and qualitative and quantitative studies in higher education, comprising

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teachers and students addressing the study objective. In contrast, the exclusion criteria covered bibliographic reviews with procedural deficiencies, studies not exposed to a peer review process, and those not depicting a relationship with parts of the study. The results reveal that online teaching-learning, digital competence tutoring, and technological tools have been affirmative features expected to persist in higher virtual education engendered by the COVID-19 pandemic.

Keywords: Online learning; distance learning; distance education; teaching digital competence; technological tools.

I. Introduction

Globally, the health crisis required the implementation of online teaching-learning to give continuity to the educational liaison: teacher-student-parent in simulated milieu, and the social distancing measure coerced the teacher to readapt to the new setting of teaching-learning processes, new pedagogical practices, needing a permanent transformation and conducive to the future.[1]

Moreover, the pandemic caused by COVID-19 has brought radical changes in the financial, social, health, and educational spheres. Therefore, Latin American countries had to acclimatize to the changes engendered by the pandemic. It included modifications in their educational policies, technological and pedagogical revolution, reinforcement of digital competencies, and implementation of novel virtual teaching-learning practices in varied educational modalities.[2,3,4]

Educational innovation demands the acquisition of new knowledge, procedures, products, and services to enhance teachers' pedagogical practices, infrastructure, and technological resources in line with changing times.[5] Furthermore, it suggests innovation of educational resources, improved

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[1] Enaidy Reynosa et al., "Adaptación docente educativa en el contexto COVID-19: Una revisión sistemática," Revista Conrado, 16(77) (2020): 141–149, https://conrado.ucf.edu.cu/index.php/conrado/article/view/1580.

[2] Julio Cabero-Almenara and Carmen Llorente-Cejudo, "COVID-19: transformación radical de la digitalización en las instituciones universitarias," *Campus Virtuales*, 9(2) (2020): 26, http://www.uajournals.com/ojs/index.php/campusvirtuales/article/view/713.

[3] Lina Rosa Parra-Bernal et al., "Las prácticas pedagógicas. Una oportunidad para innovar en educación," Revista Latinoamericana de Estudios Educativos, 17(1) (2021): 70–94, https://doi.org/10.17151/rlee.2021.17.1.5.

[4] María S. Ramírez-Montoya, "Transformación digital e innovación educativa en Latinoamérica en el marco del COVID-19," Campus Virtuales, 9(2) (2020): 123–139, http://uajournals.com/ojs/index.php/campusvirtuales/article/view/744.

[5] María S. Ramírez-Montoya, "Transformación digital e innovación educativa en Latinoamérica en el marco del COVID-19". Campus Virtuales, 9(2) (2020): 123–139, http://uajournals.com/ojs/index.php/campusvirtuales/article/view/744.

literacy in computer media assisted by the virtual form of learning with ICT tools, the eradication of space-time relationship restricting the teaching and rendering the students build their knowledge independently in these contexts.[6] To this end, Nuere and De Miguel[7] note that distance learning can be simultaneous, in real-time, and asynchronous when the interaction between teacher and student ensues at different times and places.

Online teaching-learning can render university education more accessible, malleable to teach and learn anywhere, anytime, less costly, more interactive, and student-centered. Yet, it poses difficulties concerning the lack of equipment and access, restricted ICT skills, low-speed Internet connections, specifically among the poorest families.[8] It causes deep concern among teachers as they experience hardships in developing synchronous teaching processes and asynchronous feedback. Thus, accentuating asynchronous feedback, a viable alternative to keep training professionals, is critical.[9,10] The online teaching-learning process can occur in any place, environment, and time flexibly where the teacher is a facilitator, collaborator, mentor, and trainer having pronounced responsibility and pledge toward the students' learning.[11] Similarly, Crisol-Moya et al.[12] reported that in virtual education, the pedagogical and technological aspects of the teaching-learning process must have a specific quality to expedite communication with students and broaden the horizon of access.

Teachers must equip themselves with innovative didactic strategies and digital educational materials during the teaching-learning process, making

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⁶ Carlos Zurita et al., "Análisis crítico de ambientes virtuales de aprendizaje. Utopia y Praxis Latinoamericana," Revista Internacional de Filosofía y Teoría Social, 25(Extra11) (2020): 33–47, https://doi.org/http://doi.org/10.5281/zenodo.4278319.

⁷ Silvia Nuere and Laura De Miguel, "The Digital/Technological Connection with COVID-19: An Unprecedented Challenge in University Teaching," Technology, Knowledge and Learning, (2020), https://doi.org/10.1007/s10758-020-09454-6.

⁸ José Luis Abreu, "Tiempos de Coronavirus: La Educación en Línea como Respuesta a la Crisis," Daena: International Journal of Good Conscience, 15(1) (2020): 1–15.

⁹ Siddhartha Dutta et al., "The satisfaction level of undergraduate medical and nursing students regarding distant preclinical and clinical teaching amidst COVID-19 across India," Advances in Medical Education and Practice, 12 (2021):113–122, https://doi.org/10.2147/AMEP.S290142.

¹⁰ José Martínez-Garcés and Jacqueline Garcés-Fuenmayor, "Competencias digitales docentes y el reto de la educación virtual derivado de la COVID-19,'' Educación y Humanismo,'' 22(39) J. (2020): 1–16, https://doi.org/10.17081/eduhum.22.39.4114.

¹¹ Unung Verawardina et al., "Journal of Talent Development and Excellence,'' 12(3) (2020):385–392, https://www.iratde.com/index.php/jtde/article/view/281.

¹² Emilio Crisol-Moya, Liliana Herrera-Nieves, and Rosana Montes-Soldado, "Educación virtual para todos: una revisión sistemática." Education in the Knowledge Society, (21) (2020):1–13, https://doi.org/10.14201/eks.20327.

classes more engaging and motivating along with the needs and preferences of students.[13] On top of that, Liesa-Orús et al.[14] suggested a methodological revitalization of the teacher to undertake a superintendent role in the teaching-learning process. It included active methodologies, concentrating on the students to improve their participation. Also, it prioritized collaborative work, encouraged learning autonomy, and nurtured the acquisition of competencies and skills, crucial in the 21st century.

The paradigm shift in the educational system asks teachers to adapt to digitalized models using technological tools and digital competencies to get optimal results in meeting students' needs. It, reformed to the current reality, increasingly centers on "telework" and "working with ICTs," allowing the skills and abilities for effective technology deployment in many sources and channels in the educational setting[15]. Thus, the teachers' digital competence is a priority for online education, providing continuous training and covering the software use, online platforms, digital resources, and online assessment during the teaching-learning process.[16,17]

Information technology tools have altered and affected the pedagogical practice, ignoring the traditional teaching-learning methodology, posing opportunities for more efficient communication between students and teachers, incredible in the past. Today, a student must socialize before being exposed to the online teaching-learning process.[18,19] Thus, adequate utilization of

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[13] Unung Verawardina et al., "Reviewing online learning facing the COVID-19outbreak," Journal of Talent Development and Excellence, 12(3) (2020):385–392, https://www.iratde.com/index.php/jtde/article/view/281.

[14] Marta Liesa-Orús et al., "The technological challenge facing higher education professors: Perceptions of ICT tools for developing 21st Century skills." Sustainability (Switzerland), 12(13) (2020):1–14, https://doi.org/10.3390/su12135339.

[15] Aída López et al., "Un nuevo paradigma en la enseñanza universitaria basado en competencias digitales para profesores," Campus Virtuales, 9(2) (2020):71–82, http://www.uajournals.com/ojs/index.php/campusvirtuales/article/view/737.

[16] A. D Olofsson, G. Fransson, and J.O Lindberg, "A study of the use of digital technology and its conditions with a view to understanding what 'adequate digital competence' may mean in a national policy initiative." Educational Studies," 46(6) (2020):727–743, https://doi.org/10.1080/03055698.2019.1651694.

[17] Amiya Kumar Mohapatra, "Impact of COVID-19on Higher Education," Journal of Management & Public Policy, 11(2) (2020): 4–6, http://search.ebscohost.com/login.aspx?direct=true&db=bth&AN=144532553&lang=es&site=eds-live.

[18] Atul Bamrara, "Examining the status of ICT usage in teaching – Learning Process," International Journal for Environmental Rehabilitation and Conservation, 10(1) (2019):59–63, https://www.doi.org/10.31786/09756272.19.10.1.108.

[19] Enaidy Reynosa et al., "Adaptación docente educativa en el contexto COVID-19: Una revisión sistemática", Revista Conrado, 16(77) (2020): 141–149, https://conrado.ucf.edu.cu/index.php/conrado/article/view/1580.

technological tools demands initial and permanent training in teaching practice. It targets to adapt to the technology abundance in education, incorporating them commendably and competently in the teaching-learning process.[20]

Therefore, the objective of this systematic review was to review studies on online teaching-learning, digital competence tutoring, and technological tools in virtual education during COVID-19 in higher education.

II. Methodology

The systematic literature review was performedusing a qualitative approach.[21] To this end, the documentary analysis of scientific articles was utilized, entailing the discovery and examination, with relevant knowledge and information for research.[22] It charted the methodology recognized in the PRISMA declaration, enabling a solid process of methods and results, enriching the studies of systematic reviews and meta-analyses.[23] The information search was in English and Spanish, with the databases of Scopus, EBSCO, Springer Open, ProQuest, and One File having the following keywords' combination: "Online teaching-learning and virtual education and COVID-19," "Digital competence in teaching and virtual education and COVID-19," and "Technological tools and virtual education and COVID-19," considered from the subcategories presented in Table 1.

The target period was from May 10, 2021 to July 4, 2021, where the identification, screening, eligibility and inclusion were carried out. The search for articles in the database consulted yielded a total of 230, of which 45 studies remained, establishing as inclusion criteria: peer-reviewed original research articles, qualitative, quantitative and mixed studies in higher education involving teachers and students addressing the study objective; exclusion criteria: literature reviews, with methodological deficiencies, studies that were not subjected to a peer review process and those that did not demonstrate a relationship with the categories that are part of the study (see Figure 1).

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[20] Marta Liesa-Orús et al., "The technological challenge facing higher education professors: Perceptions of ICT tools for developing 21st Century skills" Sustainability (Switzerland), 12(13) (2020):1–14, https://doi.org/10.3390/su12135339.

[21] Roberto Hernández-Sampieri and Cristina Paulina Mendoza, "Metodología de la Investigación. Las rutas Cuantitativa Cualitativa y Mixta. In Metodología de la investigación. Las rutas cuantitativa, cualitativa y mixta", (2019), https://virtual.cuautitlan.unam.mx/rudics/?p=2612.

[22] M., Tamayo, "El proceso de la investigación científica," (2003), https://doi.org/10.1007/s13398-014-0173-7.2.

[23] G., Urrutia, and X. Bonfill, PRISMA_Spanish.pdf. Medicina Clínica, 135(11) (2010): 507–511.
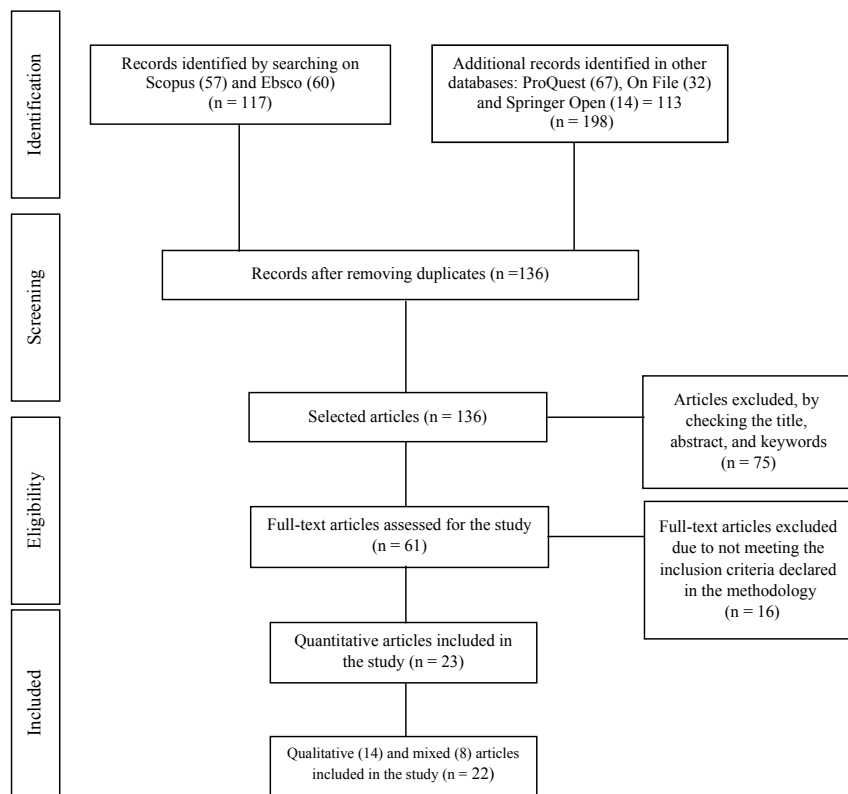
Figure 1

Adaptation of PRISMA, flowchart

III. Results and discussion

While performing the initial search in the above Databases, 230 qualitative, quantitative, and mixed scientific articles in higher education were retrieved. They encompassed teachers and students, contending with the objective of the study. The 136 articles were debarred due to duplicates; similarly, 75 were disqualified by checking title, abstract, and keywords. Eventually, 16 articles did not meet the inclusion criteria indicated in the methodology, thus excluded. The remaining was 45 articles for an extensive review and investigation as detailed below:

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Table 1

Investigations included in the systematic review

N°	Author	Methodology		Subcategories		
		Research type	Instrument, technique or method	Online teaching-learning	Teaching digital competence	Techno-logical tools
1	(García-de-paz and Santana, 2021)	Qualitative	Interview Documentary analysis	X		
2	(Ramírez-Montoya, 2020)	Qualitative	Questionnaire		X	
3	(Martínez-Garcés and Garcés-Fuenmayor, 2020)	Quantitative	Questionnaire		X	
4	(Fernández-Regueira et al., 2020)	Mixed	Questionnaire and Documentary analysis	X		
5	(Zacarias and Salgado, 2020)	Qualitative	Questionnaire		X	
6	(Arántzazu de las Morenas, 2020)	Mixed	Questionnaire Interview	**X**		X
7	(Zurita et al., 2020)	Mixed	Descriptive Documentary Analysis			X
8	(Amaya et al., 2021)	Quantitative	T-Pack test	X		
9	(Alamer and Alharbi, 2021)	Quantitative	Questionnaire			X
10	(Drake et al., 2021)	Quantitative	FAST exam			X
11	(Hew et al., 2020)	Mixed	Online assessment	X		
12	(Ashry et al., 2020)	Quantitative	Questionnaire	X		
13	(Venera et al., 2020)	Quantitative	Questionnaire	X		
14	(Ferri et al., 2020)	Qualitative	Case Study	X		
15	(Amir et al., 2020)	Quantitative	Questionnaire	X		

N°	Author	Methodology		Subcategories		
		Research type	Instrument, technique or method	Online teaching-learning	Teaching digital competence	Techno-logical tools
16	(Pozo-Rico et al., 2020)	Mixed	Questionnaire Inventory (stress)		X	
17	(Portillo et al., 2020)	Quantitative	Questionnaire		X	
18	(Kara et al., 2020)	Qualitative	Virtual Environment			X
19	(Robles and Fernández, 2021)	Quantitative	ABP Intervention Program	**X**	X	**X**
20	(Sangeeta and Tandon, 2020)	Quantitative	Questionnaire			X
21	(Torres et al., 2021)	Quantitative	Questionnaire		X	
22	(König et al., 2020)	Quantitative	Questionnaire	X	**X**	
23	(Tejedor et al., 2020)	Quantitative	Questionnaire		X	
24	(Molise and Dube, 2020)	Qualitative	Interview	X	**X**	
25	(Hortigüela-Alcalá et al., 2020)	Quantitative	Questionnaire	X		
26	(Palau et al., 2020)	Qualitative	Interview	X		
27	(Montenegro et al., 2020)	Quantitative	Questionnaire	X		
28	(Sales et al., 2020)	Qualitative	Interview		**X**	X
29	(Ruiz-Ramirez et al., 2020)	Qualitative	Interview		X	
30	(Schina et al., 2020)	Quantitative	Questionnaire	**X**	X	
31	(Acevedo-Duque et al., 2020)	Quantitative	Questionnaire		X	
32	(Albó et al., 2020)	Quantitative	Questionnaire	**X**	X	

N°	Author	Methodology		Subcategories		
		Research type	Instrument, technique or method	Online teaching-learning	Teaching digital competence	Techno-logical tools
33	(Pérez-Jorge et al., 2020)	Quantitative	Questionnaire		X	**X**
34	(Lie et al., 2020)	Qualitative	Interview	X	**X**	
35	(Dutta et al., 2021)	Quantitative	Questionnaire	X		**X**
36	(Naidoo, 2020)	Qualitative	Interactive Qorkshops			X
37	(Hossain, 2021)	Mixed	Open Questionnaires	X		**X**
38	(Sepasgozar, 2020)	Qualitative	Interview			X
39	(Fernandez et al., 2021)	Mixed	Open Questionnaires		X	
40	(Zhang, 2020)	Qualitative Ethnographic	Personal Narration	X		
41	(Fathima and Savitha, 2021)	Quantitative	Questionnaire	X		
42	(Ożadowicz, 2020)	Quantitative	Questionnaire	**X**		X
43	(Yan and & Batako, 2020)	Quantitative	Questionnaire	X		
44	(Noor et al., 2020)	Qualitative	Interview	**X**		X
45	(Zambrano, 2020)	Mixed	Open Questionnaires		X	

Table 2 depicts the broad distribution of the 45 analyzed scientific articles: 51.1% (23) studies were quantitative; 8 corresponded to the subcategory online teaching-learning, 5 to the subcategory teaching digital competence, 3 to the subcategory technological tools, and seven studies exhibited interrelation between subcategories. However, 31.1% (14) were qualitative research, with four conforming to the subcategory online teaching-learning, three to teaching digital competence, and three to the technological tools. Four studies displayed interrelation between subcategories. Ultimately, 17.8% (8) articles were the mixed type, with two

belonging to the online teaching-learning, three to teaching digital competence, and one to the technological tools. Two studies showed interrelation between subcategories.

Table 2

Number of scientific articles reviewed and analyzed

Research type	Related subcategory				Frequency	%
	Online teaching-learning	Teaching digital competence	Technological tools	Interrelationship between Subcategories		
Quantitative	8	5	3	7	23	51.1
Qualitative	4	3	3	4	14	31.1
Mixed	2	3	1	2	8	17.8
Total	14	11	7	13	45	100

Subcategory online teaching-learning

The findings of the analyzes of the articles reviewed revealed that that online teaching-learning during the pandemic has had new methodologies, strategies, pedagogical approaches, and platforms explicitly engineered for virtual settings during the teaching-learning process and will be increasingly efficient and pose a prospect for a more viable educational system.[24,25,26,27] Also, online teaching-learning is flexible and diverges, enabling active interaction between teachers and students and expediting communication with "free discussion and debate" through virtual platforms to apply language skills. Moreover, it increases the virtual methods' acquaintances,

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[24] Lisa R. Amir et al., "Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia", Medical Education, 20(1) (2020):2–8, https://doi.org/10.1186/s12909-020-02312-0.

[25] Fernando Ferri, Patrizia Grifoni, and Tiziana Guzzo, "Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations", Societies, 10(86) (2020):2–18, https://doi.org/10.3390/soc10040086.

[26] Sergio García-de-paz and Pablo Joel Santana Bonilla, "La transición a entornos de educación virtual en un contexto de emergencia sanitaria: estudio de caso de un equipo docente en Formación Profesional Básica," Revista de Educación a Distancia, 21(9) (2021):1–25, https://revistas.um.es/red/article/view/450791.

[27] Despoina Schina et al., "The integration of sustainable development goals in educational robotics: A teacher education experience2, Sustainability, 12(23) (2020):1–15, https://doi.org/10.3390/su122310085.

saving time and resources in synchronous relations in webinars and teleconferences.[28,29]

Accordingly, the studies disclose that the novel online teaching modality presents teachers the opportunity to urge the autonomy and self-regulation of students, test varying styles of synchronous and asynchronous teaching, implement advanced collaborative formats to form tasks, provide feedback and check multiple communication modes with students and their parents recognizing that communication with teachers has been constructive.[30,31] With a change in online teaching methodology, teachers have quickly undertaken their digitized pedagogical practices, despite specific difficulties using technological tools. It is due to their limited experience causing them to contract a slow work pace.[32,33,34]

Yet, some studies have noted that in online teaching, teachers confront many challenges: inadequate student participation due to not possessing the needed electronic devices for online classes, low or no internet connection, deprived supervision of virtual educational settings by parents. There also exist difficulties in holding students' attention, deficiency of social interaction with the students, monumental time devoted to class preparation and

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[28] Andrzej Ożadowicz, "Modified blended learning in engineering higher education during the COVID-19 lockdown-building automation courses case study," Education Sciences, 10(10) (2020):1–20, https://doi.org/10.3390/educsci10100292.

[29] Ning Yan and Andre DL Batako, "Online Teaching: A Relational Study of Perception and Satisfaction," International Journal of TESOL Studies, 2(4) (2020):128–145, https://doi.org/10.46451//ijts.2020.12.12.

[30] David Hortigüela-Alcalá et al., "Familias y Docentes: Garantes del Aprendizaje durante el Confinamiento," "Revista Internacional de Educación Para La Justicia Social," 9(3) (2020):353–370, https://doi.org/10.15366/RIEJS2020.9.3.019.

[31] Johannes König, Daniela J. Jäger-Biela, and Nina Glutsch, "Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany," European Journal of Teacher Education, 43(4) (2020):608–622, https://doi.org/10.1080/02619768.2020.1809650.

[32] Laia Albó et al., "Emergency remote teaching: Capturing teacher experiences in spain with selfie," Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics), Vol. 12315 LNCS (2020), https://doi.org/10.1007/978-3-030-57717-9_23.

[33] Martín Arántzazu de las Morenas, "Percepciones de alumnos y docentes de 5° y 6° de educación primaria sobre la modalidad de educación a distancia implantada temporalmente en España por COVID-19," Enseñanza & Teaching, 38(2) (2020): 157–175, https://doi.org/10.14201/et2020382157175.

[34] Uxia Fernández-Regueira, Adriana Gewerc, and Martín Llamas-Nistal, "El profesorado universitario de Galicia y la enseñanza remota de emergencia: condiciones y contradicciones," Campus Virtuales, 9(2) (2020): 9–24, http://www.uajournals.com/ojs/index.php/campusvirtuales/article/view/731.

homework assessment, changes in students' learning behavior, and families' precincts to attend virtual tasks.[35,36,37,38,39,40,41]

However, most students readily adapted to modifications in the combined intervention and assessment procedures through a synchronous and asynchronous connection. It helps them search for novel things and didactic material supplied by their teachers during virtual classes, positively impacting the educational progression.[42,43,44] Yet, students deal with challenges such as instability in the internet connection, extra financial burden, time management, scanty concentration in virtual classes at home during this acclimatization. Moreover, situational issues

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[35] Ahmed Hamdy Ashry, Hussein Mohammed Soffar, and Mohamed Fathalla Alsawy, "Neurosurgical education during COVID-19: challenges and lessons learned in Egypt," Egyptian Journal of Neurology, Psychiatry and Neurosurgery, 56(1) (2020):110, https://doi.org/10.1186/s41983-020-00242-8.

[36] Fernandez CSP et al., "Training 'Pivots' from the Pandemic: Lessons Learned Transitioning from In-Person to Virtual Synchronous Training in the Clinical Scholars Leadership Program," Journal of Healthcare Leadership, 13 (2020):63–75, https://doi.org/10.2147/jhl.s282881.

[37] David Hortigüela-Alcalá et al., "Familias y Docentes: Garantes del Aprendizaje durante el Confinamiento," Revista Internacional de Educación Para La Justicia Social, 9(3) (2020):353–370, https://doi.org/10.15366/RIEJS2020.9.3.019.

[38] Shaista Noor, Filzah Md. Isa, and Faizan Farid Mazhar, "Online Teaching Practices During the COVID-19 Pandemic," Educational Process: International Journal, 9(3) (2020):169–184, https://doi.org/10.22521/edupij.2020.93.4.

[39] Ramon Palau, Jordi Mogas, and María José Ucar, "¿Cómo han gestionado los conservatorios de música españoles los procesos de enseñanza-aprendizaje durante el confinamiento del COVID-19?," Revista Electronica de LEEME, 46 (2020):108–124, https://doi.org/10.7203/LEEME.46.18110.

[40] Luis Leonardo Zambrano Vacaela, "Uso de la Tecnología de la Información y Comunicación en educación virtual y su correlación con la Inteligencia Emocional de docentes en el Ecuador en contexto COVID-19," Revista Ibérica de Sistemas e Tecnologías de Información, 40(12) (2020):31–44, https://doi.org/10.17013/risti.40.31-44.

[41] Chun Zhang, "From Face-to-Face to Screen-to-Screen: CFL Teachers' Beliefs about Digital Teaching Competence during the Pandemic," International Journal of Chinese Language Teaching, 1(1) (2020):35–52, https://doi.org/10.46451/ijclt.2020.06.03.

[42] Fathima, E. V. and Savitha, E., "Gendered Inequalities of Access: Online Classes in the Times of the Pandemic" Journal of Comparative Literature and Aesthetics, 44(1) (2020):68–78, https://link.gale.com/apps/doc/A655258324/AONE?u=univalle&sid=AONE&xid=6bd15512.

[43] Francisco Javier Robles Moral and Manuel Fernández Díaz, "Future Primary School Teachers' Digital Competence in Teaching Science through the Use of Social Media," Sustainability, 13(5) (2021):1–13, https://doi.org/10.3390/su13052816.

[44] Cristina Venera Tartavulea et al., "Online teaching practices and the effectiveness of the educational process in the wake of the COVID-19Pandemic," Amfiteatru Economic, 22(55) (2020):920–936, https://doi.org/10.24818/EA/2020/55/920.

increase the social need directly or indirectly, impacting their academic performance.[45,46,47]

Like so, many studies disclose that students favor face-to-face classes as they provide them with an actual study environment, face-to-face learning, continual discussion, audiovisual interaction on texts associated with the study, and a blackboard for sharing questions and answers. Moreover, these classes offer adequate comprehension and the likelihood of facing a real communication setting between students and teachers. Yet, students consider that with online teaching, teachers are more considerate, solve uncertainties, learning is engaging and inspiring to partake in debates, time is properly used. On top of that, the content quality is comparable to conventional education, and the topics and ideas are exchanged appropriately and help students acquire technical knowledge, rendering them technically capable.[48,49,50]

Subcategory digital competence

The research reveals digital transformations' necessitated changes in culture, knowledge management, and open education. It has caused the enhancement and innovation of the teacher's pedagogical practices of[51]

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[45] Lisa R. Amir et al., "Student perspective of classroom and distance learning during COVID-19 pandemic in the undergraduate dental study program Universitas Indonesia," Medical Education, 20(1) (2020):2–8, https://doi.org/10.1186/s12909-020-02312-0.

[46] Mozaffor Hossain, "English Language Teaching through Virtual Classroom during COVID-19 Lockdown in Bangladesh: Challenges and Propositions," Journal of English Education and Teaching (JEET), 5(1) (2021):41–60, https://ejournal.unib.ac.id/index.php/JEET/article/view/13724.

[47] Sofía Montenegro, Esther Raya, and Fermín Navaridas, "Percepciones Docentes sobre los Efectos de la Brecha Digital en la Educación Básica durante el COVID-19," Revista Internacional de Educacion Para La Justicia Social, 9(3) (2020):317–333, https://doi.org/10.15366/RIEJS2020.9.3.017.

[48] Siddhartha Dutta et al., "The satisfaction level of undergraduate medical and nursing students regarding distant preclinical and clinical teaching amidst COVID-19across India," Advances in Medical Education and Practice, 12 (2021):113–122, https://doi.org/10.2147/AMEP.S290142.

[49] Mozaffor Hossain, "English Language Teaching through Virtual Classroom during COVID-19 Lockdown in Bangladesh: Challenges and Propositions," Journal of English Education and Teaching (JEET), 5(1) (2021):41–60, https://ejournal.unib.ac.id/index.php/JEET/article/view/13724.

[50] Ning Yan and Andre DL Batako, "Online Teaching: A Relational Study of Perception and Satisfaction," International Journal of TESOL Studies, 2(4) (2020):128–145, https://doi.org/10.46451//ijts.2020.12.12.

[51] María S. Ramírez-Montoya, "Transformación digital e innovación educativa en Latinoamérica en el marco del COVID-19," Campus Virtuales, 9(2) (2020): 123–139, http://uajournals.com/ojs/index.php/campusvirtuales/article/view/744.

allowing teachers and students to progressively get used to these new educational demands in the virtual environment. The updated fundamental modality replying emphatically to the current reality has coerced teachers to acquire high-quality technological equipment, internet connectivity, and reinforcing digital skills for developing online teaching-learning.[52,53,54,55]

Notwithstanding, the use of technologies embodies a didactic resource for sustenance, communication, and observing during the teachers' online pedagogical practices compelling them to employ some digital implements, including WhatsApp, Google Drive, email, Zoom, Khan Academy, WhatsApp Web, Google Classroom, Facebook, Microsoft Team, and others, securing the continuation of classes through an application.[56] Nevertheless, many teachers endure hardships and limitations in their digital skills while editing extant digital material. They include specifying and managing information, limited by their digital literacy and usage of technological tools. This is especially true for teachers having higher age and employed in public schools, causing a heavier workload and aggravating stress and anxiety.[57,58,59]

[52] José Martínez-Garcés and Jacqueline Garcés-Fuenmayor, "Competencias digitales docentes y el reto de la educación virtual derivado de la COVID-19," Educación y Humanismo," 22(39) J. (2020): 1–16, https://doi.org/10.17081/eduhum.22.39.4114.

[53] Teresa Pozo-Rico, Raquel Gilar-Corbí, Andrea Izquierdo, and Juan-Luis Castejón, "Teacher Training Can Make a Difference: Tools to Overcome the Impact of COVID-19 on Primary Schools. An Experimental Study," Environmental Research and Public Health, 17(22) (2020):1–22, https://doi.org/10.3390/ijerph17228633.

[54] María S. Ramírez-Montoya, "Transformación digital e innovación educativa en Latinoamérica en el marco del COVID-19," Campus Virtuales, 9(2) (2020): 123–139, http://uajournals.com/ojs/index.php/campusvirtuales/article/view/744.

[55] Johannes König, Daniela J. Jäger-Biela, and Nina Glutsch, "Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany," European Journal of Teacher Education, 43(4) (2020):608–622, https://doi.org/10.1080/02619768.2020.1809650.

[56] José D. Zacarias and Gladys D. Salgado, "Estudio de la preparación del profesorado en México ante la pandemia del COVID-19 en la transición de enseñanza presencial a virtual o en línea," Revista Paradigma, XLI(2) (2020):795–819, https://doi.org/10.37618/paradigma.1011-2251.0.p795-819.id925.

[57] Uxia Fernández-Regueira, Adriana Gewerc, and Martín Llamas-Nistal, "El profesorado universitario de Galicia y la enseñanza remota de emergencia: condiciones y contradicciones," Campus Virtuales, 9(2) (2020): 9–24, http://www.uajournals.com/ojs/index.php/campusvirtuales/article/view/731.

[58] José Martínez-Garcés and Jacqueline Garcés-Fuenmayor, "Competencias digitales docentes y el reto de la educación virtual derivado de la COVID-19," Educación y Humanismo," 22(39) J. (2020): 1–16, https://doi.org/10.17081/eduhum.22.39.4114.

[59] Javier Portillo et al., "Self-Perception of the Digital Competence of Educators during the COVID-19 Pandemic: A Cross-Analysis of Different Educational Stages," Sustainability, 12(23) (2020):1–13, https://doi.org/10.3390/su122310128.

Therefore, it is critical to keep developing technological competencies to enhance their online teaching practice in distance education; a must, more manifest in teachers from rural areas.[60,61,62,63]

Moreover, teachers disclose that adaptation to the unexpected change in the online class format has favored the growth of digital skills through an emerging process of reinforcing and self-training. It has helped enrich their high-tech knowledge and has enabled the continuity of education. Fortunately, they have displayed solid spirit and compliance to the new world educational scenario, advancing the quality of response.[64,65,66,67] Additionally, the strategic use of ICT in converting virtual teaching-learning is crucial in the communication and elevation of critical-reflective thinking in students. Hence, developing their digital skills competently and tellingly with a critical vision is critical for their training and helps them grow into productive learners and liable citizens in the

[60] Arturo Amaya, Daniel Cantú, and José Marreros, "Análisis de las competencias didácticas virtuales en la impartición de clases universitarias en línea, durante contingencia del COVID-19," Revista de Educación a Distancia, 21(5) (2021):1–20, https://doi.org/http://dx. doi.org/10.6018/red.426371.

[61] Khe Foon Hew et al., "Transitioning to the "new normal" of learning in unpredictable times: pedagogical practices and learning performance in fully online flipped classrooms," International Journal of Educational Technology in Higher Education, 17(1) (2020):57, https:// doi.org/10.1186/s41239-020-00234-x.

[62] Anita – Lie et al., "Secondary School Language Teachers' Online Learning Engagement During The COVID-19 Pandemic in Indonesia," Journal of Information Technology Education: Research, 19 (2020):803–832, https://doi.org/10.28945/4626.

[63] Habasisa Molise and Bekithemba Dube, "Emergency online teaching in economic and management sciences necessitated by the covid-19 pandemic: The need for healthy relations in a rural schooling context," International Journal of Learning, Teaching and Educational Research, 19(6) (2020):387–400, https://doi.org/10.26803/IJLTER.19.6.23.

[64] Acevedo-Duque, Á. et al., "Teacher competences in online education in time of COVID-19: Public Universities of Honduras," Revista de Ciencias Sociales, 26 (2020):206–224, https://repositorio.uautonoma.cl/handle/20.500.12728/7898.

[65] Anita – Lie et al. "Secondary School Language Teachers' Online Learning Engagement During The COVID-19 Pandemic in Indonesia," Journal of Information Technology Education: Research, 19 (2020):803–832, https://doi.org/10.28945/4626.

[66] David Pérez-Jorge et al., "Training in Digital Skills in Early Childhood Education Teachers: The Case of the University of La Laguna," International Journal of Interactive Mobile Technologies, 14(20) (2020):35–49, https://doi.org/10.3991/IJIM.V14I20.17339.

[67] Jessica A. Ruiz-Ramirez, Dayannis Tamayo-Preval, and Hugo Montiel-Cabello, "Competências digitais de professores na modalidade de aulas online: Estudo de caso no contexto da crise sanitária", Texto Livre, 13(3) (2020):47–62, https://doi.org/10.35699/1983-3652.2020.25592.

virtual world with continuous teacher training as a permanent state educational policy.[68,69,70,71]

Yet, students, albeit belonging to a new generation; have not advanced their digital skills in online education and spun classroom methodology. They gather that virtual work engenders an increased academic burden relative to face-to-face work.[72,73] Equally, they mention that teachers can implement virtual active methodologies but do not possess adequate knowledge of image editors, videos, infographics, synchronous response systems, and anti-plagiarism tools.[74]

Subcategory technological tools

Zurita et al.[75] have noted that currently, the knowledge society goes through an immense advancement about technological tools' use because it has succeeded in connecting to virtual educational platforms as an alternative space of knowledge, compliant to the current prerequisites of globalized societies. Similarly, it has attained a crucial impact on educational work settings. Accordingly, the teachers declare that technological tools and their

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[68] Habasisa Molise and Bekithemba Dube, "Emergency online teaching in economic and management sciences necessitated by the COVID-19 pandemic: The need for healthy relations in a rural schooling context," International Journal of Learning, Teaching and Educational Research, 19(6) (2020):387–400, https://doi.org/10.26803/IJLTER.19.6.23.

[69] Dora Sales, Aurora Cuevas-Cerveró, and José-Antonio Gómez-Hernández, "Perspectives on the information and digital competence of social sciences students and faculty before and during lockdown due to COVID-19," Profesional de La Informacion, 29(4) (2020):1–20, https://doi.org/10.3145/epi.2020.jul.23.

[70] Despoina Schina et al. "The integration of sustainable development goals in educational robotics: A teacher education experience2, Sustainability, 12(23) (2020):1–15, https://doi.org/10.3390/su122310085.

[71] Santiago Tejedor et al., "Education in times of pandemic: reflections of students and teachers on virtual university education in Spain, Italy, and Ecuador," Revista Latina de Comunicacion Social, 78 (2020):1–21, https://doi.org/10.4185/RLCS-2020-1466.

[72] Francisco Javier Robles Moral and Manuel Fernández Díaz, "Future Primary School Teachers' Digital Competence in Teaching Science through the Use of Social Media," Sustainability, 13(5) (2021):1–13, https://doi.org/10.3390/su13052816.

[73] Santiago Tejedor et al., "Education in times of pandemic: reflections of students and teachers on virtual university education in Spain, Italy, and Ecuador", Revista Latina de Comunicacion Social, 78 (2020):1–21, https://doi.org/10.4185/RLCS-2020-1466.

[74] César Torres Martín et al., "Impact on the Virtual Learning Environment Due to COVID-19," Sustainability, 13(2) (2021):1–16, https://doi.org/10.3390/su13020582.

[75] Carlos Zurita et al., "Análisis crítico de ambientes virtuales de aprendizaje. Utopia y Praxis Latinoamericana," Revista Internacional de Filosofía y Teoría Social, 25(Extra11) (2020): 33–47, https://doi.org/http://doi.org/10.5281/zenodo.4278319.

use are critical for developing high-quality educational practice. That is why they teach virtual classes employing their means, including technology and Internet support. The most used devices for online teaching include the mobile, laptop, tablet, and desktop computer with apps such as the Zoom, Cloud Meeting, and Google classroom. Also, they record their classes on their mobile phones; then upload the videos to their Facebook pages. They claim to have selected the tools, best fitting to their situation, as an enabler of the platforms or possessions, continue with the classes from home.[76,77,78]

Concerning the students, most utilize personal computers, despite their mastery in technological implements and the broader use of mobile devices. They have access to virtual platforms such as Blackboard Collaborate, enabling better resolution images, radiology, and ultrasound for medical training during virtual sessions. Furthermore, they feel that webinars and sessions with recorded demonstrations are invaluable sources of knowledge acquisition and answer to the technical hardships arising during virtual classes. They can deepen the assessment methods and systems in current practice.[79,80,81,82,83] The virtual learning environments, supplied by social

[76] Martín Arántzazu de las Morenas, "Percepciones de alumnos y docentes de 5° y 6° de educación primaria sobre la modalidad de educación a distancia implantada temporalmente en España por COVID-19," Enseñanza & Teaching, 38(2) (2020): 157–175, https://doi.org/10.14201/et2020382157175.

[77] Siddhartha Dutta et al., "The satisfaction level of undergraduate medical and nursing students regarding distant preclinical and clinical teaching amidst COVID-19 across India," Advances in Medical Education and Practice, 12 (2021):113–122, https://doi.org/10.2147/AMEP.S290142.

[78] Mozaffor Hossain, "English Language Teaching through Virtual Classroom during COVID-19 Lockdown in Bangladesh: Challenges and Propositions," Journal of English Education and Teaching (JEET), 5(1) (2021):41–60, https://ejournal.unib.ac.id/index.php/JEET/article/view/13724.

[79] Ali Alamer and Fawaz Alharbi, "Synchronous distance teaching of radiology clerkship promotes medical students' learning and engagement," Insights into Imaging, 12(1) (2021):1–11, https://doi.org/10.1186/s13244-021-00984-w.

[80] Anne E. Drake et al., "Innovations with tele-ultrasound in education sonography: the use of tele-ultrasound to train novice scanners," The Ultrasound Journal, 13(1) (2021):6, https://doi.org/10.1186/s13089-021-00210-0.

[81] Andrzej Ożadowicz, "Modified blended learning in engineering higher education during the COVID-19 lockdown-building automation courses case study," Education Sciences, 10(10) (2020):1–20, https://doi.org/10.3390/educsci10100292.

[82] David Pérez-Jorge et al., "Training in Digital Skills in Early Childhood Education Teachers: The Case of the University of La Laguna," International Journal of Interactive Mobile Technologies, 14(20) (2020):35–49, https://doi.org/10.3991/IJIM.V14I20.17339.

[83] Dora Sales, Aurora Cuevas-Cerveró, and José-Antonio Gómez-Hernández, "Perspectives on the information and digital competence of social sciences students and faculty

networks, are message platforms essentially utilized by this century's young generation, keeping them excited. This is due to the self-assured interaction conducted with their peers, boosting their participation and intercommunication apart from providing critical benefits and esteeming learning achievements.[84,85]

Teachers have had to espouse a positive assertiveness toward the technology used to present their classes online. Nonetheless, there exist teachers, not appreciate the digital platforms' expediency. It prevents them from implementing it and steering their online classes optimally.[86] Similarly, they must secure that the utilized resources are readily available with no extra cost to themselves and students. Accordingly, it is compulsory to propound them orientation sessions on the usage of digital platforms. Only then are they better prepared for their effective and satisfactory utilization to teach several distance courses encouraging higher student participation in online classes.[87,88,89]

IV. Conclusions

Distance education has claimed that teachers devise online teaching-learning, implying a transformation in strategies and pedagogical approaches utilized in virtual milieus. It is critical to acknowledge that this process has first been convoluted as they only have fundamental training in technological tools. Yet, teachers could acclimate and assimilate their pedagogical skills in

before and during lockdown due to COVID-19," Profesional de La Informacion, 29(4) (2020):1–20, https://doi.org/10.3145/epi.2020.jul.23.

⁸⁴ Nurten Kara, Begum Çubukçuoğlu, and Alev Elçi, "Using social media to support teaching and learning in higher education: an analysis of personal narratives," Association for Learning Technology, 28 (2020). https://doi.org/10.25304/rlt.v28.2410.

⁸⁵ Francisco Javier Robles Moral, and Manuel Fernández Díaz, "Future Primary School Teachers' Digital Competence in Teaching Science through the Use of Social Media," Sustainability, 13(5) (2021):1–13, https://doi.org/10.3390/su13052816.

⁸⁶ Sangeeta and Urvashi Tandon, "Factors influencing adoption of online teaching by school teachers: A study during COVID-19 pandemic," Journal of Public Affairs, (2020):1–11, https://doi.org/10.1002/pa.2503.

⁸⁷ Jayaluxmi Naidoo, "Postgraduate mathematics education students' experiences of using digital platforms for learning within the COVID-19 pandemic era," Pythagoras, 41(1) (2020):1–11, https://doi.org/10.4102/PYTHAGORAS.V41I1.568.

⁸⁸ Shaista Noor, Filzah Md. Isa, and Faizan Farid Mazhar, "Online Teaching Practices During the COVID-19 Pandemic," Educational Process: International Journal, 9(3) (2020):169–184, https://doi.org/10.22521/edupij.2020.93.4.

⁸⁹ Samad M.E. Sepasgozar, "Digital twin and web-based virtual gaming technologies for online education: A case of construction management and engineering," Applied Sciences (Switzerland), 10(13) (2020):1–32, https://doi.org/10.3390/app10134678.

this novel form of online teaching covering a synchronous and asynchronous link, rendering classes more vigorous and inspiring for the student.

Concerning the teachers' digital competencies, the studies have underlined that teachers should accommodate virtual teaching during the pandemic, implying classifying digital information, sharing it through digital media, editing content and texts, guarding personal data, and devising abstract proficiencies.

Therefore, digital literacy and computerization are the most sought competencies teachers should develop, not all achieving a progressive level. The need to secure the efficiency of the educational service provision has become essential for all learning institutions during the COVID. This unusual health emergency has had devastating ramifications throughout the Earth, bringing future repercussions modifying the way of making and consuming products and services, above all on the life itself.

The education sector, an essential constituent of society, has had to conform to this new form of teaching-learning. It has brought digitalization, first as an option, but has turned into compulsory later. To that end, the digital skills' practice and reinforcement for all teachers are indispensable and commanding.

Technological tools in pandemic times have received increased attention because knowledge always plays a preeminent role in society. Technology allows conducting many human activities and even more critically in the educational field. Thus, teachers confronted with the cold reality engendered by the COVID-19 have had to readily adapt to the increased technology use in varied educational platforms and integrate it into their pedagogical work. It has included teaching their virtual classes optimally favoring students, judging that education is a fundamental right beyond the privilege. Nonetheless, a group of teachers, reluctant to change themselves and find it challenging to undertake new and unexpected challenges, should gather that adopting technology as a valuable resource in their teaching process can help them meet current educational demands. Yet, the students, the indispensable learning actors, have favorably undertaken this new modality. Attending their virtual classes, they have remained motivated as ever because they can interact, partake, sustain intercommunication with their peers and attain the anticipated learning.

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Revealing invisibility: Interpreting social and behavioral aspects of the Coronavirus pandemic through student documentary photography

Ivo Jirásek and Bohuslav Stránský*

Abstract: Life for the population in the Czech Republic came to a standstill in spring 2020 due to measures enacted in relation to the Coronavirus epidemic: a travel ban and closed borders, the cancellation of physical lessons at all types of school, the closure of stores except those securing basic necessities, radical restrictions to free movement of people. This unprecedented situation became the inspiration for creative work by students at the Studio of Advertising Photography at Tomas Bata University in Zlin. Since joint work in the studio was not possible, the students were given their assignments as part of the Digital Photography classes in the form of a document reflecting the social situation during the Corona crisis. Selected visual narratives, or photo novellas, are a methodical component of arts-based research, meaning the use of art artefacts and imagination for a more complete knowledge of this mode of social reality. Verbal commentary complements the images' topic by interpreting the main themes of the selected photographic images: Easter festivities without religious services, sewing facemasks and covering faces, newly discovered meanings of borders and emptiness, the social role of meals in family life. The Coronavirus crisis has revealed the hidden opportunities of a new way to see and discover again how to evaluate our everyday life, something which in the haste of each ordinary day can become subconscious routine.

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I. Introduction: Spring 2020 in the Czech Republic

This exceptional and extraordinary situation has revealed things which normally remain hidden. Besides the virus itself – invisible to human by the naked eye – and the danger it brings with it, the global Coronavirus pandemic has also revealed many other things. Some of what it has revealed is fascinating. In some places, this tiny invisible entity has managed to entirely stop the accelerating gears of human civilization, and in other places it has slowed it down considerably, something not even the largest team of scientists, protestors and activists or politicians have managed. Something which used to seem impossible has become possible – if probably only for a short time. Conscious of all its negative consequences, individual tragedies and society-wide problems (disasters), it is useful to attempt to take a look at and investigate the opportunities it has revealed. Prerequisite to pedagogical exploitation of this extraordinary situation in the area of art is principled possibility of visualizing the ordinary points of view which are normally concealed. In our case study, this applies primarily to photographical capturing hitherto completely unknown differences.

Due to the entirely new situation in regard to COVID-19, individual and community life was sharply and radically restricted in many countries around the world in spring 2020.[1] The approach of governments in different countries differed significantly in terms of the degree and force of measures taken and how much freedom was given to the population to manage the pandemic. Some countries chose relatively loose measures (no or moderate blanket bans on public events, only individual schools closed), while others chose stricter measures (closure of schools in certain regions, mass gatherings of over 500 people) and still others took very strict measures (essential quarantine of entire country, or lockdown). The Czech Republic was one of the countries in which measures were adopted very fast in their strictest form.

The Czech government adopted a number of measures and regulations which impacted citizens' individual and group rights and freedoms in an entirely unprecedented manner. This manifested itself both within the community and in terms of the individual behavior of the country's citizens.

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[1] The completely unprecedented social situation also leads to a rethinking of social relations and new forms of community life and communing. See, for example, reflections on the emancipatory subjectivity of many: Halligan, Benjamin, Alexei Penzin, Stefano Pippa, and Rebecca Carson, eds. *Politics of the Many: Contemporary Radical Thought and the Crisis of Agency*. London: Bloomsbury Publishing, 2021.

Hygiene regulations and prohibitions, restrictions to movement and the closure of borders inevitably led to a rapid drop in economic output. The pandemic of disease was also reflected in a pandemic of economic recession, and a fall in prosperity resulting in the expected economic crisis.

Let us first go over the timeframe and substance of these measures, in particular in regard to how university students experienced them. It should also be noted, however, that sources of information are significantly limited: there are no local academic writings as yet which describe the situation. As a result, this summary is based mainly on standard sources from journalism and political declarations.[2]

Measures putting restrictions on people's lives were adopted over time. First (9 February), options for international contact and cross-border travel were reduced, especially in regards to countries with high incidence of the disease (China, later also South Korea, Italy). Subsequently, any travel across Czech borders was banned, and it was impossible to leave the country, with few exceptions. Measures at state borders led to complete isolation at state borders, a new experience over the past thirty years, and a totally unfamiliar one for the generation of university students: state borders reacquired their clear and distinct form.

Other measures were adopted restricting cultural and community life. From 10 March, theatre, music, film and other art performances, sports, cultural, religious, association, dance, traditional and similar events and gatherings, exhibitions, festivities, fairs, tastings, markets and trade fairs were all banned, whether public or private, if exceeding 100 people at one time.

Two days later, the Czech Republic declared a state of emergency across the entire country due to the threat to the population's health as a result of Coronavirus. According to Czech law in force, a state of emergency is a national crisis measure declared in the event of a serious situation which threatens lives, health or property or internal order and security to a significant extent. It can last for up

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[2] In particular, Czech Government Regulations of 12 March 2020 no. 194 on Declaration of a State of Emergency, no. 198 on a Crisis Measure Banning Entry into the Czech Republic and Travel to High-Risk Countries, no. 199 on Banning the Organisation of Cultural, Sports and Other Events with the Participation of More than 30 People, no. 201 on the Prohibition of School Attendance at Primary and Secondary Schools and Universities, Educational and Leisure Activities in Education; of 13 March 2020 no. 203 on Banning Entry of Foreigners and Departure of Citizens of the Czech Republic Abroad, no. 208 that Prohibits Presence of the Public in Selected Establishments and Markets; of 14 March 2020 no. 211 on Banning Retail Sales and Services; of 15 March 2020 no. 215 on Banning Free Movement of Persons; of 18 March 2020 no. 247 on the Use of Respiratory Protective Equipment; and other Czech Government Regulations extending the adoption of these measures for a longer period of time and the gradual easing of these measures, especially after 25 May 2020.

to 30 days, and longer with the consent of the Chamber of Deputies. The state of emergency was extended to 30 April, and then to 17 May 2020. A state of emergency restricts the following (in addition to the already mentioned measures at the state borders and regarding trips to and from abroad and also in addition to restrictions in transportation and the operation of public and local authorities):

- School attendance and educational events: with effect from 11 March, a ban on the personal presence of pupils and students in elementary, secondary and higher education institutions was implemented. Teaching was suspended, libraries were closed, self-study was enacted, and communication was permitted only via telephone and e-mail. For both students and higher education teachers, this situation was a totally unfamiliar experience requiring moving from direct teaching to the use of solely information technologies, e-learning support, communication via e-mail and teaching systems or social communication (e.g. via Skype, Microsoft Teams and Zoom).

- Retail and services: from 14 March all stores were closed with the exception of stores selling groceries, sanitary and drugstore goods, pharmacies and establishments selling medical aids, fuels and some other exceptions. The public were also banned from being present in catering establishments, except those not serving the public.

- Free movement of persons: from 16 March, people were only allowed to leave their homes in precisely specified circumstances, such as for travelling to work or for business, essential travel to see family members and loved ones, or to purchase food and basic needs, travelling to the doctor or in order to take care of urgent official matters or to go to the post office. From 19 March, in addition all people were banned from being present or moving outside their home without protective equipment covering their airways, i.e. without a facemask, respirator, scarf or other mouth covering to prevent the spread of droplets. From 24 March, only a maximum of two people could be in publicly accessible places at one time unless they were members of the same household or doing their job. Separation of at least 2 meters had to be maintained when in contact with other people.

During the second half of April, some measures were gradually eased, with a marked turnaround after 25 May 2020. Nevertheless, in summary this roughly two-month long intensive isolation and restrictions to movement, social life, study and the economy was a completely new experience which university students in the Czech Republic and many others encountered for the first time.

II. Coronavirus in the curriculum

But what does this situation mean for the options of pedagogy and learning? How can such radical social changes be transposed into the sphere of art education? Questions about the link between personal freedom and social restrictions – not only in terms free movement and gatherings, but also of health and hygiene standards – lead to contemplations as to what will be considered normal and how to interpret freedom and democracy, and what it all means for pedagogical and curricular practice.[3] Enormous changes were noted in the whole field of digital pedagogy and teachers' digital skills.[4] From the very beginning of the pandemic, the implementation of online education and limitation of laboratory and practical training associated with online education had obvious impact on medical education as well.[5,6] This impact was also quite evident in the form of the internationalization of the curriculum in the context of higher education.[7]

However, what impact or reflections of this situation offers art education? Surprisingly, we have not yet been able to find any relevant article dealing with this topic, despite the fact that art has always been and will always be a certain mirror of social changes. In essence, it is impossible to imagine time-related situations that would not be reflected in the arts. Art teaching helps to reflect situations of constant violent conflict, where it can serve as an independent type of therapy, political imagination, and perception of otherness.[8] Critical thinking and reflection is an integral part of art education, especially in situations and experiences related to a wide range of people.[9]

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[3] Goodson, Ivor F., and John F. Schostak. "Curriculum and Coronavirus: New Approaches to Curriculum in the Age of Uncertainty." *PROSPECTS: Comparative Journal of Curriculum, Learning, and Assessment* (2021): 1-17.

[4] Greenhow, Christine, Cathy Lewin, and K. Bret Staudt Willet. "The Educational Response to Covid-19 across Two Countries: A Critical Examination of Initial Digital Pedagogy Adoption." *Technology, Pedagogy & Education* 30, no. 1 (02// 2021): 7-25.

[5] Newman, Noah A., and Omar M. Lattouf. "Coalition for Medical Education-a Call to Action: A Proposition to Adapt Clinical Medical Education to Meet the Needs of Students and Other Healthcare Learners During Covid-19." *Journal of Cardiac Surgery* 35, no. 6 (2020): 1174-75.

[6] Kopp, Adam R., Sharon Rikin, Todd Cassese, Matthew A. Berger, Amanda C. Raff, and Inessa Gendlina. "Medical Student Remote Econsult Participation During the Covid-19 Pandemic." *BMC Medical Education* 21, no. 1 (02/22/ 2021): 1-10.

[7] Sá, Maria José, and Sandro Serpa. "Cultural Dimension in Internationalization of the Curriculum in Higher Education." *Education Sciences* 10 (01/01/ 2020): Art. 375.

[8] Cohen-Evron, Nurit. "Students Living within Violent Conflict: Should Art Educators "Play It Safe" or Face "Difficult Knowledge"?". *Studies in Art Education* 46, no. 4 (07/01/ 2005): 309-22.

[9] Readman, Mark, and Jenny Moon. "Graduated Scenarios: Modelling Critical Reflective Thinking in Creative Disciplines." *Art, Design & Communication in Higher Education* 19, no. 2 (2020): 167-83.

We are therefore trying to fill this gap, despite the fact that we approach the topic and its processing from the "outside". We will report on the exercises assigned to the students of photography, which we however did not initiate or organize, nor did we take part in them in the studio where the classes take place. Our field of study stands apart from the teaching of photography (our field of specialty is philosophy, pedagogy, and digital design), but after acquainting ourselves with the results of the students´ reflections, we would regret leaving this social probe without a broader and deeper response.

III. Methodical context

In order to discover the perception of the social and behavioral aspects of the state of emergency due to the Coronavirus in the Czech Republic through the eyes of university students, we use an exercise implemented in spring 2020 by students of the third (last) year of undergraduate studies at the Study of Advertising Photography at the Tomas Bata University (UTB) in Zlin. UTB is a public university-type of tertiary school, with six independent faculties (departments), located in the regional city of the Region of Central Moravia and is named after the founder of the shoemaking factory in Zlín, Tomáš Baťa (1876-1932). It offers the study of technical and technological subjects, economics, informatics, humanities and medical disciplines, as well as the arts, including photography. The study programs emphasize professional proficiency both in classical and digital technology as well as development of reactive solutions for artistic and advertising projects. During their studies, the students will acquaint themselves with the main genres of photography, such still life, product photography of glass and porcelain (china), nude acts, portraits, architecture, landscape or fashion photography, and will learn a broad range of techniques.

As we have already mentioned, we, as the authors of the article, were not directly involved in this seminar assignment, but we took the information over from the statements of the actors themselves, the students. According to this information, the assignment was initially planned as part of the study of an accredited field. Rather, it was conceived as an improvised reaction to the impossibility of working in the studio (workshop), where the students would learn the basics of lighting and work with cameras and other technology. The class attendance restriction rendered it impossible to require technically perfect photographs from a fully equipped studio and probably led to assignments lacking a thoughtful context or idea. Moreover, because this particular teacher focuses on documentary photography, he probably expected a document of an unexpected situation that cannot be prepared in advance. Thus, the works merely served as fulfilment of the given subject in

an improvised way, without the possibility of work in the studio, and therefore were left unnoticed in the quantity of other similarly conceived files which were not further processed. Nevertheless, according to our perception, they deserve reflection, as they not only testify to individual approaches to fulfilling the assignment, but especially underline the different aspects of the social situation described above.

As part of lessons (seminars in Digital Photography), they (students) received the following task, with regard to the new situation: Create a series of photographs on the topic "Corona…". The concept, method and style of photography was free, so it could be a report, social document, document, architecture, exhibition, medal, etc. Students were required to submit 10-20 photographs of any format at least 15x20cm in size, in digital form. The series had to be coherent and the author's intention had to be clear from it, with the option of a short text being added to it.

Regarding the ethical aspects of this research, it should be emphasized that we did not seek permission from an ethical committee, as we did not work directly with human subjects (no intervention was implemented), but with their works of art. The photographic works were created in the context of university learning, where the authors are exclusively adult individuals. They provided their photographs voluntarily, with written consent (in Czech language) allowing their publication through a journal publication. Also, other communication, especially concerning the reflection of the artefacts and the subsequent feedback, was conducted strictly in the mode of voluntary and freely declared involvement.

As the objective of the assignment was merely pragmatic for the purpose of fulfilling the credit requirements, no further use of the artefacts was expected, e.g., in the form of an exhibition, we selected examples which were put together in the form of visual narratives. This allows us to comprehensively view the Corona crisis, as perceived by the students through sharing their photographic series. Namely, visual narratives and visual storytelling allow not only visual perception, but also research of certain methods of social models or schemes.[10] Visual narratives are a sequence of photographs put together in order to share the maximum amount of information in each of set of photos created and shared as a uniform meaning of the story told. Methodologically, we present the outputs of photographical exercises and subject the visually carried contents to a deeper verbal interpretation, thus expanding the

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[10] Harper, Douglas. "Reimagining Visual Methods: Galileo to *Neuromancer*." In *Handbook of Qualitative Research*, edited by Norman K. Denzin and Yvonna S. Lincoln, 717-32. Thousand Oaks: Sage Publiations, 2000.

pedagogical project and teaching practice into further dimensions. We are building on social research connecting research and art which is perceived in various aspects as arts-informed research,[11] arts-based research[12] and scholartistry,[13] making use of art artefacts and imagination to gain more comprehensive knowledge of the chosen area of social experience. Thus the study chooses to go beyond the borders of positivism and technical rationality, as expressed mainly through words and figures, to achieve a more holistically understood knowledge and deeper understanding of human behavior by also involving the image and visualization. Specific aesthetic components manifesting a sensual cognition utilized in the process of revealing sense and significance are anchored in the medium of photography. By interconnecting the outputs of the documentary photographs, with which anybody did not work with further, with their deeper ideological analysis, we intend to underline their pedagogical interpretation opportunities in art education, which is not (according to the students) very common in the studies at the UTB.

The application of photography in social research has a long history, in particularly within sociology, anthropology and ethnography. A problem, however, which is closely related to the use of photography is the method of display which cannot be value-neutral. Even expending all efforts to ensure methodological objectivity, it is the researcher and their biases given by the objective of the research that dictate the method of display. In this way, photography is often used as a tool promoting the perspective of privileged social groups with power, such as colonizers over less powerful and respected social groups, such as native peoples.[14] Beginning in the 1940s, photography and graphic imagery were used not just to illustrate and provide support to scientific findings as had previously been the case, but also directly in the mode of collecting research data and its analysis within visual anthropology. A classic example of the approach primarily using photography to document social reality and perceive the displayed individuals and communities as the object of study, for example, is the "Balinese Character" study.[15] In the 1950s

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[11] Cole, Ardra L. "Arts-Informed Research: A Transformative Methodology." *Baltic Journal of Psychology* 11, no. 1/2 (2015): 21-27.

[12] Thornquist, Clemens. "Material Evidence: Definition by a Series of Artefacts in Arts Research." *Journal of Visual Art Practice* 14, no. 2 (2015): 110-19.

[13] Shanks, Michael, and Connie Svabo. "Scholartistry: Incorporating Scholarship and Art." *Journal of Problem Based Learning in Higher Education* 6, no. 1 (01/01/ 2018): 15-38.

[14] Harper, Douglas. "On the Authority of the Image: Visual Methods at the Crossroads." In *Handbook of Qualitative Research*., edited by Norman K. Denzin and Yvonna S. Lincoln, 403-12. Thousand Oaks, CA: Sage Publications, Inc, 1994.

[15] Bateson, Gregory, and Margaret Mead. *Balinese Character: A Photographic Analysis*. New York: The New York Academy of Sciences, 1942.

it was demonstrated that photography could be used not just to document, but that it also had the power to support research beyond mere illustration, also to record direct observations, or as an aid during interviews.[16] While the researcher creates photographs from the world experienced by respondents, the displayed subject (or member of the displayed community) interprets the image. Photography allows us to acquire more specific information through more empathetic expressions, it stimulates reinstatement of the means of expression, submerged feelings, it opens the doors to memory through the emotions of forgotten moments – in a manner pictures also dictate the content of an interview. Thus, in our interpretive report on the pedagogical project of photography becomes a third party in between the informant and the researcher with the pictorial content and its importance specified and checked, reducing areas of misunderstanding. Its procurement, however, is to some extent subject to uncertainty, the record is open uncontrollable happenstance, and so to some extent analytic reasoning and reflexivity are based on intuition of extra-sensitive intelligence, which first notes behavioral subtleties.[17] Incorporating photography within a research interview, i.e. discussing images, is defined as photo elicitation.[18] This is a process in which it is not just more information which is evoked and acquired, but also information of a different type, the polysemy quality of the image evoking deeper elements of human awareness.[19] Photo elicitation, photo interviewing, photo voice[20] and participatory photography are different names for the use of photography, whether realized by an external photographer, the researcher, or the respondents themselves, in combination with an interview. It is a widely used method which has also been applied in education,[21] journalism,[22]

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[16] Collier Jr., John. "Photography in Anthropology: A Report on Two Experiments." *American Anthropologist* 59, no. 5 (1957): 843-59.

[17] Collier Jr., John. "Visual Anthropology's Contribution to the Field of Anthropology." *Visual Anthropology* 1, no. 1 (11// 1987): 37-46.

[18] Rose, Gillian. *Visual Methodologies: An Introduction to Researching with Visual Materials*. 4th Edition ed. Oxford, UK: University of Oxford, 2016.

[19] Harper, Douglas. "Talking About Pictures: A Case for Photo Elicitation." *Visual Studies* 17, no. 1 (2002): 13-26.

[20] Wang, Caroline. "Photovoice: A Participatory Ation Research Strategy Applied to Women's Health." *Journal of Women's Health* 8, no. 2 (1999): 185-92.

[21] Dempsey, John V., and Susan A. Tucker. "Using Photo-Interviewing as a Tool for Research and Evaluation." *Educational Technology* 34, no. 4 (04// 1994): 55-62.

[22] Smith, C. Zoe, and Anne-Marie Woodward. "Photo-Elicitation Method Gives Voice and Reactions of Subjects." *Journalism & Mass Communication Educator* 53, no. 4 (Winter 1999): 31-41.

tourism studies,[23] gender and cultural identity[24] and communication and social change research.[25,26]

Usually, photo elicitation is used as a basis for a much deeper and more meaningful interview than could be achieved with mere verbal questions without support from images. Our method is different, however: we aren't using an interview or feedback in this report on the interconnection of the Corona crisis and photography education. Demonstration of the polysemy quality of images can also be used in empirical research as another method than just as the basis for enriching an interview. Photography then stops being merely a prompt in the interview and becomes a separate principle and a distinct method of expression which can then be analyzed as data for research. Respondents or students then record their experience or perspective on the world they live in to the camera, through photography documenting and sharing their own reality,[27] thus partaking in the process of empowerment education.[28] In our study, we shall also be leaving the procured photographs for symbolic interpretation of the images themselves, supplemented by only textual commentary. The pictures do not serve to deepen in the interview, but rather speak for themselves in the style of visual narratives or photo novella. Methodologically, then, this study is not anchored in the positivist ideal of objective science, but rather in the phenomenological and hermeneutic understanding of the experience of the authors – students of photography.[29,30] Thus we acquire testimony which can help to culturally construct an understanding of the social and behavioral

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[23] Scarles, Caroline. "Where Words Fail, Visuals Ignite. Opportunities for Visual Autoethnography in Tourism Research." *Annals of Tourism Research* 37, no. 4 (2010): 905-26.

[24] McIntyre, Alice. "Through the Eyes of Women: Photovoice and Participatory Research as Tools for Reimagining Place." [In English]. *Gender, Place and Culture* 10, no. 1 (03 / 01 / 2003): 47-66.

[25] Singhal, Arvind, Lynn M. Harter, Ketan Chitnis, and Devendra Sharma. "Participatory Photography as Theory, Method and Praxis: Analyzing an Entertainment-Education Project in India. *Critical Arts* 21, no. 1 (01 / 01 / 2007): 212-27.

[26] Singhal, Arvind, and Elizabeth Rattine-Flaherty. "Pencils and Photos as Tools of Communicative Research and Praxis: Analyzing Minga Perú's Quest for Social Justice in the Amazon." *International Communication Gazette* 68, no. 4 (08 / 01 / 2006): 313-30.

[27] Wang, Caroline. "Photovoice: A Participatory Ation Research Strategy Applied to Women's Health." *Journal of Women's Health* 8, no. 2 (1999): 185-92.

[28] Wang, Caroline, and Mary Ann Burris. "Empowerment through Photo Novella: Portraits of Participation." *Health Education Quarterly* 21, no. 2 (1994): 171-86.

[29] Pain, Helen. "A Literature Review to Evaluate the Choice and Use of Visual Methods." *International Journal of Qualitative Methods* 11, no. 4 (09/01/ 2012): 303-19.

[30] Wall, Kate, Steve Higgins, Elaine Hall, and Pam Woolner. "'That's Not Quite the Way We See It': The Epistemological Challenge of Visual Data." *International Journal of Research & Method in Education* 36, no. 1 (2013): 3-22.

aspects of the state of emergency due to Coronavirus as experienced by university students in the Czech Republic in spring 2020.[31]

IV. Student outcomes[32]
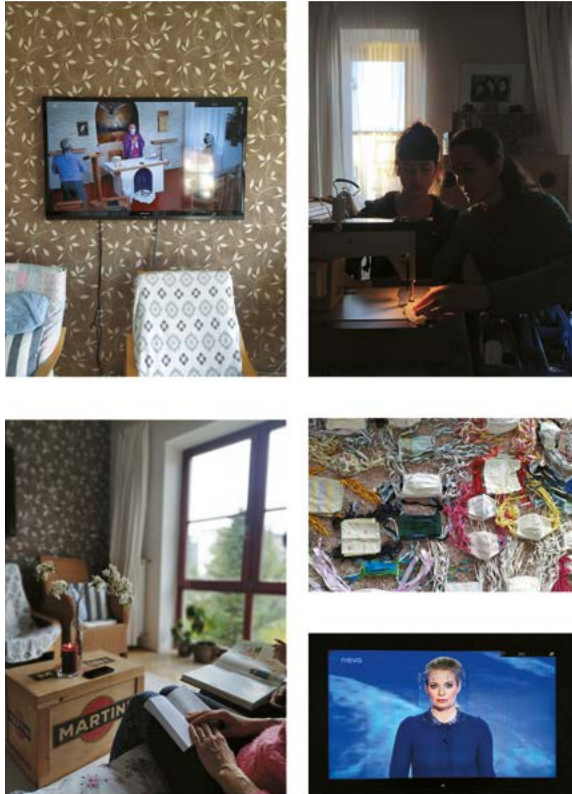
Figure 1
Author: Debora Loučková

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[31] An interesting suggestion from an anonymous reviewer relates to the question of how the restrictions on movement and social contact during lockdown have transformed the way amateur photographers take and share images on social media. While our paper looks at how photography students reflected on this particular time, the aforementioned suggestion would require a follow-up paper focusing on how the crisis situation transformed everyone into photographers.

[32] The authors of the photographs permit the publication.

Author's statement: "This series documents the days of lockdown in our household. We were consumed by fear of the unknown like most people. Overnight, we closed ourselves off to the outside world. In between devouring negative reports from around the world and disinfecting food from Rohlik.cz, we sewed face-masks. The entire house was filled with something between panic and excitement. As believers, our family experienced our first celebration of the greatest festivity of the year – Easter – without our friends and the Catholic community. We watched live broadcasts of mass on television, and read from the Scriptures together. It took time for us to realize that not everything about the entire situation was bad, and to begin to take that on board."

Figure 2
Author: Daniela Martinová

Author's statement: "The Corona series shows a discotheque venue which is closed due to the Coronavirus pandemic. These rooms which in ordinary circumstances are packed with hundreds of people now sit empty and they become a mere storehouse."

Figure 3
Author: Pavel Hála

Author's statement: "Corona – Short photo series is a kind of documentation of the current situation within the Czech Republic. Closed borders with neighboring countries, empty airport car-parks. A coffee dispenser is suddenly a facemask dispenser. People have to respond quickly and face an entirely new situation which we have never experienced here before."
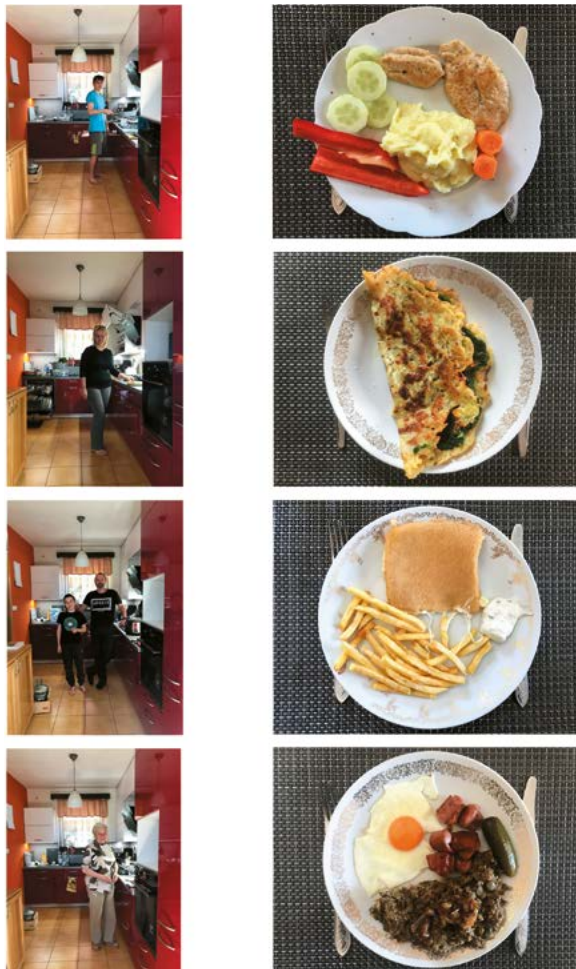
Figure 4
Author: Rozálie Jirásková

Author's statement: "I took photos of the state in my parents' household. There are 6 of us, so after some time we had to work out what to eat when we are all at home every day. We divided up work and every day somebody else did the cooking. This is closely related to the Coronavirus, because under normal conditions mum or grandma would cook. Cooking meals is a daily obligation, but also an activity which one can enjoy when stuck at home all day."

V. Discussion: A revealing invisibility

At this point, the article could be ended, provided that we were satisfied with the dimension, in which the UTB used them. However, it seems to us that the pictorial documentation contains even deeper layers of information which can be interpreted more accurately. Based on the students´ photo narratives and their own verbal descriptions, as authors, we attach four generalizing themes testifying to the distinctive dimensions of the Covid quarantine, otherwise concealed to the superficial view.

The way we approach the interpretation can be briefly described in this methodological paragraph. Its characteristics show the influence of the phenomenological approach to philosophy,[33,34,35] hermeneutic appreciation of rituals, myths, and arts,[36] and emphasis on the distinctive value of symbols.[37,38] Interest in images as a visualized component of information is in this case documented in the form of photo narratives of the Coronavirus period which is characterized by the restriction of individual freedoms and optional interpretation of artefacts as a way of translating subconscious levels of experience indicated in the visual material into verbal means of conscious communication. We assume that the symbols used, both visual and verbal, refer to or represent[39] a denotation, which is not only the experience of the creator of the image per se but also a reflection of the social situation expressed by means of the photo narratives. Such reference can be interpreted not only literally (photograph of a monitor in the living room depicting a scene of Christian worship as a denotation of a religious ceremony), but mainly metaphorically (inability to attend religious events). For the analysis of the contents, we use the support of a specialized publication, while leaving room for interpretation that is open to liberal associations, i.e., sharing of all the impressions and associations that the visual imagery evokes.

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[33] Heidegger, Martin. *Being and Time*. New York: Harper & Row Publishers, 2008.

[34] Husserl, Edmund. *The Crisis of European Sciences and Transcendental Phenomenology: An Introduction to Phenomenological Philosophy*. Evanston, IL: Northwestern University Press, 1970.

[35] Patočka, Jan. *Body, Community, Language, World*. Translated by Erazim Kohák. Chicago, Ill.: Open Court, 1998.

[36] Gadamer, Hans-Georg. *The Relevance of the Beautiful and Other Essays*. Translated by Nicholas Walker. Cambridge: Cambridge University Press, 1987.

[37] Eliade, Mircea. *Images and Symbols: Studies in Religious Symbolism*. Translated by Philip Mairet. Princeton: Princeton University Press, 1961.

[38] Jung, Carl Gustav. *Man and His Symbols*. London: Aldus Books, 1964.

[39] Goodman, Nelson. *Jazyky Umění: Nástin Teorie Symbolů* [Languages of Art: An Approach to a Theory of Symbols]. Translated by Tomáš et al. Kulka. Praha: Academia, 2007.

The validity of the hermeneutic interpretation of selected photographic shots was supported by the triangulation of researchers (authors of the text) and creators (authors of the photographs), who were sent the interpretations for approval to make sure that they do not deviate from their intentions. During the compilation of the final text, all the particulars of research ethics were respected and consent to publishing was obtained from the authors of the artefacts and statements. However, ideal research objectivity guided by positivist ideals cannot be reached, as one of the limits is, e.g., the fact that it does not involve all the students participating in the assignment as part of their art education, because the students were volunteers willing to take part in it. Thus, reflection of the work of other students would necessarily result in the expansion of themes, their interpretations, and therefore the overall message of the study. One can also consider a symbolically rich expression as a limit exceeding a rational proof of unambiguous formulations. However, we deliberately choose the polysemantic characteristics of symbols that significantly enrich the overall meaning of the students´ work, thus the understanding both of the pedagogical practice of documentary photography and the socially constructed messages that we reveal through verbalization. Namely, the aim of hermeneutics – contrary to the ambitions of positivism – is not objective measuring and generalization of the results into a revealing explanation, but a deeper understanding of partial segments of the studied reality, i.e., in our case, the social consequences of the Corona crisis seen through the optics of the students´ photo narratives in the context of the studies of photography.

V.1. An invisible God

The Latin phrase Deus absconditus, meaning a hidden or invisible God, described the Judeo-Christian idea of the general inscrutability and hidden nature of God. God is inimitable, nobody has ever seen Him, He is elusive to man except through Faith. This idea is professed in the Book of Isaiah in the Old Testament (Isaiah 45:15), although within the Czech context a revealing invisibility has another nuance of meaning: the Czech Republic is one of the most atheistic countries in the world. In contrast to the neighboring countries of Poland, Slovakia and Hungary where roughly 80 % of the population is religious, the figure in the Czech Republic is just 20 %.[40] The figures are even

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[40] Paleček, Antonín. "Sekularizace V Pohledu Inter- a Intragenerační Transmise: Čr Ve Srovnání Post-Komunistických Zemí Střední Evropy." *Czech Society / Naše Společnost* 13, no. 2 (2015): 13-26.

larger for young people between 16 and 29 years of age, 70 % of whom never attend religious services and 80% of whom never pray, and only 9 % of whom profess religion, whereas this figure for young people is 83 % in Poland and 99 % in Israel.[41] This does not mean that the Czech population does not experience deeper dimensions in their lives. There is a very active presence of various spiritual tendencies and expressions, with non-religious spiritual aspects seen, for example, in respect to the construction of spiritual health,[42] or experienced in winter camping activities.[43] Atheists can also recognize Christian values, realized in the phenomenon of love, as a very positive good.[44]

Nevertheless a Christian, here a young Christian in particular, in a cultural environment shaped in this way needs, perhaps more than in other countries, to find strength through the community of fellow believers. And the Easter period is all the more significant, as the most important liturgical festival of the entire Church year, the celebration of the resurrection of Jesus Christ. One component of gathering together to celebrate mass is the ceremony of the Eucharist, commemorating the Last Supper, when bread and wine are taken in a shared faith in Christ's presence. Easter usually involves ostentatious celebrations, processes and full churches, and shared joy. The Czech government's measures also cancelled church services, all ceremonies, and the ability to take Holy Communion was temporarily ended; the first time without friends and the Catholic community. Celebrating mass only through television (pic. 1), reading from the Scriptures together (pic. 1). Nevertheless, the joyous news of the Gospels declares that anywhere where two or three people come together in Jesus's name, He too is there with them (Matthew 18:20). Invisibility revealing the strength of Faith. We must point out that, unlike in the USA or Poland, where participation in the mass via television is quite common, the situation in the Czech Republic – certainly with regard to the aforementioned specifics of extremely low religiosity – is rather marginal, used in case of illness or other obstacles to personal participation in the mass.

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[41] Bullivant, Stephen. *Europe's Young Adults and Religion: Findings from the European Social Survey (2014-16) to Inform the 2018 Synod of Bishops*. Twickenham, UK: Benedict XVI Centre for Religion and Society, St Mary's University, 2018.

[42] Jirásek, Ivo, and Emanuel Hurych. "The Perception of Spiritual Health Differences between Citizens and Physicians in the Czech Republic." *Health Promotion International* 33, no. 5 (2018): 858-66.

[43] Jirásek, Ivo, Pavel Veselský, and Jiří Poslt. "Winter Outdoor Trekking: Spiritual Aspects of Environmental Education." *Environmental Education Research* 23, no. 1 (2017/01/02 2017): 1-22.

[44] Jirásek, Ivo. "Christian Instrumentality of Sport as a Possible Source of Goodness for Atheists." *Sport, Ethics and Philosophy* 12, no. 1 (2018/01/02 2018): 30-49.

The whole matter carries many meanings and themes, from the hygienic requirements for the common worship and the sacrament of communion, to the theological dimension of "spiritual communion", i.e. "communio" without the Eucharist and without physical presence. The fundamental theological questions about the nature of the mass, however, go beyond the main focus of our text.

V.2. *Losing face*

The face speaks before language, in the face of another we see his nakedness, exposed and defenseless, the helpless exposure to death, screaming the appeal: "Don't kill me!"[45] The face bears the most markers of human individuality, uniqueness of personality. The facemask (pic. 1 and 3) has become a symbol of the Coronavirus crisis, the most easily accessibly protective equipment. The facemask covers much of the face, with only the eyes available for contact and non-verbal communication with others. We have to imagine and surmise the missing visual information, opening space for fantasy. Covering and revealing is erotic in nature, referring to the Biblical store of Adam and Eve's fig leaves (Genesis 3:7) and various perceptions of nakedness saturated in culturally-based and contradictory meanings. Nakedness has been perceived in terms of naturalness and culturally-based superiority (e.g. in Ancient Greece), or in contrast in terms of sin, disgrace and shame (for a servant, prisoner or slave), it has played a sacral role (the nakedness of the king or priest in ancient Mesopotamia), and today it is saturated with sexualisation and pornification processes.[46,47] In a face-mask covered face, we see different levels and layers of the person, their energy, paradoxically we acquire perhaps a more holistic view, although it is more the result or construct of our intuition awakened by missing visual information. At the moment, we mean ordinary interpersonal communication and gatherings under normal conditions in the Czech Republic, i.e., in the center of Europe, in Western society. Masks play a completely different role in different periods and cultures, e.g., in theatres and arts, in healthcare and medicine, in religions (e.g., burqa in Islam), etc.

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[45] Lévinas, Emanuel. *Být Pro Druhého (Dva Rozhovory)*. Translated by Jan Sokol. Praha: Zvon, 1997.

[46] Jirásek, Ivo. "Smysl Vizualizace Lidského Těla: Různorodé Významy Nahoty." *Filosofický časopis* 58, no. 6 (2010): 863-83.

[47] Jirásek, I., G. Z. Kohe, and E. Hurych. "Reimagining Athletic Nudity: The Sexualization of Sport as a Sign of a 'Porno-Ization' of Culture." *Sport in Society* 16, no. 6 (2013): 721-34.

As we are all different, and we also respond differently in critical situations, this has been expressed in regard to facemasks. Enthusiastic volunteers sewing facemasks at home as a gift to those in need (pic. 1) and the rapid market transformation of coffee vending machines into vending machines for facemasks (pic. 3) are both different expressions of the same situation. While for some they represented a feeling of protection and safety (regardless of the disputes over their effectiveness), for others they aroused a feeling of danger. We see in the varying responses to a facemask-covered faces a dislike in Western culture: it seems that an uncovered face is a symbol of freedom of the individual, openness and likely also transparency, safety (I do not have bad intentions, I don't have to cover myself, I am a free citizen and society accepts me as I am). Covering the face and hiding under a veil is a mark of separating the profane from the sacred, a mark of religious, sexual or social status.[48] Despite these controversies, facemasks have been accepted in many countries, and worn with discipline for a long period. It can be claimed, then, that they have served us very well both at a symbolic level where they have led to a change in behavior (realization of the severity of the situation, acceptance of extra hygiene measures, social distancing), and also according to many experts as an actual functional barrier preventing the spread of infection.

Another visual symbol of this era has been faces emitted by digital screens – the faces of doctors, nurses, paramedics and everyone else on the so-called "front line", politicians at press conferences, television newsreaders (pic. 1), and even priests taking services (pic. 1). Thanks to the latest technologies, we have managed to overcome social distance and remain in close contact. We have also managed to truly realize that even the best technology cannot replace physical human closeness. And it has also demonstrated a new vulnerability – a dependence on on-line connection.

V.3. *Borders of emptiness*

In this era of postmodern globalization, we are not normally able to perceive borders as something positive, visible, tangible – we often don't even perceive them: the movement of people, goods and services in Europe has been an obvious convenience for many decades. The virus has perhaps definitively shown that the modern world is a world without borders. Despite their temporary closure and a tendency to seek salvation in closing oneself

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[48] van Gennep, Arnold. *Přechodové Rituály: Systematické Studium Rituálů*. Translated by Helena Beguivinová. Praha: Portál, 2018.

within the fortress of the national state, it is clear that neither the economy nor people will exchange a false feeling of security for freedom of movement. The ban on travel, however, has restored memories of the impossibility of crossing the border (pic. 3). But borders are just gates between states. They needn't be mere limitations, but also delimitations, that is to say to lay down shapes from unbounded chaos. This is how they were perceived by the Ancient Greeks, whose culture was highly "peratic" (peras – boundary, limit), and who appreciated borders as laying down order and harmony: e.g. a sculptor did not create anything original, only removing excess material from an ideal shape which had to be revealed.[49]

Closed borders and gates (pic. 3), closed stores, empty airports (pic. 3), car-parks in front of supermarkets and entertainment premises empty of people (pic. 2) have helped us to appreciate the value of emptiness. Emptiness is omnipresent; it's just that in the common haste of everyday life we are not aware of it. It is every silence providing meaning in the flow of speech, the pause of silence between the sounds of music, the peaceful breaks in the beats of the rhythm, white spaces in the colors of an image, the comforting pauses between inhaling and exhaling, the necessary repose between heart beats, stops in the active course of life, death delimiting our existence... The state of emergency was this kind of pause, pointing to the value of emptiness in our overflowing excess.

Yet our society lives in dread of emptiness. We let ourselves be overwhelmed by the words and images in Facebook posts and getting likes without lingering observation or rumination on the value of what is seen. We fill ourselves with banalities and we cannot concentrate in the excess of stimuli, excitement and information; distracted attention and restlessness leads us to undertake transient activities, the nervous cult of diligence.[50] As such, lockdown could be a kind of enriching refreshment. Only emptiness torn by force of will from hectic overfilled time can give us the peace to settle our thoughts, to their necessary collection so we can assess our own actions, and become aware of what is important in our journey through life. What is hidden under the surface. Whoever does not want peace can become lost in the rush of everyday life, unable to enjoy the depths of life which only come to us at moments of meaningful silence. Silence is a state during which we can finally hear ourselves.[51]

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[49] Novotný, František. *Gymnasion: Úvahy O Řecké Kultuře*. Praha: Gustav Voleský, 1922.

[50] Han, Byung-Chul. *The Burnout Society*. Stanford Stanford University Press, 2015.

[51] Kagge, Erling. *Radost Z Ticha: Proč Zavřít Dveře Před Hlukem Světa*. Translated by Viola Somogyi. Brno: Jan Melvil Publishing, 2018.

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V.4. *Ritualization of meals*

In the rush of everyday life, we do not perceive food as a social event, but as an essential supply of energy. Detached fast food predominates over sitting down together for shared dining. Western society does not recognize modesty and moderation in dining, but rather suffers from excess and wastage.

The daily habit of dining in school and university canteens, in company soup kitchens and restaurants, has been broken. Shared dining and drink and food exchange is a transitional ritual in all cultures, a ritual adopted and with a strong bond to material unity.[52] A set table and banquet have always been a mark of friendship, hospitality, family connection, for celebrations of major events – coming together for the bride and groom, the birth of a child, giving a send-off to the deceased.

The necessity of spending one's time all day long with the family could thus refer to the symbolic importance of food and meals, which modern society has forgotten. Everyday family coexistence has not just involved the consumption of food, but also its preparation (pic. 4). The phenomenon of sharing food, a prehistoric principle shaping human society, has again been strengthened through the sharing of the duty of cooking. We have been able to become more aware of the importance of this service, when one person prepares food for the others (pic. 4). Family dining enriches time spent together, deepens communication and tests the understanding of relations. Food isn't just a material fuel, but it is also endowed with many symbolic meanings, expressed in dreams, stories and myths.[53] After all, even the above mentioned ceremony of Christ's followers, the acceptance of the body and blood of the Lord in the form of bread and wine, is a sign of mystic unity.

V.5. *Is such interpretation valid? Students´ reflections*

The presented interpretations go beyond the usual pedagogical level of art education and therefore open the question as to whether it is not exclusively a voluntarist external view which is not directly related to the work of the authors of the photo narratives. Therefore we asked the authors how they perceived the project, what thoughts led to it, what strategies and themes they chose, but also what they think of the presented interpretations as such, do

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[52] van Gennep, Arnold. *Přechodové Rituály: Systematické Studium Rituálů*. Translated by Helena Beguivinová. Praha: Portál, 2018.
[53] Jackson, Eve. *Jídlo a Proměna: Symbolika Jídla Ve Snech, Pohádkách a Mýtech*. Translated by Věra Stavová. Brno: Nakladatelství Tomáše Janečka, 2004.

they resonate with their objectives, and what diverted their attention from their reflections, and how these more profound interpretations may be related to their pedagogical assignment and development. We managed to get three responses which we present herein. We are sure that they illustrate not only the link between the students´ visual artifacts and the authors´ verbal interpretations, but also point to the hidden dimensions of pedagogical work itself and potential deeper exploitation of similarly conceived assignments and exercises in art education.

1. Author: Daniela Martinová (Figure 2) The spaces I photographed were always crowded with people huddled together, dancing together, talking in a carefree manner, being noisy and drunk. For me, they are the symbolic opposite of the time of the pandemic, where everything subsided out of fear. The society was full of orders and restrictions, but mainly fear of others. That´s why these discotheques and empty spaces appear to me so eloquent. This contrast was the initial impulse to photographing the series. The interpretation of emptiness as something valuable resonates with me. The pandemic did not affect anyone in my family, so I can afford to say that I in a way perceive it as a gift of silence, peace, and enriching emptiness. Personally, I was relieved, because I am an introvert by nature. Before, I did not even realize how much the crowds of people in the streets bothered me and how many personal contacts I could not avoid and was forced to make, because they are common place, so to speak, in today´ s world.

2. Author: Pavel Hála (Figure 3) Generally, I don´t confront the viewer directly in my works I work in the form of capturing situations created by human, albeit often unknowingly. The human element is therefore indirectly present in the objects I observe. I proceeded the same way when creating the Corona project. Empty parking lots, usually full of people. Closed borders where a maximum of five cars per day pass through or a vending machine distributing masks and respirators instead of coffee. The sequence of images in the series does not matter, as each of them expresses something slightly different, but the unifying aspect is the bizarreness or improvisation of solutions in the battle against the Coronavirus. The attached bibliography reacts to the individual projects, showing the diverse approach of each student. If I look at the bibliography in the context of the texts drawn up in our studio, it is interesting to see how much they can be analyzed. In the case of photography, it is quite common to let images speak primarily for themselves, whether complemented

with a short text or otherwise, for better comprehension of the series. I think that writing texts in general is a problem in our studio, as the students are not used to having to write longer texts, and then they have to write an undergraduate paper containing a certain number of pages after three years of study. Furthermore, I think that when having to write a longer text, the authors often try to add value to the series that may be missing. Therefore, I personally prefer shorter labels rather than longer ones.

3. Author: Rozálie Jirásková (Figure 4) At first, I had a problem working on the assignment, because I left Zlín without a camera and was unable to pick it up due to the Corona situation. Therefore, I was forced to use a film compact and could only see the photographs several months later or use my mobile phone. Due to time shortage, I had to work on the assignment using my mobile phone (whereby taking "artistic" photographs was a problem, so I used it merely for taking snapshots of the moments that caught my attention). For this reason, I got the idea during a week-long visit with my parents to take photographs of the meals prepared by one of the family members, including herself. Once I paired up the photographs with the "cook", it occurred to me that I should apply this principle to other members of my family, as well. I took liking to the fact that the meals prepared by each one of us have something to say about us – not only in the sense of a flat demonstration how the Coronavirus united the family, but also as a way of showing that each of us is an individual who does things in a certain way that makes the differences between us obvious. Speaking for myself, I must say that I can identify with the interpretation of my project. If I had to talk about it myself, I certainly would not have thought about such things, but when I read the text written by another person, I must say that the text corresponds to my interpretation and fits the idea of my series wonderfully. I find it interesting to combine these visual images with the bibliographical references in a broader context. This adds more weight and meaning to the work. I feel that your interpretation goes deeper and its context is broader than is common in our university. It is my opinion, even though art works are, in our school, associated with a concept, not with real scientific sources or real historic events. I feel that the photographs themselves are more of a supplement to the text, rather than the other way around – as is customary in our department, and our study programs guide us accordingly. Nevertheless, it is interesting to see that someone is looking for a similar depth in our photographs

as we learn about in the classes of the history of photography and creative arts.

VI. Conclusion

A few series of students' photographs, of course, can never reveal and lay bare all the themes which have surfaced in recent months and drawn our attention. But by looking back at the photographs, the insights listed below can be projected into the photographs, and the images can be experienced even more in a broadened context. The words of the authors of the photographs concerning deeper verbal interpretations of their works thus provide a much deeper insight into the pedagogical process and the possibilities of reflective work with the scanned artefacts in art education.

The sudden loss of security and strict isolation from social contacts has led to the rediscovery of belonging, participation, solidarity, empathy – values which pass many by in our highly individualized society. Where the politically-run state has not managed to secure protective equipment or organize help to those in need, civil society has taken on the initiative: thousands of people voluntarily sewing facemasks, delivering shopping to senior citizens, delivering food to medical workers, etc. Some of the most inspiring moments of the crisis have included people clapping in the evening from windows and balconies to express their appreciation and thanks to the invisible heroes in hospitals, institutions, retirement homes (we had not previously realized how vulnerable our oldest citizens are).

Any situation which leads most of society to come together and work to overcome difficulties unfortunately always has a dark side. In this crisis, we have also witnessed profiteering from protective equipment, attempts at controlling society under the pretext of protecting the population, false aid from China to European countries (as demonstrated by supplies of medical material later demonstrated to be of poor quality and expensive, or secretly purchased from and exported back to the country they originated in). Many ugly things which should never be seen undoubtedly happened behind the closed doors of our homes.

If crises offer the potential for desirable change, what will be revealed this time? More than during previous emergencies, we have been given a perspective on all our engrained daily routines, habits and rules, beginning in our home, to our employment and the entire running of society. Without exception, each of us has been forced to step out of our tried and tested patterns of behavior, and seek out a new path in the resulting space – how to secure sustenance, how to live, how to look after our loved ones... We have

all been forced more than ever before to look into the unknown, the present and the future without any clear outlines.

What can each of us personally imagine or not imagine? What is hidden within an area previously known? We can evidently rely on the potential of human creativity – the response to the pandemic was a number of innovations in research, technology, services, various processes. But will this be enough in the event of other situations which humanity is now threatened with? Environmental crisis, the power of multinational capital and the idea of infinite growth, the rise of artificial intelligence and robotization, fake news and hybrid conflicts... – all this hand in hand with weakened critical thinking and less faith in traditional political parties, and in contrast strengthened populist politicians – this arouses questions over whether it is possible to manage all these new challenges in a different way than we have been doing.

Similarly concerning is the question of under what circumstances we are able to change our behavior more radically. Many scientists have warned of the risk of pandemics for many years, yet the world was unable to prepare – politicians met other demands from voters. Only face-to-face with the pandemic could we protect bare lives and begin to take the threat seriously. The aforementioned challenges are discussed no less urgently, but as for the risk of pandemics, the warnings go unheard – we do not have the courage to change how we live to any large extent.

The Coronavirus crisis has revealed hidden opportunities – what we did not know or did not have the courage to imagine became possible overnight. We should investigate these opportunities. It is our duty to make more use of our imagination. We are firmly convinced that such a process of discovery deepens the thoughts of the authors of the works that visually capture social processes that are not very clear otherwise. At UTB, the connection of artistic imagination and verbal interpretation as part of the pedagogical process in art education is not very common. In essence, the article asks readers whether there the practice is different at other art schools. The final challenge of this text can be an impulse to sharing similar experiences and mutual enrichment of pedagogical practices, not only in the teaching and study of photography.

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Emergency remote teaching and learning during COVID-19 pandemic: Efficacy of a four-stage model

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Abstract: The COVID-19 pandemic created the need for a global change in tertiary education. Universities that traditionally relied on contact with students in physical classrooms were forced to consider modes of remote teaching to mitigate the risks of infection due to physical proximity. This study evaluates the emergency remote teaching implemented within the Department of Information Technology at the Durban University of Technology, South Africa. An emergency remote teaching model with four stages consisting of: preparation, synchronous and asynchronous teaching and learning, e-assessments and reflections are described, analysed and evaluated with reference to both lecturers and students. The evaluation is performed using both qualitative and quantitative research methods. Qualitative analysis was

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performed on 29 sources using content analysis. 229 initial codes were identified and first categorized into 13 subcategories and finally to the four categories synonymous with the adopted four-stage emergency remote teaching model: preparation (135 references), asynchronous and synchronous teaching and learning (67 references), e-assessments (25 references) and reflections (8 references). Quantitative data on the use of the learning management system from 2019 to 2020 evaluated the results of the applied changes in practice. From the results, it was evident that students and lecturers invested much time in the learning management system with 13 tools being adopted by the 49 analysed subjects. The learning management system was used extensively for communication, assessment and dissemination of subject content. The comparative results of the data from the 2019 and 2020 academic years showed that the majority of the 2020 subjects' final results were statistically higher than the 2019 results. Results of analysis revealed the success of the implementation of the four-stage emergency remote teaching model.

Keywords: Emergency remote teaching; multimodal remote teaching and learning; higher education; COVID-19 pandemic; emergency remote education; remote learning.

I. Introduction

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-COV-2), commonly known as COVID-19, has crippled health organizations worldwide infecting over 365 million people with over 5.5 million fatalities globally by the beginning of 2022. Countries adopted various measures to reduce the number of infections such as social distancing, countrywide lockdowns and travel restrictions with these resulting in a reduced workforce in many sectors including education.[1] The restrictions have had unavoidable, detrimental effects on many sectors but especially on education. The majority of governments around the world were forced to decide on a near total closure of all educational institutes so as to reduce the risk of spreading COVID-19. This temporary closure affected the global education system, leading to the disruption of teaching and learning activities.

The declaration of a national lockdown by the South African government, which was effective from March 26, 2020, forced all stakeholders within the country's educational system to consider alternate solutions as a response to the crisis. Many South African universities chose to adopt a flexible, remote learning, multimodal approach as a strategy which would allow academic

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[1] Ahmed Al-Jabir et al., "Impact of the Coronavirus (Covid-19) Pandemic on Surgical Practice-Part 1," *International Journal of Surgery* 79 (2020): 234, https://doi.org/10.1016/j.ijsu.2020.05.022.

activities to continue. It is important to note that many universities and centres of education had never before been exposed to remote learning.[2,3] The internet based multimodal concept, which gained popularity in the early 2000s and is practiced by institutions, combines text, audio and visual elements as a means of reshaping the traditional approach of face-to-face teaching and learning.[4]

The current growth in advanced digital technologies facilitated the smooth adoption of internet based multimodal teaching and learning by many academic institutions, especially in the higher education sector. Diverse approaches were implemented by institutions to achieve multimodality. Delivery of the current curriculum was converted to an online platform with the focus being on the online environment instead of on online pedagogy.[5] The implementation of a multimodal remote teaching and learning approach facilitates easy access to subject contents through multiple formats and supports the continued progression of the prescribed learning activities and outcomes.[6] It also supports and benefits all students regardless of their economic or cultural background. The unexpected replacement of the traditional face-to-face instructional mode with a remote, multimodal approach has however caused many challenges. These challenges are due to social diversity and inequality which exist in several factors such as "gender, culture, social economic status, race and geopolitical context".[7]

Despite the challenges faced by institutions, educators and students the disruptions provided opportunities for innovation in several contexts including the initiation of multimodal remote teaching and learning approaches, the identification of associated challenges and the evaluation of

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[2] Abdulrahman Essa Al Lily et al., "Distance Education as a Response to Pandemics: Coronavirus and Arab Culture," *Technology in Society* 63 (2020): 101317, https://doi.org/ https://doi.org/10.1016/j.techsoc.2020.101317.

[3] Najmul Hasan and Yukun Bao, "Impact of "E-Learning Crack-up" Perception on Psychological Distress among College Students During Covid-19 Pandemic: A Mediating Role of "Fear of Academic Year Loss"," Children and Youth Services Review 118 (2020): 105355, https://doi.org/10.1016/j.ijsu.2020.05.002.

[4] Stéphanie Philippe et al., "Multimodal Teaching, Learning and Training in Virtual Reality: A Review and Case Study," *Virtual Reality & Intelligent Hardware* 2, no. 5 (2020): 421-42, https://doi.org/10.1016/j.vrih.2020.07.008.

[5] Abdalellah O Mohmmed et al., "Emergency Remote Teaching During Coronavirus Pandemic: The Current Trend and Future Directive at Middle East College Oman," *Innovative Infrastructure Solutions* 5, no. 3 (2020): 1-11, https://doi.org/10.1007/s41062-020-00326-7.

[6] Laura Czerniewicz et al., "A Wake-up Call: Equity, Inequality and Covid-19 Emergency Remote Teaching and Learning," *Postdigital Science and Education* (2020): 1-22, https://doi. org/10.1007/s42438-020-00187-4.

[7] Czerniewicz et al., "A Wake-Up Call," 1-22.

their implementation. A multimodal remote teaching and learning approach is usually embarked on due to a planned shift to an online pedagogy appropriately designed by experts with supporting technologies to meet its long term purpose. However, due to institutions requiring a speedy shift to the new approach because of an unexpected situation, the abrupt transition is rather characterized as Emergency Remote Teaching (ERT). Emergency Remote Teaching involves remote teaching or delivery of material that would normally be delivered in a face-to-face manner. The primary objective of ERT is to provide reliable access to teaching as a temporary measure through creative solutions.[8] Literature acknowledges the wide acceptance of ERT as an approach during the COVID-19 pandemic. An ERT model was implemented during the COVID-19 outbreak by the Mechanical Engineering department at Middle East College where both synchronous and asynchronous modes of delivery were combined.[9] The model consisted of a transformation framework with simultaneous execution of a curriculum transformation phase and a staff development phase. Instructional delivery took the form of online and recorded lectures, voice-over PowerPoint, asynchronous sessions through social media platforms and synchronous sessions via MS Teams. During the same pandemic, a school in Greece provided educational continuity through the adoption of a 5-phase process model for virtual learning that combines both synchronous and asynchronous modes.[10] The focus of this model was on students' and teachers' support, assessments and grading and reflection as a response to the disruption. A crisis driven conceptual framework, specifically designed for remote or distance education during times of calamity was proposed by Al Lily[11] with a focus on the Arab region. The framework highlights the ramifications associated with: pedagogy and psychology; procedure and logic; and society and culture.

The model adopted by Halat et al.,[12] also used synchronous and asynchronous modes of content delivery but incorporated YouTube videos to simulate laboratory based experiments. Students submitted their reports for

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[8] Charles Hodges et al., "The Difference between Emergency Remote Teaching and Online Learning," *Educause review* 27 (2020): 1-12.

[9] Mohmmed et al., "Emergency remote teaching during Coronavirus pandemic," 1-11.

[10] Richard E Ferdig et al., Teaching, Technology, and Teacher Education During the Covid-19 Pandemic: Stories from the Field, (Waynesville, NC, USA: Association for the Advancement of Computing in Education (AACE), 2020), https://www.learntechlib.org/p/216903/.

[11] Al Lily et al, "Distance education as a response to pandemic,".

[12] Halat et al., "Highlights from a Model for Remote Delivery of Pharmacy Laboratory Courses: Design, Implementation and Student Feedback: Innovation in Learning Assessment," Pharmacy Education (2020): 49-51, https://doi.org/10.46542/pe.2020.202.4951.

summative assessment through Google classroom. The study conducted by Chaka[13] examines the approaches to emergency online learning in 64 universities in the USA and 21 South African universities where the common components to ERT strategies included online tools that offer asynchronous and synchronous teaching, a 24/7 platform such as a learning management system (LMS), resources, guides and training on the use of LMS tools and the transition to ERT for both staff and students. Institutions also made provisions to provide additional equipment where necessary and provide zero-rated sites to support students' access to the available resources. Amin and Hanna[14] found that the most commonly used online tools during the pandemic were video conferencing, LMS's and online messaging services with WhatsApp being the most preferred mode of communication.

According to Bozkurt et al.,[15] ERT is more an obligation than an option with the aim being to approach the situation with different strategies and priorities. Significant factors to be considered when adopting an ERT model include: consideration of the target group, the availability of technological infrastructure and geopolitical, economic and social contexts.[16] Most developed countries are able to change to emergency online teaching and learning approaches seamlessly.[17] However, this is not the case for many developing countries such as South Africa where diverse factors such as students' e-skill level, digital literacy, accessibility to digital devices and internet connectivity hinder the smooth adoption of remote learning.[18] To ensure continuity of instructional delivery, in spite of associated challenges,

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[13] Chaka, Chaka, "Higher Education Institutions and the Use of Online Instruction and Online Tools and Resources During the Covid-19 Outbreak-an Online Review of Selected Us and Sa's Universities," Research Square (2020): 1-46, https://doi.org/10.21203/rs.3.rs-61482/v1.

[14] 14 Amin Fakhrurrazi and Hanna Sundari, "EFL Students' Preferences on Digital Platforms During Emergency Remote Teaching: Video Conference, LMS, or Messenger Application?," Studies in English Language and Education 7, no. 2 (2020): 362-78, https://doi.org/10.24815/siele.v7i2.16929.

[15] Aras Bozkurt et al., "A Global Outlook to the Interruption of Education Due to Covid-19 Pandemic: Navigating in a Time of Uncertainty and Crisis," *Asian Journal of Distance Education* 15, no. 1 (2020): 1-126, http://www.asianjde.com/ojs/index.php/AsianJDE/article/download/462/307.

[16] Aras Bozkurt and Ramesh C Sharma, "Emergency Remote Teaching in a Time of Global Crisis Due to Coronavirus Pandemic," *Asian Journal of Distance Education* 15, no. 1 (2020): 1-6, http://www.asianjde.com/ojs/index.php/AsianJDE/article/download/447/297.

[17] Bozkurt et al., "A global outlook to the interruption of education due to COVID-19 pandemic," 1-126.

[18] Matthias Krönke, *Africa's Digital Divide and the Promise of E-Learning*, Afrobarometer Policy Paper No. 66, (2020), https://www.africaportal.org/documents/20610/pp66-africas_digital_divide_and_the_promise_of_e-learning-afrobarometer_policy_s1oxzDa.pdf.

a remote multimodal flexible teaching and learning approach was adopted across South African universities as a protective measure and as an attempt to save the academic year whilst minimizing the spread of COVID-19 amongst students.

Durban University of Technology (DUT) is one of the 26 public universities in South Africa. Emergency Remote Teaching was implemented at DUT using a multimodal approach as a response to the COVID-19 pandemic. The shift to multimodal-based teaching and learning is a process needing active involvement from students, lecturers and support staff. The ERT approach was expected to occur at a staggering speed causing challenges for both lecturers and students. These challenges stemmed from the unpreparedness of staff and students for the virtual classroom environment, fears relating to losing the year, not being able to cope with remote learning and fear of contracting the disease. The lack of accessibility to and availability of technology was a significant challenge for staff and students. But despite these challenges the willingness of stakeholders to adapt to the new multimodal approach and the technological and training support provided by management assisted with the successful implementation of the approach.

The cardinal objective of this study is to present the four stage emergency multimodal remote teaching and learning model adopted as a tool to maintain the continuity of teaching and learning, including its implementation and evaluation, in the context of DUT in South Africa. The objective was accomplished by mixed method research design which uses both qualitative and quantitative research data. The researchers are of the opinion that the adoption of the emergency multimodal remote teaching and learning model was successful with the results indicating that the lecturers and students were able to progress with their planned activities during the transition to ERT. The study findings support the existing evidence on the implementation of ERT and open up the opportunities in the higher education sector to restructure their pedagogical approach for a suitable multimodal approach to enhance teaching and learning in a similar context.

The remainder of this paper is succinctly summarized as follows: Section II provides an overview of the adopted model. Section III elucidates the materials and methods used in this study while section IV covers the experimental results and discussions. Concluding remarks are provided in section V.

II. An overview of the adopted model

This study considers the implementation of a flexible multimodal approach for emergency remote teaching and learning at DUT as a case

study. The activities undertaken are divided into four stages: preparation, synchronous and asynchronous teaching and learning, e-assessments and reflections. The adopted four-stage ERT model is illustrated in Figure 1.
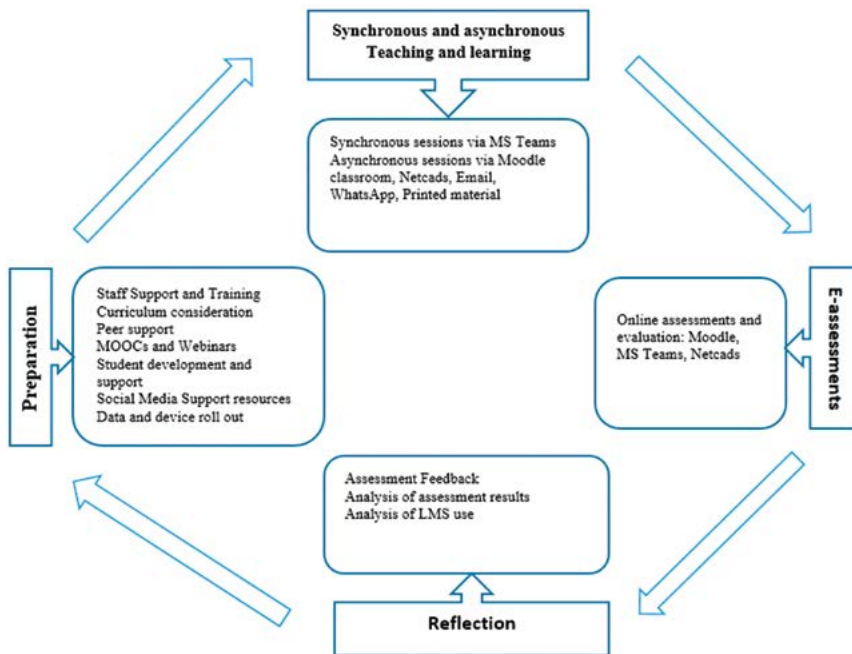
Figure 1

Four-stage emergency multimodal remote teaching and learning model

Preparation is considered an important stage when applying ERT.[19] The study conducted by Rahiem[20] highlights its significance and the importance of providing adequate training and ensuring access to resources for successful implementation of emergency teaching and learning. This initial stage in the adopted model focussed on supporting students and staff for the shift to ERT.

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[19] Unung et al., "Reviewing Online Learning Facing the Covid-19 Outbreak," *Journal of Talent Development and Excellence* 12, no. 3s (2020): 385-92.
[20] Rahiem, "The Emergency Remote Learning Experience of University Students in Indonesia Amidst the Covid-19 Crisis," *International Journal of Learning, Teaching and Educational Research* 19, no. 6 (2020): 1-26, https://doi.org/10.26803/ijlter.19.6.1.

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This was achieved by providing support and resources through training initiatives including Massive Open Online Courses (MOOC) and webinars as well as providing data and devices to staff and students.

Synchronous and asynchronous modes of content delivery is considered a significant stage of many ERT models.[21,22,23,24] Dynamic learning, enhanced classroom engagements and the promise of improved relationships between lecturers and students are some of the major benefits of synchronous teaching and learning.[25] With synchronous delivery being reliant on stable internet connectivity and many students experiencing unstable information and communications infrastructures, the asynchronous mode of teaching and learning becomes essential. Flexibility and self-pacing are further advantages of the asynchronous mode of delivery as it allows students access to course materials at their convenience.[26,27] The adopted ERT model implemented synchronous and asynchronous modes of delivery using various platforms such as MS Teams, LMS (Moodle), Netacad, Email, WhatsApp and printed materials. The synchronous mode through MS Teams attempted to recreate traditional face-to-face lectures, enabling interactive teaching and learning. The Moodle LMS was the chosen tool for asynchronous delivery using text, audio and video to disseminate information and announcements for communication. This ensured the adequate provision of materials to support the learning activities. Students were able to communicate with lecturers and gain assistance via MS Teams, Moodle chats, emails and using the WhatsApp platform. Inclusion of synchronous communication using these and other online platforms is an effective method for online teaching and learning.[28]

The assessment of students' performance is an important component of teaching and learning.[29] The third stage of the model encompasses the design and creation of online assessments. Moodle, MS Teams and Netacad were

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[21] Richard et al, "Teaching, technology, and teacher education during the covid-19 pandemic,".

[22] Abdalellah et al., "Emergency remote teaching during Coronavirus pandemic," 1-11.

[23] Hammoudui et al., "A model for remote delivery of pharmacy laboratory," 49-51.

[24] Fakhrurrazi, "EFL Students' Preferences on Digital Platforms," 368-78.

[25] Ahmad Fuad Abdul Rahim, "Guidelines for Online Assessment in Emergency Remote Teaching During the Covid-19 Pandemic," *Education in Medicine Journal* 12, no. 2 (2020): 59-68, https://doi.org/10.21315/eimj2020.12.2.6.

[26] Ahmad Fuad Abdul Rahim, "Guidelines for Online Assessment in Emergency Remote Teaching During the Covid-19 Pandemic," 59-68.

[27] Abdalellah et al., "Emergency remote teaching during Coronavirus pandemic," 1-11.

[28] Fakhrurrazi, "EFL Students' Preferences on Digital Platforms", 362-78.

[29] Ahmad Fuad Abdul Rahim, "Guidelines for Online Assessment in Emergency Remote Teaching During the Covid-19 Pandemic," 59-68.

used for the preparation and evaluation of e-assessments. Synchronous and asynchronous assessment methods including formative and summative assessments, assignments and projects were widely adopted for assessment purposes. Formative assessment methods such as online quizzes assisted in familiarizing students with the e-assessments processes and improved their confidence level during the shift to ERT.

Lack of feedback is identified as an online learning pedagogical challenge,[30] hence the final stage of this model evaluates its implementation and resulting students' academic results. The researchers evaluate both the performance of students as well as the use of the chosen LMS, namely Moodle. The feedback provides insight into the extent to which the LMS tools were used by both lecturers and students with observations being made as to the most frequently used tools and the uses thereof. A comparative analysis is done between the results achieved for modules in the year prior to the implementation of the ERT model and the year of study in which the model was applied. This provides some insight into the successful implementation of the adopted four-stage multimodal approach.

III. Materials and methods

To achieve the study objectives a mixed method research design based on a multiple paradigm position model is employed.[31] The multiple paradigm position model allowed the concurrent application of both qualitative and quantitative methods, hence the results of this study were obtained by the application and analysis of both qualitative and quantitative data. The collective strength of both qualitative and quantitative methods assists to accomplish a better understanding and interpretation of study results.[32,33]

The transition to ERT was unplanned and unavoidable requiring the university to actively respond by providing the necessary resources and support

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[30] Fernando Ferri, Patrizia Grifoni, and Tiziana Guzzo, "Online Learning and Emergency Remote Teaching: Opportunities and Challenges in Emergency Situations," Societies 10, no. 4 (2020): 86.

[31] Kathryn, Pole. "Mixed Method Designs: A Review of Strategies for Blending Quantitative and Qualitative Methodologies," Mid-Western Educational Researcher 20, no. 4 (2007): 35-38.

[32] Judith Schoonenboom, and R Burke Johnson. "How to Construct a Mixed Methods Research Design," KZfSS Kölner Zeitschrift für Soziologie und Sozialpsychologie 69, no. 2 (2017): 107-31.

[33] Jennifer C Greene, Valerie J Caracelli, and Wendy F Graham, "Toward a Conceptual Framework for Mixed-Method Evaluation Designs," Educational evaluation and policy analysis 11, no. 3 (1989): 255-74.

to aid the transition of teaching and learning from conventional classroom teaching. The evaluation of the transition to ERT is accomplished by analysing both qualitative and quantitative data concurrently. Announcements, communique and reports that were distributed during the COVID-19 pandemic by management to the Durban University of Technology community were collected as the main qualitative data source. Supplementary manuals, guides and training schedules among other documents, published on the university website during the time of the pandemic were also considered secondary sources of qualitative data. The quantitative data relating to all 2020 semester 2 modules delivered using the adopted multimodal approach was extracted from anonymized logs from the Moodle LMS and from the university's mark system, Integrated Tertiary Software (ITS). Only the data relating to modules and students from the Department of Information Technology were retrieved. This was done with the assistance of relevant administrators and managers using a convenience sampling method, because of accessibility and availability constraints. Level 1 ethical clearance was obtained from the institution's research ethics committee. Although various other tools such as Netacad, MS Teams, WhatsApp and YouTube were also utilized for asynchronous teaching and learning, only Moodle data was selected for the study as it is the official LMS adopted by DUT. Table 1 summarises the data sources for this study with data collection being guided by the four-stage ERT model.

Table 1

List of data sources

Source Type	Example
University website	DUT website
University Communication	Emails to students and staff cohorts from the DUT Pinboard
LMS and ITS data	Anonymized metadata of teaching and learning activities on Moodle, students' academic records
Reports	Technology For Learning (TFL) reports, Centre for Excellence in Learning and Teaching (CELT) reports on student academic development, Teaching Learning and Assessment (TLA) reports, reports from MS Teams sandbox

Qualitative data were analysed using an inductive approach. Content analysis transformed textual data into an organized summary of categories, identifying meaningful units through the systematic classification process of

coding.[34,35] This method is suitable for all types of text data.[36] NVivo 12 Pro[37] qualitative data analysis software package was used as the analysis tool. To get a preliminary understanding of the data, documents relating to multimodal teaching, learning and assessment, which included reports, guidelines and resources were collectively scanned into **NV**ivo and scoured for most frequently used words. The resulting word cloud, shown in Figure 2, depicts the central focus at the institution namely, students, learning, staff, support and MS teams.

Each document served as a unit of analysis where open coding determined whether a word, phrase or resource relating to teaching or learning had occurred. Each code was named to indicate its influence on the teaching and learning process. The second phase of coding re-examined codes such that related codes were grouped into categories that encapsulate their collective meaning. These became subcategories which were then studied for further similarities and subsequently classified into distinct categories to reflect their role in the adopted model.

Figure 2

Word cloud

[34] Hsiu-Fang Hsieh and Sarah E Shannon, "Three Approaches to Qualitative Content Analysis," Qualitative health research 15, no. 9 (2005): 1277-88, https://doi.org/10.1177/1049732305276687.

[35] Christen Erlingsson and Petra Brysiewicz, "A Hands-on Guide to Doing Content Analysis," African Journal of Emergency Medicine 7, no. 3 (2017): 93-99, https://doi.org/10.1016/j.afjem.2017.08.001.

[36] Hsiu-Fang and Sarah, "Three approaches to qualitative content analysis," 1277-88.

[37] Nvivo Qualitative Data Analysis Software Version 12.

Quantifiable Moodle and ITS data were analysed using descriptive and inferential statistics so that an understanding of the involvement of students and lecturers could be evaluated. Statistical analysis of the quantitative data was performed using IBM SPSS Statistics version 27.0.[38] The researchers sought to determine the extent to which the asynchronous Moodle platform was being used by lecturers and students in the 49 subjects taught by the department of Information Technology (IT). Of these 49 subjects, 32 subjects are part of programmes owned by the department of IT and the remaining 17 are serviced subjects by other departments of DUT.

Descriptive statistical analysis was used to analyse the Moodle data and to gain insight into the activities employed by both students and staff in accomplishing remote teaching, learning and assessments. As part of the reflection phase of the model, the researchers sought to establish to what extent the adopted ERT model was applied and to further investigate the extent to which the students' final marks were affected by the change. Hence, the ITS data pertaining to the 2019 and 2020 semester 1 results of the 32 subjects which are owned by the department of IT were analysed using inferential statistics. This comparison is accomplished by employing a dependent samples t-test as this is the most popular method in statistics for the evaluation of variances between two samples where data is normally distributed.[39] The authors acknowledge that during 2020, the method of teaching and learning and the approach adopted was not the only factor that could have affected the final results of a student. Other contributing factors include a change in the place of learning, access to devices, connectivity problems, access to infrastructure (including electricity) and many others. It is, however the researchers' opinion that the major change implemented during COVID-19 was the change to the remote multimodal approach therefore this would be the major contributor to any changes that occur in final marks achieved by students.

IV. Results and discussion

IV.1. *Evaluation of the ERT model*

The 29 documents analysed qualitatively define a total of 229 codes, unveiling 13 subcategories and four categories. The most significant

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[38] IBM SPSS Statistics for Windows, Version 27.

[39] [39] Manfei Xu et al., "The Differences and Similarities between Two-Sample T-Test and Paired T-Test," *Shanghai Archives of Psychiatry* 29, no. 3 (2017): 184-89, https://doi.org/10.11919/j.issn.1002-0829.217070.

subcategories are presented in Table 2. The four main categories are: preparation (135 references); asynchronous and synchronous teaching and learning (67 references); e-assessments (25 references); and reflections (8 references). These categories are directly related to the four stages of the adopted ERT model indicating the relevance of the model shown in Figure 1. Analysis reveals that the highest number of references exist in the first two phases (preparation and synchronous and asynchronous teaching and learning) while subsequent phases (e-assessment and reflection) are referenced to a lesser extent. This is due to the first phases being concerned with planning and training, which are well documented processes while e-assessment and reflection are not as well documented therefore having less qualitative data relating to them.

Table 2
Results derived from content analysis
of supportive documentation provided by the university

Categories	Subcategories	Sources	Frequency	Sample in-text references
Preparation	Care and support related to well being	3	22	"Return To Work Toolkit' information session, followed by an encouraging motivational talk"
	Quick start guides	3	5	"Remote Teaching Quick Guide: Curriculum, Pedagogies and Assessments"
	Links to resources	2	4	"Online Support links"
	Protocols and guidelines	4	30	"Guidelines and Protocols"
	Resources for students	4	45	"student and staff data issues support"
	Support provided to staff	6	29	"Data support helpdesk - staff and students"
Total references = 135				

Categories	Subcategories	Sources	Frequency	Sample in-text references
Asynchronous and synchronous teaching and learning	Technical support	2	7	"Helpdesk for Moodle, Teams and technical issues set up"
	TLA software training	3	14	"Moodle Will Continue To Be The Primary LMS"
	TLA strategies for online	11	46	"Face-face and virtual teaching conditions"
Total references = 67				
E-Assessment training	Assessment settings	4	20	"Moodle Quizzes - A Outline Settings explanations (timing, review, security etc.) "
	Creating assessment questions	3	5	"online questionnaire development"
Total references = 25				
Reflections	Feedback from assessments	1	7	"feedback on the assessment tasks will be important, as students acclimatise to this environment"
	Reflections on best practice	1	1	"Most universities were invited to comment. Substantial responses were received from US; UP and UJ and their feedback was considered for this report"
Total references = 8				

The quantitative analysis undertaken firstly evaluates the extent to which the resources provided in the first two stages of the model were adopted and secondly reports on the effectiveness of the model according to stakeholder use and student academic performance. The analysis is done on data pertaining to the delivery of and student performance in 49 subjects after 11 weeks of 2020

semester 2 lectures. The data was firstly summarized using descriptive statistical methods to reflect the involvement of lecturers and students in the process of delivering the adopted ERT model. Secondly, hypothesis testing was conducted on the students' final assessment results to statistically determine the effect that the adopted model had on students' final marks. This analysis speaks directly to the second purpose of the paper which is to analyse lecturer and student involvement in the delivery and adoption of the model.

IV.1.1. Stage 1: Preparation

The first category, preparation emerges as the most significant category with 135 references identified in the analysed textual data. This is in line with the findings of studies by Varawardina et al.,[40] and Rahiem[41] who likewise reference the importance of this stage and the need for adequate training and access to resources. References in this category confirm the notable efforts made by the university to prepare for the implementation of ERT. From the results, it is evident that preparation included providing initial support and training to staff and students with all of the subcategories in Table 2 referring to at least one of the phrases: "support"; "guides"; "resources"; and "protocols". To enable a quick adaptation by staff and students to the new online teaching and learning environment, quick start guides and links to resources were made available via multiple platforms during the early stages of ERT implementation. Textual resources are of extreme importance for not only the technical assistance they provide but also for the management of the psychological effects which may be caused by an abrupt transition to ERT. Al Lily[42] discusses the psychological challenges that result from new pedagogies which students may not be ready to embrace. These challenges were addressed by the University Wellness Centre which provided much needed support to staff and students remotely through online workshops.

> *The following workshops will be provided via Microsoft teams and the duration of the workshops will be 45 minutes to 1 hour…Psychological First Aid; Self-care during Covid-19; Supporting families during Covid19; Gender-based Violence; Transitioning to online learning…*

Online Counselling and Online Workshops, 24 April 2020.

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[40] Verawardina et al., "Reviewing Online Learning Facing the Covid-19 Outbreak," 285-92

[41] Rahiem, "The Emergency Remote Learning Experience of University Students,"1-26

[42] Al Lily et al, "Distance education as a response to pandemic,".

Software training was provided in the early stages of ERT to ensure students and staff could engage with the LMS, email, MS Teams and student portals. Remote access to software, installed in computer laboratories, was made available to Information Technology staff and students via Azure's Windows Virtual Desktop (WVD). Mobile data and other equipment were also made available to staff and students, without the provision of these e-learning would not have been possible. In addition, students were provided with controlled access to physical laboratories and libraries. Students were notified about the accessibility of campus through university statements:

> *Under alert level 3, a maximum of 33% of the student population will be allowed to return to campus, delivery sites and residences…This will include the following cohorts: …Final year students who require access to laboratories, technical equipment, data, connectivity and access to residence and private accommodation should return…*

University statement, 29 May 2020.

E-learning, would not have been possible without the provision of physical resources such as data and equipment to staff and students, evidence of which is available on multiple university statements to staff and students.

> *The Mobile Network Operators(MNOs) started loading the student's data onto their cellphones this week. The MNOs are Cell C, MTN, Telkom and Vodacom…..The loading of staff data commences on 5 June 2020…*

University statement, 5 June 2020.

IV.1.2. Stage 2: Asynchronous and Synchronous Teaching and Learning

The second category, asynchronous and synchronous teaching, is adequately represented in the data with 67 references as shown in Table 2. To ensure the continuity of academic activities, while remaining focused on a student-centred approach, both synchronous and asynchronous modes of module delivery were initiated. This approach is not new and has been used by other academic institutions for ERT.[43,44,45,46] Training is a key focus of many documents circulated by the university which is confirmed in the word cloud in Figure 2. Various forms of staff and student development initiatives were

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[43] Abdalellah et al., "Emergency remote teaching during Coronavirus pandemic," 1-11.
[44] Hammoudui et al., "A model for remote delivery of pharmacy laboratory," 49-51.
[45] Chaka, "Higher Education Institutions and the Use of Online Instruction," 1-46.
[46] Richard et al, "Teaching, technology, and teacher education during the covid-19 pandemic,".

provided to ensure that both parties were adequately trained to use the LMS and MS Teams software. The analysed data bares evidence to the training (14 references) and support (7 references) provided for synchronous and asynchronous teaching and learning. Online teaching, learning and assessment (TLA) strategies were referenced 46 times in the analysed data which also indicates the support and guidance provided. DUT's Centre for Excellence in Teaching and Learning (CELT) whose primary goal is to contribute to the enhancement of TLA strategies at the university, played a significant role in enhancing student success during the unprecedented situation.

> *All faculties and departments were represented based on the students that came at the Libraries, sent email or WhatsApp support. We supported all departments at DUT with technical queries such as login issues, cannot find modules, cannot upload assignments and other related queries…*

> TFL - 1st term Report, 18 November 2020.

Adequate training and support is an important stage in the transition to remote learning.[47] The technical staff ensured software was accessible and stable with experts providing real-time assistance to staff and students. Significant evidence was found in the data supporting the development of pedagogical skills needed by staff to effectively create content and collaborate with students. For example:

> *The training programme's learning design is underpinned by principles gleaned from universities worldwide, on how to approach a rapid change, from face to face to virtual teaching during a crisis; and the second foundation of the new Moodle course for DUT academics is e-pedagogy best practices…*

> CELT Moodle training report, 4 May 2020.

The results also indicate that multiple modes of content delivery were made available to students, including: narrative PowerPoints; podcasts; discussion groups; YouTube videos; MS Teams live lectures; and the uploading of recorded lectures to Moodle. These show a close resemblance to those modes used and reported by Mohmmed et al.[48] Various platforms such as Blackboard,[49] Google Classroom[50] and Moodle[51] were widely used in ERT to ensure the interaction and engagement of students. Similarly, in this study, the use of

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[47] Chaka, "Higher Education Institutions and the Use of Online Instruction," 1-46.
[48] Mohmmed et al., "Emergency remote teaching during Coronavirus pandemic," 1-11.
[49] Chaka, "Higher Education Institutions and the Use of Online Instruction," 1-46.
[50] Halat et al., "A model for remote delivery of pharmacy laboratory," 49-51.
[51] Mohmmed et al., "Emergency remote teaching during Coronavirus pandemic," 1-11.

the Moodle platform for the content delivery and assessment assisted with students successful engagement with the online class activities. To accommodate student inequalities and the various levels of access to online resources and devices, module content was also delivered via emails, WhatsApp and printed media. The multiple platforms including social media ensured that students were able to access teaching and learning through mediums accessible to them.

The Moodle data analysed in this study indicates the use of 13 different tools for enhancing asynchronous teaching and learning (Table 3), supporting the reliance on the LMS for asynchronous learning. Moodle tools used for the 2020 semester 2 subjects are Forum, Resource, Quiz, Assignment, Folder, Page, URL, Label, Choice group, Chat, LTI, Choice and Book. The extent to which each resource was used is illustrated in Figure 3.
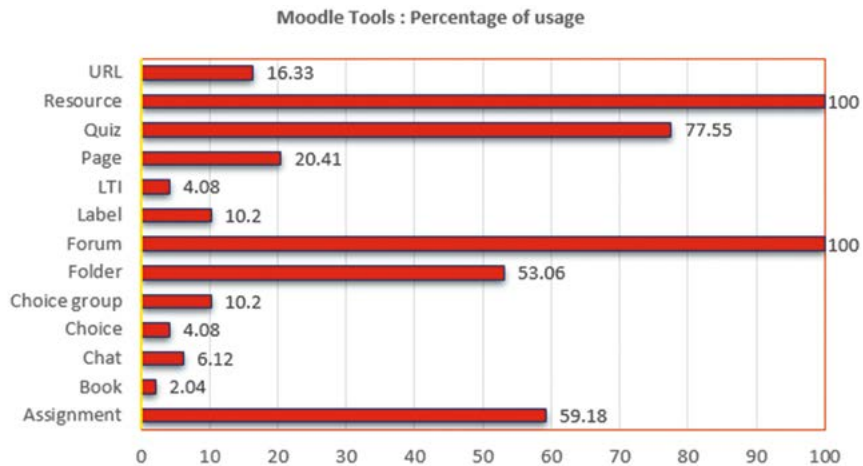
Table 3

Moodle tools used in 2020 semester 2

Tool	Description	Usage
Forum	A tool used to promote discussion, debates, reporting, role-playing, a list of ideas, news analysis, and announcements.	Used by students and lecturers for the exchange of ideas through the posting of comments. These comments can be assessed and mark assigned.
Resource	A tool that includes the ability to upload files.	Used for the distribution of tasks, presentations, and information.
Quiz	Tool for assessing learning with automatic evaluation.	Used for both formative and summative assessments. For evaluating student understanding of concepts.
Assignment	A tool that allows the submission, grading, and feedback of assignments.	Used for the submission of student work for assessment.
Folder	A tool used to organize contents.	Used for information transfer.
Page	A tool used to create a webpage.	Used to display content including plain text, image, audio, video, and embedded code. Pages are more accessible as a word processor isn't needed.

Tool	Description	Usage
URL	The tool allows the insertion of a webpage link.	Used to direct students to articles, tools, and activities that are external to Moodle.
Label	A tool used as a spacer or to add multimedia and text.	Used to add images, multimedia, and text between sections. It can be used to improve the appearance of a course/subject.
Choice Group	A tool that allows students to enrol in one more group as per their choice.	Used to restrict access to certain resources and activities can be restricted.
Chat	Tool for synchronous chat discussion.	Used for interaction with an invited speaker, students can collaborate using the chat, can discuss topics and write together. The chat can be used for questions during an assessment.
Learning Tools Interoperability (LTI)	The tool allows remote users on another site to access specific subjects and activities on the Moodle site.	Used for access and integration with other platforms such as Pearson's MyLab and MyMathLab.
Choice	A tool that enables students to vote, to choose subjects, etc.	Used to quickly test the understanding of a concept by using a single multi-choice question.
Book	A tool used to create a book like structure with pages organized as a series of chapters and subchapters.	Used for communication information in a structured form.

It is evident that Moodle was also used extensively for communication and dissemination of information purposes with all 49 subjects making use of the forum discussion and resource tool (Figure 3). Other tools used by many lecturers for uploading files include folders (used by 26 subjects, 53.06%) and resources (used by all 49 subjects) (Figure 3). These results support the finding of Chaka,[52] who opines that the learning management system has emerged as the dominant platform for ERT in South African Universities.

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[52] Chaka, "Higher Education Institutions and the Use of Online Instruction," 1-46.

Moodle Tools : Percentage of usage

Figure 3

Percentage usage of Moodle tools

IV.1.3. Stage 3: E-Assessment Training

The third category, E-Assessment training is represented in the data by 25 references (Table 2). This relates to training provided to staff for the development of effective e-assessments. COVID protocols at the time prohibited the gathering of students therefore all assessments were converted to e-assessments. Internal and external experts offered academic staff development sessions aimed at restructuring assessments for an online environment. E-assessment guides and workshops were provided to support academic staff, build in-house capacity and upskill academic staff so they were able to redesign assessments to be suitable for an online environment. The data had references to guides for the use of the e-assessment tools and assistance relating to fine tuning e-assessments such that integrity was maintained and the smooth running of assessments was managed.

> *When students are assessed from a distance, it is even more important not to test knowledge recall only. One can set questions in a way that tests higher order thinking; and tasks can be set that are related to the real world, requiring authentic problem-solving and critical thinking. Open book testing with a time limit, is also advised…*

> DUT e-Assessment Guidelines during
> the Corona crisis_FINAL DRAFT, 12 April 2020.

Regular training sessions provided ongoing support needed by staff as they learnt how to implement Moodle e-assessment tools effectively in their courses:

> *Please scroll down for the training programme taking place in the Team: eLearning Support (Moodle) -- every Tuesday and Thursday from 10-11.30, starting on Tuesday 6 Oct 2020…How to set up an assignment; In-line marking on a pdf from within Moodle; Grading: Simple, direct grading; With a Marking Guide; With a Rubric; How to override attempts; How to set up group assignments...*

<div align="right">Second Semester Moodle Training, 18 October 2020.</div>

The effectiveness of the implemented e-assessments is discussed in the reflection stage where students' assessment results are analysed. This directly represents the students' ability to learn using the ERT environment.

Analysis of Moodle LMS data shows extensive use of the tool for assessment purposes. As can be seen in Figure 3 the quiz tool is used by 77.55% of the subjects (38 of the 49 subjects) while the assignment tool is used by 59.18% (29 subjects).

Table 4 reveals that many subjects (44.9%) make use of both the quiz and assignment tools, while 32.7% of the subjects use only the quiz tool for assessments and 14.3% implement only the assignment tool. The table further reveals that only 8.1% of the subjects (4 subjects) use neither the assignment nor the quiz tools for assessment. These subjects could possibly provide assessments through presentations or assignment submissions on MS Teams or through other certification tools. With 91.2% of the subjects using either the quiz or assignment tools, it is evident that the e-assessment training implemented in the model was successful.

Table 4

Assignment and Quiz tools used

No. of Subjects	% Subjects using Assignment tool only	% Subjects using Quiz tool only	% Subjects using both Assignment and Quiz tools	% Subjects using neither Quiz nor Assignment tools
49	14.3%	32.7%	44.9%	8.1%

IV.1.4. Stage 4: Reflection

The fourth category, reflection is represented in the data by 8 references (Table 2). This stage of the model includes reflection on the model including

best practices and challenges. Internal and external experts provided valuable information for best practices as well as setbacks in the form of reports and training documents which provided academics with an informed view of how they could direct their efforts and improve ERT and assessments. For example, the CELT department of DUT reviewed their experiences helping students to adjust to e-learning:

> *The trendy issue now that we find ourselves have to address, is the issue of computer literacy, ideally we should train students on using the online systems after they have gone through at least one computer basic/skills training, however, that is not the case because some departments do not have the computer skills as one of their modules and some offer it in the next semester or year…*

> 2020 TFL - 1st term Report, 18 Nov 2020.

The Moodle LMS was the key tool necessary for providing asynchronous learning and e-assessments. The success of the training provided in the prior phases is evident in the data analysis that follows which reports on the extent to which the LMS was used by lecturers and students. Figure 4 presents the total number of different resources used per subject. The degree to which Moodle is relied on and the extent to which it has been adopted by lecturers varies between subjects, with some subjects including as few as four resources in the Moodle classroom while others include 157. Each subject used a good variety of tools or resources for teaching, learning and assessment (Figure 4).
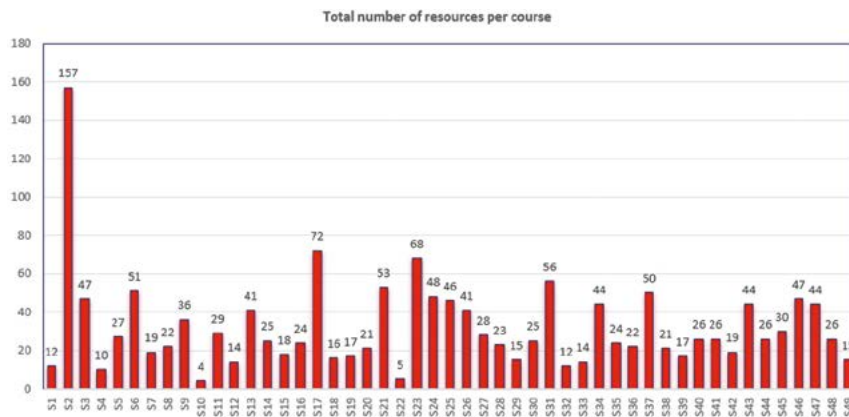

Figure 4

Total number of resources per subject (course)

The number of visits made by students to each tool (Table 5) and the visits made to each Moodle classroom (Table 6) are indicative of the high level of student participation in the asynchronous mode of teaching and learning.

Table 5

Moodle tools visit summary

	AS	Book	Chat	Choice	CG	Folder	Forum	Label	LTI	Page	Quiz	Resource	URL
Median	790	80	54	138	126	473	642	3	70	90	7582	2344	34
Max	10094	80	68	208	881	7868	4531	40	75	1966	114897	62875	180
Min	173	80	37	67	104	21	26	2	65	33	639	101	1

AS=Assignment; CG=Choice Group

The average visits made per student to a subject's Moodle classroom ranged from 9 to 433 with a median of 118 unveiling the heavy reliance that some lecturers have on Moodle LMS while supporting the notion that alternate platforms for learning were used (Table 6). A median of 118 visits per student translates to each student interacting with each of their subject specific Moodle classrooms approximately 11 times per week over the 11 week period being investigated. The students are therefore also heavily reliant on the LMS for learning purposes. The median was used for analysis instead of the mean because the data was not normally distributed therefore using the median is more accurate.[53]

Table 6

Total and average visit to Moodle classroom

S	P	TV	AVG	S	P	TV	AVG	S	P	TV	AVG
S1	308	6660	22	S18	111	15696	141	S35	100	17458	175
S2	71	30778	433	S19	41	381	9	S36	382	9158	24
S3	16	781	49	S20	432	7838	18	S37	26	9723	374
S4	876	162625	186	S21	106	21701	205	S38	569	106133	187

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[53] Harry O Posten, "Robustness of the Two-Sample T-Test," in Robustness of Statistical Methods and Nonparametric Statistics, ed. Dieter Rasch, and Moti Lal Tiku (Springer, 1984), 92-99.

S	P	TV	AVG	S	P	TV	AVG	S	P	TV	AVG
S5	570	35573	62	S22	263	8327	32	S39	18	1532	85
S6	334	10241	31	S23	32	8156	255	S40	36	3586	100
S7	527	18416	35	S24	24	3083	128	S41	318	14975	47
S8	350	11352	32	S25	61	5975	98	S42	161	3843	24
S9	152	15259	100	S26	56	5874	105	S43	60	6824	114
S10	97	3223	33	S27	75	5617	75	S44	308	74409	242
S11	278	19560	70	S28	77	15184	197	S45	118	22587	191
S12	87	7525	86	S29	605	133361	220	S46	125	20288	162
S13	329	20396	62	S30	47	5824	124	S47	54	12621	234
S14	121	10187	84	S31	77	5465	71	S48	313	26290	84
S15	89	12929	145	S32	343	29979	87	S49	316	6766	21
S16	260	6938	27	S33	283	5151	18				
S17	311	76333	245	S34	152	36215	238				

S = Subject; P=Participants; TV = Total Visits; AVG = Average visit per participants.

The most frequently used tool is the quiz followed by resources (Figure 5). Moodle is therefore essential for e-assessment purposes using the quiz as well as for the distribution of materials through the resource tool. Table 5 and Table 6 reveal that although the quiz tool is used by 77.55% of subjects while the forum and resource tools are used by 100% of subjects, the number of visits to the quiz tool (median = 7582 per module) is greater than the visits to the forum and resource (medians per module are 642 and 2344 respectively). The quiz is therefore used more extensively by students for assessments. The assignment tool is also used for assessment purposes with students' visits to the tool (median = 790 per module).

It is evident that the extent to which the LMS platform was used and the various tools adopted differed for each classroom while the data also indicates that the platform is being used for communication, assessment and dissemination of subject content by lecturers and is being visited frequently by students. The presentation of results thus far fulfils the second purpose of the paper in evaluating the involvement of lecturers and students in the ERT model. From the above discussion, it is evident that Moodle has been widely adopted by lecturers and students as a platform for teaching, learning and assessment through an asynchronous mode of delivery.
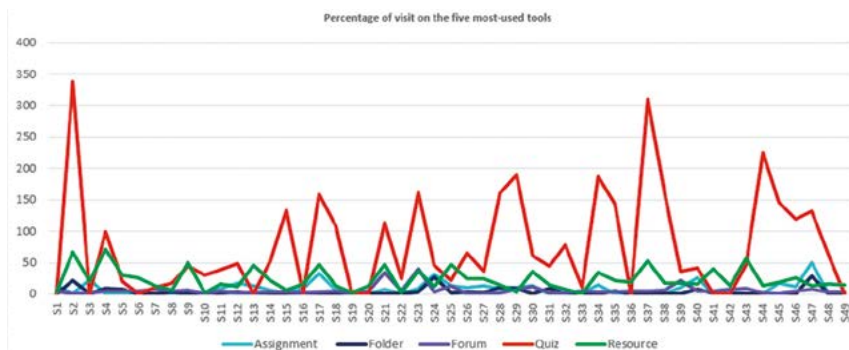
Figure 5

Percentage of the visit to the five most used tools

In an attempt to analyse the effect of the implementation of the ERT model, the authors chose to statistically test the hypothesis that the new approach was successful and attempted to further investigate the extent to which the students' final marks were affected. The data was anonymized with subject codes being assigned to subjects (S1, S2 through to S32). SPSS was used to perform the statistical analysis of the data. The median mark for each subject was calculated for 2019 and 2020. The median was used as a descriptive measure as opposed to the mean as the data within each subject was not normally distributed and presented with values that were beyond the acceptable limits in terms of skewness and kurtosis. Moreover, the median is more robust as it is hardly influenced by outliers.[54] The median values were used in a pairwise analysis between the two datasets. A dependent samples t-test was performed to test the hypothesis that the mean of the medians of the 2020 final semester 1 subject results (M = 66.25, SD = 6.30796) and the mean of the medians of the 2019 final semester 1 subject results (M = 62.5944, SD = 6.44349) were equal (Table 7).

Table 7

Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	median_2019	62.594	32	6.443	1.139
	median_2020	66.250	32	6.308	1.115

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[54] Frederik Michel Dekking et al., A Modern Introduction to Probability and Statistics: Understanding Why and How (London:Springer Science & Business Media, 2005).

Prior to performing analysis, the distribution of scores was examined for normality. The data could be considered normally distributed as the levels of skewness and kurtosis were estimated at 1.519 and 0.2446 respectively for the 2019 data and 1.999 and 1.145 for the 2020 data. These values are within the acceptable range for a t-test (i.e., skew < |2.0| and kurtosis < |9.0|.[55] From the analysis the null hypothesis of equal final marks means is rejected $t(31) = -2.682$, $p = 0.012$ (Table 8). Thus the 2020 final marks mean was statistically significantly higher than the 2019 final marks mean for the 32 subjects under review.

Table 8

Paired Samples Test

		Paired Differences					t	df	Sig[a]
		Mean	Std. Deviation	Std. Error Mean	95% Confidence interval				
					Lower	Upper			
Pair 1	median_2019 Median_2020	-3.656	7.710	1.363	-6.435	-0.876	-2.682	31	0.012

Sig = significance; [a] (2-tailed); df=degrees of freedom.

Furthermore, Cohen's d which measures the standardized mean difference of an effect is estimated at -0.474 by using the standard deviation of the mean difference (Table 9). This indicates that a medium practical effect significance exists, based on[56] guidelines.

Table 9

Paired Samples Effect Sizes

			Standardizer[b]	Point Estimate	Lower	Upper
Pair 1	median_2019 Median_2020	Cohen's d	7.710	-0.474	-0.837	-0.105

[b] The denominator used in estimating the effect sizes.

A summary of these results can be seen in Table 10. As per this table, it is evident that 31.35% (10) of the subjects presented with statistical

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[55] Posten, "Robustness of the two-sample t-test," 92-99.
[56] Jacob Cohen, "A Power Primer," Psychological bulletin 112, no. 1 (1992): 155.

insignificance (i.e., p-value>0.05). However, 68.75% (22) of the subjects showed a statistically significant difference with the majority of subjects in 2020 (17 subjects, 53.13%) demonstrating improved results being obtained when compared to 2019 results. Table 10 also demonstrates the discrepancies that exist between the different subjects, with some showing no significant statistical difference in the final marks between 2019 and 2020 while others showing significance either in favor of 2019 or in favor of 2020. Researchers believe that these variations could be due to factors such as the level and type of subjects which is beyond the scope of this study. A further study that investigates the level and type of subject that benefits or suffers most from the multimodal approach may provide extra insight into the research area.

In terms of the aims of the study, the evidence suggests that the adoption of the model resulted in a significant improvement in the majority of the students' results.

Table 10

Mann-Whitney U Test Results

S	2019		2020		Test Stats		
	N	MR	N	MR	MWU	Z	P-value
S1	186	278.65	287	287.00	18944.50	-5.345	0.001*
S2	585	562.08	559	583.41	157409.50	-1.092	0.275
S3	520	334.92	343	579.18	38697.50	-14.091	0.001*
S4	194	190.83	325	301.29	18105.50	-8.125	0.001*
S5	632	500.09	609	746.47	116031.50	-12.108	0.001*
S6	522	463.99	335	374.48	69171.50	-5.170	0.001*
S7	415	234.05	60	265.30	10812.00	-1.649	0.099
S8	199	597.21	804	478.43	61051.50	-5.180	0.001*
S9	316	178.18	37	166.89	5472.00	-0.637	0.524
S10	504	523.15	515	497.13	123150.00	-1.412	0.158
S11	321	278.28	349	388.13	37645.50	-7.343	0.001*
S12	62	80.95	305	204.95	3066.00	-8.394	0.001*
S13	84	116.90	98	69.72	1982.00	-6.027	0.001*
S14	501	431.58	476	549.43	90472.00	-6.527	0.001*

S	2019		2020		Test Stats		
	N	MR	N	MR	MWU	Z	P-value
S15	65	68.99	60	56.51	1560.50	-1.926	0.054
S16	63	48.31	57	73.97	1027.50	-4.038	0.001*
S17	79	94.97	103	88.84	3794.50	-0.778	0.436
S18	519	405.52	390	520.85	75522.50	-6.558	0.001*
S19	302	396.78	480	388.18	70886.50	-0.518	0.604
S20	263	141.81	43	225.00	2580.00	-5.720	0.001*
S21	393	354.54	334	375.13	61913.00	-1.318	0.187
S22	215	149.11	303	337.83	8839.50	-14.146	0.001*
S23	378	306.00	361	437.01	44038.00	-8.342	0.001*
S24	80	73.09	106	108.90	2607.50	-4.507	0.001*
S25	374	282.28	380	471.22	35446.00	-11.916	0.001*
S26	60	150.22	304	188.87	7183.00	-2.603	0.009**
S27	216	143.65	95	184.07	7593.00	-3.655	0.001*
S28	274	191.05	85	144.37	8616.50	-3.626	0.001*
S29	65	67.37	61	59.38	1731.00	-1.229	0.219
S30	64	64.21	58	58.51	1682.50	-0.890	0.373
S31	50	59.94	104	85.94	1722.00	-3.392	0.001*
S32	403	408.04	324	309.22	47537.50	-6.311	0.001*

* p-value < 0.001; ** p-value < 0.05; MR = Mean Rank; MWU = Mann-Whitney U.

V. Conclusion

This study mainly aimed at the presentation and evaluation of the four-stage multimodal remote teaching and learning model implemented by the DUT in response to the COVID-19 pandemic. The entire shift to the ERT model was achieved in the four stages of preparation, synchronous and asynchronous teaching and learning, e-assessments and reflections. The preparation stage ensured that the staff and students gained the necessary skills and resources for transformation to the multimodal emergency remote teaching and learning. Effective teaching, learning and assessment strategies that were required to complete the current academic year were achieved

through the second and third stages of the model: synchronous and asynchronous teaching and learning and e-assessments stages. Finally, the fourth stage aimed at reflecting the best practices by analysing the effect on the academic results of students being taught and assessed during ERT and by analysing the usage of the adopted LMS by students and lecturers.

Both the qualitative and quantitative results indicate that the adopted multimodal emergency remote teaching and learning model was well accepted and adopted by the lecturers and students. The qualitative analysis performed on the analysed documents reports on the extent to which the model was implemented and presents evidence of its' implementation while highlighting how implementation was achieved in each stage of the model. The student activity data from the LMS shows that Moodle was extensively used and it has emerged as a dominant platform for students' interaction and engagement. Despite the diverse information communications technology infrastructures available to each of them, the efforts taken by the lecturers and students in actively participating in all four stages of the adopted ERT model showed an overall improvement in student performance during 2020 compared to 2019 where no disruption to teaching and learning was present. Thus the study results demonstrate the relevance and success of the implementation of the four stage emergency multimodal approach despite all challenges. This study delivers valuable insight into the extensive use of LMS as a dominant platform during the transition to ERT. This provides recommendations to LMS developers for further developments to enhance the design of online classrooms for a successful implementation of multimodal teaching and learning. The findings of this study are not generalizable, but can be used as potential measures for the adaptation of ERT in a similar situation.

Future research could include empirical analysis to establish the perceptions of both lecturers and students to ERT and the four-stage model that was implemented while identifying the challenges experienced. A further study could investigate the type of subject (practical or theoretical) which benefits most from remote learning and which type of subjects are hindered by ERT.

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UAE-based first-year university students' perception of lifelong learning skills affected by COVID-19

Tanju Deveci*

Abstract: Forcing education institutions to rely on online learning exclusively, the recent pandemic has brought lifelong learning (LLL) to the forefront. The effects of the recent education approaches on students' LLL skills merit investigation. First-year students may be at a greater risk because of their limited tertiary education experience and universities' expectations for them to engage in self-directed learning. This study investigated how 38 UAE-based first-year students thought COVID-19 impacted their LLL skills. The quantitative data were collected using a scale while the qualitative data were collected using a reflective task. The results revealed that the students' overall high score from the scale prior to the pandemic remained stable nine months into it despite a significant decrease in the *adaptable learning strategies* sub-scale. Yet, some students' overall LLL scores increased significantly. The qualitative data showed that these students thought they solidified their skills in learning strategies and plans. However, the female students reported a decrease in *goal-setting* score. Taken together, the results indicate that LLL skills help students reduce the negative impacts of COVID-19 on learning; yet it is still important to note the reducing impact of the pandemic on some students' skill in *adapting learning strategies* and *setting goals*. The results also indicate that LLL skills are malleable and educators can help enhance students' LLL skills.

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I. Introduction

The COVID-19 outbreak was declared a pandemic by the World Health Organization on 12 March 2020. This called for drastic measures in society at all levels. Naturally, educational institutions, too, had to take immediate actions. Due to a lack of experience, new educational practices were initially introduced in an *ad hoc* way, albeit with good intentions and in an effort to avoid a reduction in the quality of students' learning. Online learning and teaching technologies were a valuable resource to draw upon, even though using them made students' full engagement in the learning process and meaningful interactions with faculty and peers difficult to maintain. Rising to this challenge, educators across the globe have had to make an all-out effort to adjust their teaching styles and adopt new approaches to teaching. This has often required them to acquire new technical skills and/or improve their already existing ones. Similarly, students' place at the center of their own learning process has become more noticeable. This has made lifelong learning (LLL) skills all the more important.

If first-year students, who have limited tertiary experience, are not prepared enough for LLL, their learning may be severely affected by the COVID-19. Experiences of such magnitude serve as a 'disjuncture', which is defined by Jarvis[1] as

> a situation in which we are not sure how to act, or even experience a 'magic moment' that just stops us in our tracks. It is something out of the normal - abnormal or supra-normal - and it gives rise to astonishment, wonder or some other emotion.

Jarvis[2] notes that "The process of resolving our disjuncture and practising our solutions may take motivation, perseverance and a lot of effort," all of which are qualities of a lifelong learner. Upon the successful completion of resolving a disjuncture, Jarvis[3] states, the person is changed in different ways. He/she, for instance, becomes more self-confident, more knowledgeable, more skilled, and more experienced. First-year students' LLL skills are likely affected by the COVID-19 pandemic. One naturally hopes this would be a

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[1] Peter Jarvis, *Towards a Comprehensive Theory of Human Learning* (London and New York: Routledge, 2006), 15.

[2] Jarvis, *Towards a Comprehensive Theory,* 22.

[3] Jarvis, *Towards a Comprehensive Theory,* 22.

positive effect. However, there appears to be no research yet investigating this phenomenon, particularly in the UAE context. One reason for this lack of research may be the fact that the pandemic is still ongoing. Researchers may choose to investigate its effects only after the disjuncture is resolved. However, the weight of the disjuncture is such that it warrants investigations at any stage. If we can understand the students' experiences as the effects of the pandemic are unfolding, we can cater to their needs better and support the development of their LLL skills. This is the case with any group of learners, irrespective of their size. Accordingly, with this current study, conducted in the English Department at a UAE-based university, I aimed at identifying my students' self-perceived effects of the pandemic on their LLL skills, particularly those of the newly-admitted students.

The university where this research was conducted puts a heavy emphasis on students' development of LLL skills. The course-learning outcomes on almost all the courses across the university include items related to LLL. However, partly because of the complicacies surrounding the concept and challenges in teaching and assessing LLL skills, students' development of LLL skills seem to be left to chance. Thus the impacts of life-changing experiences, such as the pandemic, on students' LLL skills can go unnoticed. This can hamper students' aptitude for learning and decrease their chances of becoming critical thinkers and self-directed learners, both of which are essential skills for university students to "acquire the knowledge, skills and attitudes necessary not only for academic success but also for their overall well-being."[4] Students can feel the effects not only during their university studies but also upon graduation causing problems in workplaces and for growth in their personal lives. Accordingly, it is crucial to identify students' perceptions of the effects of the COVID-19 as a disjuncture on their LLL skills.

Recently, a plethora of initiatives have focused on how students' learning is affected by the online learning/teaching practices imposed by COVID-19; however, there has been no research specifically focused on its impacts on first-year students' LLL skills – a group of learners who might be particularly at risk. To fill this gap, influenced by the interpretivist approach,[5] I adopted a combined quantitative-qualitative method to understand the experiences of a relatively small group of first-year students (n = 38) in my English classes at a UAE university. This, I believed, would enable me to identify my students'

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[4] Tanju Deveci and Nader Ayish, "Correlation between Critical Thinking and LLL Skills of Freshman Students." *Bartın University Journal of Faculty of Education* 6, no.1. (2017): 286.

[5] Louis Cohen, Lawrance Manion, and Keith Morrison, *Research Methods in Education* (London and New York: Routledge, 2007).

strengths and weaknesses so that I could improve my teaching in ways I could better support their development of LLL skills during times of crises such as the COVID-19 pandemic. To this end, I sought answers to these questions:

1. How do my first-year students' perceptions of their LLL skills before and during the COVID-19 pandemic compare?
2. How do the male and the female students' perceptions compare?

I.1. LLL and LLL skills

Defined as "the process of transforming experience into knowledge and skills, etc., resulting in a changed person–one who has grown and developed as a result of the learning",[6] LLL considers the individual to be an active agent in his/her life. Learning, not confined to a place or time, results from the individual's meaningful engagement in learning experiences and develops him/her in significant ways. Accordingly, a lifelong learner can be defined as an individual who is able to not only "informally educate [himself/herself] through self-teaching or consulting with experts" but also "[to] take advantage of institutions promoting formal learning, … or pursue more formal education."[7] Based on the relevant literature, Kirby, Lamon, and Egnatoff[8] identify the qualities of a lifelong learner as someone who sets goals, applies appropriate knowledge and skills, engages in self-direction and self-evaluation, locates required information, and adapts his/her learning strategies as required by the changing conditions. Collectively, these skills enable the individual to 'learn how to learn'.

I.2. LLL and university students

LLL has been on education institutions' agendas for a number of years and a considerable amount of time and energy has been devoted to equipping students with essential LLL skills, which has had clear positive effects on their learning experiences. The pandemic is highly likely to have encouraged students (with support from their instructors) to employ these skills to the best

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[6] Peter Jarvis, "Lifelong Learning: A Social Ambiguity," in *The Routledge International Handbook of Lifelong Learning*, ed. Peter Jarvis (London and New York: Routledge, 2009): 11.

[7] Donna L. Gilton, *LLL in Public Libraries: Principles, Programs, and People* (Lanham: Scarecrow Press, 2012), 67.

[8] John R. Kirby, Christopher Knapper, Patrick Lamon, and William J. Egnatoff, "Development of a Scale to Measure LLL." *International Journal of LLL* 29, no.3 (2010): 292.

of their abilities. Conceivably, this has been a challenge for some; a variety of factors, not the least technological limitations and glitches, come into play. Just as the extent to which such factors are mitigated determines students' quality of learning, so does the extent to which they have mastered LLL skills. Expected to be in greater charge of their own learning mainly due to the nature of university education, university students are required to, and given the opportunity to, enhance their self-directed learning skills that lay the foundations for LLL skills.[9] Although curricula at universities in the UAE often include learning outcomes pertaining to LLL skills, it appears that the use of such terms in curricula might not always translate into learning activities and assessment conducive to the development of LLL skills, and newly admitted students' LLL skills are often taken for granted.[10] It has been shown that rote-learning adopted at some secondary schools within the UAE context fails to prepare students for the kind of self-directed learning behaviors[11,12] and therefore LLL propensities expected of them at the tertiary level. In some places including the UAE, students are required to sit long central exams for university admission, which imposes an overall attitude of memorization and superficial learning,[13] resulting in a lack of preparedness for LLL at university.

It has also been shown that the further students are into their university studies, the more skilled they are in self-directedness and application of knowledge and skills,[14,15] which increases their ability to engage in LLL. Previous research conducted has indeed revealed that first-year students, with the limited time spent at university, often lacked an aptitude for LLL.[16]

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[9] Carolinda Douglass and Sherrill R. Morris. "Student Perspectives on Self-direct learning." *Journal of the Scholarship of Teaching and Learning* 14, no.1 (2014): 13.

[10] Deveci et. al, "Correlation between Critical," 282.

[11] Lelania Sperrazza and Rana Raddawi. "Academic writing in the UAE: Transforming critical thought in the EFL classroom," in *Teaching EFL Writing in the 21st Century Arab World*, ed. Abdelmahed Ahmed and Hassan Abouabdelkader (London: Palgrave Macmillan, 2016): 157.

[12] Zafar Syed. "TESOL in the Gulf: The Sociocultural Context of English Language Teaching in the Gulf." *TESOL Quarterly,* 37, no.2 (2003): 337.

[13] Thomas Kellaghan, George F. Madaus, and Anastasia E. Raczek. *The Use of External Examinations to Improve Student Motivation* (Washington, DC: American Education Research Association, 1996),

[14] John C. Chen, Karen J. McGaughey, and Susan M. Lord, "Measuring students' propensity for LLL," in *Proceedings of the 2012 AEE Conference* (Melbourne, 2012).

[15] Thomas A. Litzinger, John C. Wise, and Sang Ha Lee. "Self-directed Learning Readiness among Engineering Undergraduate Students." *Journal of Engineering Education* 94, no.2 (2005): 215

[16] Richard M. Wielkiewicz and Alyssa S. Meuwissen. "A LLL Scale for Research and Evaluation of Teaching and Curricular Effectiveness." *Teaching of Psychology,* 41, no.3 (2014): 220.

Earlier research, too, found that the UAE-based students had relatively lower scores for self-regulation and perseverance skills.[17] Similarly, Arab students in the USA were shown to have low levels of self-regulation.[18] Likewise, Saudi students were found to be extrinsically motivated for learning.[19] All of these, naturally, lower students' aptitude for LLL. Thus, first-year university students ought to be given special attention and help establishing a solid foundation on which they can build LLL skills essential for use during and beyond their university years.

I.3. Gender and LLL

There is a general perception that gender plays a role in learning. Meyer et al.[20] emphasize this saying "gender differences constitute a potentially important and neglected source of variation in student learning which, when detected in context, can and should be explicitly managed by academic practitioners." I expect there are differences between male and female students' LLL orientations. This is based on both anecdotal evidence from my own experiences and the results of previous studies. For instance, Cesur and Ertas[21] examined language learners' orientation towards responsibility for learning, which is an important aspect of LLL. Their results showed that female learners were more responsible than male students in terms of planning what to study (i.e., *goal-setting*), adjusting how to learn (i.e., *adaptable learning strategies*), and revising assignments according to feedback provided (i.e., *application of knowledge and skills*). Similarly, Üstünlüoğlu[22] found that female students assumed more responsibility than males in relation to autonomous language learning (i.e., *self-direction and evaluation*). Another study conducted in the UAE context, too, revealed that

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[17] Tanju Deveci. "LLL Orientations of Freshman Engineering Students and Faculty Members" *Journal of Higher Education* 4, no.1 (2014): 14.

[18] Aisha S. Al-Hafthi, "*Learner Self-regulation in Distance Education: A Cross-Cultural study*" (PhD diss., the Pennsylvania State University 2007).

[19] Choudary Zahid Javid, Abdul Rahman Al-Asmari, and Umar Farooq. "Saudi Undergraduates' Motivational Orientations towards English Language Learning along Gender and University Major Lines: A Comparative Study." *European Journal of Social Sciences* 27, no.2 (2012): 283

[20] Jan H. F. Meyer, Timothy T. Dunne, and John T. E. Richardson, "A Gender Comparison of Contextual Study Behavior in Higher Education," *Higher Education* 27 (1994): 469.

[21] Kursat Cesur and Abdullah Ertas (2013). "Who is More Responsible? Preparatory Class Students' Perceptions of Responsibility." *ELT Research Journal* 2, no. 2 (2013): 70.

[22] Evrim Üstünlüoğlu. "Autonomy in Language Learning: Do Students Take Responsibility for Their Learning?" *Journal of Theory & Practice in Education* 5, no. 2 (2009): 148.

female students, in comparison to their male counterparts, were more curious about learning (i.e., *goal-setting*) and put more effort into academic endeavors (i.e., *application of knowledge and skills*)[23]. A possible reason for this is that the study was carried out in an engineering university where the female students likely had a greater motivation for success in a traditionally male-dominated field of work.

Despite the results pointing to differences between the two genders, researchers in other contexts did not find statistically significant differences between male and female students' orientations towards learning,[24,25,26] making the discussion over gender differences inconclusive. Accordingly, further investigation into the role of gender in students' LLL orientations is worthwhile. This is particularly true in the context in which the current research was initiated; gender roles in the UAE tend to be quite marked although there is now much emphasis on women's inclusion in prominent positions across the society, which encourages more and more women to participate in higher education. Therefore, increasing our awareness of how males' and females' LLL skills compare will help understand the practical implications of differences, if any.

I.4. COVID-19 as a disjuncture

As happy and exciting as entering university is, it can nonetheless be fraught with major challenges triggered by changes to social environment and increased academic expectations, resulting in reduced well-being and therefore less effective functioning of those transitioning to early adulthood.[27]

A definition of 'disjuncture' was given above. The COVID-19 pandemic is a major disjuncture causing humanity great distress in the face of the unknown.

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[23] Tanju Deveci. "The Relationship between First-year University Students' Academic Self-concept and Lifelong Learning Tendency." *Learning and Teaching in Higher Education: Gulf Perspectives* 15, vol. 1 (2018): 1.

[24] Susan Edgar. "Identifying the Influence of Gender on Motivation and Engagement Levels in Student Physiotherapists." *Medical Teacher* 37, no. 4 (2015): 348.

[25] Sabine Severiens and Geert ten Dam. "Leaving College: A Gender Comparison In Male And Female-Dominated Programs." *Research in Higher Education* 53, vol. 4 (2012): 453.

[26] Tanju Deveci and Nader Ayish. "Personal Responsibility and Interpersonal Communication Skills of Freshman students In a Project-Based Environment." *International Journal of Social Sciences and Education Research* 4, no. 1 (2018): 1.

[27] Michael Sawyer, Lauren Miller-Lewis, and Jenifer Clark, "The Mental Health of 13–17 Year-Olds in Australia: Findings from the National Survey of Mental Health and Well-Being," *Journal of Youth and Adolescence* 36, no. 2 (2007): 185.

It put millions in life-and-death situations with impacts reverberating across the globe. Bjursell,[28] however, notes that LLL theory considers a disjuncture as a trigger for learning. She notes that it is essential for us to examine the changes caused by a pandemic. Only in this way can we understand how fear impacts learning and find ways to tackle the situation in the best possible way. Stanistreet[29] points out that the pandemic has caused many education institutions to end face-to-face education and find other ways to ensure that students continue learning with as minimum impact as possible. Faced with a disjuncture, students have also had to find their own ways of sustaining learning, even if supported by their institutions (and parents in many cases).

II. Method

II.1. Research context and participants

The current research was undertaken in the context of an English class at a UAE university. The English classes aim at developing students' academic literacy skills with a heavy emphasis on writing. The university offers mixed-gender education; however, students, who are influenced by their cultural upbringing and prior education experiences, tend to self-segregate in the classrooms. This is particularly the case for first-year students.

When the university decided to switch to online learning mode, the students had had three weeks of a face-to-face learning experience. The rest of their English course (i.e., 13 weeks) was completed in the pandemic-learning mode through BigBlueButton (BBB), an open-source web conferencing system for online learning. BBB was embedded in Moodle, an open-source learning management system. The faculty were given training on how to utilize BBB and enhance their use of Moodle, which had been operational for quite a while prior to the pandemic. Likewise, the students were inducted into BBB by the university's IT Department. The students took their examinations online, monitored by the faculty using Respondus, a webcam and lockdown browser recording students' entire testing experience. However, many of the assignments in my course required multiple drafts on which the students received written feedback which we discussed during office hours held online.

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[28] Cecilia Bjursell. "The COVID-19 Pandemic as Disjuncture: LLL in a Context of Fear." *International Review of Education* 66 (2020): 675.

[29] Paul Stanistreet. "Thinking Differently, Together: Toward a LLL Society." *International Review of Education*, 66 (2020): 449.

Due to cultural reasons, the students were not required to turn on their cameras during classes. In fact, almost none of the students, the females in particular, turned on their cameras. Many of them were also quite hesitant about participating in the lessons. Although some felt at more ease as the course progressed, they were generally not as vocal as they would be in face-to-face classes. This often meant that I should provide a lot more input sessions than I would normally do. However, thanks to the availability of the breakout rooms in BBB, I was able to interact with the students individually or in groups. In neither, though, the students were likely to turn on their cameras, making the interaction less authentic.

A total of 38 first-year students enrolled in my English classes in the study. Of this number, 22 were female and 16 were male. Their ages ranged from 17 to 21, and the mean age was 19. The students came from various countries including UAE (21), Eritrea (5), Ethiopia (3), Iraq (3), Jordan (2), Palestine (1), Sudan (1), Yemen (1), and Egypt (1). These were all students who came to higher education directly from secondary education.

II.2. Data-collection and analysis

The data were collected using a scale adapted from Kirby et al.[30] The scale was comprised of 14 items in five sub-scales, i.e., *goal-setting* (5 items*), application of knowledge and skills* (3 items), *self-direction and evaluation* (2 items), *locating information* (1 item), and *adaptable learning strategies* (3 items). Some of the sample statements for these sub-scales are given in Table 1.

Table 1

Sample Statements

Sub-scales	Before COVID-19	During COVID-19
Goal setting	I preferred to have others plan my learning. I loved learning for its own sake.	I prefer to have others plan my learning. I love learning for its own sake.
Application of knowledge and skills	I tried to relate what I learned to practical issues. I was able to attach meaning to what others saw as disorder.	I try to relate what I learn to practical issues. I am able to attach meaning to what others see as disorder.

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[30] Kirby et. al., "Development of a Scale," 298.

Sub-scales	Before COVID-19	During COVID-19
Self-direction and evaluation	I felt others were in a better position than I was to evaluate my success as a student. It was my responsibility to make sense of what I learned at college.	I feel others are in a better position than I am to evaluate my success as a student. It is my responsibility to make sense of what I learn at college.
Adaptable learning strategies	I was able to deal with the unexpected and solve problems as they arose. I felt uncomfortable under conditions of uncertainty.	I am able to deal with the unexpected and solve problems as they arise. I feel uncomfortable under conditions of uncertainty.
Locating information	I often found it difficult to locate information when I needed it.	I often find it difficult to locate information when I need it.

The students were asked to reflect on their experiences before and during the pandemic and indicate the extent to which they agreed with the statements using a five-point Likert-type scale (1=Strongly disagree-5=Strongly agree). Some of the items were negatively worded, requiring reverse scoring. The highest, the lowest, and the average scores that can be attained for the whole scale as well as the sub-scales are given in Table 2 below. I did not consider cut-off points for the scale for the current study although the higher scores from the whole scale reflected stronger LLL skills. I considered a score close to the first quartile (17.5) as a low level, a score close to the second quartile (35) as an average level, and a score close to the third quartile (52.5) as a fairly high degree of aptitude. The quartiles for the sub-scales are given in Table 2.

Table 2

Score Ranges

	N	Min	Max	$\bar{x}$	Quartiles		
					First	Second	Third
Goal setting	5	5	25	12.5	6.25	12.5	18.75
Application of knowledge and skills	3	3	15	7.5	3.75	7.5	11.25
Self-direction and evaluation	2	2	10	5	2.5	5	7.5
Locating information	1	1	5	2.5	1.25	2.5	3.75
Adaptable learning strategies	3	3	15	7.5	3.75	7.5	11.25
Scale as a whole	14	14	70	35	17.5	35	52.5

Kirby et al.[31] developed the scale to identify university students' LLL tendencies. I therefore considered it the most appropriate, among many other scales available in the literature, for the current research. Another reason why I deemed it appropriate was the length of the scale; as a 14-item scale, it was easy to administer, especially because I asked the students to respond to the items twice, first considering their learning experiences prior to the pandemic and then considering their learning experiences during the pandemic. I also took into consideration the fact that the students were all non-native English speakers. Although they had a good level of English as certified by a proficiency exam, it was important to make sure the items in the scale were easy to understand. To ensure that the students would be able to understand the items, I piloted it with four students with a similar profile to that of the students who participated in the study. All these students found the items to be easy to comprehend. The authors also found that the Cronbach alpha value of the scale was .71, indicating a moderate level of reliability. Similarly, the Cronbach Alpha value in the current study was calculated to be .73.

I administered the scale to the students electronically at the end of their first-year of study. They were given adequate time to respond to the questions. I used descriptive statistics including frequencies, mean, minimum, and maximum to describe the data. Also, I compared the scores from the before COVID-19 and the during COVID-19 scales using the paired-sample t-test. On the other hand, I compared the male and the female students' scores using the t-test for two independent groups. For both, a p-value of less than .05 was considered significant.

To identify any statistical differences between their data sets, I compared each of the students' scores from the two scales using the paired-sample t-test. To collect qualitative data, I invited the seven students whose pretest and posttest scores were at a statistically significant difference to respond in writing to some open-ended questions about their perceptions of how their LLL skills were impacted by the COVID-19 pandemic. Since the quantitative data analysis showed that the students were affected most in terms of *goal setting* and *adaptable learning strategies*, I asked questions related to these particular sub-scales of the first data-gathering instrument as identified by Kirby et al[32]. The questions and the related sub-scales are as follows:

How do you feel your experience of the COVID-19 pandemic has affected your

a) love of learning? (*goal setting*)

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[31] Kirby et. al., "Development of a Scale"
[32] Kirby et. al., "Development of a Scale"

b) ability to think about your own learning and how to improve it? (*goal setting*)

c) ability to see the big picture when learning new things? (*goal setting*)

d) ability to plan your learning without depending on others? (*goal setting*)

e) ability to direct your own learning? (*goal setting*)

f) ability to approach problems from different perspectives? (*adaptable learning strategies*)

g) ability to deal with unexpected problems? (*adaptable learning strategies*)

h) feeling of comfort under conditions of uncertainty? (*adaptable learning strategies*)

In analyzing the qualitative data, I adopted the thematic analysis approach[33] which "can highlight similarities and differences across the data set [and] generate unanticipated insights." The steps followed to analyze the students' written responses were as follows: (a) Immersing in the data, (b) Generating initial codes, (c) Searching for themes, (d) Reviewing themes, (e) Defining and naming themes, and (f) Producing the report. For reliability purposes, an independent researcher participated in the data analysis. Upon an initial norming session, we first conducted the thematic analysis separately. Then we held a meeting comparing our analyses, which matched 95%. We discussed the divergences and reached an agreement.

Given their lack of experience on campus, I expected the students to think their LLL skills, in general, were limited prior to the pandemic. However, I believed their experience of the pandemic and the support by their instructors, the university administration, and the IT Department would help them improve their overall LLL skills. In LLL theory, a disjuncture serves as a trigger for learning.[34] I thought they would be first shaken up by the pandemic but then encouraged to question their beliefs about learning (and teaching). This, I felt, might be partly caused by their instructors' having to give up the center stage, causing the students to search for self-directed learning opportunities, which include skillfulness in setting goals, locating sources of information, and adjusting learning strategies. In this way, they can gain self-discipline, self-confidence, and persistence in learning, which results in greater motivation for learning.

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[33] Virginia Braun, and Victoria Clarke, "Using thematic analysis ins psychology." *Qualitative Research in Psychology* 3, no.1 (2006): 97.

[34] Bjursell. "The COVID-19 Pandemic as Disjuncture" 675

III. Results

The first research question asked how the students' perceptions of their LLL skills before and during the COVID-19 pandemic compared. The results are summarized in Table 3 below.

Table 3

Students' Scores

		Before COVID-19				During COVID-19				t	p*
		Min	Max	x̄	SD	Min	Max	x̄	SD		
Whole Population (n=38)	Goal setting	10	24	16	1.05	10	23	17.7	2.95	1.6869	.1
	Application of knowledge and skills	9	14	11	.65	5	15	10.8	2.07	-.1974	.8445
	Self-direction and evaluation	4	10	7	.96	4	10	7.1	1.52	.0733	.9419
	Locating information	1	5	3.5	1	1	5	3.4	1.13	-.4080	.6856
	Adaptable learning strategies	7	12	10	1.33	1	13	9.5	1.57	-2.16	.0373
	Scale as a whole	*40*	*63*	*48.2*	*5.19*	*31*	*58*	*48.4*	*5.5*	*.3315*	*.742*

p<.05.

Table 3 shows that the students' scores for the scale before COVID-19 ranged from 40 to 63 with an average score of 48.2. On the other hand, their scores for the scale during COVID-19 ranged from 31 to 58 with an average score of 48.4. The paired t-test conducted revealed no difference at a statistical level (t=.3315, p=.742>.05). When the scores for the sub-scales were considered, it was seen that the students recorded slight increases in their *goal setting* and *self-direction* and *evaluation scores*. However, these were not at statistically significant levels (t=1.6869, p=.1>.05 and t=.0733, p=.9419>.05 respectively). On the other hand, their scores for *application of knowledge and skills* and *locating information* decreased slightly. The differences between the scores for these sub-scales were not at statistically significant levels (t=-.1974, p=.8445>.05 and -.4080, p=6856>.05

respectively). However, the decrease in their scores for *adaptable learning strategies* (10 vs. 9.5) was statistically significant (t=-2.16, p=.0373<.05). Although the average scores for this sub-scale were nearer the third quartile, the statistical difference between them still shows that the students felt increased discomfort under conditions of uncertainty and decreased confidence in dealing with unexpected problems and in approaching problems from different angles.

The second question aimed to compare the data according to gender. To this end, I first compared the male and the female students' scores for Before COVID-19 and for During COVID-19. See Table 4 below.

Table 4

Male and Female Students' Scores before and during COVID-19

		Before COVID-19				During COVID-19				t	p
		Min	Max	x̄	SD	Min	Max	x̄	SD		
Females (n=22)	Goal setting	10	24	17.3	3.17	10	18	14.9	2.13	-2.8352	.0099
	Application of knowledge and skills	9	13	11.1	1.28	8	15	11.5	1.6	1.0879	.2889
	Self-direction and evaluation	4	10	7.2	1.54	5	9	7.1	1.31	-.2951	.7707
	Locating information	1	5	3.5	1.01	2	5	3.6	.95	.1368	.8924
	Adaptable learning strategies	8	12	10.3	1.12	7	12	9.7	1.36	-1.8464	.0789
	Scale as a whole	*41*	*63*	*49.8*	*5.4*	*39*	*58*	*50.1*	*4.43*	*-.8664*	*.3971*
Males (n=16)	Goal setting	12	22	16.9	2.62	10	22	17.2	3.15	.2679	.7924
	Application of knowledge and skills	9	14	11.5	1.46	5	14	10.8	2.57	-.9583	.3531
	Self-direction and evaluation	5	10	7.3	1.35	4	10	7.6	1.79	.4303	.6731

		Before COVID-19				During COVID-19				t	p
		Min	Max	x̄	SD	Min	Max	x̄	SD		
Males (n=16)	Locating information	2	5	3.6	1.02	1	5	3.3	1.35	-.7521	.4636
	Adaptable learning strategies	7	12	10.3	1.61	7	13	9.8	1.87	-1.1306	.2759
	Scale as a whole	*40*	*58*	*49.6*	*5.03*	*31*	*57*	*48.1*	*6.6*	*-.5152*	*.6138*

p<.05.

It is seen in Table 4 that the female students' overall score for During COVID-19 was slightly higher than that for Before COVID-19 (50.1 vs. 49.8); however, this was not a statistically significant level (t=-.8664, p=.3971>.05). The most important difference was pertaining to the sub-scale of *goal setting*; the female students decreased their average score from 17.3 to 14.9 with a statistically significant difference between the two scores (t=-2.8352, p=.0099<.05). The score of 14.9 still falls between the second and third quartiles computed for this sub-scale; yet the significant amount of difference between the two scores indicates that the female students thought they became less independent in regard to planning their learning. They also tended to think less frequently about their learning and how to improve it. These, they felt, negatively impacted their self-directedness and love of learning for its own sake.

The male students recorded a slight decrease in their overall score from 49.6 for Before COVID-19 to 48.1 for During COVID-19, but the difference was not at a statistically significant level (t=-.5152, p=.6138>.05). Neither were their scores for the sub-scales different at statistically significant levels.

I also made a separate comparison between the male and the female students' scores for the two scales. Table 5 summarizes the results.

As seen in Table 5, the male and the female students' scores for Before COVID-19 were quite similar. The female students recorded an average score of 49.8 and the male students recorded an average score of 49.6. The similarity between their scores was also confirmed by the lack of a statistically significant difference between the data sets (t=.046, p=4817). The trend was also similar for the sub-scales.

I also compared the male and the female students' scores for During COVID-19. This time, the female students' average score was higher than that of the male students (50.8 vs. 48.1); however, the difference was not at a

Table 5

Comparison of Scores according to Gender

		Female (n=22)				Male (n=16)				t	p
		Min	Max	x̄	SD	Min	Max	x̄	SD		
Before COVID-19	Goal setting	10	24	17.3	3.17	12	22	16.9	2.62	.3924	.3485
	Application of knowledge and skills	9	13	11.1	1.28	9	14	11.5	1.46	.8137	.2105
	Self-direction and evaluation	4	10	7.2	1.54	5	10	7.3	1.35	-.177	.4302
	Locating information	1	5	3.5	1.01	2	5	3.6	1.02	.1022	.4595
	Adaptable learning strategies	8	12	10.3	1.12	7	12	10.3	1.61	.0513	.4797
	Scale as a whole	*41*	*63*	*49.8*	*5.4*	*40*	*58*	*49.6*	*5.03*	*.046*	*.4817*
During COVID-19	Goal setting	10	18	14.9	2.13	10	22	17.2	3.15	2.6137	.0006
	Application of knowledge and skills	8	15	11.5	1.6	5	14	10.8	2.57	1.1764	.1235
	Self-direction and evaluation	5	9	7.1	1.31	4	10	7.6	1.79	-.941	.1764
	Locating information	2	5	3.6	.95	1	5	3.3	1.35	-.867	.1958
	Adaptable learning strategies	7	12	9.7	1.36	7	13	9.8	1.87	-2499	.4026
	Scale as a whole	*39*	*58*	*50.8*	*4.43*	*31*	*57*	*48.1*	*6.6*	*1.3285*	*.0961*

p<.05.

statistically significant level (t=1.3285, p=.0961>.05). To better understand the factors that might have contributed to the increase in the female students' scores, I identified the two students who recorded a statistically significant difference between their scores prior to COVID-19 and during COVID-19

(p=.0041 and p=.0117). After a briefing about their increased LLL skills scores, I asked them to comment on their learning experiences.

In response to a question on her love of learning as affected by COVID-19, one of the students said, "I started liking [learning] more because I had the opportunity to pause and re-watch any session at any time. Also, I think that online learning saves time in comparison with learning on campus." In regard to her ability to improve her learning, the other student commented,

> After experiencing online learning, I realized that I have to improve my learning ways and I can't do the same mistakes as the last term. For example, I can't depend on the instructors and students all the time and I have to do the work on my own and not wait for others.

She also added that having to do things by herself was a positive experience for her especially because it was her first year and she did not know any students on whom she could depend. She elaborated that the easy access to her instructors before COVID-19 often led her to rely on them more than necessary. She also stated that COVID-19 contributed to her ability to deal with unexpected problems since she had to remain positive and find ways to reduce the impact of problems such as learning how to access learning resources and needing to adopt a new strategy for learning. Now that she'd been able to survive it, she felt "I will not be surprised if any other problems show up." She also pointed to her general attitude towards uncertainty and said, "I am the kind of person who feels worried constantly under this kind of conditions and with the pandemic, I rarely feel comfortable."

The other student made a similar remark about the effect of online learning practices imposed by COVID-19 on her time-management skills: "Now I can manage my time better. I spend more time for subjects I need to improve in." She stated that online learning required her to reflect on her strengths and weaknesses as a learner and devise a plan to improve her skills so that the negative impact of COVID-19 on her education would be as negligible as possible. To this end, she said she had to leverage digital resources more often. She pointed to the variety of online resources she could use to enhance her learning. She also added that if she did not fully understand something she could request a virtual appointment from her instructors. Taken together, these indicate that she thought she has become a more self-directed learner who is able to identify and use available learning resources, evaluate her own learning, and access support when needed, all of which are among the qualities of a lifelong learner.

The most important difference between the male and the female students' scores was related to the sub-scale of *goal setting*; the female students' average score for it was 14.9 whereas the male students' average score was 17.2. The t-test also revealed a difference at a statistically significant level

(t=2.6137, p=.0006<.05). This finding indicates that the female students thought the impact of the COVID-19 pandemic on their skill in setting goals was rather strong while the male students felt the impact was relatively less strong. In comparison to their male counterparts, the female students, for example, thought they became less likely to think about their learning with an intention to improve it, less able to plan their own learning, and less likely to focus on the big picture rather than the details.

My closer examination of the data revealed that three female students' Before and During COVID-19 scores were at statistically significant levels (p=.0474, p=.0445, and p=.0475). These students were briefed about the meaning of their scores and asked to reflect in writing on the possible reasons for the decrease. A common theme that emerged from their responses was 'the feeling of helplessness.' Two of the students indicated that they lost control over learning and they were unsure whether it was necessary to continue learning, especially because the future looked so bleak without a cure in sight for the pandemic. For them, this meant a loss of motivation and a lack of effort. One of the students said, "It was nice to speak to my professors in their offices when I was not sure about how to do a project. They are still available but it is not the same." Similarly, the third student remarked that due to the physical distance from the university campus she was stripped of the opportunity to utilize services like the Writing Center.

Another theme that was present in all student responses was 'the lack of quality collaboration.' For two of the students, not being in constant contact with their peers was a demotivating factor. These students expressed their desire for planning learning activities with fellow students. They also said group work required in some classes was a formidable challenge, which they disliked. The following excerpt from one of these students' responses explains the reason for this:

> Some subjects aren't suitable for online learning like engineering design. In this subject, we have to build things and work in groups. The thing is that I don't see that working in groups is a good thing to do virtually because group members can skip sessions or they don't respond to you and you can do nothing about it. Secondly, doing projects itself is really hard because in the past years (before Covid pandemic) students in each group worked on one project but now each of us has to do the whole project by [ourselves] and supplies [aren't] provided as well.

Two other students also mentioned that the amount of work they were asked to complete by different faculty baffled them. They were so overwhelmed by this that they had difficulty catching up with the course-work. Coupled with other issues at home (e.g., noise, chores), these students

often could not prioritize tasks. The absence of immediate guidance from faculty, peers, and counselors was also a limiting factor for all the students.

IV. Discussion

The results of the current study showed that the students' average scores for the scale before and during the pandemic were both closer to the third quartile computed for the scale, pointing to the students' relatively strong belief that they had an aptitude for LLL. Considering their rather limited experience at university, particularly on the physical campus, I had expected their scores to be either close or just below the average score of 35. Previous research had indicated that newly admitted university students generally had limited skills in self-directedness and application of knowledge and skills.[35,36] The students' scores for the latter sub-scale in the current study are particularly important to note; albeit showing a minor decrease, the students' scores were almost approaching the third quartile for the relevant sub-scale (11 and 10.8), which suggests that the students thought they were relatively strong in relating new learning to already existing knowledge and attaching meaning to what may seem as disorder.

The students' relatively stable scores nine months after the outbreak of the pandemic is also important to note. Considering the weight of the pandemic and its impacts on educational practices,[37] this is a promising result because it points to the students' persistence in maintaining their LLL skills, whether consciously or subconsciously. The pandemic was likely a disjuncture for at least some of the students who maintained their motivation and persevered.[38] It is, however, important to note that at the time I was writing this paper the pandemic was still in full swing, with new strains of the virus recently identified and major cities applying stricter measures. Therefore, the disjuncture cannot be said to have been resolved for the students yet. In fact, in previous research investigating newly admitted university students' transformative learning (TL) experiences it was found that not all students faced with a disorienting dilemma, a concept that can be compared to Jarvis's notion of disjuncture, completed the full cycle of TL.[39]

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[35] Chen, McGaughey, and Lord, "Students' propensity for LLL,"

[36] Litzinger, Wise, and Lee. "Self-directed Learning," 220.

[37] Stanistreet, "Thinking Differently," 452.

[38] Jarvis, *Towards a Comprehensive Theory,* 180.

[39] Tanju Deveci, "The Transformative Learning Experiences of Learners Of English as a Foreign Language at a University Program." *Transformative Dialogues: Teaching and Learning Journal,* 7, no 3 (2014).

This was due to several factors including feelings of insecurity in a new situation or the fear of the unknown. Similarly, Taylor[40] points out that not all learners may have an inclination for TL. The students participating in this study, too, may find it challenging to maintain their LLL skills as the pandemic unfolds.

It is important to point out that the range of scores for the scale During COVID-19 was greater than the one for Before COVID-19. That is, the scores for the former ranged from 31 to 58 (SD=5.5) while those for the latter from 40 to 63 (SD=5.19). This indicates that some of the students' thought their LLL skills were impacted negatively, which is also reflected in the average scores for some of the sub-scales.

The results were also analyzed considering gender. It was seen that neither the male nor the female students' overall Before COVID-19 and During COVID-19 scores differed at statistically significant levels (t=-2.8352, p=.0099). This is despite the observation that the female students' scores increased marginally while the male students' scores decreased slightly. However, the comparison of the male and the female students' overall scores did not differ from each other at a statistically significant level – a finding in line with findings of previous research.[41,42] In other university contexts, on the other hand, the female students were reported to have a stronger tendency toward LLL.[43,44,45] These contradictory results, including the ones from the current study, make the discussion about the impact of gender on students' LLL skills inconclusive.

Yet, an important finding occurred in the current study; the female students reduced their average score for *goal-setting*. The t-test produced a difference at a statistically significant level (t=-2.8352, p=.0099<.05). On the other hand, the male students recorded a slight increase in their *goal-setting* score, albeit a lack of difference at a statistically significant level. And the

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[40] Edward W. Taylor. "The Theory and Practice of Transformative Learning: A Critical Review." *ERIC Clearinghouse on Adult, Career, and Vocational Education. Information Series*. no. 374 (1998*)*: 56.

[41] Kirby et. al., "Development of a Scale," 291.

[42] Nihal Tunca, Senar Alkın-Şahin, and Özge Aydın, "Life-long Learning Tendencies of Pre-service Teachers," *Mersin University Journal of the Faculty of Education* 1, no.2 (2015): 432.

[43] Deveci, "LLL Orientations," 14.

[44] Çigdem Kılıç, "Pre-service Teachers' Perceptions toward Lifelong Learning," *Journal of Research in Education and Teaching* 3, no.4 (2014): 79.

[45] Meerah T. Subahan Mohd., Denise Koh Choon Lian, Kamisah Osman, Effandi Zakaria, Zanaton Haji Iksan, and Tuan Mastura Soh, "Measuring Life-long Learning in the Malaysian Institute of Higher Learning Context," *Procedia Social and Behavioral Sciences* 18 (2011): 560.

comparison of the students' scores revealed that the difference was to the advantage of the male students (t=2.6137, p=0006). Together, these data suggest that the female students thought the pandemic had a negative impact on their goal-setting skill while the male students tended to feel that its effect on their goal-setting skill was marginally positive. A possible reason for the decrease in the female students' score in *goal setting* is the very nature of a pandemic as a disjuncture[46] or as a disorienting dilemma. Such a disjuncture often creates stress and anxiety, leading individuals to confusion in regard to what to do and how to tackle the situation.[47] Confronted with a new mode of learning, the students' pre-established goals in the current study might have become dysfunctional, the evidence of which was present in the qualitative data collected from the students. It is possible that those shaken by the disjuncture, especially those without prior experience with online learning, became more dependent on their instructors in terms of what to learn and how to learn it. Recent research reporting data from multiple countries (i.e., Portugal, Ukraine, and the UAE) revealed that university students' online learning experiences were negatively affected by a lack in their goal-setting, study plan, and time management skills.[48] This was the case for some of the students in the current study too as indicated by the qualitative data.

Nagle[49] states that goal setting helps identify the tasks to complete to attain improvements in learning. Effective goal-setters take into account a variety of factors including their situation, responsibilities, resources, and time. Accordingly, goal setting fosters the skill of self-direction and evaluation; the learner takes charge of his/her learning experience. Supported by a facilitator, he/she can put more effort into attaining goals and persevere during difficult times such as a pandemic. Alić[50] notes that the extent to which the learner fulfills his/her goals determines the extent to which he/she feels competent. This affects his/her self-confidence encouraging him/her to apply newly-learned information and skills to current life experiences and increasing his/her motivation for learning.

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[46] Jarvis, *Towards a Comprehensive Theory,* 180.

[47] Jack Mezirow, "Learning to think like an adult: Core concepts of transformation theory," in *Learning as Transformation: Critical perspectives on a Theory in Progress,* ed. Jack Mezirow, J. and Associates (San Francisco: Jossey-Bass, 2000): 5

[48] Patricia Fidalgo, Joan Thormann, and Jose Alberto Lencastre, "Students' Perceptions on Distance Education. A Multinational Study." *International Journal of Educational Technology in Higher Education* 17 (2020): 1.

[49] Jeanne Nagle. *Great Lifelong Learning Skills*. (New York: The Rosen Publishing Group, 2008): 13.

[50] Jelana Alić, "Gender Differences in Goal Orientation between High School Students in Physical Education Classes," *Croatian Journal of Education* 19, no. 2 (2017): 181.

V. Recommendations

Such has been the impact of the COVID-19 pandemic on higher education (together with all other levels of education) that every country across the globe has made great efforts to reduce the disruption of learning. As new entrants to higher education, first-year students may be the most vulnerable. These are the students in need of establishing a solid base for success in their subsequent years of study at university; a foundation for which the importance of LLL skills cannot be overstated. The fact that they have succeeded in entering university may indicate that these students already possess relatively developed LLL skills, for which the results of the current study indeed provide some evidence; the first-year students' scores for the LLL scale used in this study were close to the third percentile indicating a relatively strong aptitude. However, the results also showed that the students, the females in particular, thought the pandemic had some negative impacts on their skills. An effective LLL learner perseveres trying to meet the exigencies of challenging times. While some may be assiduous, others may require support.

Considering the results of the current study pertaining to the students' perception of a reduced skill in adapting learning strategies, action needs to be taken. Students should be encouraged to reflect on the variety of factors impinging on their learning strategies and alternative ways of learning. Only in this way can they make informed decisions about the best ways to learn. To this end, students can be encouraged to ask questions such as "What was I supposed to learn?", "How well did I learn it?", "Where did I fail?", "What strategies did I use?", "Which one(s) did not work for me?", "In what other ways could I have approached the task?", and "What is my plan to reattempt the task?" Building a habit of asking these and other similar questions will enable students to "redevelop, extend and deploy their repertoires of knowledge and their approach to, and skills at, solving problems a new in increasingly challenging and difficult situations, throughout their lives."[51] An alternative reflection task is writing a letter to future students where they explain the things they have learned, how they dealt with problems, what different approaches they would take if they faced the same situation again in the future, and what they have learned about their learning.[52]

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[51] David. N. Aspin, "The ontology of values and values education," in *Values Education and Lifelong Learning: Principles, Policies, Programmes* ed. by David N. Aspin and Judith D. Chapman (Dordrecht, the Netherlands: Springer, 2007): 27.

[52] Phil Wilder, "Promoting Student Self-assessment," accessed December 17, 2020. http://www.readwritethink.org/professional-development/strategy-guides/promoting-student-self-assessment-30102.html

Students' adaption of learning strategies also needs to be supported by faculty adjusting their teaching strategies. The pandemic has resulted in all education institutions without exception relying on online learning technologies, which required both educators and students to use new approaches. Research in some contexts indicates that educators benefited a lot from using a variety of ICT tools when trying to adjust their teaching due to school closures.[53] In another context, educators' use of strategies increased students' interest in learning through brief, clear, and interesting media in addition to regular evaluations.[54] However, the students' feeling of reduced score in *adaptable learning strategies* in the current study may point to their reduced ability to adjust learning strategies. Relying on their instructors' delivery methods, these students likely had limited success in adapting strategies. Therefore, educators must be helped to improve their ICT skills so they can enable their students to make informed choices about how to adapt and adopt learning strategies compatible with the new modes of education. Also, students ought to be provided with as much individualized support as possible so that they can fully benefit from the new types of education delivery.[55]

Another important finding of the current study was related to the female students' self-perceived reduced scores for *goal-setting*. Goal-setting may be considered a building block of LLL; effective goal setting, according to Locke,[56] encourages learners to modify their behaviors when required and to strive for superior performance. COVID-19 clearly required students to adjust learning behaviors and goals with the necessary concomitant of diligence. Evidently, the new modes of education delivery imposed by the epidemic disturbed some students' learning goals, particularly those of the female students. These students must be supported in reorienting their learning goals to prioritize the skills necessary for adaptation to online modes of learning and adoption of individual accountability. This entails the

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[53] Johannes König, Daniela J. Jäger-Biela, and Nina Glutsch, "Adapting to Online Teaching during COVID-19 School Closure: Teacher Education and Teacher Competence among Early Career Teachers in Germany," *European Journal of Teacher Education*, 43, no.4 (2020): 610.

[54] Sutarto Sutarto, Dewi Purnama Sari, and Irwan Fathurrochman, "Teacher strategies in online learning to increase students' interest in learning during COVID-19 pandemic," *Journal Konseling dan Pendidikan* 8, no.3 (2020): 133.

[55] Pierre Gouëdard, Beatriz Pont, and Romane Viennet, "Education Responses to COVID-19: Shaping an Implementation Strategy," *OECD Education Working Papers,* no:224 (2020): 13.

[56] Edwin A. Locke, "Toward a Theory of Motivation and Incentives," *Organizational Behavior and Human Performance* 3, no.2, (1968): 157.

faculty's adapting instructional strategies with various student-learning goals in mind. The qualitative data showed that the students missed working in collaboration with other students and meeting face-to-face with faculty. Toward this end, students with similar needs regarding goal orientation can be asked to work together under the guidance of a group leader skilled in adapting learning strategies. In the case of virtual classrooms, instructors can create break-out rooms where the performances of the participants can be closely monitored. This provides struggling students with opportunities to participate in collaborative dialogue with more knowledgeable and skilled class members in order to develop problem-solving and goal-setting strategies.[57] Students can also be helped to identify an 'accountability partner' with the same learning goals. Accountability partners can support each other during difficult times and maintain their motivation for working towards the established goals[58] or adjust them as required.

Metro[59] suggests that students' goal-setting skills can be developed through differentiated grading systems that incorporate goal setting and self-reflection, especially during times of crisis. In order to respond to each student's distinct needs, faculty can ask students what grade they wish to earn and the standards they may find hard to master. Students then can be asked to set goals in those areas and identify the particular strategies they can use to achieve these goals. They should also be asked to reflect on potential barriers affecting their performance (e.g., technical problems, inadequate resources, and a lack of time-management skills) and how they feel faculty can help them.

Students' LLL skills should also be developed using a more generic approach. Although introductory classes on LLL can be offered to students at the freshman level, departments across the university should incorporate relevant LLL skills into their curricula throughout undergraduate as well as graduate levels. However, to avoid only paying lip service to the concept, particular tasks, assignments, and assessments should be aligned with the course-objectives. These need to be promptly revised to respond to the exigencies of such crises as COVID-19.

Recommendations can also be made for future research. At the time of this writing not all students, freshman students in particular, were expected to

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[57] Lev Vygotsky, *Mind in Society: The Development of Higher Psychological Processes* (Cambridge, MA: Harvard University Press, 1978).

[58] Mandi, "The Value of Accountability for Achieving Your Goals," accessed January, 10, 2020, https://theartofsimple.net/the-value-of-accountability-for-achieving-your-goals

[59] Rosalie Metro, "Humane Assessment Shouldn't Happen Only during a Pandemic," accessed January 10, 2020, https://www.insidehighered.com/views/2020/09/09/new-approaches-assessment-can-promote-student-success-times-crisis-well-normalcy

return to campus soon. This may have further impacts on their LLL skills, which could be studied. It would also be enlightening to compare the LLL skills of students according to academic settings (i.e, freshman, sophomore, junior, and senior levels).

VI. Conclusion

Effective use of LLL skills is not a panacea for all the negative impacts of a crisis such as COVID-19 on students' well-being. Yet they lend themselves as a useful tool in circumventing negative consequences. As educators, we also need to be cognizant of the malleable nature of LLL skills; during times of crisis, students' aptitude for LLL can be hampered as well as improved. We need to stay alert against the negative impacts and take the necessary interventions so that students' LLL skills can be helped to evolve apace with the demands of critical times. Only in this way can students be given good preparation for learning throughout their lives.

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Emergency remote education: A perspective of its potentialities and limitations in a Peruvian university

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Abstract: This research aims to identify the potentialities and limitations of emergency remote education in the Peruvian university context as a consequence of the COVID-19 pandemic based on teachers' experience of the Hermilio Valdizán National University (UNHEVAL). The type of this research was descriptive and the sample consisted of 123 teachers of the academic period 2020-I. For the data collection, a questionnaire was used, whose validation was made through the judgment of experts (0.96) and the reliability of the results through the Z-test. According to the results, flexibility stands out between the potentialities in regards to topics' distribution, time, and the possibility to produce greater interest in the participants. It was observed that time flexibility is not considered as favorable unlike what was detected through literature. Infrastructure stands out, especially when is related to the connectivity and Internet access as well as the distractors produced by the easy access to devices and applications that are not related to the class session. The paper revealed weakness in the digital competencies of both teachers and students, and the scarce level of social interaction caused by social isolation. It is concluded that the potentialities and limits of emergency remote education in a Peruvian university are conditioned by different elements specific to each context or country and must be considered for the production of new educational proposals as a policy of prevention of the possibility of new events that require mandatory isolation.

Keywords: higher education; emergency remote teaching; potentialities; limits; Peru

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I. Introduction

Higher education has been managed, especially, in three educative modalities: on-campus, hybrid and online learning. On-campus learning takes place in a classroom with the help of books and chalkboards (Veselina and Snejana 2020). Hybrid learning or b-learning introduces two interesting elements by the students: free choice and use of technology (Barchelor 2019, 4); besides, it alters on-campus and virtual sessions. Online learning tends to develop in a virtual space without any agent's intervention. By this classification scheme, the fundamental aspect is the use of technology as a tool for the development of the didactic process.

However, at the beginning of 2020, the inevitable effects caused by COVID-19 affect all the activities of human beings such as working, communication, training and education. The pandemic effect has changed the education of 1600 million students in more than 190 countries around the world (Naciones Unidas 2020, 2). Most of the countries decide to follow strict protocols as a measure to minimize and prevent the spread, while others opt for group immunity (Bozkurt and Sharma 2020).

Despite the context caused by the pandemic, online education was the only viable modality to carry out the didactic process (Veselina and Snejana 2020, 248), leading to a new modality called emergency remote education. This new modality consists of moving the teaching-learning process towards a virtual space, it was first thought to apply in an on-campus modality (Cabrales 2020). The difference between the new modality and the online remote education is the temporary solution for a specific and mandatory situation (Borzkurt and Sharma 2020).

In Peru, the early measures adopted in the first stage allow to stop the levels of infection, support the economy and protect Peruvian people (Figallo et al. 2020). Regarding the higher education field, guidelines were established through Resolution no. 085-2020, which emphasize the adaptation of the syllabus content and the design of a learning guide that includes the content integration, digital tools, required time and the assessments methods (Ministerio de Educación [MINEDU] 2020). In this sense, it is necessary to guide, train and monitor the actions of the academic planning proposed by teachers.

However, in the higher education field, the beginning of the classes coincides with the isolation measures in the second week of March 2020. According to Figallo and Sharma (2020), in April of the same year, 72.7 % of public universities did not start operating since they were still making adjustments. The educative system, universities and teachers were not prepared to adapt the educational process to the situation. A palpable example is shown in the document of MINEDU (2020) by indicating that it is necessary to

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transfer the teaching activity on-campus to a virtual one. This requires a further organization to provide students (6) the quality of service they deserve, which evinces the inexistence of a different alternative to traditional education.

In addition, it is recognized the necessity to strengthen the digital competencies of teachers through training, mentoring and assessment (MINEDU 2020). Reaffirming in the proposal of Ascayo (2015), that pointed out universities should boost and implement extension courses about digital competencies for teachers of higher education and other educational levels.

As in every activity field of human beings, the effects of the pandemic have generated important changes in the educational processes. One of them was the remaking of multiples activities and educative experiences on-campus to redesigned and adapt in real-time for the online modality (Pardo and Cobo 2020). Currently, emergency remote education must be carried out by all teachers and not only for a group interested in digital culture since technology is a teaching tool. Despite the implementation of technology in the curriculum for more than 20 years, it has not been given the importance it deserves, possibly due to the lack of a common frame of reference (Tejada and Pozos 2018).

One relevant aspect to consider is the different educative strategies of male and female teachers regarding the capacity of organization and planning ($p = 0.0089$), in contrast to other categories such as academic support, the increase of the capacity of learning in the student, innovative activities and the use of Microsoft Teams as a tool (Zamora-Antuñano et al. 2021). This shows that gender doesn't influence the adaptation process of teachers' strategies for remote education during the pandemic.

On the other hand, this adaptation process has been discussed indistinctly about emergency remote education, online and digital education (Bustamante 2020). However, each one of the modalities presents unique characteristics. Distance education is characterized by the distance in time and space between students, teachers and learning resources. While remote education refers to spatial distance with a further emphasis on synchronous modalities (Bozkurt and Sharma 2020; Shim and Lee 2020).

Regarding the planning in distance education, besides adapting the contents, it should present the different interactions produced in the process (Ferri et al. 2020). By contrast, the adaptation process of emergency remote education has been difficult because there is no design of a planned approach (Shim and Lee 2020). However, in both modalities, the objective is not limited to the transmission of information through digital media but requires the interaction of elements such as the technological infrastructure, technological competencies of the teacher, digital skills of students and other tools that facilitate effective learning outcomes.

In this regard, the emergency remote education faces the same challenges of online learning, specifically in the technological dimension about the access to infrastructures such as technological devices and Internet connection, skills and training of teachers and students in the use of technologies, and interactive, versatile and motivating didactical materials. Thus, it can contribute educative models when considering the role of technology to develop the teaching-learning process, analyze the limitations and potentialities (Ferri et al. 2020).

In this way, the limits of emergency remote education are assumed as a group of restrictions of technological, educational, personal, and social character that does not allow normal development of the learning process during the pandemic. The potentialities and variations of emergency remote education are assumed as the group of aspects that emerge through the process and contribute positively to the integration of this teaching modality (Whittle et al. 2020), generating ways, methods, means, and scenarios that are not possible in a face-to-face scenario.

Regarding the conditions and characteristics of the educative systems of each country, it was necessary to know both potentialities and national limitations to generate plans of action that allow carry out the remote teaching according to the context. For instance, in Spain, the initial research made by Fernández-Regueira (2020) demonstrated the inexperience of teachers of higher education to teach through the virtual platform. Findings of the paper indicated that 68.07 % of teachers had never given classes in this modality. Moreover, the predominant methodology is based on the transmission of contents and the absence of a pedagogical and didactic coherent analysis, noticing a series of weaknesses and gaps that makes the execution of emergency remote education difficult. In Chile, the educative system changed more than 1.2 million students to emergency remote education since the beginning of the pandemic and the lack of technological skills by teachers, students and other agents of the education system (Ruz-Fuenzalida 2021).

Meanwhile, in New Zealand, the educational transformations caused by the COVID-19 were linked to social agreements, the development of carefully organized tasks and even new educative designs like the one proposed by Green et al. (2020) for nursing faculty with an emphasis on the learning activities, physical, social and epistemic nature of the learning. Virtual happy hour was also included to familiarize the educative agents with the new tools of communication, interaction, tasks, assessment and new planning of the academic semester.

In this way, more than 20 years of continuous progress of the digital network allows the use of communication, information exchange, education and scientific elaboration. However, according to Pardo and Cobo (2020),

many universities still cannot adapt to the restrictions imposed by the health measures to teach remotely (4). This is accentuated in public institutions, where the analogical teaching predominates in a reality that was hybrid before the pandemic (Fernández-Regueira et al. 2020). Despite the changes that have been generated for the necessity, the digital transformation in the educative and professional fields, and other areas has been slow and, currently, it has turned into a principal objective (Coeckelbergh 2020).

In the same manner, although the literature part is from different positions, it is considered to determine the potentialities and limitations of emergency remote education in the Peruvian higher education as a consequence of the COVID-19 pandemic, specifically, from the teachers' experience. Therefore, the research question was to determine what are the potentialities and limitations of emergency remote education in Peruvian higher education as a consequence of the COVID-19 pandemic based on the teachers' experience of Hermilio Valdizan National University (UNHEVAL)

Research objectives

The objective of this research is to identify the potentialities and limitations of emergency remote education in Peruvian higher education as a consequence of the COVID-19 pandemic based on the teachers' experience of Hermilio Valdizan National University (UNHEVAL).

In this regard, this research is distributed in four sections. First, the literature review is based on emergency remote education and the positions of other authors on the possible potentialities and limits that exist in this context. Second, Materials and Methods provides a description of the variables and indicators as well as the instruments and the characteristics of the sample used in this study. Third, the Results section details the discoveries based on teachers' experience and emergency remote education. In the Discussion and Conclusions section, the findings in this research are compared with the previous research related to the study subject. It also allows to validate and consolidate the findings and contributions of this research as a contribution to the knowledge in the educational area in the context of the emerging product of the new normality.

II. Materials and methods

This research is framed as descriptive research. According to Arias (2006), it consists in the characterization of a fact, phenomenon, individual or group to establish the structure or behavior (24), since there is a description

of the characteristics considered as the potentialities and limits of emergency remote education from the teachers' perspectives. In addition, a non-experimental design was performed at a specific time and the variables were not manipulated (Hernández et al. 2014).

The sample consisted of 179 teachers of higher education from the Faculty of Education of Hermilio Valdizan National University (UNHEVAL) in Huánuco during the 2020-I academic period. The number of participants was determined by the sample size recompiled by Martinez (2019), through a confidence level of 99%, 0.18 of the proportion of the sample and an error of 5%. In this way, a sample of 123 teachers was obtained. In the process of the sample units, a proportionate stratified sampling (Otzen and Manterola 2017) was used since there is no alteration in the data of population to the sample (Table 1).

Table 1
Stratified sampling of teachers

Faculty	Population	Sample
Mathematics and Physics	29	20
Elementary school	18	12
Physical education	54	37
Biology, Chemistry and Environmental sciences	39	27
Language and Literature	39	27
Total	179	123

The principal variables of this research were the limits and potentialities of emergency remote education. For its measurement and description, a questionnaire based on the advantages and disadvantages of emergency remote education studied by Vásquez et al. (2020) and Shima and Yi (2020) was used. In addition, the demographic variables such as gender, age and academic level of teachers of higher education were considered (Table 2).

Table 2
Distribution of gender, age and academic level

Variables		f	%
Gender	Masculine	71	57,72
	Feminine	52	42,48

Variables		f	%
Age	<35 – 41	11	8,94
	42 – 48	89	72,36
	49 – 55>	23	18,70
Academic level	Bachelor	18	14,63
	Magister	69	56,10
	Doctor	36	29,27

The instrument was a five-level Likert item: strongly agree, agree, neutral, disagree, strongly disagree. It was distributed in 2 sections of 20 items. The first section addresses the potentialities of emergency remote education and the second section about their limits. Hence, the established dimensions and their indicators were evaluated (Table 3). The instrument's validation was supported by three researchers specializing in the technology field who expressed an agreement index of V = 0.96 (95 % IC [0.71; 0.99]) considered acceptable (Charter 2003). The four aspects considered for the evaluation were: clarify, congruency, coherence and relevance. Finally, the instrument's reliability was carried out through Z-test.

Table 3
Distribution of variables and dimensions

Variables	Dimensions	Description
Potentialities	Flexibility in the distribution of the subjects	Access to the additional information available 24/7 for students
	Variability of times for each objective	Possible follow-up of the development of abilities.
	Flexibility of time	Courses may be accomplished at the student's own pace, by completing easy lessons and focusing on the complex lessons.
	Interest of the participants	The use of digital tools boosts the interaction, the interest in learning and the development of competencies.
	Opportunity for the mistake	It makes the practice easier through digital tools that simulate real scenarios.

Variables	Dimensions	Description
Limitations	Necessity of infrastructure	Availability of necessary electronic devices to perform the didactic process.
	Distractors	Easy access to different applications and websites does not contribute to the development of the learning session.
	Study Habits	The change of modality can be assumed as a flexibility of the educative requirements.
	Use of new technology	New technologies can be restricted by the competencies limits of teachers and students.
	Social interaction	The necessity of expressing ideas, emotions and experiences to others individuals or people.

The email address to share the Google Forms were sent to 123 teachers of Hermilio Valdizan National University (UNHEVAL). The consent informed letter was attached to ensure the reliability of the information collected in conforms with the ethics for the research by the Internet (Domínguez-Lara and Torres-Villalobos 2020). The data collected were imported into an Excel datasheet.

Regarding the data analytics, the Google Forms database was downloaded and the database pruning was conducted to check the missing values. The IBM SPSS 25 statistical software was used to analyze the data through contingency tables to identify the potentialities and limitations of emergency remote education in Peruvian higher education as a consequence of the COVID-19 pandemic from the teachers' experience.

III. Results

The findings show important variations of the potentialities detected by the teachers in their context (Table 4). Items 1 and 2 accumulate Strongly agree with 86.17 % and Agree 86.16 %. These indicators are associated with the flexibility dimension in the distribution of the topics since it's considered an important volume of additional information for students.

In this regard, it is important to note the possibility of students to study through lessons and time for courses seemed complex. It is stated in the items of times' flexibility as a potentiality in the emergency remote education: items 5 (74.78 %) and 6 (78.85 %) of teacher respondents.

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Table 4

Teachers' opinion about the probabilities of the emergency remote education

No.	Item	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
		f	%	f	%	f	%	f	%	f	%
1	Emergency remote education provides the access to additional information in anytime and everywhere.	50	40,65	56	45,52	15	12,19	1	0,81	1	0,81
2	The distribution can be different from the one planned in on-campus classes.	53	43,08	53	43,08	14	11,38	2	1,62	1	0,81
3	The available digital tools provide the analysis of individual development.	9	7,31	11	8,943	19	15,44	47	38,21	37	30,08
4	The emergency remote education provides autonomy so students can work on a self-paced course	10	8,13	19	15,44	17	13,82	39	31,70	38	30,89
5	The emergency remote education has generated flexibility in the time spent for each learning session.	43	34,95	49	39,83	18	14,63	7	5,691	6	4,87
6	It is possible that participants work the emergency remote education on their own paced	53	43,08	44	35,77	15	12,19	9	7,317	2	1,62
7	Participants show motivation through the emergency remote education	46	37,39	47	38,21	14	11,38	11	8,943	5	4,06
8	The emergency remote education boosts the interaction between participants	50	40,65	45	36,58	13	10,56	10	8,130	5	4,06
9	The emergency remote education allows to simulate real scenarios related to the course	24	19,51	26	21,13	19	15,44	33	26,82	21	17,07
10	The assessment can be performed many times, allowing the student to correct the possible mistakes.	7	5,69	17	13,82	18	14,63	36	29,26	45	36,58

Teachers don't perceive potential in the variability of time in each objective as shown on items 3 and 4. Those items obtain a percentage accumulated of 68.29 % and 62.59 % in the categories of Disagree and Strongly disagree.

In the interest dimension, participants perceive the emergency remote education as a potential to motivate their students and interact between them. This shows in items 7 (75.60 %) and 8 (77.23 %). Meanwhile, the dimension of opportunity for the mistake would not be considered as a potential, since only 40.64% of teachers consider Strongly agree and Agree with the real scenarios associated with their courses. On the other side, regarding Item 10, teachers state that the repetition of tests as a correction of deficiencies of students is a limitation (65.84 %).

Regarding the limits of emergency remote education (Table 5) in the necessity of the infrastructure, in Item 1, teachers perceive the Internet connection for the educational process (59.34 %) as a difficulty. However, the availability of electronic devices for the current programs may not be considered as a limitation, since it represents less than 50% of Strongly agree and Agree (44.711 %) in Item 2.

In the dimension of distractors (Item 3 and 4), two findings partially opposed were determined. In Item 3, teachers perceived the external distractors in a classroom represent a limit (56.91 %). Item 4, would not determine if the access to the Internet during classes is a limit for students since it doesn't exist a definitive contrast between Strongly agree (45.52 %) and Disagree (39.83 %) values.

Concerning the change of modality as flexibility of new educative requirements, in Item 5, teachers are in favor (47.15 %) and against (36.58 %) of the implementation of new study habits of study during the on-campus to virtually. By contrast, in Item 6 there is a consensus in considering the limits to the practice that require habits for remote modality (79.67 %); while, 2.43 % of teachers disagree with their implementation.

Another limited aspect in emergency remote education is the competencies levels of teachers and students. In Item 7, teachers considered the limits of the technological skills of teachers to develop didactic processes (67.47 %). There is not an agreement about the deficiencies in the technological competencies of students, of which 37.39 % Strongly agreed and Agree. By contrast, in Item 8, 43.08 % of respondents are between Disagree and Strongly disagree.

Finally, regarding the necessity to express ideas, emotions and experiences to other individuals or groups of people, in Item 9, teachers agree on the problems in the communication process (78.04 %), and in Item 10, the

Table 5

Teachers' opinion about the limitations of emergency remote education

No.	Item	Strongly agree		Agree		Neutral		Disagree		Strongly disagree	
		f	%	f	%	f	%	f	%	f	%
1	Internet connection limits the normal development of the didactive process	30	24,39	43	34,95	19	15,44	9	7,31	22	17,88
2	The available electronic devices accomplish the minor characteristics to perform the current programs	28	22,76	27	21,951	21	17,073	26	21,138	21	17,073
3	The emergency remote education allows external distractors to the classroom	50	40,65	20	16,26	24	19,51	19	15,44	10	8,13
4	The Internet access during the lessons represent a distractor for the student	29	23,57	27	21,95	18	14,63	27	21,95	22	17,88
5	Student can apply the same study habits as the ones used in on-campus learning modality	30	24,39	28	22,76	20	16,26	21	17,07	24	19,51
6	The modality of emergency remote education requires exclusive study habits	51	41,46	47	38,21	13	10,56	9	7,317	3	2,43
7	Technological competencies by teachers are not enough to performed the emergency remote education	46	37,39	37	30,08	20	16,26	16	13,00	4	3,25
8	Students do not have enough digital abilities to learn through the emergency remote education	20	16,26	26	21,13	24	19,51	25	20,32	28	22,76
9	The emergency remote education makes difficult the process between students	45	36,58	51	41,46	11	8,943	11	8,943	5	4,06
10	The emergency remote education does not contribute to the development of communicational competencies in the participants	53	43,08	45	36,58	7	5,69	8	6,50	10	8,13

lack of contribution of emergency remote education for the development of communicational competencies (79.66 %). Both are considered as limits.

IV. Discussion

Results show teachers consider the potential of emergency remote education in the flexibility in the distribution of subjects, this affirmation is supported by Vásquez (2020), thus, it allows to strengthen the theoretical basements before the development of the subject (16). Therefore, it is an important factor in the transformation of Peruvian education, since the education is based on the flexibility that requires changes from an educative practice focused on the teacher and the student (Ñañez et al. 2016).

Teachers perceive the students' participation based on the learning and management of time as potential. These results are similar to the results of Shim and Lee (2020), who state that management time represents a positive characteristic in emergency remote education. In their study, 26.02 % of respondents shows as benefit the fact of moving to the campus. This demonstrates that the time flexibility of time represents a potentiality that benefits both teachers and students since it contributes to minimizing the contagion risk, transportation costs and the possibility to invest that time in other productive tasks.

On the other side, it was identified in the variability of times for each objective as a no potential. This can be due to the perception of teachers about the variability in times that shows the use of educative assessment tools by the Information and Communication Technology (ICT). According to Dapozo et al. (2020), the tasks contribute students to knowing the relevant and necessary aspects for the accomplishment of objectives, besides the responsibility of the student as an active actor in their process (Hidalgo 2020).

The category of teachers' perception about the interest of participants for the emergency remote education, is considered as a potential. These results are supported by Vásquez (2020), who affirms the use of interactive digital tools boosts the interest of actors, consolidates the acquisition of knowledge and allows them to apply actively in their context. Finally, the chance of errors is perceived as potential by teachers, since they don't consider the benefits of active learning, in special, the autoregulation process as an effective method to help students to overcome the academic difficulties through a cognitive style independently of the field (Hidalgo 2020; Rosário et al. 2014).

In the limitation analysis of the emergency remote education, the necessity of infrastructure was considered as a limitation by the teachers in higher education. In this sense, results present important implications in the

development of emergency remote education. This is supported by Shim and Lee (2020), who state that this limitation generates unstable access to the educative platforms and also affects the synchronization of didactic materials and the teachers' voices. The results obtained by Huanca-Arohuanca et al. (2020) confirm the limitations related to Internet access in Peru where 45 % of students can't access the Internet. In addition, only 36 % of the houses have a computer and the 5.7 % uses for educative, labors and entertainment tasks (Instituto Nacional de Estadística e Informática [INEI], 2020). Therefore, it is considered a limitation for the emergency remote education and generates the necessity of the Peruvian government includes in their annual budget the implementation of Internet coverage in remote or rural areas as well as the educative politics that allow minimizing the gap (Leiva-Reyes et al. 2020).

The findings based on the distractor dimension as a limitation in the implementation of emergency remote education stand out teachers consider the Internet access could interrupt the educational process. In the words of Vásquez (2020), there is no control by teachers regarding the use of other devices unrelated to the lesson learning. This aspect is linked to the dimension of study habits, both connect each other with the maturity and awareness level of the participant.

In this way, study habits could be considered a limitation when requiring exclusive actions in the remote modality. This result agrees with the results of Herrera-Robaina et al. (2021) who identified the use of taking notes and summary as a new modality of study habits during the pandemic in contrast to previous years where individual conclusion and flowcharts were predominant. Therefore, emergency remote education requires the adaptation of study habits towards the online modality.

In this context, levels of digital competencies of teachers in the didactic process were a limitation aspect. The deficiencies in the technological competencies limit the access to new technologies for the development of courses (Vásquez 2020). In this way, the diversity of digital tools available on the Internet for developing the instrumented assessment to impulse the cooperative learning (Ocaña-Fernández 2020).

In the last dimension, results show teachers consider social interaction as a limit to implement in emergency remote education. These results coincide with the results of Shim and Lee (2020), who indicate that is one of the more frequent objections with a response rate of 17.29 %. This shows the lack of interaction, the difficulty to express thinking and a deep emphasis on individual progress could interfere in the educative strategies in a remote education program.

Finally, based on the obtained results, it is important to note a reflection about it. Due to the issues related to the emergency remote education and the COVID-19 pandemic, the education overview has changed into new modalities. In other words, education has changed in a new perspective focused on the importance of the current context where the educative practice is developed. This shows the resilience indicators through discussions and proposals by teachers and students to boost and generate a quality of education focused on the objectives of sustainable development (Rosales and Cárdenas 2021).

V. Conclusions

This research summarized the potentialities and limits of emergency remote education from the teachers' perspective. The variability in times of each objective and the opportunity for the mistake is not perceived as a potentiality. On the other side, the difficulties in the access to electronic devices for programs, the Internet access as a distractor, the application of the study habits of on-campus and online learning as well as the digital abilities of students do not represent a limitation of the emergency remote education.

In this way, this research allows knowing in what potential aspects of the didactic strategies in the emergency remote education could be improved. It also discards indicators perceived as a limitation to teachers and students, in both cases, to achieve a better adaptation of teachers and students, from a systematic and programmed didactic sequence of specific instructional designs. The evidence in this research suggests elaborating a higher education plan that includes the formation necessity of students based on their potentialities and limitations in the context. According to Bozkurt and Sharma (2020), the design of learning systems is based on wrong assumptions that generate more vulnerability to drawbacks to the educational practice. Therefore, it is important to highlight that identifying and achieving the knowledge of the potentialities and limitations of emergency remote education, can lead to creating future journals to give responses to possible interruptions in the educative context.

In this regard, the future perspectives that adopt the education will be based on the emergency remote education actions, thus, the educative politics won't be the same. For this reason, it is important to conduct educative research that transforms the teaching methods and models in all educative levels, modalities and teacher training programs.

This research acknowledges its limitation of being conducted during the pandemic and only teachers' perspective was considered. Hence, for future

researchers, longitudinal assessment in teachers and other educative parties and contrast with others post-pandemic research should be conducted. The strategies on the selection of options can represent a bias of the instrument since it stops the contrast of the performance of participants in a specific construct. The future research streams could include instruments for the competencies level in the adaptation of emergency remote education as well as consider a wider sample that generalize the findings.

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TJHE
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TJHE Ethical Guidelines for Publication

Final Version (March 2015)

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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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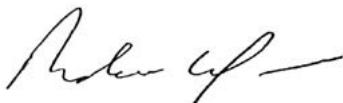
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