Perceived experiences of preparing accounting students with digital skills for the workplace: An exploratory grounded approach study at a newly formed Technological University in Ireland

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Abstract

Accounting education has been criticised for ill-equipping graduates for professional employment, with calls for accounting students to have a broader range of skills, particularly digital skills on entering the workplace. Digital skills are an important employability skill, yet employers repeatedly state that accounting graduates entering the workplace do not have the necessary digital skills to carry out their roles effectively. Accounting educators in higher education have differing views on the level of importance placed on digital skills covered in accounting programmes. The differing views between the level of skills employers expect and what accounting educators are covering in higher education are currently misaligned. Although a certain degree of misalignment is anticipated, this gap is expanding to the extent of resembling a “gaping hole”. This study uses a grounded approach, an approach not used in previous studies in this area, to analyse data from the most influential stakeholders in enacting change in higher education accounting curriculums – teaching staff on programmes. Using this approach allowed for a comprehensive answering of the research questions where no predetermined outcomes were anticipated, and common themes emerged from the data during the analysis process.

This study highlights the challenges of implementing digital skills in accounting programmes, with the most influential factor in the process being the pressure on staff to obtain professional exemptions from professional accounting bodies.

Other challenges were also identified in integrating digital skills into higher education accounting education, such as the lack of resources and institutional support, uneven distribution of digital skills modules in course design ie front loading modules in Year 1 of programmes, and limitations in including work placement on programmes. It concludes that it is necessary to scrutinise the connections between higher education institutions, professional accounting bodies, and employers. Presently, professional accounting bodies wield significant influence in higher education, while employers' engagement is lacking. This research proposes that establishing a more equitable and organised collaboration among these three entities in a formal manner, would enhance these relationships in the future and foster more sustainable outcomes. This collaboration would subsequently boost flexibility and create space for the integration of essential digital skills for accounting students who are entering today's workforce.

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List of abbreviations

AAA	American Accounting Association
ACA	Association of Chartered Accountants
ACCA	Association of Chartered Certified Accountants
AI	Artificial Intelligence
CAI	Chartered Accountants Ireland
CGMA	Chartered Global Management Accountant
CIMA	Chartered Institute of Management Accountants
CPA	Certified Public Accountant
ECDL	European Computer Driving License
FET	Further Education Training
HCI	Human Capital Initiative
HE	Higher Education
HEA	Higher Education Authority
HEI	Higher Education Institutions
ICA	Institute of Chartered Accountants
ICT	Information and Communications Technology

IT	Information Technology
MOS	Microsoft Office Specialist
PABs	Professional Accounting Bodies
PR	Programmatic Review
WIL	Work Integrated Learning
UNESCO	United Nations Educational, Scientific and Cultural Organization

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Chapter 1 Introduction

The skills requirements for modern jobs are directly influenced by the rapid transformation of the workplace through digital technology, which has been exacerbated in the post-Covid-19 pandemic era. Hence, there persists a shared challenge for governments, employers, policymakers, educators, and students alike to identify the digital skills that are relevant not only for today but will also address the future demands of the workplace.

Higher Education Institutions (HEIs), bear the responsibility of re-evaluating their approach to preparing students for the ever-evolving challenges of a rapidly changing digital society. However, despite the substantial investment by the Irish government in universities, students are still not equipped with the necessary digital skills required for the 21st-century workforce (Armah & Van Der Westhuizen, 2020).

1.1 Background

Accounting, the specific focus of this study, is widely regarded as the language of business and an essential component of business degree programmes (Christensen et al., 2019). Businesses cannot function successfully and efficiently without the recording of financial transactions. These transactions, when recorded accurately, consistently, and timely, provide information in the form of financial statements, which report how a business is doing to external stakeholders, and management accounting information, which records day-to-day transactions, to the internal stakeholders of a business. This financial information can be used in several areas such as securing additional funding

and investment, benchmarking against competitors, and used by a variety of stakeholders that use the information to gauge how well a business is doing. Compared to other disciplines such as engineering, the adoption of digital technologies in accounting education has been reported to lag behind the dynamic pace of the work environment (Watty et al., 2016). This is particularly crucial for accounting students who must develop proficiencies in emerging technologies to ensure their high employability (Ghani & Muhammad, 2019). This slow pace is also not reassuring for employers to have confidence that the students they are employing have the necessary digital skills to execute their professional responsibilities in the workplace adequately (Jackson & Meek, 2021). In the past five years, businesses have fully moved from manual to cloud solutions to execute their day-to-day processes. The most common function that was upgraded in this way was the accounts department. Packages that process accounts and payroll functions of a business are now accessible anytime, anywhere, and most of the information in these packages is then exported to Microsoft Excel for further analysis. Employers continually express dissatisfaction with the level of soft skills, which often encompass digital skills (Ghani et al., 2018), exhibited by accounting graduates upon entering the workforce. This is supported by the students themselves who often feel inadequately prepared in subject-specific digital skills required for these roles (Nelson et al., 2011).

This research will shed light on reasons for the potential misalignment between universities and the workforce demands regarding the digital skills of accounting students. The initial observations of the researcher in this area were

that some universities have attempted to address this issue through superficial measures such as renaming modules, making minor adjustments to programme content, and misusing buzzwords like data analytics, big data, blockchain, and AI (Artificial Intelligence). These practices may prioritise marketing agendas rather than delivering practical employability skills to students. Additionally, some universities adopt a “bolting on” approach by incorporating modules that aim to foster specific emerging skills, as highlighted by Keneley & Jackling (2011).

Accounting students are leaving HE without the required digital skill level to enable them to work competently in the digitised office of the 21st century. This study seeks to explore why students are leaving HE without these digital skills by examining the perceptions of the most influential stakeholder in HE accounting curriculums – academic teaching staff.

1.2 Context in HE

This study utilises interview data from a newly formed university, previously three Institutes of Technology, in Ireland. It seeks to gain insight into the current gap in perspectives of the digital capabilities of accounting graduates from a staff’s point of view. It focusses on the views of teaching staff, including their experience of feedback from employers that employ their students.

Two important underlying events that possibly influenced the findings of this study are as follows:

1) This study was conducted at the end of a programmatic review process. A programmatic review is a quality review process whereby a provider conducts a critical evaluation of its programme. It is an opportunity to review a suite of programmes developed and delivered over a period and to streamline them. The conventional period between programmatic reviews is five years (DIK, 2016). This is typically where the introduction or cessation of skills and competencies is enacted.

2) The three campuses in this study were four months into amalgamation as a newly formed university. As it stood at the time of this study, each of the three campuses was running accounting programmes allowing for a more diverse sample of participants across different geographical areas.

Other factors that will influence perceptions in this study, could be site location, gender, length of employment, qualifications, and subject matter taught. Even though this study is based in an accounting context it can also be applied across other disciplines, particularly where that discipline can also lead to other professional body membership for example Law.

Based on the literature reviewed to date, there is a notable disparity between the skills that teaching staff perceive as crucial for the contemporary workplace and the skills and attributes that employers seek in new graduates upon entering employment. These attributes were regularly found to be

communication, teamwork, and interpersonal skills (Tsiligiris & Bowyer, 2021) which are intrinsically linked to digital skills. With staff placing a heavy emphasis on technical accounting skills (Rackliffe & Ragland, 2016) and in contrast, employers emphasising soft skills (Banasik & Jubb, 2021; Carvalho & Almeida, 2022; Ghani et al., 2018; Tsiligiris & Bowyer, 2021). Previous research found that most accounting degree programmes are not dynamic enough to meet the rapid technological changes in the business environment (Al-Htaybat et al., 2018; Berikol & Killi, 2021; Carvalho & Almeida, 2022; Muthaiyah et al., 2021; Tsiligiris & Bowyer, 2021). This contributed to the widening of the skills gap in how accounting is practiced and what is taught in universities (Kotb et al., 2019). Not only does this gap still exist but it is widening as businesses deploy more technologies in their processes and there is an acknowledgment that traditional accountants are a dying breed (Kotb et al., 2019).

1.3 Key terms and their descriptions

In this study, I use terms that are sometimes only understandable in the context of accounting. Here I present a definition of these terms in the order that they appear in the study.

Term	Description and use in this study
Professional Accounting Bodies	In the Irish context, there are four main types of accountants that students, after achieving their undergraduate business/accounting degree, can go on to "fully qualify" and become a professional accountant. Qualifying with one of these professional bodies requires successfully passing challenging business and finance exams along with demonstrating a proven track record of work experience in different areas depending on the professional body. In the context of this study, students complete a three-year undergraduate accounting programme and then seek job opportunities normally with accounting firms. It is then while working in these firms they go on to apply to do professional exams and qualify as accountants on completion. They can then demonstrate this qualification by displaying the relevant letters after their names. The four main accounting bodies are CAI (Chartered Accountants Ireland) which primarily aligns their exams to working in a large accounting practice, ACCA (Association of Chartered Certified Accountants) which primarily aligns their exams to both practice and industry, CIMA (Chartered Institute of Management Accountants) which primarily align their exams to industry, CPA (Certified Public Accountants) which primarily align their exams to working in public organisations.
Digital skills	This term is often used interchangeably throughout the literature reviewed with digital literacies, competencies, and capabilities. In this study, in the context of accounting, digital skills are primarily subject specific (Armah & Van Der Westhuizen, 2020) and profession relevant (Nelson, 2011) in the areas of using the Microsoft Office suite, along with payroll and accounting packages. It is also used in a general way to encompass the skills required to assist with all the other important attributes that a competent accountant should possess. According to UNESCO (2020), digital skills are a range of abilities to use digital devices, communication applications, and networks to access and manage information. They enable people to create and share digital content, communicate and collaborate, and solve problems for effective and creative self-fulfilment in life, learning, work and social activities at large. Ferrari (2013) saw digital skills as the ability to critically analyse and assess digital information, problem solving using digital tools, creation and recreation of content and so forth. The International Telecommunication Union (Lyall, 2021) defined digital

Term	Description and use in this study
	skills as a set of technological abilities that may be fully or partially acquired before entering the world of work.
Microsoft Excel	A spreadsheet package that is primarily used to perform calculations. Often referred to as Excel throughout the study.
Technical aspects of accounting	This refers to the principles, procedures, and methods used to record and report financial transactions. This is primarily achieved through the operation of a double-entry bookkeeping system, to record accurate, consistent, and reliable data used in financial reporting.
Practitioner employer	An employer who owns and runs an accounting firm as opposed to an individual who works as an accountant in a business/company.
Accounting staff	Staff who teach in accounting programmes who are also professional accountants i.e. qualified with CAI, ACCA, CIMA or CIPA
Lecturing/teaching staff	Staff who teach on accounting programmes can be accountants but also non-accountants. The non-accountants do not teach areas of technical accounting.
Debits and credits	Part of the double entry system used in accounting. For every debit, there must be a corresponding credit. Every business transaction is recorded in this manner. Upon completion of this double entry system, a trial balance is then extracted which allows items subsequently to be classified into the relevant financial statements, primarily the profit and loss account and the balance sheet. These are the two primary financial statements in a set of accounts.
Exemptions from professional bodies	Each of the four bodies (CAI, ACCA, CPA, and CIMA) have an independent exam process normally spanning three years to qualification. This process can be shortened by recognition of prior learning on specific undergrad accounting programmes through the granting of a varied number of exemptions depending on the programme and grade achieved.
Accounting packages	Accounting software that digitises the double entry process that was traditionally carried out manually.
Work experience	This is the specific experience in the field of accounting either in an accountant's practice or the accounts department of a business.
Financial Accounting	Financial accounting is the branch of accounting intended for users outside the business itself. It takes the form a set of financial statements that are used to determine the profit and net worth of a business.
Management Accounting	Management accounting is that branch of accounting concerned with the provision of information intended to be useful to management within the business.
Audit	This is a control mechanism designed to provide an external and independent check on the financial statements and reports published by businesses. Financial reports on the state of affairs and the past results of businesses are prepared by accountants under the control of the managers of the enterprises.

Table 1 Key terms and their descriptions

1.4 Aims of the study

This study aims to give deep insights, from a staff perspective, concerning the complex processes at play when trying to implement digital skills in accounting programmes, with a specific focus on digital competencies within a professional domain (Nelson et al., 2011). This will assist in understanding the contributing factors to the current gap between HE instruction and the evolving demands of the 21st-century workplace. It will provide deep insights into the views of important stakeholders to effect change in the accounting curriculum – teaching staff members.

By highlighting the factors including challenges experienced by teaching staff in this process, this study aims to contribute uniquely to the existing knowledge in this area by gaining an understanding that will allow for recommendations to be implemented at a practice and policy level, while also contributing to the limited research in this area.

To obtain this deep understanding, a grounded approach was deemed the most appropriate methodology, to gain unique insights into the intrinsic experiences of teaching staff. Using this approach will allow for theory building that applies to real-world situations and supports the daily realities (Glaser & Strauss, 1967).

The study starts with seeking to understand why HE staff conceptualise digital skills the way they do, and how this affects inclusion and exclusion criteria in the accounting curriculum. It then goes on to give a better understanding of the misalignment in the ranking of importance in this area between the main stakeholders identified in accounting education, namely – teaching staff,

employers, and professional bodies.

The overarching research question this study seeks to answer is -

What are staff perceptions of the importance of different aspects of digital skills for accounting students, both throughout their studies, and entering the workplace?

1.5 Motivations for the study

The inspiration for this study originated from three different personal experiences. Firstly, from my own experience and the dilemmas I faced when I initially joined the workforce over twenty-five years ago as an accounting graduate. At that time, I found that both my employer and colleagues expected me to possess a higher level of proficiency in the digital arena, particularly in Microsoft Excel and other technology-related applications than I possessed. I experienced an underlying assumption from my employer at that time that my digital skills were excellent. At this time, I had very little digital skill capabilities and as a result, I began questioning my professional identity and my ability to fulfil my job responsibilities to the expected standard in my profession.

Secondly, as a lecturer in higher education specialising in accounting and business, I have first-hand experience with teaching business technology modules designed for accounting students. Based on my recent extensive industry experience, I have noticed that this module does not sufficiently address the development of digital skills, particularly within the Microsoft 365 suite and more specifically concerning Microsoft Excel. Furthermore, while delivering on other technology-based modules, for example on accounting and

payroll packages, I observed the design and fragmented nature of the curriculum concerning these modules, making it practically impossible for graduates to effectively apply their knowledge in real workplace scenarios digitally.

Thirdly, it was supported by my earlier module studies on the PhD programme, which investigated the students' perceptions of their digital skill capabilities on entering the workplace, and concluded that accounting students today, still express feeling a similar sense of inadequacy that I experienced on entering the workplace, particularly with the advancement in the digital arena in the past twenty-five years. The primary reasons students cited for this lack of digital knowledge throughout their HE experience were:

1) At curriculum and programme design level - particularly concerning placement on the programme and content of modules.
2) At the individual lecturer level – a more concentrated effort was required in developing academic material and teaching techniques to further promote students' digital skills requirements specifically when entering the workplace.

As a researcher and lecturer in accounting and business, I contend that the overall desired attributes for students in these fields are inherently intertwined with digital skills, especially in today's business environments that increasingly rely on technology. While technical knowledge in accounting remains crucial, it is essential to recognise that this knowledge cannot be effectively applied in the current business landscape without a proficient level of digital skills. This

includes subject-specific skills in using Microsoft Excel, computerised accounts, computerised payroll packages, and general digital skills required to assist with effective communication. The growing dependence on technology necessitates that students possess the ability to leverage digital tools to demonstrate their expertise in accounting subject matter.

1.6 Overview of the study

1.6.1 Chapter 1

This chapter starts by highlighting the importance of digital skills for today's workforce. It then narrows the focus to the importance of these skills for the subject matter of this study – accounting. It then gives a background context highlighting what accounting students are taught in universities is currently misaligned with the expectations of employers for this class of student. It then highlights how the data was collected, and an overview of the gap in the current literature between what academic staff perceive as important attributes for students versus what employers perceive as important. It also highlights the aim of the study and my motivation for carrying out this study, which is multifaceted.

1.6.2 Chapter 2

The literature review highlights the significance of integrating digital skills into the accounting curriculum in higher education. It explores the obstacles confronted by universities, the impact of professional bodies, employer expectations, and the challenges involved in incorporating technology into accounting programmes. It highlights the importance of fostering collaboration

among universities, professional bodies, and employers to bridge the digital skills gap in an evolving profession.

1.6.3 Chapter 3

This chapter highlights the influences of research positionality on all areas of the research from formulating the research questions, how the data is interpreted, research methods chosen, and the data analysis. It then documents the sampling approach adopted and the reasoning behind selecting semi-structured interviews as a data collection process. Finally, it explains how a grounded approach was used in the data analysis and interpretation process. It then finishes off with the ethical considerations that were identified.

1.6.4 Chapter 4

This chapter gives further information on participant profiles to help the reader distinguish between staff that are also accountants and other staff that teach on the accounting programmes. It also gives information on the roles held by these staff and years of teaching experience, which will also influence their perceptions.

It then presents the data, using the methods in chapter 3, in a format that answers the four research questions using themes that emerged from the data. It then concludes by highlighting the importance of digital skills in all facets of professional working life, and highlights some of the main obstacles experienced in digital implementation in these programmes.

1.6.5 Chapter 5

This chapter discusses similar themes that emerged between the research findings and the existing literature, while also shedding light on additional data discovered during this study. It explores the significance of the findings in addressing the research questions and provides an interpretation of these findings as a valuable contribution to the existing knowledge in this field. Moreover, it identifies and addresses further gaps in knowledge, enriching the existing knowledge with the support of the findings.

1.6.6 Chapter 6

The study's conclusion revisits the research questions and concisely answers them. It states how this study can influence practice and policy while also highlighting how it contributes to the existing body of literature in this area.

It then finishes off by acknowledging the limitations of this study and makes recommendations for further research.

Chapter 2 Literature Review

Over the past three decades, the debate concerning what employers demand and what universities offer has attracted the attention of professional accounting bodies (PABs), academics, researchers, and practitioners (Kolb et al, 2019). Most accounting degree programmes were not deemed dynamic enough to meet in time the rapid changes in the business environment. This created an increasingly perceived skills gap between how accounting is practiced and what is taught in universities (Andiola et al., 2020; CAI, 2022). This skills gap refers to the mismatch between the skills of university graduates and the skills demanded by employers (Canovi & Succi, 2019). The size and the nature of the skills gap depend on whether the right skills are embedded in the university curriculum and how they are delivered and assessed (Tan & Laswad, 2018). Universities have attempted to align their curricula with the skills demanded by employers, but today the gap still exists, rather, it is widening (Bridgstock & Jackson, 2019; Osmani et al., 2019). In today's business landscape, businesses are becoming increasingly more complex and technology-based than in the past. As a result, employers demand graduates "to be a good fit with their business in terms of skills, abilities, and attitudes" (Pollard et al., 2015, p. 13). However, universities seem to still struggle with adequately responding (Lords, 2015). This gap is unhelpful for students as it poses the risk that skills worked on and developed at university will not readily transfer into the workplace (Jones, 2014). There is a need for greater communication between academics and practitioners (Jones, 2014) to assist with bridging this gap. Bui & Porter (2010) argue that much of this gap results

from inadequate communication and understanding between the parties. In their 2010 study, Bui and Porter developed a framework to understand the expectation-performance gap in accounting education, drawing from prior literature and data from a New Zealand university. Their research not only substantiates the existence of this gap in New Zealand's accounting education but also identifies its primary causes. These include a disparity in expectations between university educators and employers (termed the expectation gap), and substandard teaching quality in universities (referred to as the performance gap). Additionally, the study highlights two significant institutional factors from the viewpoint of university educators: insufficient resources and the tenure and promotion policies of universities, which they cite as major impediments in nurturing the competencies of accounting graduates (identified as the constraint gap).

Students entering today's workplace must be equipped with the necessary technological skills, which may in the past have been an optional requirement that is now deemed fundamental (Anderson, 2020), as the digital economy becomes a way of life (Kotb, 2019). However, what those specific skills entail is a more challenging task to grasp.

Determining what specifically should be taught is further complicated by a host of other issues:

- Difficulties with clearly defining what a digital environment entails as rapidly changing technologies represent a moving target (Atzori et al., 2017)
- Lack of a common inventory of digital literacy skills or outcome expectations (Nelson et al., 2011)
- Steady shift of introductory college-level material (Yahya, 2010)
- Disconnect between what colleges expect students to know and what

students think they already know as students' self-efficacy ratings exceed their actual performance scores (Dassa & Nichols, 2019)
- Claims that students who have been born digital are digital natives, i.e., only know a digital world (Palfrey & Gasser, 2011), are radically different and do not have to learn ICT but merely experience it (Kincl & Štrach, 2021)
- A wide range of computer proficiency and online skills among students depend on factors such as socioeconomic background and personal innovativeness (Correa et al., 2015; Zhong, 2011)

As this study is using a grounded theory approach, a common misassumption is the notion that not only must the researcher enter the field with a blank mind (i.e., without knowledge of the literature and absent prior experience), but that she or he must also enter the field with a blank agenda (i.e., without a defined research question) (Suddaby, 2006b). However, the researcher's views in this research on conducting an initial literature review, align with the opinion of Dunne (2011), who sees this approach as unworkable and acknowledges that a literature review using a grounded theory approach is a necessary part of the historicity, familiarisation, and contextualisation of the study. Thornburg (2012) also argues that researching the literature in these studies can support greater sensitivity and creativity, spotting matters that might otherwise be overlooked.

Most of the literature reviewed to date (Figure 2.1) focuses on students' views of their digital skills capabilities throughout their Higher Education (HE) experience. While this gave a good insight into the problems experienced by students, this study will focus on staff experiences who are one of the main stakeholders in implementing change and improvement in digital skills in accounting education.

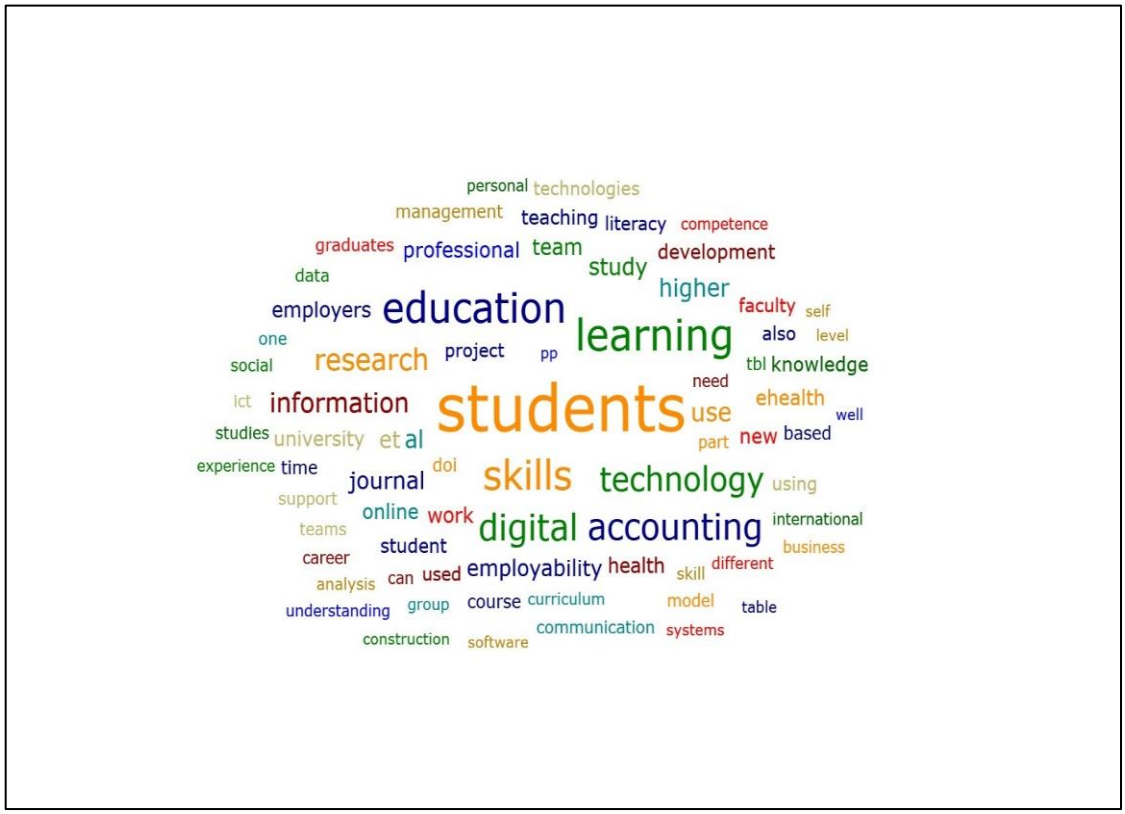


Figure 2.1 Word cloud depicting literature on digital skills experiences of accounting students

A search of the Scopus database was carried out to try and capture staff's perceptions in this general area. This yielded only a small number of results, supporting the notion that there has been limited research written on this topic to date. This search was carried out using the following string of search keywords – financial accounting OR management accounting OR business AND perceptions OR experiences AND digital skills OR digital capabilities OR digital competencies OR digital literacies AND Higher Education AND academics OR faculty OR teachers OR staff AND workplace skills AND transferable work skills. This yielded only 11 results which helped identify the need for further research in this area. The initial literature was already sourced from previous research, along with the research found using the search above, and then a snowballing approach was adapted to these existing studies to

understand existing knowledge in this area.

There are still complaints from employers concerning the lack of soft skills (Ghani et al., 2018) of which digital skills often are categorised, among accounting graduates. Employers want digitally competent accounting graduates which can often assist with competitive advantage, and drive innovation capacity in the workplace, and enable graduates to move at the fast pace of business that is required in the 21st century. This requirement is intrinsically linked to all other skills requirements of this profession. An initial scoping of the literature selected supports this view see Figure 2.2 below.

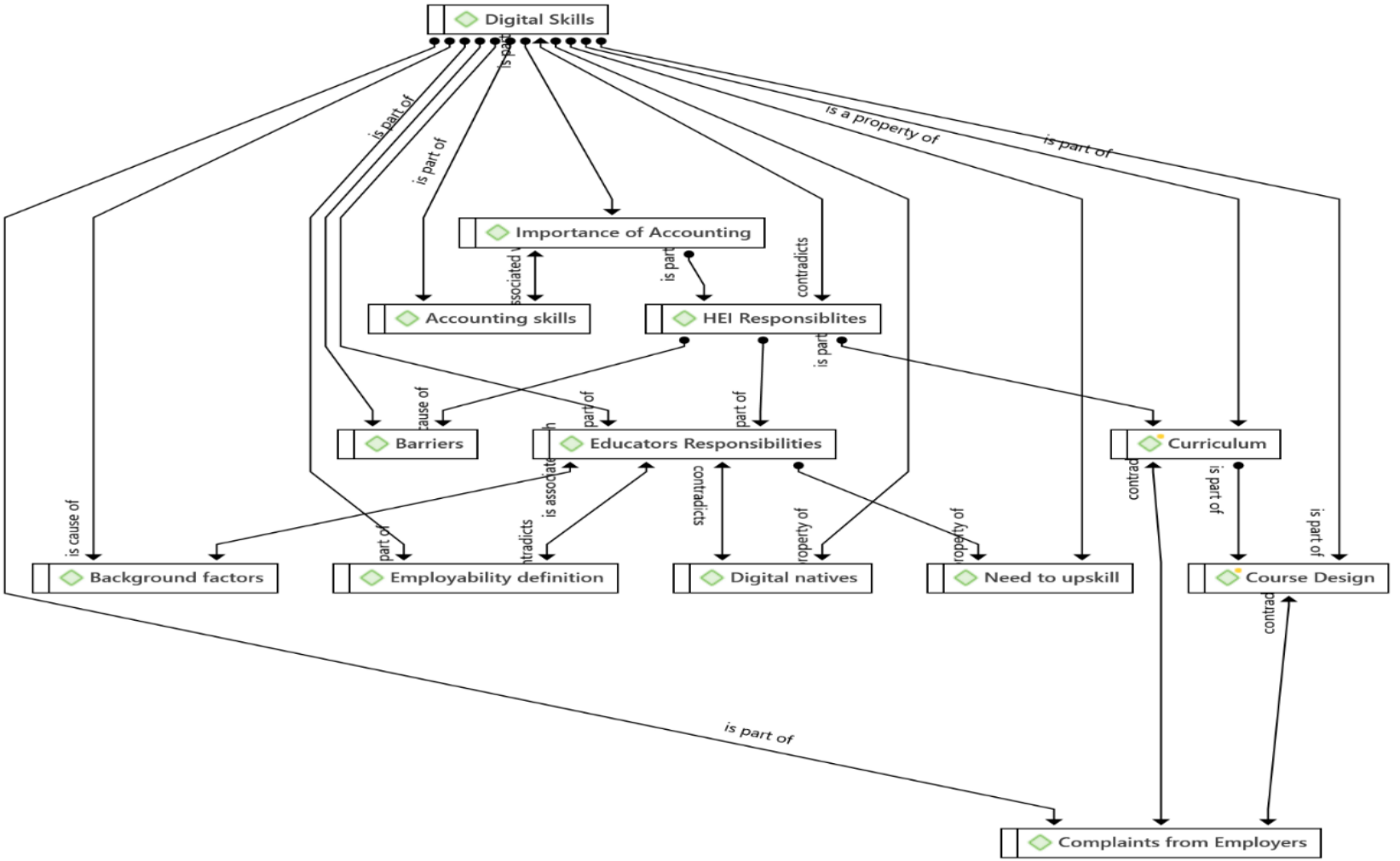


Figure 2.2 Initial scoping of literature identifying themes that relate to digital skills

This literature review focused on studies that will assist with the overarching research question in this study - What are staff perceptions of the importance of different aspects of digital skills for accounting students, both throughout their studies, and entering the workplace?

Initially, it will start by looking at the term digital skills in the context of HE. It will then look at the application of these skills in an accounting context, which will assist in giving an overall understanding of the type of digital skills that are relevant to accounting students. It then looks at the power of individual stakeholders on the accounting curriculum, to help gain an understanding of the main players that influence accounting programme design. Finally, it then highlights the potential problems faced by academic staff in implementing a digital accounting curriculum, that more aligns with the demands of today's workplace.

Author	Year	Approach	Stakeholder View	Findings
Carvalho	2022	Interviews	Teaching faculty, students, and recent graduates	This study looks at the importance of digital skills as a transversal skill and how HEIs must assess whether their programme is adequate to meet these challenges
Tsiligiris	2021	Literature Review	Professional Bodies	This study demonstrated the importance of digital skills which are seen as paramount in helping accountants to be successful in the future working world.
Bastos	2021	Questionnaire	Students	This study demonstrated that after the pandemic students preferred to go back to face-to-face teaching due to their difficulties in navigating the technological environment
Berikol	2021	Documentary Research Method	Students	This author argued for an urgent need to review the existing accounting curricula to prepare students for a digital future.
Ng	2021	Self-Evaluation	Teaching Faculty	This study highlighted the importance of transversal skills, particularly digital skills, during the emergency pivot.
Muthaivah	2021	Literature review + Interviews	Employers	In this study, the response from Employers confirms that digital inclusion in the curriculum is imperative, but teaching staff lack the know-how, particularly in emerging technologies
Polimeni	2021	Self-Evaluation	Teaching Faculty	This study recommended a proposal for their institution for a department on the “Emerging Accounting Technologies Institute “to be created
Banisk	2021	Self-Evaluation	Accounting Curriculum Review	Part of this study highlights the importance of digital technology policies across accounting programmes
Andiola et al	2020	Survey	Teaching faculty	To fully participate in a digital society digital literacy cannot be reduced to a single component, or it can be assessed with one type of test, but must be implemented across a whole programme
Kotb et al	2019	Online questionnaires and semi-structured	Teaching faculty + professional bodies	Findings suggest a view that technological developments should be covered across curricula, however, it is still a peripheral component in accounting curricula with no agenda for change.

Author	Year	Approach	Stakeholder View	Findings
		interviews		
Al-Htaybat	2018	Interviews	Teaching Faculty	This research acknowledges how participants' opinions vary regarding the necessity of adjusting the accounting curriculum especially digitally.
Watty	2016	Interviews	Teaching faculty	This study found that the single most important factor inhibiting technology adaption is time
Pan	2016	Literature Review	Accounting students	This author found that academics, practitioners, and professional bodies should help accounting students fully understand the importance and usefulness of digital skills in their long-term careers.
Rackliffe	2016	Questionnaire	Teaching faculty	This study recommends that Microsoft Excel should be included and/or used more frequently in accounting education.

Table 2 Summary of the primary research on implementing digital skills into the accounting curriculum

Table 2.1 shows the most relevant empirical studies using the methods described above. Details of the reviewed studies including author (s), date of publication, research method, participant type, and a short synopsis of relevant findings.

The analysis of past research shows that while there is a strong acknowledgment that digital skills are important (Banasik & Jubb, 2021; Carvalho & Almeida, 2022; Ng & Harrison, 2021; Pan & Seow, 2016; Polimeni & Burke, 2021; Tsiligiris & Bowyer, 2021; Watty et al., 2016) with Berikol & Killi, (2021, p. 228) arguing that there is an “urgent need” to review accounting curricula to prepare students for the digital future. However, what this entails and how we go about this is still uncertain in accounting education. While there is an agreement that just adding an individual module to a programme as suggested by Rackliffe & Ragland (2016), will not solve this issue (Andiola et al., 2020; Kotb et al., 2019), staff are unable to agree on the best way to move forward with this (Al-Htaybat et al., 2018). Muthaiyah et al. (2021) go a step further and argue that the underlying issue is with teaching staff having a lack of know-how in emerging technologies as one of the primary reasons that this is not addressed successfully.

There are limited studies that seek the views of teaching staff concerning digital skills implementation in accounting education (Al-Htaybat et al., 2018; Carvalho & Almeida, 2022; Ng & Harrison, 2021; Rackliffe & Ragland, 2016; Watty et al., 2016) and fewer that use interviews as a primary method of data collection (Carvalho & Almeida, 2022; Watty et al., 2016). This study enhances the current body of research, particularly those utilising interviews for data

gathering, by offering a more contemporary perspective compared to Watty et al. (2016), who also focused on interviewing teaching faculty. Moreover, this study delves deeper by exclusively concentrating on teaching faculty, in contrast to the broader participant range in Carvalho and Almeida (2022), thereby providing a more focused and in-depth analysis in this specific area.

Kotb et al. (2019) found no prior research has examined the coverage of technological development in British and Irish undergraduate accounting programmes. This study, while claiming to have an Irish context, suffers from a significant limitation in its representativeness. Of the 212 respondents to the questionnaire, only nine were from the Republic of Ireland, a number too small to adequately represent the Irish demographic. In contrast, this current study is deeply rooted in the Irish context, with all participants hailing from the Republic of Ireland. Additionally, the previous study's scope was narrow, focusing solely on accountants who also have teaching roles, specifically in exemption modules. This study adopts a more inclusive approach by encompassing all staff involved in teaching accounting programs. This includes both accounting and non-accounting staff, with a particular emphasis on the latter as they typically instruct digital skill modules. These modules, being non-exemption and central to this study, highlight the importance of a broader educational perspective in understanding the integration of digital skills in accounting education.

This research aims to contribute to this limited knowledge, particularly in the aftermath of the global pandemic which accelerated technology adaption

worldwide.

2.1 Digital skills as an evolving concept situated in HE

The concept of digital skills often appears to be an umbrella term, and the intended meaning can be quite different depending on several factors. These are primarily - time frame, context, and more specifically the discipline in which the term is used. It became apparent as a concept initially in dentistry education research in the mid-1960s, and even at this early stage was recognised as important to include in the curriculum (Boucher, 1966). This was followed by more frequent use of the term in the late 1990s in military research (Salter, 1998). In this context, the concept was described as those skills needed by soldiers who operate the army's increasingly complex computer-based system (Salter, 1998; Wisher, 1999). As the term increases in use over the following years, due to rapid technological advances in the dynamic external environment, its use has become synonymous (Iordache et al., 2017) with other, often described as similar concepts, namely digital literacy, digital capabilities, digital experience, and digital competences. The intended meaning may become blurred as it is often used in studies with an assumption that the reader knows the specific definition within a particular context.

However, Iordache et al. (2017) explore the distinct conceptual difference between digital skills, literacy, and competencies. Digital skills can be defined as the more technical aspects of literacies which can be referred to as certain competencies and knowledge (Van Deursen & Van Dijk, 2010) or the more practical and measurable outcomes of literacies (Iordache et al., 2017). It is crucial when studying digital skills to consider the conceptual distinction, along

with the overall complexity and multi-layered character (Iordache et al., 2017) of the concept.

Van Laar et al. (2017) more recently uses the term to talk about 21st-century digital skills and how imperative it is to acquire such skills. He defines these skills as

1) The mastery of ICT applications to solve cognitive tasks at work.

2) Skills that are not technology-driven, as they do not refer to the use of any software programme.

3) Skills that support higher-order thinking.

4) Skills related to cognitive processes favouring employees' continuous learning.

(Van Laar et al., 2017, p. 578)

Most definitions of digital skills tend to encompass functional skills to operate and use technologies for a range of informational, social, and creative purposes, alongside a strategic understanding of how ICTs are influenced by commercial and societal factors (Helsper & Eynon, 2013). This study will use the term digital skills more aligned with the definition of skills, concepts, and approaches within a specific context or domain (Klara et al., 2008) more specifically profession-relevant skills (Al-Htaybat, 2018) that are more subject-specialised (Armah & Van Der Westhuizen, 2020), taught throughout HE and the transfer of these skills into the workplace.

It is incumbent on higher education, which produces a major part of the workforce of a country, to rethink the preparation of students to meet the challenges of a rapidly changing digital society (Armah & Van Der Westhuizen, 2020). This study, conducted in Ghana (West Africa), employed the JISC Digital Tracker—an online survey—to assess the digital skills of students across various disciplines, though not specifically in accounting. The survey sample was disproportionately high in business students. The findings indicate that students in Ghana experience limited interaction with technology within their subject areas. Consequently, higher education institutions in Ghana are encouraged to integrate digital skills more thoroughly into their academic curricula. Such integration is crucial for equipping students with the digital competencies necessary for their future careers and for thriving in the digital economy. Lecturers should focus on identifying practical skills in the curriculum and designing authentic tasks that leverage these skills. This approach would enable students to create digital artefacts and hone essential competencies such as digital communication, collaboration, critical thinking, and problem-solving.

Reports are emerging worldwide suggesting that if HEIs (Higher Education Institutions) wish to remain competitive and relevant in the 21st century, they will need to embrace the opportunities afforded by technology, particularly concerning teaching, and learning practices (Christensen et al., 2019; Conole, 2012). As HEIs are mandated to train students for the global market, they must employ the appropriate digital technologies at the programme level to develop students' digital capabilities and understand the modern workplace (Armah &

Van Der Westhuizen, 2020). Unfortunately, despite the huge investment by universities, students are still grappling with the acquisition of digital skills needed in the current work environment (Armah & Van Der Westhuizen, 2020). Even though advancements in technology are a continuous cycle of improvement and change, it is acknowledged that there are often challenges to preparing graduates for jobs that do not yet exist or using technologies yet to be invented (Römgens et al., 2020). Despite this, students still need to be well-versed in new technologies to remain in strong demand in the workplace (Ghani & Muhammad, 2019).

This is supported by the view that traditional teaching methods in universities are increasingly seen as outdated and inappropriate for the new generations of students (Christensen et al., 2019). This is problematic when there is a perceived shortage of digital skills that has now reached a tipping point with such skills deemed essential (Kotb et al., 2019; Van Laar et al., 2017). Some universities have made strides to address this issue. In Ireland, the National Forum for Enhancement in Teaching and Learning has created a road map to assist with the breadth and depth of skills needed to achieve digital proficiency (Morrison, 2016) (see Figure 2.3 below). This road map demonstrates the multi-faceted dimensions of digital skills in HE and the complexity of the concept.

Figure 2.3 All Aboard – A conceptual map for digital skills in Higher Education (2015)

This roadmap was created to explore aspects of ‘confidence’ (or the lack of it) in the use of technologies by everyone engaged in higher education (students, academic staff, technical, support, and administrative staff). The project, funded by the National Forum for the Enhancement of Teaching & Learning was a collaborative project undertaken by four universities that aimed to enhance digital skills in the higher education sector and beyond. The objective was to allow staff and students to take short programmes to earn digital badges on completion of different competencies on the map. However, a lot of the content could be considered too general and too vague to apply to specific contexts (Varga-Atkins, 2018).

2.2 Digital skills in an accounting context

The knowledge, concepts, and rules of the technical aspects of accounting education have not changed dramatically over the last number of years, and Bastos et al., (2021) are not alone in their claims that accounting itself is the same as it has been for many years (Al-Htaybat et al., 2018; Kotb et al., 2019). However, the globalisation of business, strict regulations, and numerous technological solutions and innovations continuously affect accounting (Bastos et al., 2021), with Polimeni & Burke (2021) going as far as to say that digital technologies are quickly disrupting the accounting profession. This is seen by many as a revolution in accounting (Banasik & Jubb, 2021; Berikol & Killi, 2021; Kotb et al., 2013; Pan & Seow, 2016; Polimeni & Burke, 2021; Tsiligiris & Bowyer, 2021). Carvalho & Almeida (2022) go a step further stating that the future of the profession will depend on the use of technology. This results in a transformative shift (Tsiligiris & Bowyer, 2021) in the skill set required of

accountants in the current job market. Vasarhelyi (2010) argues that traditional accounting education focuses on knowledge of concepts and rules, which is not enough for students to function in a digital economy, as technology is an essential feature of accounting education, and is shaping the skills and personal qualities that accountants are expected to possess (Tsiligiris & Bowyer, 2021).

There are limited studies carried out on the digital skill requirements of these students, particularly in specific professional contexts (Anderson et al., 2020, Berikol & Killi, 2021), and are further limited in the context of accounting education. The Pathways Commission, established in 2010 as a joint initiative by the American Accounting Association (AAA) and the American Institute of CPAs (AICPA), has been instrumental in shaping the future of accounting education. The methods used in this report entailed surveys of accounting educators and practitioners, interviews with industry leaders, analysis of current academic curricula, and review of industry trends and technology advancements. They also reviewed data from accounting accreditation bodies and educational institutions to understand the current state of accounting education. While there are varying views on the subject-specific digital skill requirements of accounting students, the Pathways Commission's Report (2015), which focused on technologies in the accounting curriculum and emerging technologies in business, indicates a strong consensus for the need to teach some technologies (i.e., spreadsheets). The report does however indicate significant divergence on which other technologies should be taught (Andiola et al., 2020). This is supported by another study carried out on 197

practitioners in North Carolina who support the notion that Microsoft Excel is the most important software tool for new hires, and this should be emphasised in accounting programmes (Lee et al., 2018), but after this the requirements become inconsistent. This is not aided by the profession facing numerous challenges in the age of digitalisation (Gulin, et al., 2019).

The main changes digitally over the last number of years can be categorised as follows: data analytics, big data, cloud technologies, AI, and blockchain (Al-Htaybat et al., 2018; Andiola et al., 2020; Armah & Van Der Westhuizen, 2020; Banasik & Jubb, 2021; Bastos et al., 2021; Berikol & Killi, 2021; Carvalho & Almeida, 2022; Kotb et al., 2019; Muthaiyah et al., 2021; Pan & Seow, 2016; Polimeni & Burke, 2021; Tsiligiris & Bowyer, 2021). In study by Moll & Yigitbasioglu (2019) it notes that despite the recognised importance of IT in accounting, few university programs comprehensively cover the intersection of accounting and digitisation. The paper concludes that integrating knowledge of these new technologies into the accounting curriculum is essential for preparing future professionals, thus strengthening the case for this study.

Although Tsiligis & Bowyer (2021) support the notion that the new skills accountants need primarily revolve around analytics, others have supported this but go a step further citing specific software such as for programming (Python), statistical software (using R) and data visualisation (Tableau) (Andiola et al., 2020). Whatever is deemed digitally important after Microsoft Excel is seen as still uncertain. What is quite apparent, however, is that all these technologies are continually contributing to changing the conventional face of

the accounting profession (Schwab, 2017).

2.3 Challenges faced implementing digital skills into accounting programmes

The current challenge for HE that teach accounting programmes is to identify the skills and tools relevant to the profession, and how and when to incorporate them into the academic curricula (Carvalho & Almeida, 2022). This Portuguese study investigates the transversal skills required in the field of accounting by conducting interviews with a range of individuals closely associated with the profession, including lecturers, students, and recent graduates. The primary objective is to determine the extent to which higher education in Portugal meets the demands of these necessary skills in accounting. A significant finding of the study is the emphasis on communication as the most critical transversal skill in the accounting profession. However, the study suggests that the current state of accounting education in Portugal may not be fully equipping students with these essential skills. This shortfall is attributed to the continued reliance on traditional methods of teaching and assessment within the educational system, which may not effectively foster these crucial competencies.

However, there can be varied opinions on what the digital skills requirements are for today's accounting students. In a recent literature review carried out by Tsiligiris (2021) of research published by professional accounting bodies (PABs), outlining the impact of digital technologies on the accounting profession, they determined the necessary skills for future accountants may be classified into four categories: (a) Ethical skills; (b) Digital skills; (c) Business skills; and (d) Soft skills. Once again, the conceptual distinction mentioned

earlier becomes blurred with the interpretation of the concept of digital skills, even within an accounting context. However, this study's conclusions are primarily derived from a literature review. While examining previous research is crucial, there is a noticeable lack of diverse viewpoints in this study. This could result in the findings being overly influenced by the author's personal perspectives and opinions, rather than a balanced analysis of the subject matter. A more comprehensive approach that includes a variety of perspectives would likely provide a more nuanced and accurate understanding of the topic. This study provides offers valuable insights in this regard.

While some studies classify digital skills for accounting as soft skills (Carvalho & Almeida, 2022; Tsiligiris & Bowyer, 2021), while other studies classify them as generic skills (Armah & Van Der Westhuizen, 2020; Römgens et al., 2020) and others talk about them as transversal (Ng & Harrison, 2021; Van Laar et al., 2017). They all highlight the importance of digital skills but often do not specify what specific skills these entail. This is demonstrated in Figure 2.4 below. It shows how digital skills overall are deemed necessary to enhance the other three main skills identified for accounting students – soft, generic, and transversal. While the definition of soft skills was not specific in the literature, they were often described as emotional intelligence, being a team player, having a growth mindset, being adaptable, open to feedback, and having good work ethic. Other attributes that were deemed soft were also classified as generic and transversal, such as critical thinking, leadership, and communication. Also, while the digital skills needed were often clearly identified as programming or analytics technologies citing the appropriate buzzwords

such as AI, blockchain, and analytics, none of the literature reviewed to date gave examples of how these could be or are currently implemented in programmes.

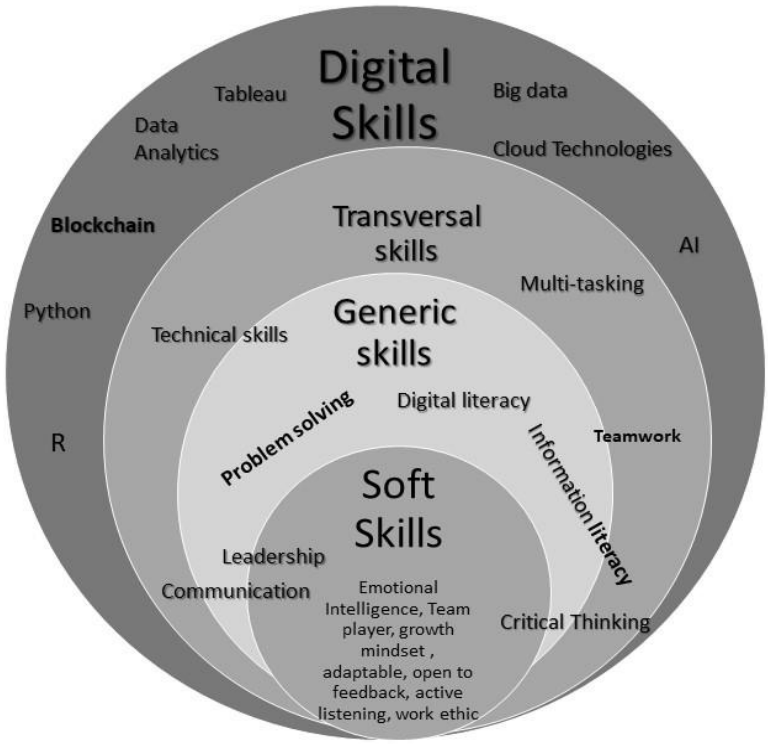


Figure 2.4 Different classifications and attributes of skills for accounting students in the literature reviewed

Digital skills for accounting students are a more nuanced and complex concept, particularly concerning the subject of accounting where there is heavy reliance on quantitative data. The complexity of the dissemination of this information in the business world requires digital skills which expand across all the other skills and are a fundamental part of all skills required (Iordache et al., 2017). This is demonstrated further by Figure 2.5 below. This framework was developed through three phases of research from a total of 130 organisations across 14 countries. The main finding of this study found that digital skills, as well as

being a standalone knowledge area, also permeate throughout other knowledge areas, and without digital skills, participants were found to be limited in what they could accomplish in other areas. These are displayed below as technical, business, leadership, and people skills. These are recognised, along with assisting with the cornerstone of the profession namely acting ethically, upholding integrity, and maintaining professionalism (CGMA, 2019).

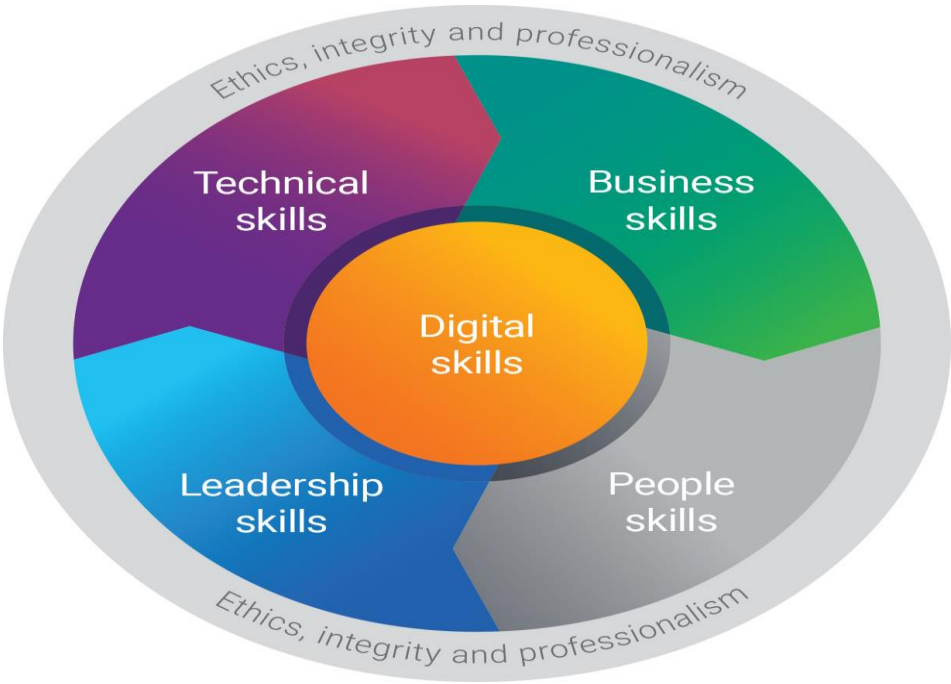


Figure 2.5 CGMA (Chartered Global Management Accountants) Competency Framework 2019

2.3.1 Curriculum challenges of keeping pace with digital developments

The best method to allow students to experience new technologies and develop their capabilities is to embed these technologies and skills in the context of the academic curriculum. The curriculum is deemed to be the best route to highlight and develop digital practices. It is often viewed as the focus of students' attention and a key driver of effort (Armah & Van Der Westhuizen, 2020). When digital technologies are embedded in the context of the academic curriculum,

this also enables the students to move between individual, partner, small group, and whole-class instruction to broaden, challenge, or affirm their thinking (Kneale, 2018). Therefore, it can present problems when feedback is obtained from students that this is not happening currently in the curriculum. In a study by Al-Htaybat et al. (2018), several participants strongly emphasised the need for incorporating new technologies in the accounting curriculum and felt that this was not happening regardless of the current advancements in the digital era. This study presents an analysis of the accounting curriculum, drawing insights from a diverse group of stakeholders including accounting educators, professional bodies, and practicing accountants. Utilising semi-structured interviews, it delves into the evolving landscape of accounting education, particularly emphasizing the impact and integration of emerging technologies. The research is structured around a novel theoretical framework, metaphorically described as a "tree," which serves as a guide for evaluating and understanding the current state and future directions of the accounting curriculum.

The knock-on effect of not addressing changes in the accounting curriculum reduces the employability and work-readiness of accounting graduates (Kotb et al., 2019). Prior research suggests that a pedagogical shift is required for greater inclusion of digital skills into the accounting curricula, but such change is slow (Andiola et al., 2020; Ng & Harrison, 2021; Rackliffe & Ragland, 2016; Watty et al., 2016) and this pace is likely to continue to be problematic in the “age of acceleration” we currently live in (Friedman, 2017, p. 187). It is therefore quite worrying in a recent study by Muthaiyah et al. (2021), which looked at the

existing curricula of major accredited accounting institutions, found little or no evidence of digital skills being embedded in the taught curriculum. While it is probably naive to suggest that they can ever reach a total alignment to the pace of the workplace, perhaps universities could position themselves more pre-emptively of this educational need by re-designing the accounting curricula to better incorporate digital technologies into accounting programmes (Banasik & Jubb, 2021). This Australian study examines the curriculum of master's level accounting programs, focusing on the integration of various skills, including technology, that are crucial for future employability. It identifies specific modules that are particularly suitable for the incorporation of technological aspects. It predominantly relies on data sourced from college websites, which serves as a useful preliminary basis. However, it falls short of offering the comprehensive insight that this research provides.

There is a call for universities to improve their accounting programmes by use of different strategies, such as real-life scenarios as suggested by Chaffer & Webb (2017). One way that universities have responded to this growing demand for skills and improving the employability of accounting graduates is by embedding WIL (Work Integrated Learning) components within accounting degree programmes (Freudenberg et al., 2011; Henderson & Trede, 2017; Low et al., 2016). WIL refers to such learning activities and experiences which connect universities with the workplace and allow students to integrate theory into practice, hence students can develop critical soft skills and prepare for the workplace (Jackson, 2013; Jackson et al., 2017; Smith et al., 2016). WIL components can be broadly classified into two types: (1) placement and (2)

non-placement based. In placement-based WIL students gain hands-on experience in the workplace through work placements. In non-placement WIL students engage in project-based learning and simulations (Ferns & Zegwaard, 2014; Jackson et al., 2017). While both employers and institutions recognise the benefits of WIL, there are often implementation hurdles that can be difficult to overcome. Employers often face limited capacity to mentor and supervise students, difficulties in finding suitable students who can perform in the workplace, and difficulty supplying universities with suitable student projects (Jackson et al., 2017) to name a few. This increases the pressure on universities to bridge the skills gap, especially concerning developing soft skills that are necessary for adapting to the changing demands of the workplace.

2.3.2 Managing stakeholder relationships

The success of an educational institute often depends on its ability to take care of its stakeholder relationships (Kettunen, 2014). Institutions now explicitly recognise their obligation to meet the needs of a range of stakeholders, such as students, employers, professional associations, the government, the academic community, and wider society. However, significant conflicts can arise in managing their competing claims (Macfarlane & Lomas, 1999).

The main stakeholders in HE accounting curricula are external - professional accounting bodies (PABs), employers, and students, with staff categorised as internal. Jackson & Meek (2021) highlight that it is the stakeholders' collective responsibility to shape accounting curricula to better prepare students for the future of work, and expectations of the accounting profession. However, stakeholders are often uncertain about how to solve problems and have

conflicting opinions (Patton, 2010). This can result in them working in a siloed or fragmented manner. Therefore, communication acts as the vital link between internal and external stakeholders (Tsiligiris & Bowyer, 2021). When looking at the accounting curriculum specifically concerning stakeholder relationships, it is useful to use Mendelow's Matrix (Mendelow, 1981) as used in Figure 2.6 below, which highlights the position of stakeholders based on their level of power and interests.

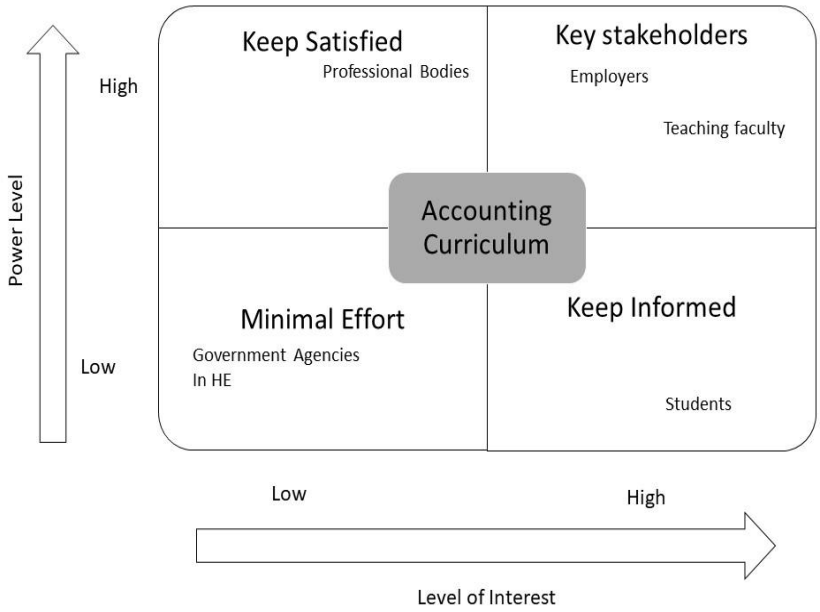


Figure 2.6 Stakeholder mapping of accounting curriculum - Adapted from Mendelow's Matrix

Stakeholder	Power Level	Level of Interest	Influence on accounting curriculum
Professional bodies	High	Low	Need to be kept satisfied to obtain external professional exemptions for students. Not interested in how this is carried out but will not grant exemptions unless a demonstrated level of competencies is achieved.
Employers	High	High	Key stakeholders in the curriculum as students must have employability skills to achieve employment. Interested in the curriculum to ensure it meets the needs of the workplace.
Teaching Staff	High	High	Key stakeholders as ultimate decision makers on inclusion and exclusion criteria in the curriculum.
Government Agencies	Low	Low	Minimal effort is required as currently does not influence the curriculum and has a low level of interest. The interest in this group concerns overall registrations and retention numbers.
Students	Low	High	Have a low power level as often excluded from the decision-making processes which directly affect them. High levels of interest in the curriculum as often a deciding factor when choosing the programme.

Table 3 Stakeholders' influence on the accounting curriculum

We will now look at the individual stakeholders below and their influence on the accounting curriculum.

2.3.3 Professional bodies as a form of hegemony through a dictated curriculum

Historically, PABs and universities have co-existed as the two independent pillars of accounting training and education. PABs have been focusing on meeting the employment market needs for vocational skills, whereas universities have been adopting a broader focus on accounting education and research (King & Davidson, 2009). However, PABs still rely on universities to supply students, who after obtaining their relevant degrees, must go on and complete professional accounting exams with a professional body, to satisfy the criteria to become a registered accountant. Students, on completion of their degrees at university, can obtain exemptions from the entry level of these

professional exams. Different accounting/business programmes across different universities, often use the number of exemptions currently obtained by that institution as their selling point to attract students, who wish to pursue a career in accounting.

The process for higher education institutions in Ireland to apply for professional exemptions from professional accounting bodies like ICA (Institute of Chartered Accountants), ACCA (Association of Chartered Certified Accountants), CIMA (Chartered Institute of Management Accountants), and CPA (Certified Public Accountant) involves a series of steps. These steps are designed to ensure that the courses offered by the institution meet the educational standards required by these professional bodies for granting exemptions to their students. Below is an outline of the general process:

1. Review Professional Body Requirements

The institution should first understand the specific exemption criteria and educational standards required by each professional body (ICA, ACCA, CIMA, CPA). This involves reviewing the syllabus, assessment methods, and learning outcomes that are expected by these bodies.

2. Curriculum Assessment and Development:

The institution should assess its current curriculum to see how it aligns with the requirements of the professional bodies. Necessary curriculum development or adjustments might be needed to ensure compliance with the professional standards.

3. Documentation Preparation:

Prepare comprehensive documentation detailing the curriculum, course content, teaching methods, assessment strategies, and learning outcomes.

Include information about faculty qualifications and any other relevant resources or supports provided to students.

4. Submission of Application:

Complete the application form for accreditation or exemption recognition, provided by the respective professional body. Submit the application along with the required documentation and any application fee that may be applicable.

5. Liaison with Professional Bodies:

The institution may need to liaise with representatives from the professional bodies. This could involve answering queries, providing additional information, or arranging site visits.

6. Review and Site Visits:

Professional bodies might conduct a thorough review of the submitted documentation. They may also conduct site visits to assess the institution's facilities, resources, and teaching quality.

7. Feedback and Compliance:

The professional body may provide feedback or request changes or improvements to the curriculum or resources. The institution should work to comply with these requests to meet the required standards.

8. Accreditation/Exemption Approval:

Once the professional body is satisfied that the institution meets their criteria, they will grant accreditation or recognize the institution's eligibility for student exemptions. Specific details about the level and extent of exemptions for various courses will be provided.

9. Communication with Students:

Inform current and prospective students about the exemptions they can avail of when they enrol in specific courses. Update course materials, marketing materials, and the institution's website to reflect this information.

10. Ongoing Review and Updates:

Professional bodies may require periodic reviews to ensure ongoing compliance. The institution should regularly update its courses to align with any changes in the professional bodies' requirements.

11. Maintain Records and Evidence:

Keep detailed records and evidence of compliance, student performance, and curriculum updates. These may be required for future reviews or re-accreditation processes. Each professional accounting body has its specific requirements and processes, so it's crucial for the higher education institution to carefully review and adhere to each body's guidelines. Regular communication with the professional bodies throughout the application process is also essential to ensure a smooth and successful accreditation or exemption recognition.

As universities grapple with each other to claim titles of who offers the best exemptions, professional bodies are situated in a position of power as universities line up their accounting degrees in a way that will enable them to be "granted" the maximum number of exemptions. This power of where institutions are granted accreditation, and how many exemptions can be achieved on programme completion from professional bodies, leads to a form of hegemony which has been described by Ferguson et al. (2005, p. 26) as an "over-emphasis on the interests of one group at the expense of other stakeholders concerning accounting education". The role of hegemony in shaping accounting education has been examined in several studies (Ferguson et al., 2005, 2006; McPhail, 1999, 2001; Warsame, 2006). However, Kotb et al. (2019) concluded by examining accounting curricula across Ireland and the UK, that the content that is labelled most legitimate tends to be mandated by PABs through programme accreditation requirements. This leads to professional bodies playing a hegemonic role in shaping accounting programmes through a strict mechanism of granting exemptions to university programmes from examination requirements (Collison et al., 2014), which some might agree leads to a dictated accounting curriculum (Kneale, 2018; Kotb et al., 2013) from professional bodies to universities.

One study carried out by Kotb et al. (2013), looked at accounting degrees in Ireland and the UK by questioning accounting educators and professionals, about undergraduate accounting programmes. They found that a regular practice of universities was to perform an internal audit of their accounting syllabus and change their qualifications to suit the accreditation requirements of

professional bodies. Previous to this Stone & Milner (2010), reported the disappearance of an e-business module from the core of an accounting degree programme happened as a direct result of changes in accreditation requirements. This supports the powerful hegemonic role of professional bodies but also emphasised how this was an inhibiting factor, particularly concerning the coverage of IT-related topics in accounting curricula in universities. Summarising these views reflects the ideology of PABs, which are dictating to other groups in society (universities) using their (soft) powers of granting exemptions from examination requirements (Kotb et al., 2013).

Universities are under pressure to accept curricula as per PABs, as students who take a direct professional route may not need any prior accounting degree at all. The routes into professional accounting can be achieved in several ways in Ireland and the UK. The most popular routes can be achieved through a school leavers apprenticeship model, through further education colleges, straight to professional route, or through Higher Education. When students opt to take the direct professional route, this could be better for employers as PABs are in a better position to prepare graduates for the profession (Annisette & Kirkham, 2007; Tsiligiris & Bowyer, 2021), and meet the needs of students who are in greater demand for exemptions, therefore, attracting more students (Duff & Marriott, 2012). This reasoning puts pressure on universities regarding what modules in the accounting curricula should be included as per the PABs. The number of options available for students leads to increased competition from the different providers of accredited programmes, with different Universities in HE itself, competing for a limited number of students. One way universities

have adapted to compete in accounting education is by promoting the number of exemptions available on programme completion to the four main PABs in Ireland – ACCA (Association of Chartered Certified Accountants), CAI (Chartered Accountants Ireland), CPA (Institute of Certified Public Accountants), CIMA (Chartered Institute of Management Accountants).

However, universities delivering accounting programmes are often quite happy to pass over the responsibility of the accounting curriculum to professional bodies, and just teach what needs to be taught to gain exemptions (Kotb et al., 2019). As Tsiligiris (2021) concluded in a study looking at the impact of digital technologies on the accounting profession, PABs have been more efficient than universities in tracking and responding to the changing needs in the employment market. However, this goes against what Kotb et al. (2013) cited earlier that universities arguably are expected to lead the way as the accounting landscape changes, or Andiola et al. (2020) who stated how many accounting departments form relationships with business professionals to keep abreast of changes in the business environment and make curriculum updates to respond to these changes, when it seems, in reality, they are severely restricted as to what changes they can make. Kotb et al. (2019, p. 456) also noted from interviews with PABs, some reasons cited below as to why professional bodies lack integration of digital skill requirements in their curriculum.

1) Students learn IT in school so there is no need.
2) Students pick up IT naturally through other ways through personal use.
3) Students often have more IT knowledge and experience than accounting tutors.

This view is also supported by an extract from one professional body – ACCA, that they assume digital skills are covered in HE, or that students will simply learn all they need on the job, or that they will teach themselves. Below is the extract -

> "And there are plenty of ways to boost your digital know-how - learning on the job will form a large part of people's learning, and being proactive in your digital knowledge acquisition is also essential. Many universities offer digital skills programmes and training programmes, while there are also online programmes, some for free. Watch tutorials and guides on YouTube; find relevant groups and content on LinkedIn; network to connect with people who can help you; and volunteer or undertake internships that will provide you with hands-on digital experience." (ACCA, 2020)

However, this contradicts Banasik & Jubb (2021) to some degree in their findings carried out on PABs that recognise digital technology as an area where skills are lacking. Much of the blame for this failure has been directed toward professional bodies (Humphrey et al., 1996; Puxty et al., 1994; Zeff, 1989), as they carry out their hegemonic role in shaping the accounting education in the UK and Ireland through accreditation requirements (Ellington, 2017).

Perhaps a way forward could be a more collaborative agenda where the professional bodies' teams responsible for assessing university programmes and granting exemptions, should be trained not only to focus on matching applications against the professional bodies' curricula but also to look at the other issues/topics that are not part of their curricula (Kotb et al., 2019). This could include the inclusion of more robust digital skills that were previously acknowledged as lacking in PABs' curricula (Banasik & Jubb, 2021).

2.3.4 Employer's needs - A transformative shift

Universities need to be encouraged to work in partnership with industry to make sure programmes are aligned with employers' needs and to ensure graduates are digitally competent (Kotb et al., 2013). This is particularly important in the current era where over the last number of years we have experienced a profound technological change. While many accounting departments form relationships with business professionals to keep abreast of changes in the business environment (Andiola et al., 2020), there is a lack of clear requirements in the area of digital skills for students leaving HE (Jones, 2014).

Graduates emerging from HE are entering a technology-rich workplace (Watty et al., 2016). Although accounting records in the past have been in the form of physical records, they are now almost completely digital (Berikol & Killi, 2021), as the ecosystems of businesses are changing (Armah & Van Der Westhuizen, 2020). As a result, there has been a shift in employers' needs concerning the skills now required from accounting graduates. Historically, it was technical accounting skills that were necessary for a career in employment in accounting. While teaching staff still support this notion (Rackliffe, 2016), employers are not always aligned with this view, with some employers even suggesting that these skills can be very job specific and that even a very basic understanding is all that is required, as they expect these skills to be learnt on the job (Tsiligiris & Bowyer, 2021).

Employers of today's graduates are now valuing soft skills or generic skills (Al-Htaybat et al., 2018; Banasik & Jubb, 2021; Carvalho & Almeida, 2022; Ghani et al., 2018; Ragland & Ramachandran, 2014; Tsiligiris & Bowyer, 2021), over

technical skills.

This is supported by a study by Tsiligiris & Bowyer (2021) who analysed job advertisements for accounting roles which showed that employers value soft skills over technical skills. The most frequently cited skills for accounting jobs were communication, teamwork, and interpersonal skills (Tsiligiris & Bowyer, 2021), however, for such accounting jobs there may be an underlying assumption that anyone applying for these jobs would possess a level of technical accounting skills.

Employers tend to believe that universities have the responsibility for developing these skills and as a result the professional identity of their graduates (Jackson & Meek, 2021; Low et al., 2016). However, Collins (1983) warns against placing too much emphasis on these soft skills at the expense of key accounting concepts. Perhaps employers should attempt to take a more proactive role by increasing their stake in employability skills development in two ways: by working in partnership with universities on the skills they need and two, by assuming their share of the responsibility for the development of these skills (Maxwell et al., 2010). What would assist in aligning requirements between staff and employers is a formal structured relationship between these two parties. This initially needs to be supported by funding followed by support from staff to aid the development and sustainability of such partnerships (Petrov et al., 2016).

2.3.5 The staff as the ultimate decision-makers

Studies in accounting show the differing perceptions between employers and

university educators regarding the skills accounting graduates should possess (Bui & Porter, 2010; Howcroft, 2017; Pratama, 2015). Howcroft (2017) explored the conflicting views between practitioner employers, university educators, and chartered management accountants, and identified a range of problems beyond the content of the curriculum. He concluded an expectation gap is acceptable from these different stakeholders, as accounting educators should be more aligned with society's best interests, whereas professional bodies are elite organisations whose language, values, and prejudices are sometimes at odds with core values in society (Craig & Amernic, 2002).

Staff with different roles and responsibilities in accounting programmes must be aware of important stakeholders in this field. Having looked at the other main stakeholders above in accounting education, we will now see how they assist or otherwise constrain what staff can do at curriculum level, to assist with implementing change in programmes. This study will focus on the view that staff in accounting education, notwithstanding that there is very little concerning prior research on this group, is the most important group of stakeholders in the accounting curriculum process, whom despite the hegemonic pressure of accounting bodies discussed earlier, still have the final say as to what is included and excluded in their accounting curricula. While HE has been often seen as slow to embrace the opportunities that technology affords, it is often the responsibility of individual champions to implement (Broad et al., 2004). This supports the notion that accounting staff on both an individual and collective level, have the ultimate decision on what is taught in the accounting curriculum, particularly concerning digital technologies. Carvallo & Almeida

(2022) suggests that it is the staff's responsibility to continuously revisit the curriculum to see whether it still meets the needs of the accounting/business environment. Then, after review, implement any changes deemed necessary into individual modules. One study has strongly indicated that how a teacher thinks about teaching influences both how they teach and how their students learn, and the learning outcomes they achieve (Watkins et al., 2005). The array of educational technology typically employed by accounting staff includes both hardware and software tools such as spreadsheets, word processing, databases, learning management systems, and online learning resources. As a result, traditional chalk-and-talk accounting classrooms have morphed into present-day technology-enhanced learning environments (Guthrie et al., 2014). However, not all teaching staff have embraced this new environment with open arms. In one Australian study, 93% of academic interviewees pointed to accounting educator resistance as a key barrier to technology adoption and use (Thomas, 2020). Resistance is also influenced by factors such as potential increased workload, time, lack of interest, support, resources, and a general preference for traditional teaching methods (Thomas, 2020; Watty et al., 2016). Despite this resistance from some educators, it is unlikely that 21st-century accounting education can constrain indefinitely against the radical implications of the digital turn (Watty et al., 2016). Another issue can arise when staff does not have the competencies required to utilise new technologies (Thomas, 2020). This can then lead to a situation of sub-optimal utilisation of technologies by staff. However, conversations that may be difficult and challenging, are a necessary precursor to raising awareness and understanding (Watty et al., 2016).

While this study by Thomas (2020) offers valuable insights its focus is predominantly on the reasons behind staff resistance. In contrast, this study takes a more comprehensive approach, examining a broader range of factors that staff experience. Notably, while a key finding of this study by Thomas (2020) identifies several barriers to technology adoption, with the primary one being a lack of time, it surprisingly omits the influence of professional bodies as a barrier. This omission is particularly noteworthy, as the influence of professional bodies is a significant finding in this research.

To combat some of these issues raised, educators need to re-imagine how curricula are designed and focus on how students may be better engaged (Kneale, 2018). However professional bodies and regulators - particularly in the accounting profession, employers, and other stakeholders, provide tensions that influence curriculum design. Based on the insights from a national study of exemplary cases in Australian universities, Watty et. al. (2016) discussed the need for better technology integration in technology-enhanced accounting education.

HEIs have a bigger role to play in getting staff on board with implementing up-to-date best practices in technology education for their students. This could be enacted through supporting staff in professional development and having a conceptual framework in place for faculty development in technology-enhanced accounting education.

2.3.5.1 Main factors to consider aiding understanding of staff barriers to technology adaption

Increased technological literacy among staff is of central importance, particularly in today's environment when technological innovation is having a transformative impact on accounting education (Watty et al., 2016). Some staff acknowledges that accounting students are hardly taught about technologies employed in the business environment in which they will operate, for example, one participant cited in Kotb et al. (2019, p. 8) "we're more backward, we're more traditional: we're not forward-looking, still, nothing changes". This is supported by Muthaiyah et al. (2021) that states often teaching staff lack the know-how of both existing and emerging technologies that are relevant in today's dynamic workplace. This has become problematic as using recent technologies in accounting education has become one of the most important priorities for improving the profession. The Association of Chartered Certified Accountants (ACCA, 2018) states that there is a great need to improve teaching methods to convey accounting subjects due to the accelerated development of accounting.

However, staff have stated that they simply do not have the competencies to teach technologies required by the workplace (Bowles et al., 2020). This can be due to several factors and is a more nuanced issue than technology emerging at a rapid pace therefore staff cannot keep up. There are many factors to consider when looking at this issue. One of those is staff not being aware of resources to help them update their knowledge and skill set (Polimeni & Burke, 2021). We will now look at the main factors to consider that prevent staff from implementing more digital technologies into their programmes.

Despite sound reasons, many staff are found to be resistant to adopting new technologies in their teaching practice (Abbas Zadeh, 2014; Blin & Munro, 2008; Keller, 2005; Kirkup & Kirkwood, 2005; Selwyn & Facer, 2007; Senik et al., 2013). Writing about the accounting discipline specifically, Bloom (2002) explains that while technology has and will continue to radically change the way that information is provided and used in higher education, “many educators have still not caught the vision of what this means” (p. 57). Hodgson (2005, p. 200) agrees stating, “Despite the growing importance of integrating learning technologies into higher education, the speed of learning for many academic teachers has not kept up with the pace of change. Resistance is still being experienced.”

Prior research shows that staff needs to be supported continuously in their engagement with new technologies (Watty et al., 2016). One study that looked at staff development, found ‘corridor conversation’ and ‘at elbow support’ was invaluable in the early stages of adopting and learning new technologies (Lefoe et al., 2009, p. 22).

Other possible inhibitors may include, for example, a lack of IT-qualified staff members (Johnson et al., 2014) and the great appreciation of research at the expense of teaching, as lecturers may agree that the incorporation of IT into accounting curricula is vital but may not do so because they do not see any reward in return (Fazackerley, 2013).

Universities should ensure all graduates are digitally competent, however, university educators are not entirely free to structure the subjects they teach (Kotb et al., 2013) particularly in accounting when students are trying to obtain

maximum accreditation from professional bodies. Accreditation is regularly criticised by accounting educators because of its constraining nature, particularly with its dictated curriculum which continuously causes tensions at the programme design stage (Kneale, 2018). This dictatorship prevents the development of a more generic broader knowledge and skills that meet employers' needs (Apostolou & Gammie, 2014). One study by Duff & Marriott (2012) highlighted that many accounting staff saw accreditation as a restrictive force and something that discouraged lecturing staff from developing their curriculum based on their interests, motivations, and skills. Although respondents still highlighted the main barriers such as lack of resources (i.e., staff, space/time, computer laboratories, budgets, materials) (See Table 2.4 below) over the interest of PABs, they still play a powerful hegemonic and inhibiting role in shaping the undergraduate accounting syllabi.

Main Barriers	Existing Literature
No time due to other work demands	(Banasik & Jubb, 2021; Kotb et al., 2019; Lam et al., 2016; Ng & Harrison, 2021; Senik & Broad, 2011; Thomas, 2020; Willis, 2016)
Lack of resources and technical and institutional support	(Aisbitt & Sangster, 2005; Andiola et al., 2020; Gazely & Pybus, 1997; Senik & Broad, 2011)
Lack of interest	(Kotb et al., 2019; Senik & Broad, 2011; Thomas, 2020; Watty et al., 2016)
Preference for traditional teaching methods	(Blin & Munro, 2008; Christensen et al., 2019; Senik & Broad, 2011)
Resistance to innovation	(Carvalho & Almeida, 2022; Watty et al., 2016)

Table 4 Overarching barriers to technology adoption in accounting education by staff

Others have also identified a failure to see the desirability of technology and unwillingness to experiment (Wilson & Sangster, 1992) as key factors in the lack of adoption. Roberts et al. (2007) posit that there are three overarching factors influencing staff uptake. These include social factors (peers' attitudes and behaviours, friendship networks), organisational factors (administration/infrastructure provided by the institution), and individual factors (learning new skills, achieving personal goals). This demonstrates that while staff are highly restricted due to the hegemony of professional bodies in the external environment, they also experience internal barriers in their day-to-day experiences.

2.3.6 Policies on digital skills initiatives in HE

On a national, European, and relevant to this research, a professional accounting body level, several frameworks, self-assessment tools, and training

programmes have been developed to describe the facets of digital skills for educators and students in higher education. These tools should help them assess their competence, identify their needs and offer targeted training which is influenced by policy.

2.3.6.1 At national level

The Irish government's most recent national digital strategy – Harnessing Digital – The Digital Ireland Framework (Ireland, 2022) launched on 1 February 2022, to drive and enable the digital transition across the Irish economy and society. This trajectory is intensifying and has been accelerated as a direct result of the shift to embrace digital technologies since the global pandemic. This was formed because of greater remote working opportunities, greater online learning options, coupled with greater demand for online shopping, and the public services utilisation of processes, which in most instances, are now carried out digitally.

Four main dimensions were included in this framework – the digital transformation of business, digital infrastructure, skills, and digitisation of public services. Tertiary education falls under the skills dimension. This involved setting an overall goal to respond to the learning, skills, knowledge, and talent needs of learners, society, and the economy in key areas such as digital skills. Under this dimension, the aim is to increase the number of graduates with higher-level individual skills to over 12,400 by the end of 2022, with the ambition to further increase the digital skill provision in the following years.

Under the framework provided under Ireland’s Economic Recovery Plan (Ireland, 2021a), and the National Recovery and Resilience Plan (Ireland,

2021b), there is a diverse skills policy response underway across the School System, HE, and FET (Further Education Training) responding to digitalisation needs. The project most applicable to third-level education under this remit is the Human Capital Initiative and under this falls the Springboard+ programme (Ireland, 2021a).

Announced as part of Budget 2019, the primary objective of the (HCI) Human Capital Initiative, is to underpin the provision of additional capacity across the Higher Education Sector, to meet priority skill needs for enterprises. It represents an additional investment of €300m (€60m per annum from 2020 to 2024). The HCI will also incentivise continued reform and innovation in the third-level provision, building on best practices nationally and internationally, strongly supporting innovation in programme design and delivery. It aims to future-proof graduates and ensure that there is a greater focus across the whole spectrum of higher education programme provision on promoting and embedding transversal skills.

The Human Capital Initiative consists of 3 pillars:

- Pillar 1: Graduate Conversion and Specialisation Courses
- Pillar 2: Additional Places on Undergraduate Provision
- Pillar 3: Innovation and Agility

The Human Capital Initiative Pillar 3, Innovation and Agility is the main pillar that is being accessed by the institution in this study currently and commands a total budget of €197 million over the 5 years, 2020 to 2024. The three campuses in this study are currently accessing funds as part of Pillar 3 – Higher

Ed 4.0: - Enabling agile responsiveness from Higher Education**.** The Technological University sector, on which this study is based, has a central role to play given its interconnectedness to industry. High-quality teaching and learning are at the heart of meeting high-level digital skills needs. Mainstreaming best practices evidenced through initiatives such as the Human Capital Initiative is set to yield major benefits.

Springboard+ is one such initiative. This funding provides free places on higher education programmes for people who are unemployed, or were self-employed and are now seeking new opportunities, and those looking to return to the workforce. You can also apply for a Springboard+ course if you are working, but you must pay a 10% contribution towards the course fee (Ireland, 2021a). Courses are available at certificate, degree, and master's level, leading to qualifications in areas where there are employment opportunities in the economy. These areas include ICT, engineering, green skills, manufacturing, and construction, among many others. There are over 252 courses available for 2023-24, the majority of which are flexible and part-time. This initiative is co-funded by the government of Ireland and the European Union.

2.3.6.2 At European Level

Digital competence is one of the European Union's eight key competences for lifelong learning (Yelubay et al., 2020). To better understand the digital competences teachers, need to develop to integrate digital technologies in education and support the acquisition of students' digital competences, the European Commission's Joint Research Centre published the European Framework for the Digital Competence of Educators (DigCompEdu) (Caena &

Redecker, 2019). The particular focus of the framework is the competences that are specific to the teaching profession (Redecker, 2017). This framework is considered a comprehensive framework that shares characteristics with other frameworks used internationally (Cabero-Almenara et al., 2020), such as the European Digital Competence Framework for Citizens, International Society for Technology in Education, Standards for Educators, UNESCO Framework of ICT Competence for Teachers, Spanish Common Framework of Digital Teacher Competence, British Framework for Digital Education, European e-Competence Framework for ICT Professionals, ICT Literacy Competencies, and Global Media and Information Literacy Assessment Framework (Morze et al., 2018). However, the guidance in national and European policies and frameworks remain "largely at a generic level of digital skills, with no contextualisation for discipline-specific professionals in tertiary education" (Varga-Atkins, 2018, p.4).

2.3.6.3 Professional bodies guided by policy

The four main professional bodies applicable in this study, in the Irish context, are CAI (Chartered Accountants Ireland), ACCA (Association of Chartered Certified Accountants), CIMA (Certified Institute of Management Accountants), and CPA (Certified Public Accountants). Although these institutions primarily serve as guides for their members in matters related to digital implementation, they also engage in their own research and regularly update their respective professional curricula to incorporate newly identified skills and competencies.

While CAI and CPA are tailored to cater specifically for members in the Irish context and are therefore more governed by national policy, ACCA and CIMA

do not differentiate between their Irish and worldwide members therefore, they are more guided by international policies and practices.

ACCA appears to have carried out robust research in digital skills when it was identified as one of seven important quotients in a report published in 2016 “Tomorrow’s World: Rethinking the Role of the Accountant” (Perrin, 2016). This report focussed on the skills that accounting professionals need to develop to ensure that they remain relevant. It revealed that knowledge of digital technologies is the key competency area where professional accountants have skill gaps (Islam, 2017). This resulted in a follow-up study that was carried out as a direct result of this report – “The digital accountant: digital skills in a transformed world” (Webb, 2020). This research is based upon interviews and round table discussions conducted with ACCA members and other interested parties, as well as the results of a survey of 4,264 accountancy and finance professionals globally, including members, affiliates, and students. An important outcome of this study highlighted that 89% of participants perceived that digital skills were either necessary or very necessary in the profession, with only 63% indicating that they had the right level of skills for their roles.

CPA, on the other hand, launched a digitalisation hub for members which was partly funded by the government through Skillnet Ireland in 2022. Skillnet Ireland is a business support agency funded by the government of Ireland. The main slogan for the formation of the digitalisation hub was “giving you clarity on the future of digital accounting” (CPA, 2022). This support primarily came about as a result of evolving digital practices in both accounting firms and client businesses, which was accelerated as a result of the pandemic. The primary

objective is to help CPA members fully digitise work practices.

ICA which operates from an Irish context is guided by policy on a national level.

ICA published a response to the Harnessing Digital strategy mentioned above by making a submission to the public consultation process (CAI, 2022). Overall, the document calls for a more ambitious approach to digital connectivity, accelerated implementation of the National Broadband Plan, continuous improvement of digital skills, and a focus on cyber security and data protection. (CAI, 2022).

The only information that could be sourced from CIMA in this area is that they offer an add-on course to their qualification in digital transformation.

2.3.7 The misguided assumption of students as digital natives

Graduates, upon their entrance into the profession, are expected to know the most recent technologies as they relate to the accounting profession (Polimeni & Burke, 2021). For most students, HEIs are the only place to experience and develop digital skills and competencies (Armah & Van Der Westhuizen, 2020). However, staff often overestimate students' digital capabilities, and ignore developing these in the academic context. This can be primarily down to the underlying assumptions that are associated with assuming today's students are "digital natives" (Watty et al., 2016, p.2). The term digital native was coined to describe the generation of students who have not known a world without technology. It denotes as a term their technology proficiency, natural relationship with technology, and immersion in digital culture (Prensky, 2001). However, several studies have challenged this assumption (Armah & Van Der

Westhuizen, 2020; Berikol & Killi, 2021; Lam et al., 2016; Nelson et al., 2011; Watty et al., 2016). Students' technological competencies for social purposes do not necessarily transfer to other technology or contexts (Kirkwood & Price, 2005), and require support to understand how to use these skills outside social contexts (Lam et al., 2016). In contrast, one study by Al-Htaybat et al. (2018) does support the use of the term claiming such students are entrepreneurial, innovative, and independent. However, the study uses vague vocabulary to describe the needs of the digital native in the future, such as to be " more liquid", "responsive" and "flexible" and to apply the "human touch", as important skills for the future workforce to possess, that extend beyond the discipline-specific curriculum to a broader skill set that is required by the global citizen (Al-Htaybat et al., 2018, p. 340). This same study supports the idea that students as digital natives, often possess more advanced generic technological skills than their educational instructors. An inherent problem is that technological developments out-pace instructors' abilities to remain updated, which may explain why they are not aware of what should be taught regarding information systems, and why they may resist the introduction of new technologies as discussed above. This also reflects the volatility of accounting education and the awareness that a particular set of knowledge, skills and abilities eventually may be outdated (Rebele & Pierre, 2015).

2.4 Chapter Summary

In this chapter we looked at literature that supports the misalignment in skills between what universities are teaching students and what employers expect from students when entering the workplace, and instead of solutions to close

this gap, it is indeed widening. It then discussed the complexities at play when interpreting what digital skills mean in the context of HE, and then in the context of HE accounting education. Finishing with an understanding of the different factors at play when trying to implement these skills into existing accounting programmes.

Chapter 3 Methodology

In this chapter, I outline how I went about the design of the study, starting with my philosophical position about reality, and how this influences the interpretations throughout the study. I considered the implications of identifying as neither an insider nor an outsider researcher, but somewhere in between both realms. This is followed by the overarching research question of the study, and how the data was collected, analysed, and influenced by a grounded approach. I considered the ethics aligning with a study of this type, along with the potential limitations and weaknesses of the study, ending with a summary.

3.1 Epistemological and ontological orientation

My ontological position in asserting reality aligns with the view that there is no single reality, but multiple realities based on one's construction or interpretation of reality (Cohen et al., 2013; Slevitch, 2011). This supports my epistemological position that the interdependence between the investigator and the investigated is interactive. As a result, findings are mutually created within the context of the situation in question (Slevitch, 2011). This study is carried out in the context of accounting education, more specifically digital skills in accounting education. While insights and findings may be implemented across other disciplines, I acknowledge that the results are influenced by several contextual factors which may be only applicable to this discipline, or this group of participants at a particular point in time.

My stance aligns with my understanding that realities are understood in the form of multiple social constructions, dependent on the perceptions of reality

that individuals or groups hold (Guba & Lincoln, 1994), and supports the notion that we perceive and interpret social life from different points of view (Saldana, 2013). This continuum aligns with a constructivist stance as an ontological and epistemological grounding, which aligns with my stance of interpretivism as a research paradigm in carrying out this qualitative study. Constructivists' positions often focus on the individual and their perceptions that lead to meaning making, rather than meaning created relationally by group interaction. This aligns with my research design that focuses on individual participants or groups of practitioners in interpreting experiences shared by these participants.

3.2 Researcher positionality

Maher and Tetreault (2001) discuss positionality as an idea in which people are not defined in terms of fixed identities, but by their location within shifting networks of relationships, which can be analysed and changed.

This research acknowledges that researchers producing knowledge are located within a particular social, economic, and political context of society (Foote & Bartell, 2011). My positionality as a researcher can be shaped by factors such as race, class, gender, sexuality, and other identifiers, including positions of power into which society has placed upon me, as well as my personal life experiences within and around these identifiers (Maher & Tetreault, 2001).

Awareness of my positionality plays out in diverse ways throughout this research. I am a professional accountant for over 20 years having spent the last 5 years working primarily in HE (Higher Education). The conceptualisations we choose may, among other things, depend on our academic background, our research questions, the literature we have been reading, and our personal life

experiences (Friese, 2019). Aligning with this I am aware of how my background and life experiences continually influence my ontological and epistemological positions in this study. Having come from a socially disadvantaged background, including young single parenthood, stems a strong need to investigate and represent often unheard and unrepresented voices, particularly expanding their influences in the decision-making process of practices that directly affect them. While the participants of this study could be viewed as powerful decision-makers (teaching staff), it is envisaged that this study will highlight improvements needed in practices going forward, and the ultimate beneficiaries, in this case, will be students.

I also recognised in my early twenties the power of education, and how it could open doors not accessible to me at the time and provide a financially stable future for me and my young child. I went on to qualify as an accountant in what was then a particularly male-dominated profession, with the sole goal of choosing a profession that would reward me financially. I also taught accounting subjects part-time throughout my professional accounting career. However, after many years working in the private sector in this profession, I realised this role, often did not align with who I was personally as an individual, and so to fulfil different personal needs I joined academia where I instantly felt like I had arrived. I am currently teaching in both FE (Further Education) and HE but primarily in HE, and I also currently write exam papers, as a subject matter expert, for a professional accounting association, around digital skills for accountants. All this background information influences my mode of seeing (hooks, 1994), and can inform one's actions pointing to the significance of

attending to researcher positionality. Our perspectives as researchers, the methodologies we choose, and the questions we ask are informed by what we consider salient aspects of our prior knowledge and experience. As Denzin (1986, p.12) explains, “interpretive research begins and ends with the biography and self of the researcher”.

My past experiences currently shape the way I see the world and mediate meanings. This has an influential effect on all aspects of this study as demonstrated through my researcher lens below.

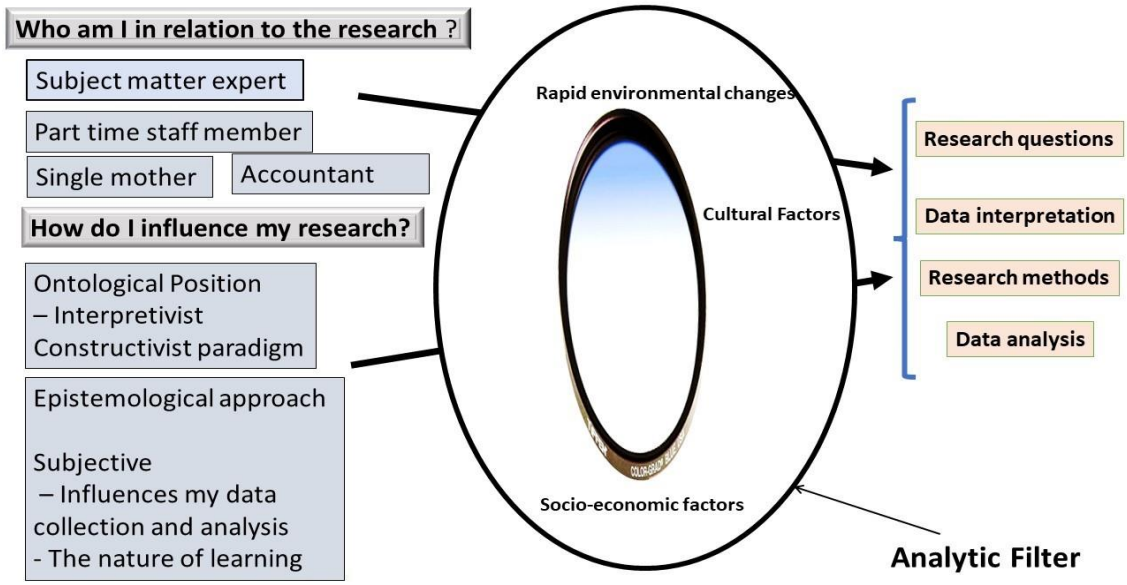


Figure 3.1 Researcher lens

As well as considering my positionality, I also consider the positionality of my participants. A contribution of this study is to examine links between the positionality of teaching staff concerning accounting students’ digital skills, and that of the researcher which influences the interpretation of results. My participants are also split into two distinct categories – staff who teach in

accounting programmes who are also professional accountants, and staff who teach in accounting programmes who are not accountants. These two distinct groups assist in giving this research, deep insights to address the research questions, particularly as digital skills modules taught to these students are typically taught by the non-accountant group.

This study originated from my own experience (20 years ago) of entering the workplace as a young, qualified accountant not having the expected digital skills required by my employer. As my research in a previous module demonstrated, when I interviewed accounting students in their first six months of employment, this issue is still apparent today, even though there have been huge strides in the technology field of which HE is mandated to keep abreast.

I consider myself an advocate for student voices and letting the voices of often deemed weaker parties be heard, when often they have no apparent power in the decision-making process. Therefore, I chose to focus this study on staff who, through the experience gained in this study, I have witnessed the power dynamics at play in the decision-making process, particularly concerning programme design and review. I have also first-hand experience teaching both technical and non-technical modules on accounting programmes including Business Technology, which gave me first-hand experience of how these modules, in my opinion, are not best serving accounting students today as they enter the workplace. This has been supported by participants continuously citing throughout this study, the dissatisfaction of employers in this area about these students.

3.3 Insider/outsider researcher

If past experiences influence researcher positionality, then this also influences whether one considers oneself as an insider or outsider researcher. Identifying oneself as either an insider or outsider does not denote complete sameness within that group. Insider research refers to when researchers conduct research with populations of which they are also members (Kanuha, 2000) so that the researcher shares an identity, language, and experiential base with the study participants (Asselin, 2003).

Rather than consider this issue from a dichotomous perspective, this researcher acknowledges the role of the researcher as both insider and outsider rather than insider or outsider (Dwyer & Buckle, 2009). However, we may be closer to the insider position or closer to the outsider position, but because our perspective is shaped by our position as a researcher (which includes having read much literature on the research topic), we cannot fully occupy one or the other of those positions. Throughout this research, I have considered my position as both an insider and an outsider. As a part-time staff member who teaches on the accounting programme as a professional accountant assists with my inside position, but also as a part-time staff member often leaves me very much on the periphery, particularly concerning power in decision-making processes which contributes to my outsider position. I am also only recently out of professional practice which contributes to me having often quite different views from other staff on the deemed necessary digital requirements of accounting students for today's workplace, which in turn contributes to my stance as an outsider, particularly from the views of my participants. The intimacy of qualitative research no longer allows us to remain

true outsiders to the experience under study and, because of our role as researchers, it does not qualify us as complete insiders either. We now occupy the space between and experience the costs and benefits this status affords (Dwyer & Buckle, 2009).

3.4 Research questions

The purpose of this research was to investigate the overarching research question - what are staff perceptions of the importance of different aspects of digital skills for accounting students, both throughout their studies, and entering the workplace. The research was conducted across three HE (Higher Education) campuses. The study initially started with three primary research questions to answer this overarching research question (see Section 3.4). However, as we can see in section 3.4 there are four research questions in total. RQ4 did not emerge until after the data collection and analysis process. This is often the process using a grounded approach where the researcher identifies theory emergence without necessarily having a clearly defined research question (Suddaby, 2006b). In this research, for example, asking a general question - What is your opinion on the preparedness of accounting students entering the workplace from a digital perspective? – allows the exploration of many different areas. The replies are then categorised into similar themes and then formulated to create a research question due to the commonality of occurrence with a particular phenomenon. This is how RQ4 was formed as there was a strong emergence in themes related to programme design.

The overarching research question and the individual research questions are closely connected, each addressing a different facet of understanding staff perceptions about the importance of digital skills for accounting students, both during their academic journey and as they transition into the workplace. The overarching question - What are staff perceptions of the importance of different aspects of digital skills for accounting students, both throughout their studies, and entering the workplace? is segmented into the following research questions to thoroughly address this issue.

RQ1 How are skills for accounting students understood and defined?
This question delves into the fundamental understanding and definition of digital skills in the context of accounting education. It explores how educators conceptualise these skills, which is crucial for comprehending their perceptions of importance.

RQ2 What are the factors to consider when implementing digital skills throughout accounting programmes in staff members' lived experience?

Here, the focus is on the practical aspects and challenges of integrating digital skills into the curriculum, as experienced by the staff. It's a direct exploration of the practicalities and hurdles in actualising the perceived importance of digital skills in educational settings.

RQ3 What are the factors to consider when preparing accounting students for entering the digital workplace?

This question targets the transition from academic learning to professional application. It's about understanding what educators believe is necessary to

equip students with digital skills that are not just theoretically sound but also practically relevant and valuable in the workplace.

RQ4 What are the perceived influences of programme design on digital skills implementation?

This focuses on how the design of accounting programs can impact the effectiveness of digital skills training. It probes into the structural and curricular elements that can either facilitate or hinder the integration of digital skills, thus affecting their perceived importance and practical implementation.

In summary, each of these research questions contributes a unique perspective to the overarching query. They collectively cover a comprehensive range of topics from the conceptual understanding of digital skills in accounting, the practical challenges in teaching these skills, the preparation required for the digital workplace, to the influence of programme design on effective skill implementation. Together, they provide a multi-dimensional view of staff perceptions regarding the importance of digital skills for accounting students.

3.5 Data collection

3.5.1 Overview of participants

Semi-structured interviews were deemed a suitable method to assist with answering the research questions. The purpose of the interviews was to gain a deeper understanding of the perspectives of teaching staff, from three different geographical locations, who teach in the honours accounting programme, about the importance of these students' digital skills. The focus was twofold - their experiences with them in their HE journey, and their perceptions of their

preparedness in the area of digital competence when entering the workplace. This research aims to highlight the different factors that influence the perceptions of these staff. These perceptions then influence programme design on accounting programmes when introducing new elements, namely digital skills, and the issues that they may face in this process.

Staff lecturing on the accounting programme in this study typically fell into two main categories – staff who are also professional accountants and staff who are not accountants teaching other related non-accounting modules example – digital skill-based modules. It is important to seek the views of both categories of participants as they both influence programme design and the latter group often teaches students across several disciplines, enabling the findings of this study to possibly be applied across other disciplines.

Participants were identified through an informal Microsoft teams channel set up for lecturers of these groups of students, whose purpose was to share ideas and resources as a newly formed university that previously operated as three separate Institutes of Technology. In addition to the two primary categories mentioned above, other key characteristics of the participants are present in tables 4.1,4.2 and 4.3 below.

All staff teaching on the honours accounting program are part of the programme board. The programme board has the following functions:

1. Each Programme Board is responsible to a Faculty Teaching and Learning Committee and, ultimately, to the Academic Council of the University for the development, regulation, and the use of available

resources to maintain the quality of the programme within the context of relevant University regulations and guidelines.

2. The Programme Board is the forum for formal discussion of programme design, content, and delivery.

3. The Programme Board is responsible for overseeing the delivery of the programme and for monitoring the performance of students on the programme.

4. The Programme Board will make recommendations regarding the admission of students to the programme and, within the context of the University's Marks and Standards, regulations that govern the determination of students' results and their progression in the programme (DCU, 2016).

•

Code	Accountant	Gender	Length Teaching
P1	Yes	F	Between 5 and 10 years
P2	Yes	F	Between 10 and 15 years
P3	Yes	M	Less than 5 years
P4	Yes	F	Between 15 and 20 years
P5	Yes	M	Between 25 and 30 years
P6	Yes	M	Between 20 and 25 years
P7	Yes	F	Between 15 and 20 years
P8	Yes	M	Between 20 and 25 years
P9	Yes	F	Between 30 and 35 years
P10	Yes	M	Between 25 and 30 years
P11	Yes	M	Between 15 and 20 years
P12	Yes	F	Between 15 and 20 years
P13	Yes	F	Between 10 and 15 years
P14	No	F	Between 15 and 20 years
P15	No	M	Between 10 and 15 years
P16	No	F	Between 15 and 20 years
P17	No	M	Between 25 and 30 years
P18	No	F	Less than 5 years
P19	No	F	Between 25 and 30 years
P20	No	F	Between 15 and 20 years
P21	No	F	Between 25 and 30 years
P22	Yes	F	Less than 5 years
P23	No	F	Between 25 and 30 years

Table 5 Participant profiles

Modules Taught	% of Participants
Finance	13%
Financial Accounting	26%
Law	9%
Auditing	17%
Financial Reporting	9%
Management Accounting	30%
Business Information Systems	26%
Financial Management	17%
Professional Development	4%
Bookkeeping	4%
Taxation	13%
Math	4%
Economics	4%
Strategic Management	9%

Modules Taught	% of Participants
Skills to advance	4%

Table 6 Summary of modules taught by participants

Note: Some staff members teach more than one module in the accounting programme. So, the cumulative percentages across the areas taught do not equal 100%

Academic Roles Held	% of Participants
Lecturer	100%
Programme Chair	22%
Programme Coordinator	9%
Head of Department	4%
Programme Director	4%
Programme Designer	4%
Other	13%

Table 7 Academic roles held by participants

Note: Most staff members held more than one role simultaneously. Some roles held were past roles that may not be currently held by participants. Other - are roles held in professional bodies.

3.5.2 Sampling

The overarching research question of the study determined the selection of participants. These participants both accounting and non-accounting staff were deemed the most suitable for answering the research questions based on the following considerations:

1. Expertise:

   Accounting and non-accounting lecturers, being professionals in the field, possess valuable expertise and knowledge about the skills necessary for accounting students. Their experiences in academia make them well-equipped to understand the digital skills required by students throughout their studies and in the workplace.

2. Diverse perspectives:

   By engaging lecturers from different campuses, you ensure a broader

range of perspectives. Each campus might have its own curriculum, teaching methods, and industry connections, which can contribute to a more comprehensive understanding of the importance placed on digital skills across various educational settings.

3. Academic insight:

   Lecturers often have research backgrounds and stay up-to-date with industry trends. This allows them to provide valuable insights into the evolving demands of the accounting profession and the digital skills that students need to succeed. Their academic involvement ensures that their opinions are grounded in relevant research and pedagogical practices.

4. Professional networks:

   Lecturers often maintain relationships with industry professionals and employers, who might provide feedback on the digital skills required for accounting students entering the workplace. This network can help validate the importance of certain digital skills and provide practical insights from employers' perspectives.

By gathering information from a diverse group of accounting and non-accounting lecturers, you gain valuable insights into the perceptions of digital skills throughout the accounting curriculum and their importance in the workplace. This group's combination of expertise, diverse perspectives, academic insight, and professional networks makes it suitable for answering the research questions effectively.

I determined the experiences that participants must have, to give valuable insights and contributions to the phenomenon under investigation. The focus of this study is on staff's perceptions based on their experiences, insights, and reflections concerning teaching accounting students, as this is the discipline of the researcher. The main criteria set was participants must be currently teaching a module (s) on the accounting programme in their respective campuses. The participants who could best help understand the central phenomenon in the study, digital skills, were determined to be teaching staff, as this group contributed most to the module design and/or delivery (Creswell, 2012).

Three primary campuses comprising eight geographical locations had just come together as one university, three months before the start of the interview process for this study. To share ideas and resources among staff that teach accounting students, one staff member set up an informal Microsoft Teams site and added staff from the three primary campuses for informal discussions about accounting programmes, one accounting programme per campus.

The sample size is intertwined with our ontological and epistemological stance, for example, how much does our construction of the social world influence what we regard as the population and the sample? Sampling decisions are deliberate, requiring the exercise of judgment and a reflexive attitude to the assumptions that we might all too easily make (Cohen et al., 2013). Researchers have to decide when a sample is good enough, large enough, or small enough, and this is not simply a question of reading off figures from a table, but a deliberative, reflexive, ontological, and epistemological matter

(Cohen et al., 2017).

There was a total of thirty-five potential participants on the Microsoft Teams site, which was the full representation of the group that was involved in accounting programmes over the three campuses. At the time I was unsure as to which participants satisfied the main criteria mentioned above, that they were currently actively teaching modules to accounting students. While I was employed in one of the campuses and was aware of the staff that satisfied the criteria in the campus to which I belonged, I was unsure of the other two campuses. This is where I contacted one person from each campus that I knew satisfied the criteria, and from there used a snowballing approach from these initial contacts to ascertain which remaining members of the Microsoft Team were actively teaching modules to accounting students. This was identified as thirty participants across the three campuses that were currently teaching accounting students.

All (30) participants were initially contacted by the researcher by email along with a consent form, and participant information sheet and asked if they would be interested in taking part in the study. Of this group (30), 24 participants agreed to take part with the final number used in the study being 23, with one participant withdrawing after the interview stage. Therefore 76% of this population took part in the study. This aligns with observations by Krejcie and Morgan (1970) who state that the smaller the number of cases there are in the population, the larger the proportion of that population must be in the sample. Particularly with qualitative data, the essential requirement is that the sample is representative of the population from which it is drawn (Cohen et al., 2013).

Campus	Staff -Also Professional Accountants	Staff - other
1	3	3
2	5	3
3	6	3
Total	14	9

Table 8 Breakdown of participants by campus

The sampling process outlined above is akin to purposive sampling. In purposive sampling, often (but by no means exclusively), a feature of qualitative research, researchers handpick the cases to be included in the sample (Cohen et al., 2013). It is often used as a sampling method in a grounded theory approach to research (Glaser & Strauss, 1967). Teddlie and Yu (2007) provide a typology of several kinds of purposive sampling, to achieve representativeness or comparability. The category that this study most aligns with is termed criterion sample, in which all participants in the sample fit a particular criterion being studied, in that they must be directly involved in the teaching of accounting students. In many cases, purposive sampling is used to access knowledgeable people, i.e., those who have in-depth knowledge about issues, maybe by virtue of their professional role, power, access to networks, expertise, or experience (Ball, 1990). This aligns with staff in this study who are also accountants, and staff that are non-accountants but who teach on accounting programmes.

3.5.3 Interviews

Hochschild (2009) notes that the interview can do what surveys cannot, which

is to explore issues in depth, to see how and why people frame their ideas in the ways that they do, and how and why they make connections between ideas, values, events, opinions, and behaviours (Cohen et al., 2013).
Semi-structured interviews were deemed the most suitable to explore staff views on the overarching research question, but also allowed scope for related areas and other topics to be explored during these conversations.

The interviews took place from March 2021 to June 2021, during which the researcher, who was employed part-time, had limited access to the participants. It is worth noting that Ireland's COVID-19 restrictions were at their highest level (level 5) during this timeframe, resulting in widespread lockdown measures. Consequently, the staff members involved were primarily occupied with adapting to online teaching and managing the challenges posed by the pandemic. These circumstances further highlight the limited availability and potential constraints faced during the data collection process. This was also made more difficult due to the nature of employment contract held at the time by the researcher. The researchers contract of employment expired at the end June 2021, this limitation left no room for the possibility of re-interviewing participants.

The questions asked in the interview were formulated primarily around the overarching research question in the first instance, followed by more detailed questions to assist with answering individual research questions. This can be demonstrated in Table 3.2 below where Q1 – Q5 is quite broad in context which seeks some background understanding to the study and allows participants to voice what they feel are the most important attributes for accounting students.

The remaining questions focus on the core competency covered in the study – digital skills. When focusing on this competency the questions start quite broad and general (Q6-Q10), narrowing down to participants' personal experiences of digital skills implementation throughout their time in HE (Q11-19), followed by their opinions on how aligned they think HE is to the requirements in the workplace in the competency of digital skills (Q20 -Q26). The design of the questions in this order allowed participants to talk in general about their perceptions of what they feel is important and allowed them to be heard. This in turn assisted with participants feeling more relaxed and willing to give more in-depth answers to the remaining questions on the focus of the study.

Interview Questions	**Assisted with part of RQ**
Q1- 5	What are the overall desirable attributes of accounting students both throughout HE and entering the workplace?
Q 6 – 10	Digital skills - general – impacts on accounting education, importance, what factors affect the learning of these skills in HE
Q11-19	Digital skills – personal experience – What roles, if any, do you feel you contribute to the implementation of these skills, what supports/ training is available, and what challenges are experienced?
Q20-26	Digital Skills - workplace – How aligned is your institution, employer engagement, and opinions on work placement, and anything further to add?

Table 9 Mapping of interview questions to the overarching research question

These questions were subsequently tailored further to accommodate the two distinct groups of participants in the study who teach the accounting students (a) staff who are also accountants who teach the technical accounting modules

(Table 3.3) (b) staff who are not accountants who teach the non-exemption subjects including digital skills (Table 3.4). Whilst the introductory questions (1-5) are the same for both groups questions become more tailored for the non-accountant group as they are the participants teaching the digital skills elements through both practice and assessment. This group is also the group that has mixed student groups in their classes, so tailoring the questions in this way allowed for some insight into this experience.

Interview questions - accountants
1. How long have you been teaching here and what type of modules do you teach to undergraduate accounting students?
2. Do you hold any other roles concerning these accounting students in addition to teaching?
3. How do you feel about the current undergrad accounting curriculum being aligned with requirements in the workplace?
4. What do you think are the important attributes of accounting students entering the workplace?
5. How do you feel that the university is currently aligned with these attributes?
Digital Skills - General
6. In your opinion how does digital technology impact accounting education?
7. How important do you think digital skills are for accounting students throughout their HE experience? How do you think your university is currently aligned with providing these digital skills?
8. How do you think your students learn these skills?
9. What factors for example policy, do you think affect the learning and development of digital skills in HE?
Digital Skills – Personal Experience
10. Do you feel you play a role in any way with digital skills development at a programme level or curriculum level or policy level?
13. What are the types of digital technologies that you use in your teaching if any?
14. What prompted you to use technology in your curriculum design?
15. What assumptions, if any, do you make concerning a student's prior digital experience?
16. What level of support was provided when you introduced technology and from where?
17. What do you see as the challenges of using digital technologies in your teaching?

18. If you had access to unlimited funds, how would you use them to implement in your practice using technologies?
Digital Skills – Workplace
19. What do you perceive are the different factors at play when assessing if accounting students are equipped with the required digital skills for entering the workplace?
20. How aligned do you feel your university is with providing these skills?
21. How do you perceive how accounting students feel concerning their digital skills entering the workplace?
22. How does the engagement with employers take place in your college?
23. Are you aware of any relationships that exist between your university and employers concerning accounting students' digital skill requirements?
24. Do you think work placement/work experience on programmes is beneficial for students, particularly digitally?
25. Is there anything else you would like to add concerning the digital skills of accounting students?

Table 10 Interview questions accountants

Interview questions - non-accountants
Introduction
1. How long have you been teaching here and what type of modules do you teach to undergraduate/postgrad accounting students?
2. Do you hold any other roles concerning these accounting students in addition to teaching?
3. How do you feel about the current undergrad accounting curriculum being aligned to requirements in the workplace, particularly concerning the module you teach?
4. What do you think are the important attributes in general of accounting students entering the workplace other than the technical aspects of accounting?
5. How do you feel that the university is currently aligned to equipping these students with the attributes you mentioned?
Digital Skills - General
6. In your opinion how does digital technology impact accounting education, particularly concerning the module you teach?
7. How important do you think digital skills are for accounting students throughout their HE experience?
a) What is your opinion on the digital skills of the accounting students versus your other students?
b) Do you set assignments for these students that require them to be digitally competent in certain tools or technologies?
c) If yes to the above, when setting digital assessments do you make assumptions that the accounting students already know how to use the digital tools required? Or how does that work?
8. What factors for example policy, do you think affect the learning and development of digital skills in HE?
Digital Skills – Personal Experience

9. Do you feel you play a role in any way with digital skills development at a programme level or curriculum level or policy level?
10. What are the types of digital technologies that you use in your teaching if any?
11. What prompted you to use technology in your curriculum design?
12. What level of support was provided when you introduced technology and from where?
13. What do you see as the challenges of using digital technologies in your teaching?
14. If you had access to unlimited funds, how would you use them to implement in your practice using technologies?
Digital Skills – Workplace
15. What do you perceive are the different factors at play when assessing if accounting students are equipped with the required digital skills for entering the workplace?
16. How do you perceive how accounting students feel concerning their digital skills entering the workplace?
17. Are you aware of any relationships that exist between your university and employers concerning accounting students' digital skill requirements?
18. Do you think work placement/work experience on programmes is beneficial for students both for your module and to help them digitally?

Table 11 Interview questions non accountants

During the initial pilot interview on 15 March 2022, the participant was made aware that they were the first to take part in the study, and I asked if they could give some feedback about their understanding of the questions, and their understanding of the terms used. As a result of this feedback, some questions were adjusted to assist with the clarification of terms, and this was used as a template going forward. Due to the nature of semi-structured interviews and a grounded approach, these questions were used more as a guide, and often the order in which they were asked from one interview to the next differed, as often participants would go on to answer questions not yet asked, and I did not want to disrupt the flow or the richness of the data I was gathering. As Walford (2001, p. 90) remarks, "interviewers and interviewees co-construct the interview". Although interview questions are designed before the interview, these

questions are used to start a conversation, each conversation can eventually take a unique route that aligned with the semi-structured part of the interview.

All interviews were conducted through Microsoft Teams and were recorded and transcribed verbatim. This was advantageous as these recordings were reviewed many times throughout the research, not only at the transcription phase but sometimes to understand context, language, and tone which assisted with understanding a phenomenon in a particular context, throughout the study. All participants were forthcoming in discussing the topic and most commented that it was both an interesting and necessary piece of research on which action should be taken. This often led to participants, because of the information they received on the participant information sheet, answering questions that were coming down the line and giving valuable insights into new areas that I had not thought about at the initial stages of the research.

It was also noted throughout the interview process that questions have different meanings for different people. This is evident in this research when using the term digital skills which, several participants automatically associated this term with Microsoft Excel in the accounting context.

3.5.4 Website Review

This study also incorporated information sourced from the websites of each campus to further investigate the details of the accounting courses they offer.

3.6 A grounded approach

This research used a grounded approach to data analysis. Using this approach is initially quite risky for the researcher as there are no predetermined

outcomes, and there is an initial apprehension in trusting the process. The aim of this research using a grounded approach is to construct a conceptual and/or theoretical framework that will become “grounded” in the data.

Using a grounded approach to data analysis aims to develop an explanatory theory of basic social processes, studied in the environments in which they take place (Glaser & Strauss, 1967; Starks & Brown Trinidad, 2007) by examining social processes (causes, contexts, contingencies, consequences, covariances, and conditions) to understand the patterns and relationships among these elements. According to Birks & Mills (2015), this approach is particularly useful when investigating research topics with limited prior research, and where theory building is required, which fits quite well with the objective of this study. A grounded approach intends to build and generate a theory rather than to test an existing theory (Cohen et al., 2013), particularly in real-world situations (Kinnunen & Simon, 2012). It is seen as especially powerful when one is seeking to build a theory or model that applies to real-world situations and supports investigating “the daily realities (what is going on) of substantive areas” (Glaser & Strauss, 1967, p. 239), and the interpretations of those daily realities made by those who participate in them - the “actors” (Suddaby, 2006a). There are several models of grounded theory depending on who you read up on. The early researchers were Glaser and Strauss (1967), and then Strauss teamed up with Corbin (1990), who was followed by Charmaz (2000), and Clarke (2003) to name a few. Which stance this research followed was a mix of these views, but on reflection, this research more aligns with the views of Charmaz on Constructivist Grounded Theory, as her view aligns with the

epistemological and ontological beliefs of the researcher at this time.

The stages in generating a grounded theory depend, in part, on the model of grounded theory adopted, and they may vary. However, a typical sequence is:

1 Decision on whether the grounded theory approach is more suitable
2 Theoretical sampling and memoing
3 Data collection and memoing
4 Coding open codes leading to axial codes
5 Categorisation and memoing
6 Constant comparison and memoing
7 Identification of the core variable and memoing
8 Saturation and memoing
9 Theory generation and verification
10 Writing the report (Cohen et al., 2018, p. 715)

This process can be somewhat better understood with the aid of a diagram like the one below:

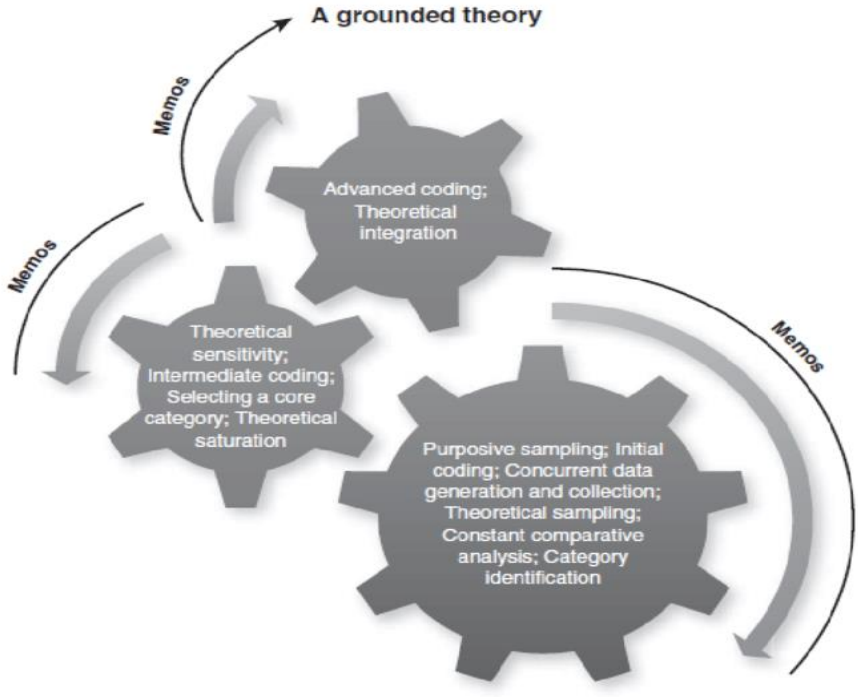


Figure 3.2 Essential grounded theory methods (Birks & Mills, 2015, p 13)

3.6.1 Why a Grounded Approach?

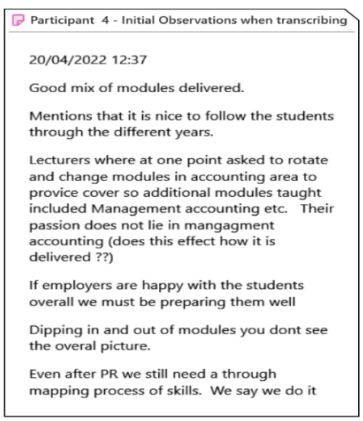
Grounded theory develops an axial model to represent the sequential aspects of an experience or decision (Glaser & Strauss, 1967). Other qualitative methods researched for this research were 1) Phenomenography 2) Activity Theory. Phenomenography as a second-order approach, is the experience of the phenomenon as described by others that form the basis of the researcher's description (Trigwell, 2006). Phenomenography is a methodology seeking out variations, where this study aims to have no pre-determined criteria for the outcomes, other than trying to address the research questions. Activity theory tends to focus on the negative aspects of a system or contradictions. To get the intrinsic views of participants, where the object is not to identify contradictions or problems, albeit they may arise during the research, the accounts of a participant's experience in this research will come from a more nuanced

perspective. This research aims to use this methodology to formulate an up-to-date conceptual framework to better understand the experiences of staff in an ever-changing technological environment in HE.

3.7 Data analysis

3.7.1 Initial analysis of transcripts

The first step of the data analysis process started by remembering some of what I thought were interesting pieces of information during the interview process. I then reflected on some similarities and differences that had transpired in different areas of this research. I then proceeded with the transcription process. During the transcription process, analytic memos for each interview were also collated. These contained items that were deemed of interest to me and included a summary of the main points of the interview. A sample of these initial memos are displayed in Figure 3.3 below.


Participant 4 - Initial Observations when transcribing

20/04/2022 12:37

Good mix of modules delivered.

Mentions that it is nice to follow the students through the different years.

Lecturers where at one point asked to rotate and change modules in accounting area to provice cover so additional modules taught included Management accounting etc. Their passion does not lie in mangagment accounting (does this effect how it is delivered ??)

If employers are happy with the students overall we must be preparing them well

Dipping in and out of modules you dont see the overal picture.

Even after PR we still need a through mapping process of skills. We say we do it


Participant 5 - Initital Oberservataions when transcribing

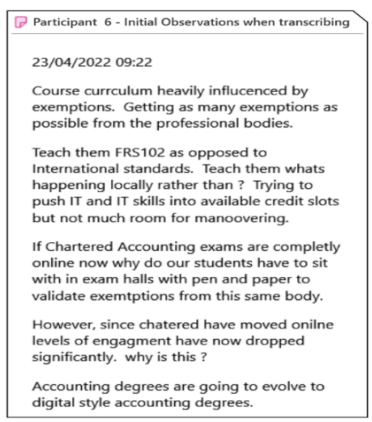
22/04/2022 12.30 -

This participant acutally designed programs and has taught a wide range of modules. Is the accounting curriculum too narrow and too focussed on professional exemptions. Accounting was too narrow. We got exemptions anyway but that was NOT the design criteria. We are not aligned when we produce accountants with a very narrow, technicial understanding not applicable to most accounting roles.

When citing the skills needed for the workplace (possibly after a 3 year contract) the first focus was on technicial skills.

Different cultures Irish V Candian when participating in class. Very silient classroom in Ireland. Agrees very weak on IT skills.

Real emphasis throughout here on preparing students for a LONG TERM CAREER rather


Participant 6 - Initial Observations when transcribing

23/04/2022 09:22

Course currculum heavily influcenced by exemptions. Getting as many exemptions as possible from the professional bodies.

Teach them FRS102 as opposed to International standards. Teach them whats happening locally rather than ? Trying to push IT and IT skills into available credit slots but not much room for manoovering.

If Chartered Accounting exams are completly online now why do our students have to sit with in exam halls with pen and paper to validate exemtptions from this same body.

However, since chatered have moved onilne levels of engagment have now dropped significantly. why is this ?

Accounting degrees are going to evolve to digital style accounting degrees.

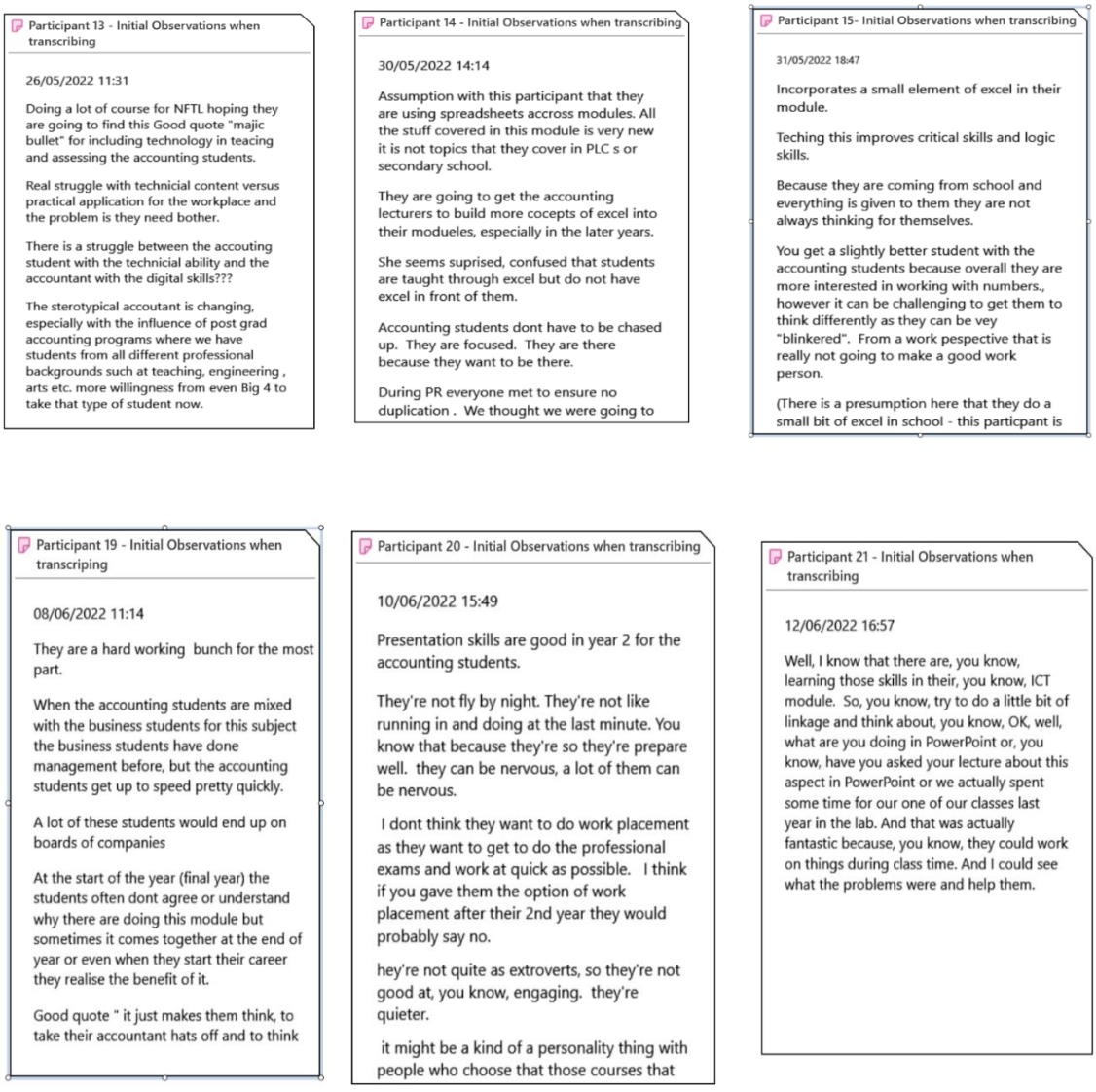


Figure 3.3 Sample of initial observations during the transcription process

At this stage of the process using the NCT model – Noticing, Collecting, and Thinking about things was useful as a navigation tool.

1 Noticing – Finding something interesting in the data.

2 Collecting – Finding similar items that may be able to be grouped under a code.

3 Thinking about things – A lot of thinking happens while writing up memos. We need to think when noticing things when coming up with good names for codes, or when developing good names for categories and sub-categories. Figure 3.4 below shows that noticing, collecting, and thinking about things go hand in hand back and forth.

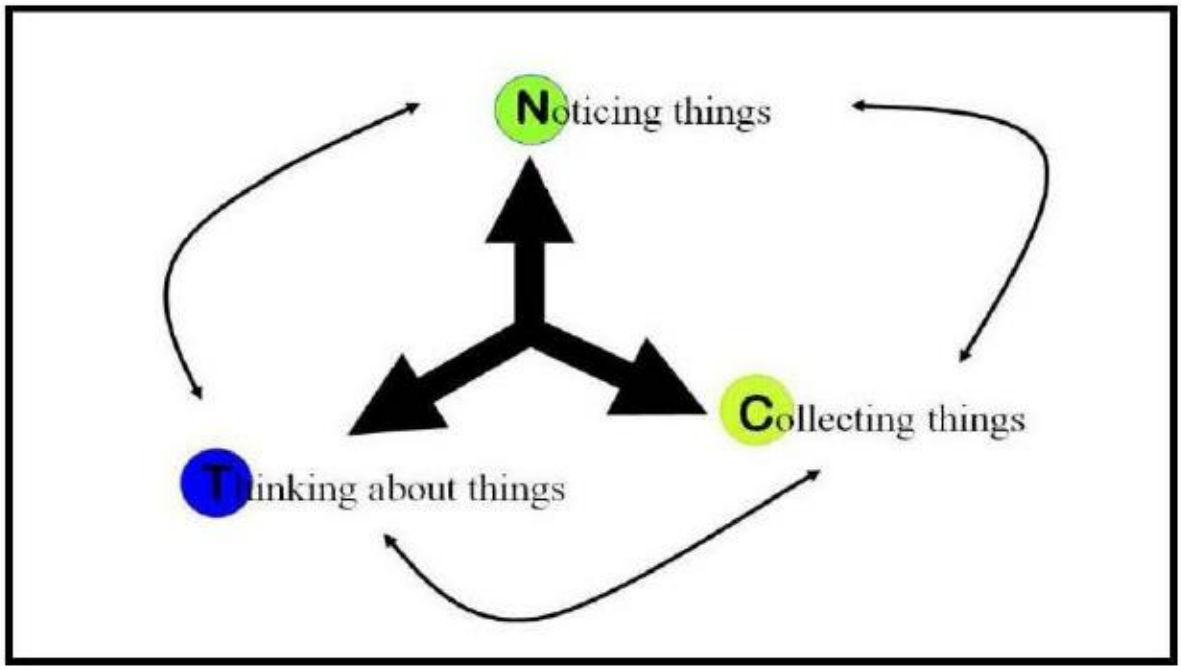


Figure 3.4 The NCT Model Source: adapted from Friese 2019, p 69.

Atlas.ti was used as the CAQDAS (computer-assisted qualitative data analysis software) to assist with the analysis. There is a quotation feature available on this software which can be used before the coding process. Documents can be read, and areas highlighted of interest using this quotation function which you can also insert a comment on each quotation. This was the first stage of the data analysis process. Highlighting interview transcripts for areas of interest and inserting comments for each of these observations. See the sample in Figure 3.5 below

the first interview with a sample of quotations (First piece of text) and comments (text in italics underneath).

Interview 1 Extract- The feedback would be that they need more and that things are changing rapidly you know that that would be useful for them to get more on this.

Comments: Conflict here between this and the previous sentence. Participant thinks that they are well prepared with feedback stating they are not why do they think students are well prepared? Thoughts to date - digital native assumption? Other colleagues are integrating and covering it?

Interview 1 Extract -To some extent our curriculum is restricted by the requirements of professional bodies, and we are so focused on meeting these requirements I think you know that means that we are leaving out other important things.

Comments: Curriculum is obviously well aligned if we are getting exemptions. Not perfectly but it's good enough for the professional bodies then it's good enough for us.

Interview 1 Extract - There is a shortage of these skills at undergrad level but that may be because there's an assumption that they learn as they go but I definitely think that's a gap.

Comments: There was a shortage of these skills at undergrad level as some people have the attitude they will learn as they go in the workplace, but this is a gap

Interview 1 Extract - Because I have to cover the technical aspects of the programme but I guess somewhere the technology then needs to get integrated into modules. So I don't know how that gets done.

Comments: Recognises pressure to teach technical aspects but also realise the importance of technology but does not know how to get it done with everything that needs to be done.

Interview 1 Extract - Not necessarily me but I can see that my colleagues are making a big effort to integrate technologies.

Comments: Does not integrate excel themselves but can "see" other colleagues doing it. This is the problem as everyone assumes everyone else is doing it which can lead to knowing no one doing it at all!!!

Interview 1 Extract - Employer relationships is based on personal relationships with these people but I would like to do that as well but not linking in with schools that's not my job

Comments: It's not my job to form a relationship with schools how does this attitude transfer over to linking in with employers.

Figure 3.5 Interview No 1 – Sample of quotations and quotation comments

3.7.2 Second reading of transcripts

Transcripts were then revisited to start the coding process. Some codes were formulated using “in-vivo” codes. In-vivo codes according to Corbin and Strauss, (2008, p. 65) are “concepts using the actual words of research participants, rather than being named by the analyst”. All initial codes were also given a code definition. Giving codes definitions is an important part of the analytical process (Lee & Fielding, 1996). Coding decisions are based on methodological needs, i.e. the qualitative researcher will choose which coding methods will best fit the data, style of research and length of study, and thus, the choice can be made in advance but may also have to be made during the data collection and analysis stages (Saldana, 2016).

The first four interviews were coded to establish some main themes. The first phase of coding aims to develop a code list that describes the issues/aspects/phenomena/themes that are in the data, naming them and trying to make sense of them in terms of similarities and differences (Friese, 2019).

See below for an example of a sample of codes with definitions as I understood them at that time.

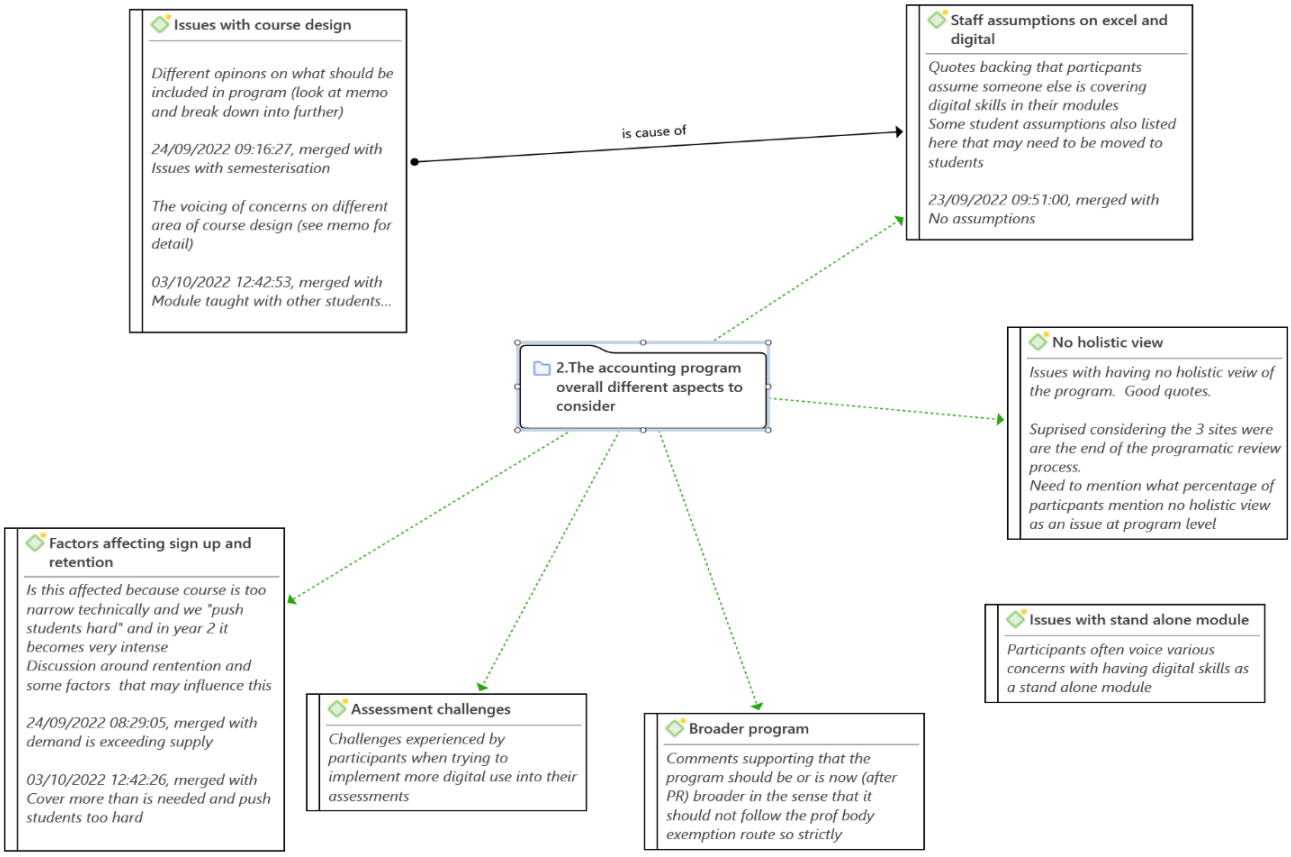


Figure 3.6 Sample of codes with comments

This often results in a large number of codes in the first phase of the process. Below we can see over 80 codes and comments being developed from the first four interviews.

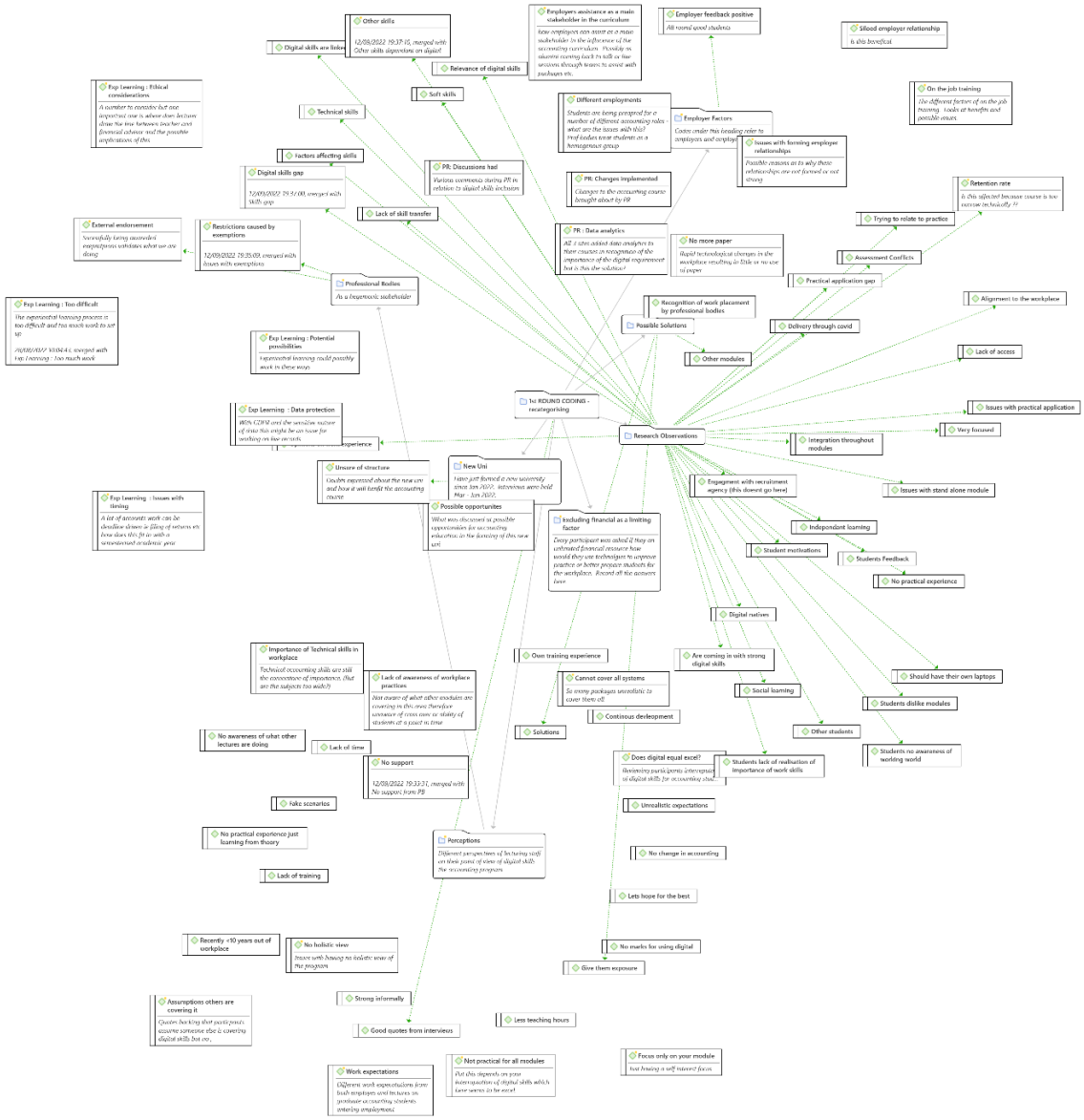


Figure 3.7 Coding of first four interviews

3.7.3 Third Reading of transcripts

Once these initial codes were identified from the first four interviews the rest of the interviews were coded using these as a starting point with codes being added, deleted, and merged while analysing the remainder of the interviews. Coding is not just labeling, it is linking. It leads you from “the data to the idea, and from the idea to all the data about that idea” (Richards & Morse, 2007, p. 137).

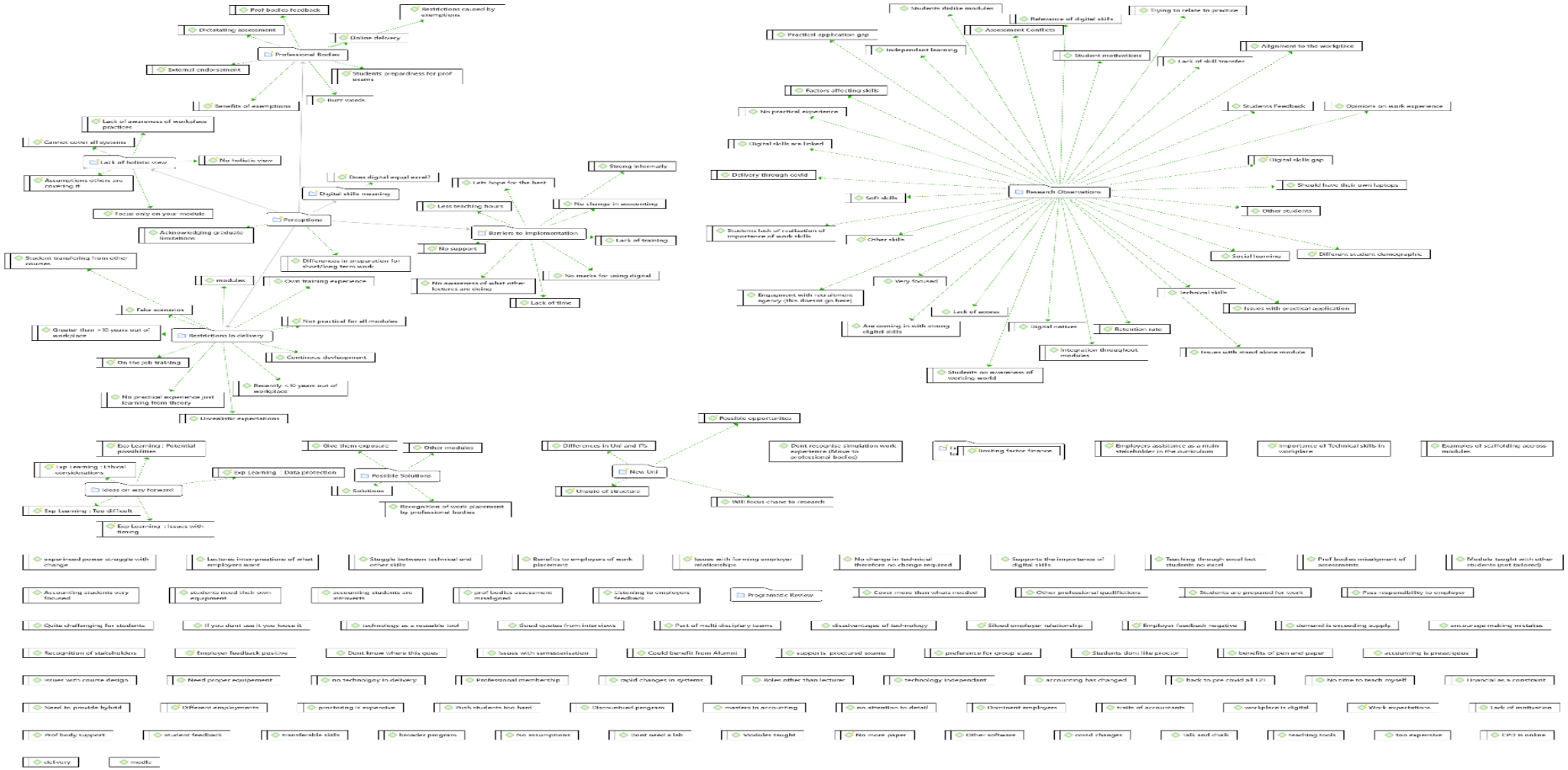


Figure 3.8 Coding all interviews

3.7.4 Fourth Reading of transcripts

The fourth reading of transcripts was carried out to ascertain relationships, similarities, and differences and form categories, which often involved the merging and deletion of codes. Going through all my codes and defining them helped with the analytic thought process. It forced me to draw clear-cut boundaries between codes. If you realise there are overlapping meanings, you can merge codes to make them more distinctive. The conceptualisations I choose are influenced by my background, my research question, the literature read to date, and my personal life experiences (Friese, 2019). The conceptual categories I use to make sense of the world are constructed out of the experience and in turn, are used to make sense of experience (Freeman & Dmytriyev, 2017).

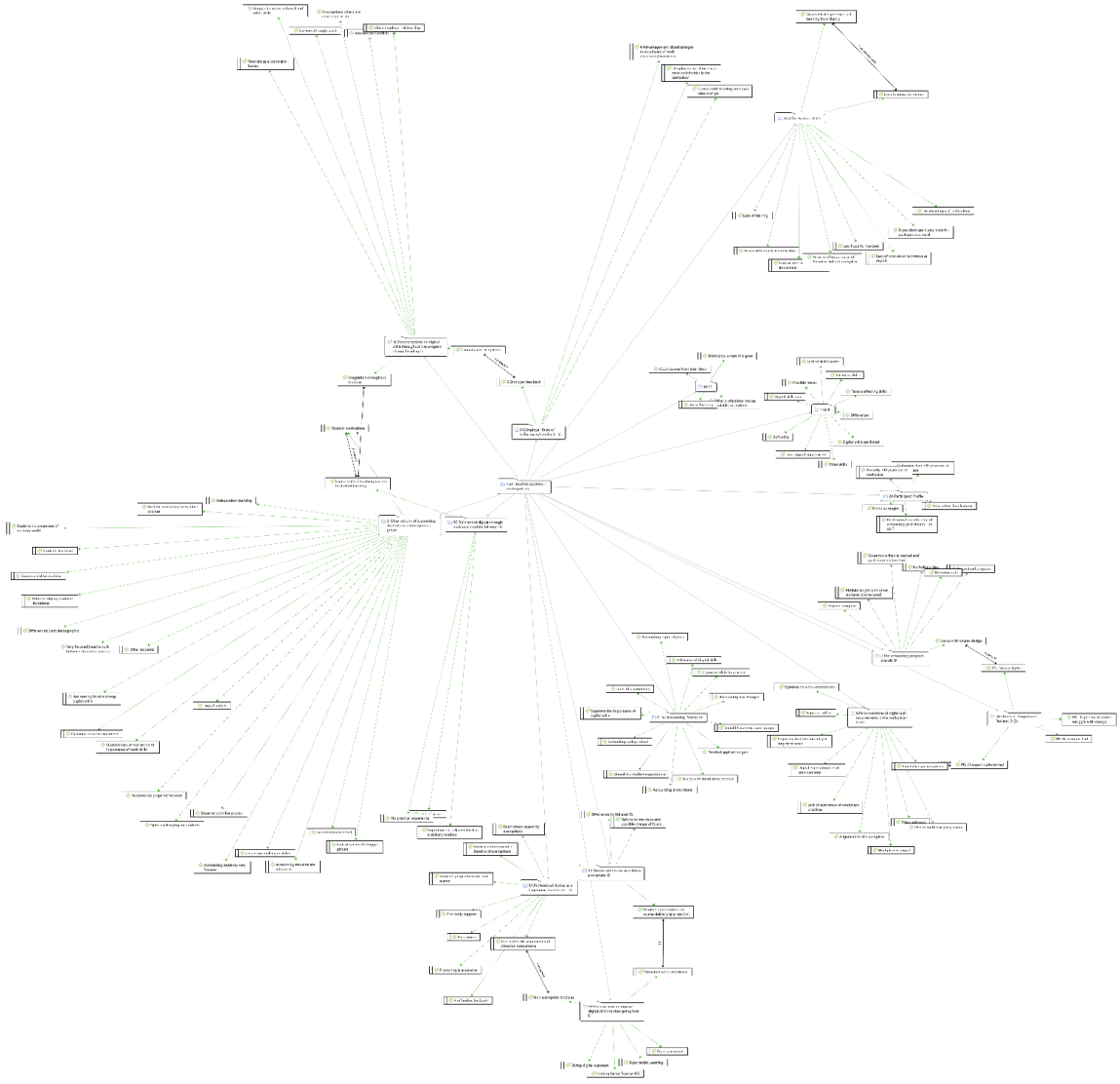


Figure 3.9 Coding – Recategorising

3.7.5 The fifth round of reading transcripts

Data analysis took place through qualitative coding, from which the shared perceptions and opinions of participants emerged (Glaser & Strauss, 1967). The method of coding adopted depends on the research question, as the research question embeds the values, worldview, and directions of a study, and thus

determines the knowledge that will arise from the inquiry (Saldana, 2016).

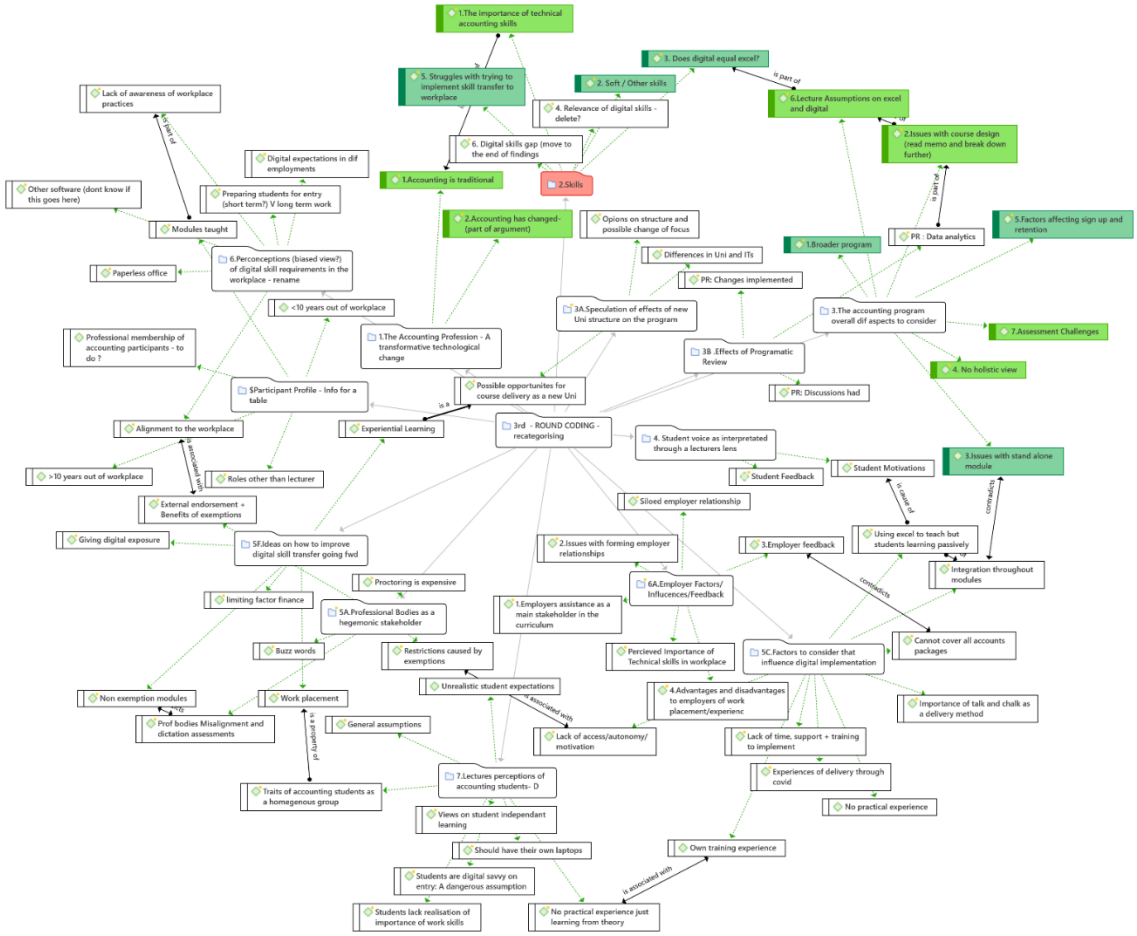


Figure 3.10 5th round of Analysis – Coding – Categorising and subcategorising merging and deletion

The final phase of the coding process involved sorting categories and their related codes into a sequence to assists in the answering of the research questions in a coherent manner. See Figure 3.11 below displaying final categories and codes used to assist answer each of the four research questions.

	Research Questions	Category	Codes
RQ1	How are skills for accounting	1.The accounting profession - A transformative change	Accounting has changed
	Students understood and defined?		Accounting is traditional
		2. Skills	Digital skills gap
			Does digital equal excel?
			Relevance of digital skills
			Soft / Other skills
RQ2	What are the factors to consider	1. Staff perceptions of accounting students	General assumptions
	when implementing digital skills?		No practical experience just learning from theory
			Strudent feedback
			Student Motivations
			Students are digital savvy on entry: A dangerous assumption
			Students lack realisation of importance of work skills
			Traits of accounting students as a homegenous group
			Unrealistic student expectations
			Views on student independant learning
		2. The accounting program overall aspects to condsider	Assessment challenges
			Broader program
			Factors affecting sign up and retention
			No holistic view
			Staff assumptions on excel and digital
		3. Professional bodies as a hegemonic stakeholder	Buzz words
			External endorsement + benefits of exemptions
			Proctoring is expensive
			Prof bodies misalignment and dictation assessments
			Restrictions caused by exemptions
		4. Speculation of effects of new univesity on structure of program	Differences in Uni and ITs
			Opions on structure and possible change of focus
			Possible opportunites for course delivery as a new Uni
			PR : Data analytics
			PR: Changes implemented
			PR: Discussions had
		5. Pedagogoic experience linked to digital skills implmentation	Cannot cover all accounts packages
			Experiences of delivery through covid
			Importance of talk and chalk as a delivery method
			Integration throughout modules
			Lack of access/autonomy/motivation
			Lack of time, support + training to implement
			No practical experience
			Own training experience
			Using excel to teach but students learning passively
RQ3	What are the factors to consider when	1. Employer factors/Influences and feedback	Employer feedback
	preparing students for entering		Employers assistance
	the digital workplace?		Issues with forming employer relationships
			Percieved Importance of Technical skills in workplace
			Siloed employer relationship
			The importance of technical accounting skills
		2. Preconceptions of digital skills requirments in the workplace	Alignment to the workplace
			Digital expectations in different employments
			Lack of awareness of workplace practices
			Other software
			Paperless office
			Preparing students for entry (short term?) V long term work
			Adv and disadvantages to employers of work placement
			Struggles with trying to implement skill transfer to workplace
RQ4	What are the perceived influences of course design	1. Issues experienced	Issues with course design
	on digital skills implementation for these students?		Issues with stand alone module
			Work placement no scope

Figure 3.11 Final categories and codes used to report findings

3.8 Ethical risks and considerations

Ethical approval was granted by two institutions for this study - Lancaster University's Faculty of Arts and Social Sciences Ethics Committee in March 2022, and the university where this research was carried out, also approved in March 2022. A consent form and participant information sheet were sent to participants before the interview process. The participant information sheet outlined the following:

- What the study was about
- Why the participant was invited to take part
- What they will be asked to do it they do take part
- Possible benefits of taking part
- Possible disadvantages of taking part
- Taking part is voluntary
- Option to change your mind - withdrawal procedure
- How the information will be used
- How identities will be protected
- How information will be securely stored
- If participants have any questions or concerns

The primary identifiable disadvantage of taking part in this study, would be the time taken to carry out the online interview. However, one underlying ethical issue that participants queried throughout the research, was if the information they supplied would be identifiable. I was also aware at this time, to obtain rich interview data, I had to ensure that the identity of participants would be always protected. I assured participants that every effort would be made throughout the

research to maintain their anonymity. This was primarily twofold. Firstly, an effort was made throughout the research so that individual campuses could not be identifiable, and secondly that participants themselves would not be identifiable on an individual or campus level. I carried this out by using pseudonyms with each participant assigned a number (P1 - 23) during the transcription and analysis process. I also used some tables, for example, Table 3.1 above and Table 4.1 – 4.3 in Chapter 4 – Findings, to explain the profile of the participants to the reader, but also in a deliberate way to not enable the reader to identify participants either individually or by individual campuses. Participants were also offered their scripts to review after the transcription process but before the coding process. They were also made aware of the timelines for withdrawal from the research, and how their data would be stored on secure servers at Lancaster University.

3.9 Limitations and weakness of research design

Potential limitations in project design might include researcher bias in interpreting findings, including bringing my expectations when conducting analysis. However, this issue arises with the use of most qualitative techniques and can be reduced by a conscious awareness of researcher subjectivity and how this might affect data interpretation. Also, as the participants were not a random sample, but specifically selected, this raises a generalisability issue which is also common in qualitative research. This study will demonstrate how the results and methods will be reported with transparency to encourage reproducibility and trustworthiness, so that the reader may determine the transferability of this study to other higher education institutes and disciplines.

3.10 Chapter Summary

In this chapter, I conceptualised methodology and considered how my epistemological and ontological stance influenced my positionality, research questions, and research methods.

I explained my stance on positionality as both an insider and outsider depending on which context is the point of focus at a particular point in time, and how this influences my selection of participants and research questions.

I also discuss how I used a grounded approach to assist with the analysis stage resulting in emerging concepts and/or theories against other approaches. I showed my methods of data collection in a step-by-step process that demonstrates a grounded approach in action. The chapter ends with the ethical risks that were considered throughout the study, particularly in the writing-up phase with the underlying concept of participant anonymity at the forefront of my mind, along with an acknowledgment of the study's limitations and weaknesses.

In Chapter Five, I put the above methodology into action by reporting findings and demonstrating how the data collection unfolded through the categorisation of main themes that emerged throughout the data as can be seen in Figure 3.14 above.

Chapter 4 Findings

In the ever-evolving landscape of accounting education, the cultivation and refinement of skills for accounting students raises concerns. This chapter unravels the intricacies surrounding the understanding and definition of these essential skills, examining the theoretical foundations that underpin their conceptualisation within the academic domain. Research Question 1 (RQ1) delves into the multifaceted dimensions of skills, seeking to delineate the contours that shape the perceptions and definitions held by teaching staff.

The scope then widens to encompass the integration of digital skills within accounting programs. Research Question 2 (RQ2) extends its inquiry into the lived experiences of staff members, aiming to unearth the factors that bear significance when implementing digital skills throughout accounting programs. The voices of these educators provide a crucial lens through which we can explore the challenges, successes, and nuanced considerations that come to the forefront in the dynamic intersection of technology and accounting education.

Expanding our exploration further, Research Question 3 (RQ3) steers our attention toward the broader landscape of preparing students for the digital workplace. As the professional sphere undergoes a paradigm shift towards digitalisation, understanding the pivotal factors that contribute to equipping students for success in this environment becomes imperative. This chapter highlights the insights gathered from educators, shedding light on the multifaceted strategies and considerations that educators employ to ensure

their students are well-prepared for the digital challenges that await them in the workforce.

Research Question 4 (RQ4) focuses in on the perceived influences of program design on the implementation of digital skills for accounting students. As the architects of educational programs, educators play a pivotal role in shaping the learning experiences of students. This section explores the deliberate choices made in program design and how these decisions impact the development and integration of digital skills within the broader framework of accounting education.

4.1 RQ1 - How are skills for accounting students understood and defined?

This section starts by looking at accounting as a profession overall. Even though it is regularly classified as traditional, it will then explore how it is also acknowledged as evolving in an ever-changing business environment. It then looks at how skills in accounting are primarily classified into two main categories – technical and non-technical skills. Lastly, it then explores the different interpretations of digital skills by participants, and how this influences the degree of inclusion/exclusion of these skills in their modules.

4.1.1 Accounting is traditional and technical

Accounting is said to be the language of business (Christensen et al., 2019), and business and society, form an interactive social system. Each needs the other, and each influences the other. They are entwined so completely that any action taken by one will surely affect the other (Lawrence et al., 2010).

The business landscape has changed rapidly over the last number of years and

one of the contributory factors to this change was the introduction of technology to processes. However, this change does not seem to have affected opinions, that accounting is still very much a traditional concept, therefore the way we teach it should be embedded in traditional methods. The perceptions of some of the participants of this study found that due to the nature of accounting being quite a "traditional" subject there is no need to either digitise the learning process or indeed the classroom delivery.

> I wouldn't think about using technologies, accounting as you know, is very traditional, a very set way of doing things. (P3)

Several participants cited the importance of students possessing technical accounting skills as the cornerstone of the profession. As understood above, this is a profession that has not changed in any significant way over the last number of years.

> So initially the basics of accounting are very important to understand the debits and credits etc mentioned earlier. It has not changed significantly over the last 18 years. But the actual key competencies and skills that students need haven't changed that much. The core accounting in my opinion has not changed. (P7)

This participant's understanding of key competencies and skills are all technical subject matter based, and they do not acknowledge here that students may need other key competencies and skills outside this technical realm. This may be connected to the often-external perception of professional accountants' perceived identity, as number crunchers that are often removed from the rest of an organisation with a sole focus on the figures.

Here another participant does acknowledge in a small way the link between the

technical accounting skills and digital skills required. However, this small acknowledgment does not take away from the opinions that technical accounting skills should still rank at high in importance.

> They are still going to have to know the double entry rules and be able to go out to a client and spot where somebody's used a computer system. From that perspective, it is not going to change our teaching. Don't know if it's going to change the way we educate people because they still have to have the building blocks. It does not change the way we teach in a classroom. (P19)

This is an interesting view in that this participant concludes that because the subject matter has not changed, this directly justifies them using traditional teaching practices and possibly a justification for the avoidance of implementing technology in their classrooms.

> But I firmly believe that it's back to basics. You know, it's back to the debits and credits, building up the information, reading a trial balance, and preparing the financial statements. They have to know the definition of an asset, the definition of expense, revenue, and liabilities. That's the foundation. (P12)

Here we again see a strong emphasis on the technical areas of accounting but a total absence of mentioning that financial statements are now primarily prepared digitally. While students do indeed need to know theoretical definitions, computerised accounts packages can eliminate a lot of the guesswork for students and can indeed be operated quite effectively without any in-depth knowledge of accounting, and possibly just good on-the-job training.

There is a strong emphasis that accounting is viewed as traditional, therefore

we can assume that it has not changed significantly over the last number of years. As one participant goes further to note, this non-change is linked to the justification of traditional methods for programme delivery. The accounting landscape is changing, primarily due to the digitisation of processes. A lack of acknowledgment of this, from participants in this study, is a nuanced concept, particularly concerning accounting programme design and delivery which the study will address later under RQ4.

4.1.2 Accounting is evolving in a changing environment

The role and identity of accountants in today's business environment are ever-changing. They are now found in many positions in organisations from marketing, human resources, and IT departments, and at board level, many chief executive officers of companies are professional accountants. As a result, the skillset now required from accountants has broadened dramatically over the last number of years. This has been accelerated further by the rapid and disruptive changes in technology, resulting in digital skills in accounting coming to the fore of importance in all aspects of the accounting role.

Not all participants share the view that accounting is traditional and not subject to change. As we can see below some participants did acknowledge vast changes currently underway in the accounting profession, both now and in the future. This may initiate change to programme design and indeed delivery of accounting programmes, and how the technical skills required going forward may have a lesser ranking in importance than previously thought.

> There is a skill set for accountants, but we are way beyond the technical skills. The role has changed. There is a lot of

> functionality now from an accounting perspective that can happen without a human involved in it in any way. (P22)

This view contrasts with the view in section 4.2.1 above that we are gone beyond having a sole focus on technical accounting skills. We can also ascertain an awareness that these routine technical skills are now being replaced by technological advances and the removal of the accounts administration role, responsible for the day-to-day routine transactions, is moving towards full automation. This shift has a knock-on effect on our accounting programmes in HE.

As a result, it has been suggested that we need to shift our focus at programme level primarily due to these technological factors. This wide-ranging varying of opinions can be problematic especially at programme review, when trying to introduce new skills and competencies to keep the curriculum up to date.

> I think as providers we need to readjust our programmes. Some said no change to the accounting programme at PR (Programmatic Review). I replied how can there be no change. It's been 5-6 years since our last review and you're telling me accounting hasn't changed in 5 or 6 years? It has changed massively. Everything is online now. If we don't embrace that, we are not being honest. (P10)

Here we can see the conflicting opinions of participants and other staff. Some state that there is no change required to the current programme, which is very much the sentiment linked to accounting is traditional and therefore should not be changed, therefore we do not change our programme or teaching methods. Whereas other staff cannot believe that others are proposing no change when things have been changing so rapidly, particularly in the business environment year after year.

Then when there is an acknowledgment that there needs to be change implemented concerning introducing more technology, and digital into the programme, participants are conflicted due to the large emphasis on the technical accounting that needs to be taught.

> Because I have to cover the technical aspects of the programme. But I guess somewhere the technology then needs to be integrated into modules. So, I don't know how that gets done. (P1)

We can see here conflicting opinions on when accounting is classified as traditional, it may justify decisions not to change or implement digital competencies into programme design. This can be problematic when trying to keep pace with what is going on in the external environment. We can also see when some participants acknowledge that changes need to be made, but this suggested change can be resisted by other staff members. When these challenges are often overcome and there is an acceptance that changes needs to happen, there are often then debates on what changes need to be made and what skills are required for the accounting students of today.

4.1.3 How skills in accounting are defined

When participants cited what skills they deemed important for accounting students in today's business environment, two meaningful categories emerged from the data concerning skills descriptions in an accounting context.

1) Technical accounting skills - aligned with a traditional accounting approach mentioned above. All subject-specific skills.
2) Non-technical skills – any other skills not classified as technical.

4.1.3.1 Technical accounting skills

As this research focuses on lived experiences of teaching in accounting programmes, the technical accounting skills acquired by students were emphasised to some degree. This included the importance of students knowing the fundamental rules of accounting under all the different modules that are subject-specific including Financial Accounting, Management Accounting, Auditing, and Tax. These subjects could be classified as core subjects in the technical arena for accountants and are also the subjects that are normally associated with the granting of exemptions from external professional bodies once a certain grade (normally 50%) is achieved in HE final exams. See table 4.4 below on the modules subject to exemption criteria by professional bodies.

Modules Taught	**Exemptions Granted by Professional bodies**
Finance	Yes
Financial Accounting	Yes
Law	Yes
Auditing	Yes
Financial Reporting	Yes
Management Accounting	Yes
Business Information Systems	No
Financial Management	Yes
Professional Development	No
Book Keeping	No
Taxation	Yes
Math	No
Economics	No
Strategic Management	No
Skills to advance	No

Table 12 Modules taught by participants across the three programme

Some modules have been grouped eg. Financial reporting 1 – 6 all fall under Financial Reporting

4.1.3.2 Non-technical (soft) accounting skills

The non-technical accounting skills were a more difficult construct to define. When specifically asked about the importance of non-technical skills there was a mixture of terms used to describe these which were primarily categorised as soft skills. To get a better understanding of how participants referred to non-technical (soft) accounting skills, the number of participants that used terms about these non-technical skills is displayed in Table 4.4 below. In many cases, these terms below were often used interchangeably with meanings blurred.

Non – Technical Skills (soft) Terms used	No of Participants
Communication	17
Critical thinking	7
Digital/IT	4
Confidence	3
Presentation	3
Analytical	2
Interpretation	2
Report writing	2
Professionalism	1
Teamwork	1
Transversal	1

Table 13 Non-Technical (Soft) skills that were deemed important for accounting students

4.1.3.3 Interpretations of soft skills as non-technical

The majority of participants (17) mentioned soft skills as important but often did not explicitly state exactly what was meant by soft skills other than they were other skills that were not technical accounting skills. The use of this ambiguous term can often blur understanding, however, some participants did go on to further state what they meant by this term, but again very different meanings and interpretations were given as can be seen below.

> Do they have enough skills going into the workplace eg. soft

> skills such as working in an office environment dealing with clients? I think soft skills are linked to confidence. (P1)

> Soft skills are not strong enough. By this, I mean their ability to write and present a report. (P19)

As we can see here, “soft skills” has many different meanings attached. One would expect such a generic term to have various interpretations. However, when a term becomes too broad, it can cause confusion regarding its intended meaning. This confusion can make it challenging to incorporate the term into a programme. Particularly when people are associating significantly different meanings with the skills to be included in the programme. Such differences in meaning and interpretation of soft skills suggest it may be complex for different ideas on implementing all these different variables into the programme. However, many participants cited that soft skills are directly linked to communication skills. So, a further explanation of this is warranted below.

4.1.3.4 Communication as a non-technical (soft) skill

Communication was mentioned by over 70% of the participants as being the main non-technical skill required by these students, with most of these citing that these students tend to have very poor communication skills.

> On a more human level good communication, interpersonal and transversal skills are important. You would be surprised by the tone of the email sometimes you get from students. (P18)

While the tone of students' current written communications may not be deemed acceptable for the business world, another participant cited that poor communication methods are expected of this type of student, that tends to be more introverted and as a result does not communicate effectively in a class

situation.

> I think that possibly the biggest thing is that they're not quite as extroverted. They're not good at engaging with each other. They have a big issue in communication in that way. They're just quieter. They don't contribute as much as the other students. It's not because they've nothing to contribute. That's not the case. I just think perhaps it might be a kind of a personality thing with people who choose these types of programmes that they might be kind of quiet or, you know, I think that it is, they are more introverted or maybe it is that they don't know how to communicate in that way. (P20)

This perception that accounting students overall possess weak communication skills can support the notion that accounting students are a homogenous group. This concept of homogeneity is discussed later in section 4.3.2.

Most methods of communication are now intrinsically linked to technology in today's business environment from verbal, nonverbal, and written communication in the form of emails, presentations, and online meetings to name a few. As one participant below states:

> Using digital skills to communicate is important. (P15)

On the other hand, when participants do not link digital skill requirements as part of the communication process, this might be one of the contributing factors as to why accounting students were deemed to be poor communicators. It is possible that they are not exposed to the appropriate tools, often digital, throughout their programme. This may hinder and limit their ability to effectively demonstrate how they communicate, contribute, and engage with staff and peers, particularly during class.

Other skills that were cited as important were critical thinking (30%), digital skills

(17%), confidence and presentation skills (13%), analytical, interpretation, and report writing (9%), and professional, teamwork, and transversal skills (4%).

4.1.3.5 Assumptions of digital skills interpreted as Microsoft Excel

When participants were asked if they implemented digital skills in their delivery they often assumed, as the focus of the study was digital skills for accounting students, that digital skills in this context were understood to mean Microsoft Excel skills. We can see this here when participants mention when asked specifically about digital skills, they construe that the researcher specifically means Microsoft Excel without this being made explicit.

> Depending on the type of subjects say law and auditing are quite a sort of wordy subjects and so they don't lend themselves too much to Excel. (P3)

> We will take spreadsheets as an example of digital skills which makes sense to me. (P9)

While having such a broad view of soft skills can be nuanced as previously discussed, it can be seen here how having such a narrow view of digital skills can be as equally perplexing. Some participants seem to ascertain that if they teach theory-type subjects to these students, they are unable to develop their digital capacity due to the restrictions of the module type. While Microsoft Excel seems to be the main digital tool used in the accounting profession, other digital skills also need to be recognised as important. As we can see in Table 4.5 the different skills that participants deemed important can all be demonstrated using digital platforms, and an apparent lack of awareness of this concept might prove challenging when trying to prepare our students for the digital economy of the future.

4.2 RQ2 - What are the factors to consider when implementing digital skills throughout accounting programmes in staff members' lived experience?

Participants were asked about their personal experience of implementing digital skills into a programme and about their experiences of trying to implement these skills on both a module and programme level. Both categories of participants, the accountants, and the non-accounting staff, deliver modules to both accounting and non-accounting students. Their experiences of teaching non-accounting students were often discussed as a comparative reference when explaining their experiences of teaching accounting students. They also spoke about students in general in HE. This section will start with general perceptions of all students and then narrow down the focus to the specific characteristics and traits experienced by teaching accounting students.

4.2.1 Assumptions of students' digital capabilities on entry into HE

In some instances, it was assumed that students on entry to HE had basic digital skills concerning the Microsoft Office suite. Particularly in the most common packages of this suite such as Microsoft Word, Microsoft Excel, and Microsoft PowerPoint. But as this study demonstrates, what was experienced by participants in the classroom was quite a different level of capabilities in this area than what was previously assumed. It was found that most students could be deemed more social media savvy, than proficient in applications that were widely used in the workplace such as the Microsoft Office suite. There appeared to be a wide variation in students' digital capabilities in these workplace applications. This can be problematic where there is a large variation in prior experience among a group of students. To address this issue, one

campus in the study, that had a digital module in the first semester, subsequently dropped this module when it was assumed that students had these skills on entry to, HE. However, a couple of years later, this module was added back in again as some participants expressed a trial-and-error approach had been taken to including and excluding digital-related modules over the past number of years. Where exclusion occurred when there was an assumption that students had these skills, the reality experienced did not support this assumption, the digital module was then re-introduced into the programme in the first year.

> They do all come in at different levels and some of them will have, you know, maybe a lot of experience with Word or PowerPoint and some of them will have none. (P21)

It was also the experience that the non-traditional students (over 23 years) often struggled with these packages as well as having to overcome all the other aspects of returning to education after some time.

> For the older generation returning to education, the feedback I got from some of them was that really before they went doing an undergraduate programme, a foundation type of programme would have served them well in the digital area. So they would have conquered maybe the IT skills beforehand because what they were doing was they were trying to deal with the IT skills on top of new programme content. That made it difficult. (P8)

To combat this variation in experience on entering HE a lot of programmes now front-load modules that cover these digital skills.

> There's a kind of front loading at the start when students come in. We assume that they wouldn't have the basics in Word, Excel, and PowerPoint. So we provide them with that. (P5)

But participants often still experience resistance during the programmatic review process, for this front-loading approach as opinions are divided on the digital abilities of the students starting on a programme. It was noted through the conversations between the participants and the students, the students themselves often feel that they have better skills in this area than they can demonstrate.

> Some staff made the argument that students have already done this stuff by obtaining the ECDL (European Computer Driving License) before entering HE and that doesn't ring through because the students that we have sitting in front of us don't have those skills. They have social media skills, but when you go to give them their assessments, put a PowerPoint together, or use the Word package in an advanced way, they don't have those skills. And we end up with a lot of those students thinking they have the skills and then they end up making up the majority of the repeats that we have in the following August. (P14)

To summarise the initial issues that can face staff concerning digital skills implementation in a programme, students are entering at all different levels of capabilities. Also, where students often rate their capabilities as stronger than they can demonstrate can be challenging. While often students can be familiar with digital applications, there seems to be a difference between being social media savvy and being proficient in Microsoft Office applications, and the level of proficiency required in the workplace in these applications.

4.2.2 Traits of accounting students as a homogenous group

Accounting students can be perceived by educators to have quite different characteristics and traits in comparison to students from other disciplines. These characteristics and traits are explored in this section to help understand

how they influence inclusion and exclusion criteria when deciding what should be omitted or added to a programme on review.

When students sign up to do the accounting programme there are assumptions about the type of traits that these students possess to be interested in pursuing this type of programme and career. These assumptions that staff make concerning these traits are primarily based on the past teaching experiences, of this cohort of students, for many years. Most participants (91%) have been teaching these students for greater than 5 years and 87% of participants have been teaching these students for greater than 10 years (see Table 4.1 – Interview Profiles). On retrospective examination, all the quotes below are from the non-accounting staff that teaches accounting students (see Table 4.1 – Interview Profiles). This makes sense as this group of participants is more likely to have mixed groups of students in the modules they teach, including digital skills-specific modules, which would possibly help them compare different disciplines of students both throughout the teaching period and through assessment results.

Accounting students were regularly described as very focused, interested in learning, hardworking and often stand out academically in comparison to other cohorts where there is a sharing of modules.

> They're generally very organised and focused. They generally get the work done. (P21)

Nevertheless, one participant highlighted a significant shift in higher education entry requirements during the global pandemic. During this time many countries had to adapt their educational assessment methods due to the health risks and

logistical challenges of conducting in-person exams. In Ireland, one significant adaptation was the introduction of a predictive grading system for the Leaving Certificate examinations in 2020, as opposed to the traditional route of exam hall assessment. This system was designed as an alternative to the traditional exams, which could not be held safely due to the pandemic. This predictive grading system, on which entry points were now based, allowed some students to access the programme who would not have typically qualified through the conventional point-based route.

> But this year I find that the accounting students would be the weakest of all the groups. (P16)

Even though having these positive attributes are important, other attributes were observed with this group of students that were lacking, particularly in the areas of communication and engagement. It was regularly cited that they were not usually very proficient in the delivery of presentations, and class engagement which are important attributes of the working world. This shortfall was deemed to be acceptable to some degree with this class of students, as they were deemed to be more introverted which these traits of poor communicators are often associated with. While having a strong focus was seen as advantageous, the downside is that students can become "*too blinkered"* which may not be a positive attribute to carry through to the workplace.

> At the same time, you are trying to get them to think a bit differently because they can be very blinkered and very focused on how they think. And I don't think from a work environment point of view that's not going to make a good work person if all you're thinking about is this is how this is. I do it

> this way and no other way. (P15)

It was also found that because these students are so focused on results, to gain professional exemptions, that they often did not want to engage in any modules that did not offer exemptions. A lack of motivation to participate in any modules that did not qualify for professional exams was experienced. This could help understand possibly why engagement was low in non-exemption modules. But overall, it was found that the lack of class engagement and communication throughout these modules was quite concerning. Particularly as they enter the working environment where they are expected to be able to communicate effectively, especially in delivering results to multi-disciplinary teams.

4.2.3 Supporting a broader programme

Overall participants were in favour of a broader programme for accounting, rather than having a strong focus on exemptions and exemption-based subjects. As we can see below though that specific focus to some extent is seen as beneficial.

> The accounting degree is very focused on what the student does subsequently. It's a fantastic thing for the students to have exemptions from professional bodies, and that does dictate to a certain extent the content of the programme. But I also think that we are now a new University and that the programme will have to be developed to be a bit broader than that as well. (P16)

While another participant found following the professional body route to be too linear, and too focused on traditional technical accounting areas. This might be problematic for students who pick this programme and want to opt-out at some point during their studies.

> The programme is very linear. At the moment I am working with a different professional body and it is always good to look outside your area of expertise. Rather than a linear approach mapping from A to B, they have adapted more of a professional map focusing on core behaviours, competencies, and skills rather than a line coming from one module endpoint to the next. So, you have an entire suite of modules that contribute to this profession map. (P8)

This sentiment is further supported by other participants who are strongly advocating for changes in the programme, citing that along with describing the programme as linear, it is also described as being too siloed and the focus too narrow which in turn restricts job opportunities for students.

> I think a broader programme would open up opportunities for our graduates. Currently, they think after their degree, I wouldn't get work for the pharma company, or that engineering company. They do not have to have all these technical skills and exemptions for these types of jobs. (P17)

While there was support for a broader accounting programme, there seemed to be no clear understanding of how this could be implemented without a loss of some exemptions.

There was a consensus among participants that these students knew what they were signing up to from the start, and there was little or no flexibility in these programmes to change their minds. If they did change their minds there was no pathway out to other related programmes, which may give them a more rounded skill set. One would have to ask the question are we doing students a disservice by competing with larger institutions that attract a higher calibre of students in the race to offer more exemptions? Instead of universities competing in this area as part of their marketing strategy, most participants

agreed that students would be better served if the programmes in the northwest of the country where tailored better to the demographic of students that this type of university is attracting.

4.2.4 Lack of a holistic view

It is important to mention that the interviews for this study were carried out at the end of the Programmatic Review (PR) process. A PR provides an opportunity for staff to reflect and analyse what has been achieved in a programme in the previous 5-6 years. It also allows for strategic planning regarding the objectives and actions to be undertaken in the upcoming 5-6 years, all with the overarching goal of improving and elevating the quality of the programme. This self-critical review should acknowledge the strengths and identify and plan to address the challenges experienced by the staff. The PR should also analyse the ability of staff to respond to the changing needs and demands of all the university's stakeholders. While Campus 1 was approximately one month ahead of the process, in comparison to Campus 2 and 3, at the time of interviewing the participants for this study, the external panel consultation had not taken place on any campuses, but all campuses were at the end of the process.

When assessing a programme during the PR process, staff should recognise a ranking or mapping of stakeholders to help identify the most important stakeholder in this process, which is often found to be the student. This is important to consider when designing or amending programmes. Good programme design should take a holistic view of a programme with clearly defined aims and learning outcomes. It should also consider the student

journey from the start to the end of the programme, including potential employment opportunities on completion.

It was interesting to note that all three campuses were at the end of the PR process, with all staff consultations and meetings completed. This is where courses are discussed at length for viability, suitability for today's job market, and in-depth analysis of areas of improvement carried out. Despite this, most participants in this study, still did not understand the pathway through the accounting programme for these students. Some even appear to be unaware of possible cross-over of topics between modules, and they sometimes question why some modules are never open to discussion for amending or change. Some participants even expressed concerns that some staff only have self-serving interests or are "*minding their own patch*" at the detriment of having the programme more aligned to producing a more rounded holistic programme, that is deemed more suitable to the changing work environment.

> We sort of get lost. We don't have a holistic view. It only comes up at PR. I often wonder how does my bit fit into the overall? I don't know. So, I'm hoping that if I don't understand, someone else will. (P3)

An assumption that others will cover the gaps in content and misunderstanding is an issue. This could possibly contribute to the confusion and the learning pathway throughout the programme which may result in a disjointed approach rather than a more cohesive effort.

While it is understandable that semesters can be quite short (13 weeks) and there is often a lot to cover in that short space of time, the staff is fully focused on their modules and the end goal is to teach your module and assess the

learning outcomes. The PR process, which only happens every 5-6 years at this university, is a good opportunity to take stock and look at programmes in their entirety. This process can assist in several areas of a programme - to avoid duplication of topics, take out redundant topics and introduce new topics. However, as we see above if the staff does not have a transparent view of a programme at a holistic level, it is quite difficult then to implement changes. Particularly when they are unaware of the full content of the programme. One participant below goes on to explain how in one situation they found out what was covered in a related module to theirs, from the students.

> I found the students were quite good on charts in excel and when I asked them about this they told me they covered this in another module. I was not aware that this other module covered aspects of excel. So I'm doing a little bit of this and I do not know what the crossover is with the other module. So maybe a conversation needs to be had to start with along the line of - I cover this, and I assess it this way and just to have that conversation. (P2)

We can see above how it is not ideal to find out about a potential crossover in modules from the students. This demonstrates how some staff members are unaware of the content of other modules on the programme. Particularly when there is an apparent crossover or duplication of content, which may leave staff often questioning the value of what they are covering with students. It may result in unnecessary duplication if it is repetitive of what is covered by someone else in another module. This issue is also supported by what was mentioned earlier that often throughout the programmatic review process, staff often assume that someone else will know or pick up on the skill gaps in the programme if they are unsure. This assumption often leads to skills then being

omitted altogether, which in turn are not picked up on, if a holistic view of the programme is not clear to the decision-makers.

4.2.5 Professional bodies as hegemonic stakeholders

When participants were asked why they did not implement more digital skills both at a programme level and at a module level, all participants cited that this was practically impossible due to the pressure and restrictions caused by the four main PABs in Ireland - Association of Chartered Certified Accountants (ACCA), Chartered Accountants Ireland (CAI), Certified Public Accountant (CPA), and Chartered Institute of Management Accountants (CIMA), in granting exemptions for the technical modules on the programme.

When universities run programmes that seek external accreditation, policies, and procedures must be in place that is adhered to and reviewed regularly. To satisfy these requirements constantly and consistently, often forces universities to alter their programmes, modules, and even down to the language they use in their learning outcomes to satisfy these external requirements. This type of expert power often leaves universities with no choice but to satisfy professional bodies as dominant stakeholders. The prestige of gaining such external accreditation, in this case, in the form of exemptions for technical accounting subjects, is deemed more beneficial than the lack of autonomy to be able to decide at the university level what goes into accounting modules and programmes.

There seems to be an understanding that one of the main objectives of these accounting programmes is to not only achieve exemptions from professional

bodies at the end of the programme, but to achieve the maximum number available is seen as a badge of honour and a marketing tool. Universities use the number of exemptions offered to students to compete with other universities offering similar programmes. In the case of the campuses in this study, this benchmark was used to compete against each other, even though they are now a united institution. This can be demonstrated in Figure 4.1 below which shows extracts from the programme information page of each campus's websites in this study, advertising their honours accounting programmes. Slogans such as "*no other university in Ireland offers more exemptions from professional examinations"* and another stating you obtain *"maximum exemptions"* and *"unbeatable exemptions"* all demonstrates the importance of exemptions as a marketing tool to attract students to their programme.

Website 1

- ALL CAP1 examinations with Chartered Accountants Ireland
- 9 of the total 13 examinations with ACCA
- ALL examinations up to Professional 2 Stage with CPA (Certified Public Accountant)
- Certificate and Operational Level with CIMA (Chartered Institute of Management Accountants)

No other university in Ireland offers more exemptions from these professional examinations.

Website 2

Maximum exemptions from the examinations of professional accountancy bodies including ICA, ACCA, CPA, and CIMA (subject to annual review).

Website 3

This degree gives unbeatable exemptions from the exams of the Association of Chartered Certified Accountants (ACCA), Chartered Accounting Ireland (CAI), and Certified Public Accountants (CPA), in addition to exemptions from The Chartered Institute of Management Accountants (CIMA).

Figure 4.1 Extracts from the 3 campus websites promoting their exemptions from professional bodies.

This influences the power dynamic of professional bodies over higher education institutions. The need is so strong to seek external validation that it comes at a cost of restrictions in the programmes from many areas including programme content, design, and delivery. The professional bodies very much "*lead the*

way" (P8) in all areas here and supports the notion that accountants are a homogenous group, in that there is no flexibility in criteria requirements, and once the tick box exercise is carried out, exemptions will be granted. We can see below how participants valued the importance of exemptions and the effect this validation has on staff.

> We retained our exemptions just last week, so the professional bodies are pretty happy with what we're doing in our modules to map to their requirements. (P3)

A knock-on effect of gaining exemptions is often pressure on staff to comply with requirements that sometimes they are unsure of. Staff often feel that the requirement of the professional bodies can be somewhat vague. They also move at a fast pace when incorporating the latest buzzwords into their syllabuses, without explaining to HE staff how they go about implementing these new buzzwords into programmes.

> Although professional bodies tell you what they need to satisfy requirements, they don't necessarily tell you how to do it. They are all into buzz words but how do we go about implementing these into our modules? No one tells you that. Professional bodies, tend to focus on cool stuff like AI (Artificial Intelligence). But they don't tell you how to go about implementing it. Professional bodies will go off at the advanced stuff straight away and move quickly from one thing to the next. But how do we move like that? (P11)

As can be inferred above, while professional bodies may dictate the content to be covered on exemption modules, they do not necessarily demonstrate how this is to be achieved, especially when they are incorporating new concepts into their syllabus, which are primarily due to the fast-paced change of the accounting environment. A lot of this change is linked to technology, particularly

incorporating buzzwords such as AI, big data, data analytics, and blockchain to name a few. However, none of the exemption modules displayed in Figure 4.4 insist on any digital skill development, both throughout the module or on assessment. These modules focus solely on technical content and exams in a traditional exam hall with pen and paper.

4.2.6 External pressures from dominant stakeholders

It was apparent throughout this study, that exemptions obtained from PABs were of prime importance, and were used to some degree as a tool to measure the quality of the three accounting programmes. The participants regularly cited how important the number of exemptions that can be achieved by studying their programme was, and regularly promoted themselves against the other campuses in the study (See Figure 4.1). This resulted in a strong overall focus on exemptions which everyone in the study cited as restrictive to some extent.

> We're primarily driven by exemptions with professional bodies. It is all about getting as many as possible. So we haven't much leeway. (P6)

> Exemptions are the key thing you know, you can't mess with the exemptions. (P18)

And while the pressure to achieve and maintain exemptions is at the fore of the whole programme, it affects and restricts staff in many ways. Here we can see how one participant describes how they "*dumb down (P2)*" their delivery because of the content they must cover. This may suggest that exemptions to a large extent remove autonomy from staff to make content more engaging and perhaps more relevant, but they are restricted in that regard because of the

content they must cover.

> We are under pressure. We have to cover particular content to get exemptions. We have to do it in as little time as possible. (P9)

We can see below similar issues, but this time with covering content that is not required in the workplace for this cohort of students (based in the Northwest of Ireland, that largely go into small practices). The current programmes are covering content that is very far removed from the reality of the workplace, and pushing this demographic of a student hard will also contribute to possible issues with retention.

> If we are selling the accounting programme as maximum exemptions and we are pushing the students hard, even covering more than what's required we have to think about a) what this does for retention and b) what the students realise under this pressurised environment that they don't want all the exemptions anymore. Are we pushing them too hard? They can still go on and do professional accounting without all the exemptions and do employers even care? Especially when they are in training contracts anyways. (P8)

Currently, this new university structure, (and the old Institute of Technology structure) is competing for exemptions with the traditional universities. This seems inequitable for student's especially when you look at the demographics of each student from an entry point of view. To apply to do the accounting programmes covered in this study, the points entry requirements range from 312 - 315 points in the Irish leaving certificate exam. However, students applying for a similar programme that offers the same professional exemptions need over 500 points for the traditional universities. It is then questionable as to whether we should be competing with them on exemptions. Some participants

found it was not fair to push our students so hard to gain the same level of exemptions as students who have much stronger entry requirements. It is perfectly acceptable that we should be competing on a different level by providing our students with a more rounded experience.

> We have maximum exemptions, which is our big marketing thing. And my view is we're competing with colleges in Dublin saying that we have maximum exemptions. But the students that are going to the universities in Dublin have higher points. They are different types of students. And you come to this side of the country and we're competing with them on that level. But our students are a different and more diverse and more inclusive type of student. (P22)

Following on from this comment, this participant was then asked how they think more digital skills could be implemented into the programme to which they replied:

> The focus of the programme needs to change from all about the exemptions. That shouldn't be the selling point because it has to offer more than saying you are great at competing with the big universities. (P22)

But not everyone agreed that exemptions were so important, and that giving students a more holistic experience was more important than just a narrow exemption focus.

> If you are broadening your programme you would produce a better graduate, than a graduate purely focused on maximising the exemptions. If in one college you do this course and you get all the exemptions, and in another college, you don't get all the exemptions, but you get a broader kind of education, that is more beneficial I think in the long term. (P8)

While having exemptions can benefit the programme focus and give credibility and validity to a programme by the endorsement of professional bodies. It is often experienced as being too restrictive and too focused on technical accounting. This is to the detriment of not being able to offer accounting students a broader experience. This broader experience could be more aligned to the other non-technical skills that are deemed necessary for today's workplace. Continuing to pursue professional exams while simultaneously working does help develop some the skills necessary to pass these exams, especially digital skills to a certain extent. However, it is evident that there is a lack of opportunity to acquire these skills before students embark on their first job after graduating from college.

4.2.7 Misalignment and rigorous rules on assessments

There is a heavy focus on how exams are conducted in HE to obtain professional accounting exemptions. All professional bodies insist that exams must be conducted in an exam hall, supervised setting using the closed book method, or using the online proctoring method. During the pandemic, all these exams were conducted using an online proctor. After the pandemic, HE s insisted on reverting to the traditional exam hall. Participants in this study had mixed feelings about reverting to the exam hall. One contributing factor to their ambivalence stemmed from the fact that the professional bodies have all transitioned from traditional exam halls to online proctored, closed book exams. This mandatory examination format does not incentivise participants to incorporate digital skills, particularly those related to Microsoft Excel, into their coursework. This becomes apparent when students are still required to use pen

and paper during the final exemption-based modules, held in traditional exam halls.

> I think we're missing what the professional bodies are doing - 500 students in the gym doing their exams, I think everything should be proctored online. We have to integrate assessments more - we don't use digital enough. Why can't we retain proctoring for the accounting? And not just accounting. All the resources that go into an exam hall - paper, exam papers, notebooks, supervision. It's so old. Its madness. (P10)

Participants seemed to understand the need for closed book exams in this profession, even though it was not always viewed as the favoured method by the students:

> They also (students) do not like proctored exams and found them more stressful than the exam hall setup. (P12)

It was understood that online proctored exams are the way we should be moving forward. Not doing this fuelled participant frustration with the universities decision post-pandemic to revert to the exam hall. When asked why they thought this decision was made by the university, cost was cited frequently, but the accounting participants did not support this view. Even though acknowledging proctoring might be expensive to implement initially, the long-term benefits and costs, in their view, far outweighed the exam hall setup.

> I think why we did not continue with proctoring is about cost and attitude. (P13)

It is interesting to note that while professional bodies seem to dictate module content, exam setting and grades to be achieved to avail of exemptions, perhaps they could also use this power to have discussions with HE going

forward on the benefits of implementing digital assessments. Perhaps this sharing of experiences could assist HE in several areas including digital implementation of assessments going forward. They could also have discussions around "*taking the heat off gaining maximum exemptions" (P13)* by raising these and other issues with all stakeholders in this process including employers and students.

> I think it would help if the professional bodies would spend time with the third-level lecturers. I think there's a need for professional bodies, third-level institutes, the students, and employers to sit down and say, I think a revamp is needed of the system. But it has to come from the professional bodies. They talk a little bit you know about taking the heat off the exemptions and taking the focus off the exemptions. And maybe you know that third level shouldn't be as focused on the exemptions. But that's not so easy to say when employers still expect them to have a certain number of exemptions. (P13)

While there is a heavy focus on professional body exemptions, the typical training contract for a student leaving college and entering the workplace is 3.5 years. This means that a student enters a 3.5-year contract with often under-par pay, but with exams and study time included in the salary package.

If a student gains maximum exemptions, it is often possible to qualify as an accountant in 2.5 years. Given that a student with no exemptions can still qualify in the 3.5 years, perhaps employers want maximum exemptions as a short-term cost-saving measure. They should recognise that if this situation arises, there might be a need for additional investment in non-technical training, such as paying for graduates to complete Microsoft Excel courses, if it is identified that they lack the necessary skills in this area. Therefore, establishing a routine dialogue between key stakeholders in higher education, including

professional bodies and employers, could prove advantageous for all parties involved.

4.2.8 Speculation of effects of the new university structure

Like the UK education structure of pre- and post-1992, where education institutions with polytechnic roots were given university status, the same thing is currently happening in Ireland since January 2019. Institutes of Technology in geographical clusters are coming together and achieving university status. Participants of this study covering 8 campuses of 3 Institutes of Technology, are now part of one university under this new structure since January 2022. As interviews were carried out between March and June 2022, this new structure was still very much in its infancy. There was also quite a bit of uncertainty expressed by participants in how this is going to affect the accounting programmes going forward. Currently, each campus runs its own accounting programme to cater to the students in those geographical locations. This has led to some confusion as to how these accounting programmes are going to run in the future. As we can see in Figure 4.2, this study covers a large portion of the West and Northwest of Ireland, an area often overlooked from a research perspective in the HE spheres.

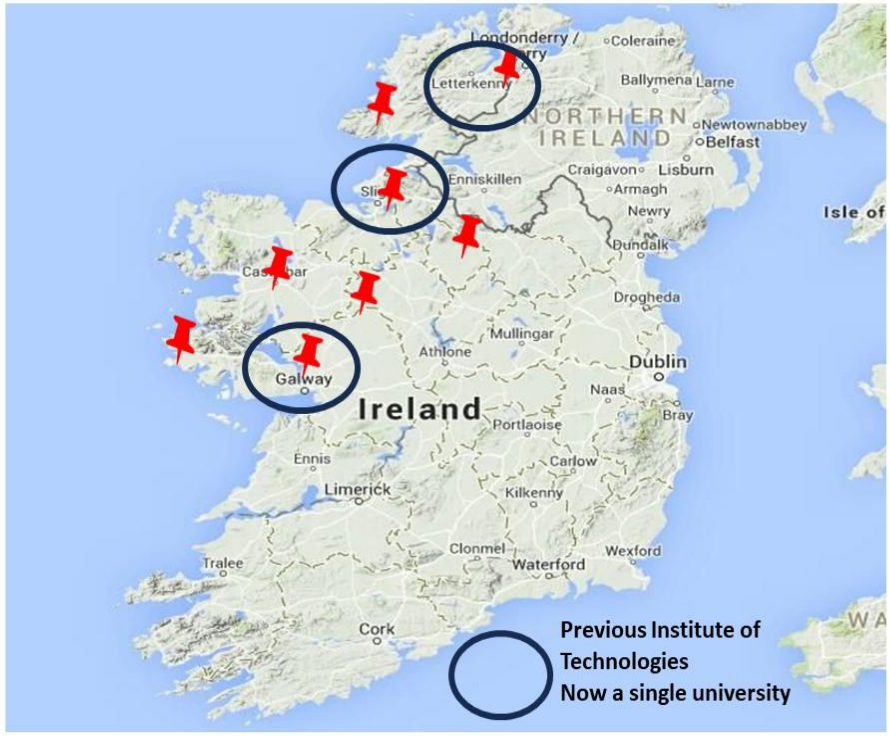


Figure 4.2 Location of participants across eight campuses

It was often cited that some of the challenges experienced by staff currently in the accounting programme, may be remedied with the new university structure now in place. By integrating the knowledge and expertise derived from three distinct accounting programmes, participants have expressed that this approach could offer enhanced support for a more comprehensive understanding of the programmes. It may also allow for a broader perspective beyond mere exemptions, creating space to incorporate additional digital skills in the curriculum.

> I think maybe now that we're a university, we can look at this a bit more holistically from the students' point of view. (P11)

However, other participants were not as hopeful, primarily due to the lack of communication by management to date. The speed at which change is implemented at university level, often left participants uncertain of the benefits or the general direction of the programmes on a possible amalgamation.

> We have 3 different programmes serving 3 different geographic locations, so I do not see how it is going to work. I don't see a clear pathway for this yet. (P1)

While another participant mentioned the possibility of a reduction of the three accounting programmes into one programme so that going forward, operating under the new structure, may make sense so that we are not inadvertently competing for students.

> I'm sure our accounting programmes are very similar because they're all working towards the same exemptions, they have to have similar content. I presume the idea somewhere down the line is to have one accounting degree. They could scale it to satisfy the three campuses, for example, one campus could do the face-to-face delivery, one campus could do an online element and another campus could do tutorials and questions. I don't know. Nobody knows and that's the problem. (P12)

While participants mentioned the possibility going forward of sharing resources and ideas with the other campuses, they felt the uncertainty at this stage would not encourage them to deviate too far away from the programme norm. This was influenced by the view that management could have other plans if all three programmes get amalgamated, which may result in effort wasted. Staff regularly speculated on what the future of the accounting programmes might hold, but in general there was a feeling of uncertainty. However, it was also noted that now with the new university structure in place, the university may be

in a better position to bargain with professional bodies about the possibility of relaxing exemption requirements. This new structure may also facilitate more frequent discussions on other topics such as non-technical skills, now that as one unit the new university has more students involved, resulting in a larger pipeline for professional bodies.

4.2.9 Pedagogic experiences linked to digital skills implementation

This section looks at the different challenges experienced by staff when trying to implement more digital skills in their modules. It looks at participants' views on the steep learning curve they endured during the pandemic. At this time, they had to implement lots of digital technologies in the online environment. Nevertheless, now they are not being allowed to develop further what they learnt at this time as they are forced to return to a full face-to-face environment. It also looks at the pedagogy of the talk and chalk experience, and how this method is particularly suitable for numeric subjects. It highlights how often technology speeds up the learning process to the detriment of student learning. This is further demonstrated by looking at Microsoft Excel as a passive teaching tool, rather than a more immersed student experience. It finishes off by looking at challenges at an institutional level that participants have experienced in several areas that stem from an overall lack of support at this level.

4.2.10 Experiences of digital delivery through the pandemic

The experiences of the worldwide pandemic that started in March 2020, accelerated the technological movement, and forced staff to embrace technologies in their delivery. This was often on the agenda of HEs for some

time before this, but in some instances, they were often unsuccessful in implementing digital technologies due to the resistance of staff for a myriad of reasons. However, when staff was left with no choice but to offer more flexible teaching through technology, many adopted an "*adapt or die" (P6)* approach and embraced the online environment. Even though many found it a steep learning curve, they found it beneficial and were open to some of the benefits that were experienced using technologies for delivery during this time. However, now that this period has past, and institutions insist on returning to the face-to-face environment, staff has had an experiential shift and no longer want to fully revert to methods pre-pandemic. Being forced to move back to a full face-to-face mode of delivery, they cited they have now experienced a loss of some of the benefits that technology afforded.

Participants want to implement and use what they have learnt during this time to improve delivery going forward. They are strongly resisting management's decision to insist that they just forget about the pandemic teaching experiences, and everything that was learnt during this time. They think it is backward and there is a real undertone of frustration with a few participants alluding that they are occasionally operating outside these instructions. We can see this demonstrated here:

> I have always said that I think we should deliver more online. Covid made us do that, but I don't think we embraced it fully. I think there is a lot more that could be done. Now Covid is gone, and we are back to the old ways. I tried to still deliver some parts of my modules online, but the head of school said no you can't do it. You're not allowed. And yet we're just going to forget Covid ever happened. Forget any of the lessons we learnt in covid. I don't want to be in here doing full face-to-face.

> It's a case of will I forget what I learnt during covid because I won't be using it? and the students are the same. (P10)

Not only were the potential benefits of lessons learnt helpful for staff during the pandemic but for students too:

> Students mentioned the benefits of recording lectures now we are back face-to-face. We don't have any choice. I didn't push it, but it seems to be face-to-face is what we have to do. (P23)

We can see how even though the technology was available (proctoring exams) to allow the campus to run the exams during a high-risk time during the pandemic, they still insisted that some students come into the exam hall setting. This backfired on one campus, resulting in a lot of negative publicity through the national press at the time. Perhaps while the college may have been trying to save money short term, they could have suffered long-term reputational damage in enforcing these decisions. It may also demonstrate an unwillingness of management to embrace technologies at a decision-making level. This in turn feeds down through a programme's inclusion and exclusion criteria for module formulation.

4.2.10.1 Importance of 'talk and chalk' as a delivery method

Several participants mentioned the benefits of talk and chalk as a pedagogic approach, especially when teaching numerical subjects on the programme. This delivery method was supported by the pace of the method in assisting students to learn. Sometimes the use of technology was cited as a speedier process that may not benefit students. One participant cited that using technology for the sake of technology is not the way. If there is nothing wrong with the traditional method of talk and chalk then why change? However other participants cited

that this method is outdated, as students only take a picture on their smartphones of the board anyway. Using this method all workings in class could be potentially lost, whereas using technology as a delivery tool e.g. Microsoft Excel, can be saved, reused and revisited at a later date.

> What I would do is talk and chalk. It has a massive place in any numeric subject. (P7)

However, some participants did mention using Microsoft Excel during class in the same way as they understood the talk and chalk method, and another mentioned that we should be moving forward from this method to implement more technology, otherwise, we are moving backward instead of forward.

> We'll be wrong if we go back to the traditional approach of presenting with talk and chalk. I think we are wrong. I think we'll have lost the mark, going backward instead of forward. (P10)

There appears to be two distinct opinions on whether talk and chalk should be used going forward, which seems to be heavily influenced by experiences of using technology during the pandemic. This could support a case going forward that perhaps we could use technology to assist with improved programme delivery, that allows students the option to reuse and revisit the technological resources. This reusing and revisiting of technological resources are not available to students when using the talk and chalk method.

4.2.10.2 Excel as a passive tool

Some participants who teach technical accounting subjects (staff who are also accountants) often mentioned that they try to implement more digital in their delivery, by teaching their subject by using Microsoft Excel as a teaching tool. One participant mentioned that using Microsoft Excel in this way was not a

choice but due to a lack of facilities e.g. size of whiteboards in some classrooms was too small. This forced them to use Microsoft Excel as larger volumes of information could be displayed in a smaller space, hence overcoming the inadequate board space issue.

> I deliver through excel as the board space is quite bad in a lot of our rooms as well. Some are lovely if you are doing T accounts (the format used for accounting ledger accounts) and they have lots of boards you can put them all up, but other rooms have very small writing space. So, this forces me to use more digital in my teaching, but the students are not necessarily using digital in their learning. (P4)

By using Microsoft Excel in this way, possibly to implement more digital skills in delivery, often raised other issues. It was felt that using Microsoft Excel as a teaching tool benefits staff more than students, and students were not at the forefront of the decision-making process when deciding to teach through Microsoft Excel.

The typical setting for teaching in this manner would be displaying Microsoft Excel through a projector onto a whiteboard. Students would not have access to Microsoft Excel in real time i.e. they would not be in a computer laboratory where they may be able to access Microsoft Excel themselves and input figures in real time. Instead, they are taking notes from Microsoft Excel and they often find the use of technology in this manner is often too fast for them to take adequate notes.

> When using excel there is a lot of zooming in. If you name cells rather than see numbers it can confuse the learning process. Whereas doing it by hand slows down the process and you are controlling the pace which is a big thing for students. (P14)

Yet, staff mention the benefits of using Microsoft Excel for them as less time intensive and work can be reused and saved for the students to reference later. Although this format differs from what the students use to take notes during class (pen and paper), it can create challenges when they need to reference the information later.

> I often teach via excel rather than writing everything up on the board. The advantage is I can save it afterward and the students then have the model answer in excel. When I was writing on the board it was gone but some of them do photograph it. Students don't necessarily like being taught through excel. Excel has its limitations as well in that you can't see exactly what is written out in excel. If you don't use excel slowly, they get annoyed very quickly. (P7)

Even though one participant cited "*you don't learn accounting, you do accounting*" (P7), but using Microsoft Excel in this way supports a more passive learning style which appears to be primarily benefiting staff not students.

> When you're looking at teaching accounting modules, my focus would be on accounting, not excel. I just use excel as a tool same as a white board marker, or a piece of chalk. I'd be just using that tool to deliver the accounting side. (P2)

It was found that there is no scope or time to teach Microsoft Excel when using it as a tool. Assumptions are made on student competencies in Microsoft Excel gained earlier in the programme, which in 2 out of 3 of the campuses was two years previous, in the first year. The disjointed design, along with the problems of using Microsoft Excel as a teaching tool when students are passive participants, suggests that students may benefit from active learning with Microsoft Excel, co-creating work with the lecturer.

Often throughout the study, participants cited experiences, including obstacles, that were often unique to them and their subject matter, in trying to increase digital capabilities in their module. For example, in one module, it was cited that a lack of access to raw data – large volumes of excel data that can be interrogated digitally, hindered the possibility of showing the students the specific software applications in that area.

> I'd like them to do the odd substantive procedure in excel but I do not have access to data to enable them to do that. (P1)

Others mentioned a lack of access to computer labs by the institution, and when they eventually gained access to such rooms, it was unusable due to printing restrictions, firewalls in place, and issues connecting to the wi-fi. Other participants also brought up concerns regarding timetables set at the beginning of the semester. If you haven't been assigned a computer laboratory slot at that time, you cannot request one later, as there's no flexibility.

> A few years ago, I said I want the students to do the exam on a PC. And could I book a lab and get the students to go in and they can just give them the exam paper? They can just type out the answer and print it out. Ah God, that nearly caused the whole system to go into meltdown. It was totally impossible. I just wanted them to use the internet first and print out their answers. It could not be done. I have done this in classes around Europe but not here. (P5)

When participants were asked if there was any way around needing a computer laboratory when it was not scheduled in the timetable, some mentioned the possibility that students could perhaps bring in their laptops. But then not everyone has access to a laptop, which even post-pandemic is still an issue. Then by the time an effort is put into getting everyone a laptop, it was deemed a

total waste of time.

> If I brought in digital quizzes in class I can't do it because a student says I don't have a laptop what can I do. I've got to the stage now why would you bother bringing in digital skills? If you can't do those tests and use those digital products in the classroom. It is just a waste of time. (P7)

This demonstrates a lack of motivation from staff to implement more digital into their modules, as they feel they are up against it at every corner they turn. From the lack of adequate classroom facilities to the unsuitability for students of delivering through Microsoft Excel, the lack of availability of much-needed computer laboratories, and students not having their laptops, it gives us a better insight into the continuous challenges faced.

4.2.11 Lack of institutional support

A regular factor that was cited as an obstacle to introducing more digital technologies throughout modules was an overall lack of institutional support. This lack of support was in the form of time allocation, training, and other support to assist staff in implementing digital practices into their modules. Participants mentioned when they came up with ideas for possible implementation of new software, they were often left to research this by themselves e.g. sourcing suppliers, and calculating costings, often in areas beyond their expertise. Once this information was collated there were then often told it is unfeasible, which left staff demotivated and frustrated. Heavy teaching loads were cited as the main reason that staff was unable to get the time to research the technologies available.

> I have tried to get the college to get some accounting packages

> in the past, but I was told off you go and find out myself. I don't have time for that. (P17)

Furthermore, each participant was queried about a hypothetical situation in which financial resources were unlimited, and they were prompted to envision how they would utilise technology to enhance their practices. The most common answers were paraphrased as follows:

- Less lecturing hours leaving time to explore technologies.
- Have good reusable resources possibly in the form of more professional recordings and online quizzes.
- Larger computer laboratory classes with a layout suitable for assessment.
- Staff training on software packages and staff development on how to implement similar technologies across the programme.
- Proper technology for the task at hand eg. to support hybrid teaching.

It seems that due to primary pressures in the teaching timetable, staff does not have the time, resources, and often the required skills to research effectively potential digital opportunities that may be available to them. This would help to enhance both their capabilities and that of their students. Several participants mentioned that colleges are too focused on unit costs and being the leanest, which was deemed not a suitable model to be aspiring to in the education sector.

4.3 RQ3 - What are the factors to consider when preparing students for entering the digital workplace?

4.3.1 Uncertainty of workplace requirements due to the speed of change

The rate of change in the current business environment can present challenges for HE institutions to keep abreast of continually updating their programmes to

align and produce employable graduates. This is particularly challenging concerning keeping up to date with the digital skills requirements of today's workplace. We are often preparing students in this area for jobs in the future that currently do not exist eg. fifteen years ago, the role of social media manager did not exist. In this study, participants were further challenged in this area as 61% (14) of participants have been teaching full-time for over 15 years (Figure 4.1), and therefore by default have not worked in the industry for quite some time. This may leave them somewhat challenged concerning trying to implement and teach the latest digital skills, when they are possibly so far removed from the workplace themselves.

> I recognise my limitations. How long out of that world I am, in that respect, I accept that. So that is my limitation. (P6)

What was apparent was participants' opinions determining that the digital skill requirements in the workplace, very much relied on where the student ended up working. The Big 4 accounting firms placed more emphasis on a good all-round knowledge of digital skills including computerised accounts and payroll packages, along with competent Microsoft Excel skills. The smaller practices, where the majority of the students in the campuses of this study ended up working, there was less emphasis on this and more emphasis on the day-to-day digital skills for smaller firms like filing an online tax return, filing online with the company’s registration office, of which none of these skills are currently covered on any of the undergraduate accounting programmes.

> A lot of our students go into local practices and probably will never do a consolidation or use any fancy digital skills. It would be more beneficial for them if we covered stuff for small

> practices i.e. tax filings in a module, but it's just fitting it in. (P13)

While a common consensus was that the timetable doesn't allow room for digital skills, it is quite an important gap between what employers expect students to be able to do, and what they are not being taught in this area in the programme. While the pressures of professional bodies have a dominant influence over what must be taught, which more aligns with going into a Big 4 practice. Most students in this university end up in smaller practices in the northwest of Ireland. We do not appear to be equipping them adequately in this area for these types of employment. When this was questioned with participants some replied -

> We cannot be all things to all people. (P7, P8, P12)

However, it is essential to consider your audience in this scenario. Instead of engaging in a competition with traditional universities to see who can provide more accounting exemptions, it may be more advantageous to initially assess the demographics of our students upon enrolment and their post-graduation job placements. By doing so, we can tailor the programme to align better with the specific requirements of the employers our students are most likely to join upon graduation. This may also relieve the participants from pushing the students too hard, as mentioned previously, and pushing them into technical modules and content that they will possibly never use.

4.3.2 Cannot cover all computerised accounting packages

Several times participants cited the importance of computerised accounts, payroll packages, and Microsoft Excel. There seemed to be a strong awareness that

students must cover some type of computerised package before they entered the workplace. There were varying opinions on what packages they should know and how responsible staff were for implementing different computerised packages on a programme. When asked about covering accounts packages specifically throughout the programme there seemed to be two dominant opinions:

1) We cannot cover all packages there are so many packages it is unrealistic to cover them all.

> It is nonsense to consider that college could prepare them for all the different types of computer systems because there are so many different types, especially in multinationals. (P7)

2) Any exposure to accounts packages is beneficial. Even a basic start is helpful on any of the packages as they are all similar.

> The more exposure they get to different packages the better. (P13)

If we look at the 3 programmes below in Figure 4.5, we can see that no more than one semester (13 weeks) is dedicated to accounts and payroll packages in semester one, year two, of the three-year programme. These are identified as modules in Campus 1 – computerised accounts, Campus 2 – enterprise applications, and Campus 3 – computerised accounts packages. Typically, eighteen months will have elapsed by the time the student enters the workplace. It is an unrealistic expectation that students would have to remember how these packages operate with such a long lapse of time.

> They do a full module on computerised accounts and payroll and I would like to see that continue through subsequent years. One module is not enough in the middle of the programme. (P3)

While some participants cited this as a major problem in the programme, others cited that it was not an issue as most digital skills are learnt on the job anyways, as each job is different.

4.3.3 Siloed approach to employer relationships

Participants supported the notion that most digital skill requirements will be learnt on the job, as staff recalls their digital skills learning curve many years previously.

> They have moved on considerably from my time in practice. I suppose they're probably vastly more experienced and IT savvy in terms of what they are using now in practice. (P9)

There is an apparent gap in the digital skills required in today's employment versus what was experienced, in some instances, over 20 years ago on the steep learning curve of the digital landscape. But this is not what employers today want. They want students to be productive from day one. This is why stakeholder engagement with employers, and HE is so important in trying to narrow this expectation gap. However, participants mentioned in the study that all three campuses adopt a siloed approach to employer relationships, with often just one person per campus acting as the contact for that campus with employers. This was primarily based on personal relationships outside of the institution. This siloed approach is problematic as it excludes the other staff that may want to liaise with employers. For continuity purposes, it was mentioned several times, if that main staff member left that all contact with those employers would be severed. Institutions should heavily rely on employer relationships to keep them abreast of what is going on in the work environment.

Particularly now post-pandemic, when a lot of companies are employing digital technologies to carry out online interviews and remote working opportunities.

4.4 RQ4 - What are the perceived influences of programme design on digital skills implementation for these students?

This research question emerged from reoccurring themes in the data, as outlined in the introduction section of Chapter 4.

4.4.1 Challenges of programme design

The programmatic review encountered numerous challenges related to the programme design. Balancing the quest for maximum exemptions while ensuring the curriculum remains aligned with the dynamic business landscape proved to be a recurrent issue. This often led to staff feeling caught in a cycle with minimal overall program improvements, particularly considering the programmes extensive 180 credit, three-year duration (Figure 4.5).

When new competencies need to be included in the programme, it is often a dilemma as to what to exclude, to make room for these competencies eg. digital, sustainability, and new governance. This frequently sparks extensive debates, with exemptions consistently singled out as a limiting factor. Below are insights from discussions that occurred while considering the including of competencies both in the annual and semester-based programme assessment.

> The downside is it's a three-year course and it's only 180 credits. When you take out the number of credits that are needed to achieve your exemptions, you're left with very little. The wiggle room on the course is virtually zero. (P7)

When the programme was looked at on an annual basis

> What we've left is very little, 5 or 10 credits, that we have available. Then we're trying to push more IT skills into those slots, but we haven't much room for manoeuvring. (P6)

Then on a semester basis

> You are limited to 30 credits per semester, and you know what you must have, so it leaves very little scope for other things. Somebody said it's easy to see what you want to add, but what can you take out. (P5)

All campuses had decided at the time that these interviews were conducted, that they must have a data analytics module built into their programmes. This was scheduled to be implemented in the September 2022 semester. One campus had no choice but to place this module in year 1, which from a design point of view, the students would be working on data analytics when they would not be covering the topics that related to these skills until year 3. While staff acknowledged this was an issue, there was no room in the final year for it to be placed, and there were disagreements and debates across all three campuses on where to place this data analytics module.

> For this review, we were talking about introducing data analytics into the accounting degree, and we felt that was a skill that the students needed. And there was a lot of talk about it, but how could we fit it into a three-year degree when you're trying to get maximum exemptions? And you know everything else is needed. (P4)

> Data Analytics in semester 1 or 2 when they do not have accounting knowledge or appreciation for the data. (P5)

> There was a battle to get data analytics in because we didn't have the resources, but that's not a justification as to why something can't go in a course. We are doing courses around resources. That's not the way the real world works. (P8)

4.4.2 Issues with front-loading all digital modules.

As highlighted in section 4.3.1, digital skill modules are front-loaded in Year 1, spanning both semesters. The rationale behind this approach is to provide students with essential digital skills as a foundation for the programme. However, these modules, in their current placement, function independently, with no apparent effort to integrate these skills into other Year 1 modules or across other years of the programme. This fragmented approach deprives students of the opportunity to scaffold these skills and demonstrate competence by applying them to other modules.

	Year 1	**Year 2**	**Year 3**
Campus 1	Learning to lean (Semester 1) ICT,Business Information systems. (Semester 2)	Computerised Accounts (Semester 1 only)	Digital Business (Semester 1 only)
Campus 2	ICT in Accounting (Semester 1), Advanced Business Technology (Semester 2)	Enterprise applications (Semester 1 only)	Nothing
Campus 3	Information Technology 1 (Semester 1), Information Technology 2 (Semester 2)	Computerised Accounts packages (Semester 1)	Nothing

Table 14 - Digital modules currently on programmes

While participants are claiming they have no room to implement digital skills, particularly in the final year which is deemed important before they head out into the workplace, Campus 1 has successfully been able to achieve this. It should also be noted that there is an uneven spread between the three campuses between what is allocated 10 and 5 credit modules. This may influence this decision and should be noted that all modules in campus 2 are 5 credit modules see Table 4.6 below.

Campus 1 – Programme

Year	Semester 1	Credits	Semester 2	Credits
1	Learning to Lean + ICT	5	Economics	10
	Book-Keeping	5	Business Information Systems	10
	Personal Finance	5	Writing Skills	5
	Quantitative Methods	5	Financial Accounting	5
	Business Management	10		
2	Financial Reporting 1	10	Management Accounting 2	10
	Management Accounting + Finance	10	Company Law + Governance	10
	Computerised Accounts	5	Business Tax	10
	Law for the Business Environment	5		
3	Digital Business	10	Strategic Management	10
	Financial Reporting 2	10	Advanced Management Accounting	
	Business Finance	5	Finance	10
	Capital Gains Tax + VAT	5	Auditing	10

Campus 2 - Programme

Year	Semester 1	Credits	Semester 2	Credits
1	Financial Reporting 1	5	Financial Reporting 2	5
	Business Law for Accountants 1	5	Business Law for Accountants 2	5
	Business Mathematics + Statistics	5	Business Mathematics + Statistics 2	5
	Skills for success	5	Advanced Business Technology	5
	ICT in Accounting	5	Personal Finance	5
	Management Accounting	5	Management Accounting 2	5
2	Financial Reporting 3	5	Financial Reporting 4	5
	Principles of Microeconomics	5	Principles of Macroeconomics	5
	Principles of Management	5	Principles of Management 2	5
	Management Accounting Planning,		Management Accounting Planning,	
	Control + Decision Making	5	Control + Decision Making	5
	Company Law + Governance	5	Company Law + Partnership	5
	Enterprise Applications	5	Professional development for	
			Accountants	5
3	Financial Reporting 5	5	Financial Reporting 6	5

Year	Semester 1	Credits	Semester 2	Credits
	Finance 1	5	Finance 2	5
	Strategic Management Accounting 1	5	Strategic Management Accounting 2	5
	Strategic Management 1	5	Strategic Management 2	5
	Taxation 1	5	Taxation 2	5
	Auditing 1	5	Auditing 2	5

Campus 3 Programme

Year	Semester 1	Credits	Semester 2	Credits
1	Academic + Professional skills	5	Principles of Economics	10
	Management Principles and Business	5	Management Accounting 1	10
	Information Technology 1	5	Information Technology 2	5
	Business Mathematics	5	Marketing for Accountants	5
	Financial Accounting	10		
2	Management Accounting 2	5	Management Accounting 3	5
	Financial Management 1	5	Financial Management 2	5
	Computerised Accounts packages	5	Taxation 1	10
	Business Analytics	5	Corporate and Business Law	10
	Financial Reporting	10		
3	Principles of Strategic Management	5	Corporate Finance + Management Accounting	10
	Corporate Reporting	10	FRS102	5
	Taxation 2	5	Corporate Governance	5
	Audit + Assurance	10	Systems Thinking for accountants	5
			Professional Development	5

Table 15 List of modules and credits available on the 3 accounting programmes

4.4.3 Issues with the standalone digital modules

As mentioned above the front loading of digital modules in Year 1 are stand-alone modules, with no scaffolding of learning to bring what was learnt in these modules into other subjects such as financial accounting, and management accounting. Although, as noted previously, there is an expectation in these subjects that they can implement these skills, particularly in Microsoft Excel in

the new contexts of a different subject/module.

> I think that's something that we need to address more and embed more not just in separate modules. (P4)

If the programme teams at these campuses are facing difficulties, as mentioned earlier, with the integration of the data analytics module, they might consider an alternative approach of incorporating data analytics into existing subjects rather than treating it as a separate module. However, this approach raises concerns about staff proficiency, as they may lack the necessary skills and practical knowledge of how analytics function in today's professional landscape. To successfully implement this integration across their modules, they would likely require institutional support for additional training and development in this area.

4.4.4 No scope for mandatory work experience

While the benefits of work experience greatly assisted students in developing their digital skills capabilities, there was once again no room to implement a work experience element in any of the accounting programmes.

> We cannot put work placement in programmes because of credits used up by exemptions. (P20)

There were also mixed views on the uptake of students on work experience and often there was no benefit to employers on taking students on for such a short period i.e. a few hours per week for a semester.

> Work experience is a good idea but very limited uptake as often students just want to get in and out of college as soon as possible. (P4)

While it was overall deemed a positive component to include work placement in

accounting programmes, it was acknowledged that because of time constraints, it was not possible to implement. However, all participants agreed that having a work placement element would benefit students in all areas, but particularly in the digital work environment, where experience gained would make them more employable.

4.5 Chapter Summary

In this chapter, the study addresses the overarching research question, what are staff perceptions of the importance of different aspects of digital skills for accounting students, both throughout their studies, and entering the workplace. It breaks each component of this question down into four main questions to allow for more in-depth analysis and insight. It then explores the different factors that influence the inclusion and exclusion decisions of including digital skills on accounting programmes.

While accounting skills are embedded in traditional philosophies, the rapid changes in the external environment are forcing change particularly digitally. Digital skills are connected to practically all skills required for today's workplace. However, implementing these skills at the required level is a complex task. Staff experienced many barriers, ranging from conflicting views about deciding what digital skills should be included at the outset of the programme, to not having any room to implement these skills into the programme due to the restrictions primarily imposed by professional bodies. It was also apparent that an overall lack of institutional support in this endeavour was evident, and there was hope that the new university structure might alleviate some of these issues.

When assessing the digital skills requirements of today's workplace, staff

mentioned difficulties with the speed of change, given that they often had no personal up to date insight into today's workplace environment. This area is so vast, it was deemed impossible to fully equip students for all workplace environments digitally. This could somewhat be bridged by employers informing HE of changes. However, all of the campuses in the study experienced a fragmented approach to employer relationships, which were often individual personal relationships with one staff member. There was no structure in place to foster and grow long-term employer relations at an institutional rather than a personal level. As this study was conducted at the end of a programmatic review process, the theme of programme design was particularly apparent throughout the interviews. While there was an acknowledgment that it was not ideal to front-load digital skills modules as stand-alone modules at the start of a programme, it was the only place they could be placed, and most agreed that a more integrated approach across all modules should be implemented. This was also the case for the inclusion of work experience in the programme, again citing no space even though every participant agreed it would benefit students, especially in the digital workplace environment.

It should also be noted that when participants were asked specifically how digital policy ie if there were any guidelines, rules, regulations currently in place that must be adhered to, none of the participants in this study were aware of any policy or resources available to assist with this, and participants cited that they did not know how or where to start in implementing digital technologies into their programmes.

Chapter 5 Discussion and Conclusion

This research aimed to investigate possible reasons why students on completion of an honours accounting programme, are not equipped with the required digital skills when entering the workplace.

To investigate this issue, this study used interviewing teaching staff, as a data collection process, on three honours accounting programmes across eight campuses in the Northwest and West of Ireland. The focus of the study was on the lived experiences of teaching staff, as they are deemed the most influential stakeholders in the accounting curriculum taught in HE. They are the final decision-makers at every stage of a programme, from inception through to continuous improvement which occurs through the periodic programmatic review process, usually every five to six years. They also have perceived autonomy in delivering their modules in line with programme learning outcomes, and they ultimately decide what is included and excluded overall in the programme.

The findings of this study primarily supported two classifications of skills for accounting students:

1. Technical accounting skills
2. Non-technical skills

While they were predominantly mentioned as two separate categories there is an apparent overlap between them. It was found that technical accounting skills are no longer just a standalone skill requirement for accountants due to the technological changes in the business environment.

Technical accounting skills are now deemed to be inseparable from the digital environment as the manual recording of accounts becomes extinct. However, digital skills are categorised as non-technical skills both in the literature reviewed to date and in this study. Technical accounting skills are the only skills that are of interest to the professional bodies concerning the granting of exemptions, however, as will be discussed later there is no digital requirement in this exemption process. Non-technical skills were classified as anything other than technical such as soft skills, which were primarily found to be communication skills.

While the subject-specific knowledge (technical) of accounting was acknowledged by most participants as the most important prerequisite for the success of accounting graduates, it will also demonstrate how due to rapid changes in the external environment, these technical accounting skills are now intrinsically linked to a student's digital skill requirement.

We can see in Figure 2.4 the classification of non-technical skills in the literature primarily spans four categories - soft skills, generic skills, transversal skills, and digital skills. While the literature also overlaps in the attributes describing these terms eg. critical thinking in the literature spans all four categories, there was a consensus that without some level of digital skill development, this would hinder abilities in other categories and attributes.

Not having adequate digital skill capabilities is now not only affecting soft skills but is now ranking in greater importance in the carrying out of technical accounting skills also. We can see this demonstrated in Figure 5.1 where digital skills that were previously situated under non-technical skills, are now spanning

both categories, highlighting the importance of these skills going forward.

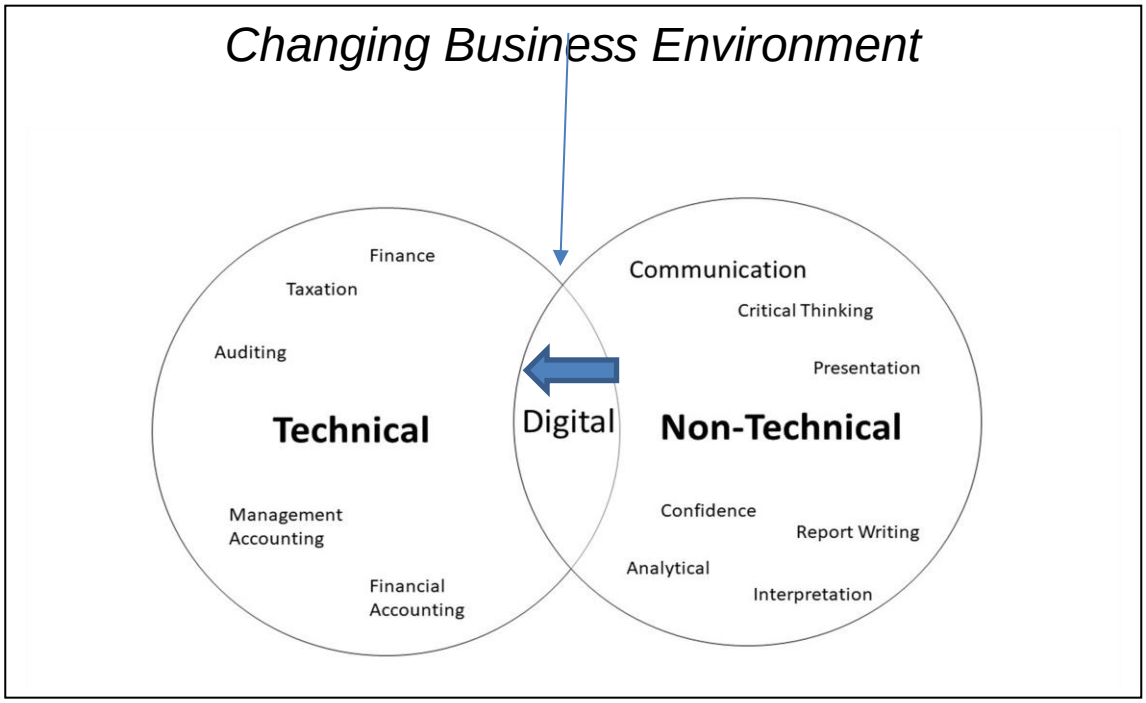


Figure 5.1 Primary technical and non-technical skills that were identified with the importance of digital skills moving across into technical skills

The importance of digital skills was also recognised in the CGMA Framework 2019, which intrinsically links digital skills with the top four skills identified in this framework as important see Figure 2.5. This supports the recognition of digital skills in today's spectrum of essential skills across all categories.

Students' digital skills on entry to HE tended to be at a very basic level for the most popular software packages in the workplace. While some staff claims that students have had reasonable exposure to Microsoft Office applications before entry to HE, others voiced concerns that students had very limited or no prior knowledge of the Microsoft Office suite. These variations in experiences often lead to a regular change in the programme design of digital skill modules every

five to six years through the programmatic review process. The change included either front-loading modules that covered this content at the start of a programme or leaving it out altogether on the assumption students had basic skills in these applications. This change occurred as staff initially supported the assumption that students had the necessary skills on entry, which resulted in the digital skills module being removed from the first year in one campus. This experience can be aligned with an underlying assumption that is associated with assuming today's students are "digital natives" (Watty et al., 2016, p.2). Students' technological competencies for social purposes do not necessarily transfer to other technology or contexts (Kirkwood & Price, 2005). But subsequently, it was then experienced that students were not starting programmes with these skills. They struggled overall digitally as a result of the absence of these modules, particularly concerning compiling and submitting assessments electronically. As a direct result of this experience the digital module was then reintroduced at the start of the programme, and there was a consensus that students are probably more digital social media savvy, than digital skills for the workplace savvy, and this module has remained in the first year since then see Table 4.6.

5.1 Re-Introducing the research questions

In Chapter 1, I presented an overarching research question - What are staff perceptions of the importance of different aspects of digital skills for accounting students, both throughout their studies, and entering the workplace?

To address this overarching question, four research questions were formulated:

- RQ1 – How are skills for accounting students understood and defined?

- RQ2 – What are the factors to consider when implementing digital skills throughout accounting programmes in staff members' lived experience?
- RQ3 – What are the factors to consider when preparing students for the digital workplace?
- RQ4 – What are the perceived influences of course design of digital skills implementation for these students?

5.2 Answering the research questions

The following are the underlying results of this study combined with the existing literature to amplify the perceptions of participants and answer the research questions. It explores how these perceptions are situated in the current body of knowledge and how it adds to the existing research in this area.

The first research question facilitated an exploration of the nuanced factors that shape participants' perspectives on the skills required for accounting students.

5.2.1 Persistence of Traditional Views in Accounting Education

This study revealed a prevailing notion that accounting remains rooted in tradition, which supports the historical landscape of accounting that has long been characterised by its traditional and technical foundations. This perspective tends to isolate accounting from external influences of the changing business environment. Although technical skills have traditionally formed the bedrock of accounting, there is a growing imperative to revolutionise the pedagogical approach and infuse digital proficiencies into the realm of technical accounting subjects. It is not enough that students can operate a technical accounting system using traditional methods, but it is a core requirement that they can

execute such tasks using electronic means, a core requirement in today's business environment.

This study demonstrates a strong inclination towards traditional teaching methods (talk and chalk), supported as a preferred method for subjects that were heavily numeric in content, such as technical accounting subjects. Accounting was perceived as a static field, thus justifying traditional pedagogies. This stance starkly contrasts with the literature (Christensen, et al., 2019, Kotb et al., 2019) that criticises traditional teaching methods as outdated. Modern educational paradigms emphasise digital skills, recognising a transformative shift in professional requirements (Tsiligiris & Bowyer, 2021). Participants in this study focus on traditional accounting competencies, with little acknowledgment of the need for digital literacy and skills. The literature (Bastos et al., 2021; Kotb et al., 2019) indicates a significant shift in the skill set required for modern accountants, moving beyond conventional knowledge to include technological proficiency and adaptability in a digital economy (Vasarhelyi, 2010).

There is a conflict between viewing accounting as a traditional field and acknowledging the rapid changes it is undergoing. This conflict reflects a broader struggle within professional education, as described by Römgens et al. (2020). The challenge lies in preparing students for an evolving job market, where the future is uncertain and where technology plays an increasingly significant role. The need for a shift in focus to include more technology and digital skills in accounting programs is clear. The literature stresses the

importance of functional skills and strategic understanding of ICTs (Helsper & Eynon, 2013), reinforcing the findings that contemporary accounting education must transcend traditional boundaries, and embrace a more technologically integrated approach.

In conclusion, the findings of this study highlight the critical intersection between the evolving role of accountants and the imperative to incorporate digital skills into their education. This aligns with the broader themes in the literature concerning the need for educational adaptation in the face of rapid technological change. The study underscores the urgency for curriculum reform in accounting education, reflecting the industry's shifting demands, and preparing graduates for a digitally integrated professional landscape.

5.2.2 Evolving Role of Accountants

Accountants are diversifying into various organisational roles, necessitating a broader skill set beyond traditional accounting. This shift is reflective of the dynamic nature of professions in the digital age, as noted by Ghani & Muhammad (2019). The need for adaptability in the face of technological advancement, is a common theme in literature and is particularly relevant in the context of accountancy, a profession traditionally viewed as static.

There is a growing emphasis on digital skills in accounting, with technological advancements leading to automation and changing the nature of routine tasks. This is consistent with the literature (Van Laar et al., 2017; Armah & Van Der Westhuizen, 2020) that emphasizes the necessity of digital skills in the 21st century. The concept of digital skills has evolved over time, becoming more

nuanced and integrated into various professional disciplines.

5.2.3 Conflicting priorities between technical and non-technical skills

The research highlights the importance of technical accounting skills, emphasising subject-specific knowledge in areas like Financial Accounting, Management Accounting, Auditing, and Tax. These skills align with traditional accounting education, and are often linked to professional body exemptions.

The literature reinforces this view. Carvalho & Almeida (2022) emphasize the need for accounting programmes to identify and integrate profession-relevant skills into curricula, which includes these technical skills. Both the findings and the literature underline the continuing relevance of traditional, technical accounting skills in education. This suggests a consensus on the need for strong foundational knowledge in specific accounting subjects, reflecting industry standards and professional requirements.

The research also identifies a broad range of non-technical skills, often referred to as "soft skills," including communication, critical thinking, digital skills, confidence, presentation skills, and professional teamwork. There's a notable emphasis on communication skills, with concerns about students' proficiency in this area. Tsiligiris (2021) and other sources acknowledge the importance of soft skills, including emotional intelligence, teamwork, adaptability, and communication. The literature also highlights the blurring lines between different skill categories, like soft, generic, and transversal skills.

Both the findings and literature suggest a growing recognition of the importance of non-technical skills in accounting education. However, there's a disparity in

how these skills are defined and understood. The emphasis on communication skills in the findings aligns with the literature's focus on soft skills but highlights a need for clearer definitions and teaching strategies.

In the exploration of participant perspectives, the significance of digital skills emerged as a focal point for only 17% of respondents. This figure appears notably modest when contrasted with the study conducted by Tsiligiris & Bowyer (2021), where digital skills were deemed among the top four essential skills for accountants. This incongruence underscores a clear disparity in prioritisation between the perceived importance of digital skills by employers and the participants in this study. While some educators advocate for the continued primacy of technical skills (Rackliffe & Ragland, 2016), employers exhibit a distinct shift towards valuing soft skills over their technical counterparts (Al-Htaybat et al., 2018; Banasik & Jubb, 2021; Carvalho & Almeida, 2022; Ghani et al., 2018; Ragland & Ramachandran, 2014; Tsiligiris & Bowyer, 2021).

This divergence lies in the evolving needs of employers, who increasingly prioritise skills adaptable to diverse contexts, deeming them more valuable than specialised technical expertise (Ghani & Muhammad, 2019). Consequently, the misalignment between the emphasis on technical skills by teaching staff and the preference for non-technical skills by employers, creates a disconnect in the preparedness of students for the workforce. Addressing this discrepancy necessitates a robust discussion on fortifying the collaboration between universities and employers.

Nevertheless, caution is warranted in not overemphasising soft skills at the expense of core accounting concepts, as warned by Collins (1983). Employers

should also bear a responsibility in fostering the development of digital skills (Maxwell et al., 2010). Further investigation into this misalignment from a teaching content perspective, revealed that educators attribute much of this discrepancy to professional bodies. These bodies, deeply entrenched in a focus on the technical facets of accounting, contribute to the misalignment. Notably, the literature review uncovered a lack of mention in prior studies about educators citing professional bodies as a barrier to digital skill implementation. The absence of digital skills within the exemption modules, despite professional exams being conducted online, accentuates the conflicting dynamics. Professional bodies insisting on traditional pen-and-paper exams for exemption criteria, while recognising a deficit in digital skills, raises questions about their commitment to adapting assessment methodologies.

Some literature acknowledges professional bodies' acknowledgment of their deficiency in digital skills (Banasik & Jubb, 2021). Kotb et al. (2019) posit that professional bodies assume digital skills should be acquired at university. This places an undue burden on academic institutions, especially when professional bodies do not actively collaborate with universities to facilitate the integration of digital skills, notably in their exemption processes. This highlights a need for a more collaborative approach between educational institutions and professional bodies to ensure that students are equipped with the relevant skills demanded by the evolving landscape of the accounting profession.

5.2.4 Digital Skills – Broader view

There's a misconception among participants that digital skills primarily equate to proficiency in Microsoft Excel. However, the findings suggest a broader view,

where digital skills are integral to other competencies and are essential for modern accounting practice. The literature reflects this broader perspective, with digital skills identified as critical for the future of accounting. Studies by Iordache et al. (2017) and others indicate that digital skills are not just standalone competencies but are interwoven with other skill sets. Both the findings and literature underscore the critical role of digital skills in accounting education. However, there seems to be a gap in understanding the full scope of these skills in the academic setting. This gap presents an opportunity for educational institutions to broaden their digital skills training beyond traditional tools like Excel.

5.2.5 Communication skills are intrinsically linked to digital skills

The findings of this study illuminate a significant gap in the skillset of contemporary accounting students, particularly in non-technical areas, with a pronounced emphasis on communication skills. Over 70% of participants highlighted communication as a critical skill lacking among these students. This aligns with the literature, which emphasizes the evolving skill requirements in accounting education (Carvalho & Almeida, 2022; Tsiligiris, 2021).

Participants noted that accounting students often exhibit poor communication skills, especially in written forms like emails, and tend to be more introverted, affecting their class participation and engagement. This observation corroborates the stereotype of accounting students as a homogenous group, primarily introverted and less communicative, a topic explored in section 4.3.2. However, it's crucial to consider whether these perceived deficiencies are inherent or a result of the educational environment and curriculum design.

The study also reveals a discrepancy in the understanding and application of digital skills within the accounting curriculum. Participants frequently equated digital skills with proficiency in Microsoft Excel, overlooking other vital digital competencies. This narrow interpretation could be a contributing factor to the perceived poor communication skills of accounting students, as they might not be exposed to a broader range of digital tools that facilitate effective communication and collaboration.

In contrast, the literature review suggests a broader categorisation of necessary skills for future accountants, encompassing ethical, digital, business, and soft skills (Tsiligiris, 2021). This classification, however, varies across different studies, with digital skills alternatively labelled as soft, generic, or transversal skills. The ambiguity in defining and categorising these skills points to a potential misalignment between educational focus and industry requirements.

5.2.6 Homogeneity of Accounting Students

The research suggests a perception of accounting students as a homogenous group, particularly in terms of communication skills and introverted tendencies. This aspect is less discussed in the literature reviewed. However, it raises an important point about the diversity of student skills and personalities, which may not be adequately addressed in current curricula. The perception of homogeneity among accounting students, as observed in the findings, contrasts with the varied skill sets (technical, soft, digital) highlighted in both the findings and literature. This suggests a need for more personalised and diverse approaches in accounting education to cater to different student strengths and learning styles. The research findings and the literature both emphasize the

importance of a well-rounded accounting education that includes technical, non-technical, and digital skills. However, the research reveals gaps in the understanding and integration of these skills, particularly non-technical and digital skills, in accounting programmes. This suggests a need for ongoing curriculum development to better prepare students for the evolving demands of the accounting profession.

5.2.7 Fostering a Holistic View of the Program: Addressing Communication Gaps and Siloed Responsibilities

A critical aspect influencing the overall effectiveness of a program is the presence of a holistic view among the staff. The absence of such a comprehensive perspective can manifest in various challenges, including deficient communication, compartmentalised responsibilities, and a lack of collaboration within the programme group. Communication breakdowns often arise when staff members responsible for different facets of a program fail to communicate effectively. Despite thriving informal interactions among colleagues, this cohesion may not extend to formal collaboration during programmatic reviews, particularly exacerbated by the shift to online platforms due to the pandemic. The virtual environment poses challenges in capturing nonverbal cues, further hindering effective communication among staff. This lack of communication can result in a limited awareness of the programme's overall goals, content, and structure. A myopic focus on individual modules can lead to a siloed approach to responsibilities, neglecting the broader program perspective. Modules, especially those focused on digital skills, may operate independently, contributing to a fragmented view of the program. For instance, digital skills modules often function as stand-alone components in the first year,

lacking integration with other modules. This compartmentalisation hinders the transferability of digital skills across various subjects, particularly in numerical-based modules, limiting students' ability to develop specialised digital competencies. The piecemeal adaptation of accounting programs to a technology-driven business environment, as noted by Andiola et al. (2020), reflects the need for systematic changes, as underscored by Polimeni & Burke (2021).

A holistic program view is obstructed by a lack of collaboration among staff members, inhibiting the recognition of connections between different program topics or modules. Instances were noted where staff members were unaware of how their module contributed to the overall programme, highlighting the need for improved collaboration. Discovering module crossovers from student feedback, as observed in one instance, underscores the importance of comprehensive knowledge of programme content for effective implementation of changes. Addressing these communication gaps and fostering collaborative efforts among staff are essential steps toward cultivating a holistic view of the program, ensuring its coherence and effectiveness.

The programmatic review (PR) process in higher education is a pivotal moment for reflecting on and implementing changes in academic programmes. This study, conducted at the conclusion of a PR process across all involved campuses, provides fresh insights into the challenges and opportunities encountered by staff in adapting their curricula. This PR process was an opportune moment for faculty to step back and critically assess their modules in the context of overall programme objectives and workplace demands. However,

a surprising finding was the pervasive lack of holistic understanding of the programme among staff. Many participants were unaware of how their individual modules fit into the larger curriculum, leading to gaps that remain unaddressed. Additionally, the study highlights a sense of restricted autonomy among staff, coupled with feelings of being unheard or overlooked in decision-making processes. This lack of empowerment was more pronounced among non-accounting staff, who often felt dictated by the demands of professional bodies, particularly in reducing non-exemption module credits. Conversely, accounting staff frequently cited resistance to change due to fear of incorporating unfamiliar skills into their modules.

Understanding these dynamics is crucial in comprehending the complexities involved in integrating new competencies into programmes. The insights gleaned from this PR process reveal not only external constraints imposed by professional bodies, but also internal barriers within the accounting departments, impacting the inclusion of essential skills in the curriculum. This comprehensive understanding is key to addressing the challenges in curriculum development and fostering a more adaptive and responsive educational environment in accounting programmes.

5.2.8 Barriers faced by staff when trying to implement digital skills

While this research found certain participants failed to see the need or recognise the necessity for change that needs to be made in the current accounting curriculum, notwithstanding the digital shift that is undeniably taking place in the external working environment. Other factors influenced participants' unwillingness to adopt an open attitude needed to make necessary changes to

the accounting programmes. Staff's resistance to change was cited as one of the key barriers to digital skills implementation in accounting programmes (Thomas, 2020).

The primary barriers faced by staff in this study in trying to implement digital skills into existing programmes were experienced as:

- Resistance to innovation and digital skill implementation
- Lack of institutional support
- Preference for talk and chalk as a traditional method
- Lack of autonomy due to exemption requirements
- Lack of motivation influenced by the uncertainty of the new university structure
- Lack of structured employer relations – a siloed approach

When we compare these with the barriers most frequently cited in the literature in section 2.3.5.1 (see Table 2.3) they can be summarised as follows

- Resistance to innovation
- Lack of institutional support – through lack of resources, lack of time due to work demands.
- Preference for traditional methods
- Lack of interest

5.2.8.1 Educator Resistance and Adaptability Challenges

The study reflects a trend of educator resistance to changing teaching methodologies, potentially due to increased workload, lack of resources, or comfort with traditional methods. Staff resistance refers to the opposition or

reluctance shown by employees within an organisation towards changes, new policies, procedures, systems, or management practices. This resistance can manifest in various forms, ranging from subtle behaviours like reluctance, passive non-compliance, or scepticism, to more overt actions such as outspoken disagreement, active non-cooperation, or even sabotage.

This resistance is a well-documented barrier (Thomas, 2020; Watty et al., 2016) to the necessary evolution of accounting education. The literature suggests that overcoming this resistance is crucial for aligning accounting education with industry demands and technological advancements. There is an underestimation or lack of acknowledgment among the participants regarding the impact of technology on accounting practices and education. The literature (Pan & Seow, 2016; Berikol & Killi, 2021) emphasizes a 'revolution' in accounting due to technological disruptions, necessitating a corresponding revolution in accounting education.

5.2.8.2 Institutional Challenges in Digital Skill Integration

This study reveals that educators face significant obstacles, including inadequate time allocation, insufficient training, and a lack of comprehensive support for implementing digital practices. Educators' initiatives to introduce new software or digital tools are often met with the daunting tasks of independent research, supplier sourcing, and cost analysis, frequently leading to projects being deemed unfeasible. This process results in frustration and demotivation among staff, as evidenced by statements like that of P17, who expressed the impracticality of researching accounting packages due to heavy teaching loads.

The literature supports these findings, indicating that the rapid pace of technological advancement is not the only barrier to technology adoption in teaching. Factors such as a lack of awareness of resources (Polimeni & Burke, 2021), resistance to adopting new technologies (Abbas Zadeh, 2014; Blin & Munro, 2008; Keller, 2005; Kirkup & Kirkwood, 2005; Selwyn & Facer, 2007; Senik et al., 2013), and a misalignment of institutional priorities contribute to this challenge. Bloom (2002) and Hodgson (2005) specifically point out that many educators in the accounting discipline have not fully grasped the implications of technological advancements in higher education.

To address these challenges, Watty et al. (2016) emphasize the need for continuous support in engaging with new technologies. Studies like Lefoe et al. (2009) highlight the value of informal support mechanisms, such as 'corridor conversation' and 'at elbow support' in the early stages of technology adoption. Additional inhibitors include a shortage of IT-qualified staff (Johnson et al., 2014), and an institutional culture that prioritizes research over teaching, leading to a lack of incentive for integrating IT into curricula (Fazackerley, 2013).

While there is a clear recognition of the need and benefits of integrating digital technologies in higher education, particularly in accounting, significant barriers exist. These include institutional support issues, staff training and development gaps, and cultural resistance to change. Addressing these challenges requires a concerted effort from institutions to provide the necessary resources, support structures, and cultural shifts to fully leverage the potential of digital technologies in enhancing educational practices.

5.2.8.3 Influence of Professional Bodies on Accounting Education

The findings from this research indicate a significant influence of professional accounting bodies (PABs) like ACCA, CAI, CPA, and CIMA on the curricular decisions of higher education institutions (HEIs) in Ireland. This influence is primarily exerted through the granting of exemptions for technical modules, which has become a central focus for universities offering accounting programs. As reflected in the participants' responses, the pressure to conform to the requirements set by these PABs often results in a lack of flexibility and autonomy in curricular design, particularly concerning the integration of digital skills and technologies.

This situation aligns with the literature suggesting that PABs play a hegemonic role in shaping accounting education (Ferguson et al., 2005; Kotb et al., 2013). The power dynamics observed in this study confirm the notion that the accreditation and exemption process, dictated by these bodies, leads to a form of curriculum dictated by external entities rather than being driven by educational innovation or the evolving needs of the field (Kneale, 2018). The hegemonic influence of PABs has led to a situation where universities often prioritise achieving maximum exemptions as a marketing tool, as evidenced by the slogans used by different campuses. This practice underscores a significant shift in the focus of accounting education from a broad, holistic learning approach, to one that is primarily driven by the need to conform to the standards set by professional bodies. This shift is reinforced by the lack of emphasis on digital skills in the exemption modules, despite the rapid evolution of the accounting profession in the context of technology (Kotb et al., 2019).

The findings suggest that this hegemony of PABs results in a curriculum that is heavily focused on technical content, often at the expense of incorporating current and relevant digital skills. The educators' voices in this study reflect a sense of frustration and constraint, as they are required to align their modules with the often rapidly changing and vaguely defined requirements of the professional bodies, without adequate guidance or support. This situation not only impacts the curriculum but also places a significant burden on the educators, who are expected to swiftly adapt to these changes.

The hegemonic role of PABs and its impact on accounting education raises several concerns. First, it suggests a potential mismatch between the skills taught in university programs and those required in the modern accounting profession, particularly in areas like AI, big data, and blockchain. Second, it points to a potential erosion of academic freedom and innovation in curriculum design, as universities increasingly tailor their programs to meet the specific requirements of PABs, rather than broader educational goals or industry needs.

The findings of this study highlight the significant influence of PABs on accounting education in Ireland, with implications for curriculum design, educator autonomy, and the relevance of accounting education in the digital age. This calls for a critical examination of the relationship between HEIs and professional bodies to ensure that accounting education remains dynamic, relevant, and responsive to the evolving needs of the profession and society at large.

5.2.8.4 Challenges and Opportunities in Implementing Digital Competencies During Organisational Restructuring

The integration of digital competencies into academic courses is a critical topic in contemporary education, especially in fields like accounting that are rapidly evolving due to technological advancements. However, the literature reviewed reveals a gap in understanding the influence of institutional restructuring on the motivation to innovate curricula, particularly in the realm of digital skills.

This study's findings (section 4.3.8) highlight the complexities introduced by the new university structure, impacting the willingness of staff to undertake significant changes in the accounting programmes. The current scenario involves three honours accounting programmes, each housed in a different campus, yet now unified under a single university banner. This unification has inadvertently led to internal competition and redundancy, casting doubt on the future feasibility of running these parallel programmes. Such institutional uncertainties appear to significantly dampen the enthusiasm for introducing innovative elements, such as digital competencies, into the curriculum.

Amidst this restructuring, the programmatic review process revealed hesitancy among staff to integrate new concepts. This reluctance is partly rooted in the fear that efforts invested in curriculum development might become obsolete or irrelevant in the rapidly evolving structure of the new university. The apprehension of wasted effort in a shifting educational landscape is palpable among the participants.

The formation of the new university structure also presents unique opportunities. Participants expressed optimism that the consolidation might

eventually lead to more comprehensive skill sets being incorporated into the programmes. This new entity could potentially wield greater bargaining power in negotiations with professional bodies, potentially influencing the curriculum more assertively towards including digital skills. Moreover, an expanded university might attract a broader pool of employers, enhancing employment prospects for graduates and fostering more robust employer relations. The transition phase, however, is marked by a 'wait-and-see' approach, as faculty and staff await clearer directives from the management regarding the implementation of the new structure. This situation reflects a broader trend in higher education, where institutional changes often lag the pace of external professional bodies and industry demands.

While the restructuring of the university poses immediate challenges to curriculum innovation, particularly in the digital domain, it also opens avenues for future enhancements. The key will be in navigating these changes strategically, ensuring that the evolution of the academic programmes aligns not only with the new university's goals, but also with the dynamic requirements of the accounting profession in the digital age.

5.2.8.5 Enhancing Employer Engagement: Overcoming the Siloed Approach

The interdependence between universities and industries, particularly in the context of supplying a skilled workforce, is well-established. Universities have a critical role in aligning their programmes with industry needs, a task that has gained urgency with the digital transformation of the workplace and the evolving business ecosystems (Armah & Van Der Westhuizen, 2020). However, a key challenge identified in this study is the lack of structured, inclusive employer

relations within the accounting programmes, which manifests as a siloed approach to engagement with industry. Participants in this study, 83% (19 out of 23, as indicated in Table 4.1), have been teaching in higher education (HE) for over a decade. This longevity suggests a deep entrenchment within academic frameworks, potentially leading to a disconnect from current industry practices. This gap may impede the faculty's ability to effectively integrate relevant technology and workplace requirements into the curriculum, as well as to prepare students for an evolving professional environment (Thomas, 2020).

An aspect of concern is the centralised model of employer engagement, where each of the three campuses involved in the study relies on a single staff member to liaise with industry partners. Although some participants are content with this model, a significant majority express the desire for more direct involvement. This centralised approach potentially leaves many staff members out of touch with the latest industry trends and demands, particularly in relation to the local employment market. Furthermore, the personal nature of these existing relationships often creates barriers to broader staff engagement, especially for those not originally from the campus area. Participants have voiced a strong need for a more structured and inclusive approach to employer engagement. Expanding the circle of contact beyond a single individual per campus could facilitate a more consistent and comprehensive understanding of industry needs, particularly regarding digital competencies. This change could bridge the gap between employers' expectations and the actual skills students possess upon entering the workforce.

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5.2.8.6 Restrictions in programme design

The literature and findings of this study highlight several key challenges and considerations in the design and delivery of accounting programs, particularly in embedding digital competencies and work-integrated learning (WIL). The discussion will focus on the integration of digital skills in the curriculum, the placement of digital modules, and the feasibility of incorporating mandatory work experience.

1. **Integration of Digital Skills in the Curriculum**

The literature underscores the importance of embedding digital skills within the academic curriculum to enhance students' competencies and employability (Armah & Van Der Westhuizen, 2020; Kneale, 2018). However, the findings from this study reveal a disconnect between this pedagogical ideal and its practical implementation. The constraints of a rigid credit system and the need for exemptions limit the flexibility to introduce new digital competencies, as highlighted by the participants (P7, P6, P5). This rigidity echoes the broader concerns in the literature about the slow pace of curricular adaptation to the digital era (Andiola et al., 2020; Ng & Harrison, 2021).

2. **Placement of Digital Modules**

The study findings reveal that digital skill modules are predominantly front-loaded in the first year of the programs across different campuses. This approach, while providing an early foundation in digital skills, fails to integrate these competencies in subsequent years (Section 4.5.2). This fragmented approach contrasts with the literature that advocates for a more seamless

integration of digital skills throughout the curriculum to reinforce and contextualize learning (Ferns & Zegwaard, 2014; Jackson et al., 2017). Additionally, the uneven distribution of credits and digital modules across campuses further complicates this issue.

3. Feasibility of Mandatory Work Experience

The literature suggests that WIL components significantly contribute to the development of soft skills and employability of graduates (Freudenberg et al., 2011; Henderson & Trede, 2017). However, the findings of this study indicate substantial challenges in integrating work experience elements into the accounting programs, primarily due to credit constraints and the varied interests of students and employers (P20). This situation highlights a gap between the pedagogical benefits of WIL and the practical realities of program design and student preferences.

While the integration of digital skills and WIL in accounting programs is essential, its implementation faces significant challenges. A strategic approach that involves curricular flexibility, integrated learning, faculty development, and industry collaboration is crucial for aligning accounting education with the demands of the digital age.

Below we can see how opening a dialogue with PABs and employers can help address external barriers to digital implementation. Strengthening these relationships can assist in overcoming internal barriers faced by staff when implementing digital technologies in the programme.

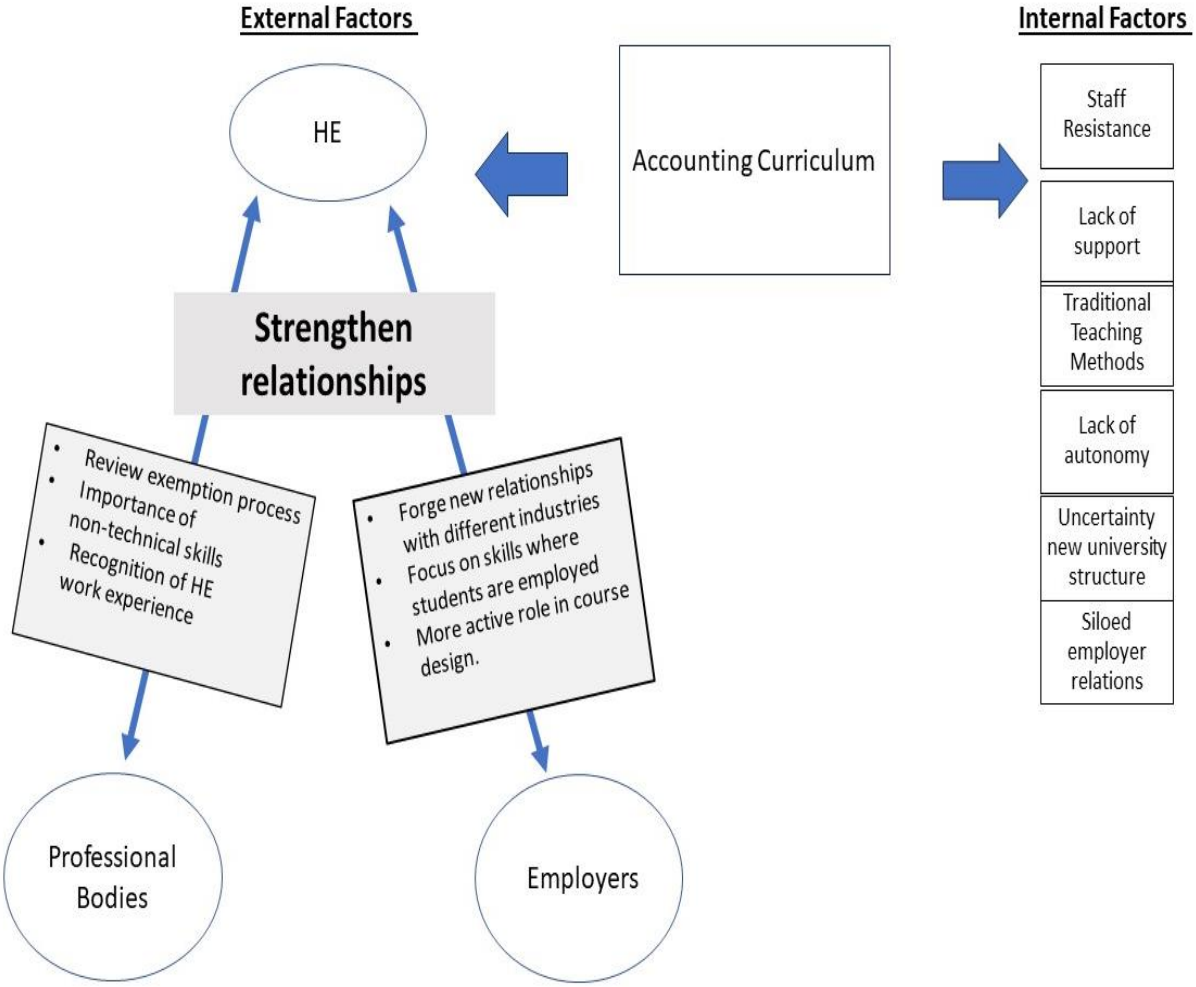

Figure 5.2 Recommendations to assist with the adoption of digital technologies into the accounting curriculum

5.3 Practice implications

This study was carried out due to my motivation to investigate why accounting students are leaving HE without the necessary digital skills to enable them to operate in the digital office. A particular aim was to identify from a staff's perspective the factors they face, initially with course design and then subsequent implementation throughout their different modules on the

programme. The next section offers recommendations, as highlighted in this study, that would assist staff going forward in the inclusion of these skills at programme level initially, and then at an individual module level.

5.3.1 More balanced relationship with professional accounting bodies

This study established the importance of HEIs gaining exemptions primarily from the four main professional accounting bodies (ACCA, ICA, CPA, and CIMA), that enhance courses as accreditation is seen as an endorsement and quality assurance process. This allows universities to advertise their courses as having links to industry and real-world applications, while fast-tracking professional qualifications (Al Mahameed et al., 2022). However, it can be argued that the dynamic of this process is imbalanced, with universities playing the role in this partnership as the one that is willing to make more concessions. In this setting, academics are required to consistently prove that the universities accounting courses, align with the standards and evolving criteria of the PABs. This often involves staff incorporating learning outcomes that go beyond what is required to ensure success in the process. This inclusion of excessive content was found often to cover content that may never be required in some accounting roles, and it pushes students too hard which affects enrolment and retention on courses. While there is a level of autonomy available to teaching staff in how content is delivered, the content itself and the assessment methods are heavily influenced by PABs. Staff in this study expressed concerns about mandatory examination formats, which primarily evaluate knowledge retention and basic application within a constrained timeframe in the form of a closed book, exam hall setting. It can be argued that students in such conditions

respond to questions without engaging in critical thinking, adopting an approach that prioritises speed and accuracy and omits any digital skill demonstration from the exam process. While PABs frequently do not highlight the HE paths to qualification when recruiting students, they should avoid undervaluing the significance of this student supply channel. Universities should assist in acknowledging the significance of incorporating soft skills into the accounting curriculum, resulting in more well-rounded graduates. Additionally, universities should consider the specific demographic of their students during the redesign phase of the programme. They could better cater to this student demographic by potentially reducing the number of exemptions offered, which will have a knock-on effect in alleviating some of the academic and student pressures concerning course content. Simultaneously, they could focus on enhancing softer skills such as professional digital proficiency.

5.3.2 Establishing a formal structure for employer engagement

The prevailing disjointed and disorganised employer relations cause limited input by employers into these programmes. This has resulted in a deficiency of staff awareness regarding the digital demands of the workplace. This situation has also led to a restricted emphasis on the employment practices of only a limited number of employers, consequently impeding the range of employment opportunities available to students upon graduation. There is a strong need for a more formal and structured approach to establishing more effective and sustainable employer relations going forward. This cannot happen without defining and supporting employer engagement activity, which can be assisted through the following processes:

- Ensuring strategic fit
- Identifying suitable partners
- Developing appropriate learning
- Funding
- Supporting culture and systems
- Staffing
- Persistence in sustaining, developing, and leading the partnership (Petrov et al., 2016).

These processes can be initially grouped, with the first four needed to start the process, and the next three established when sufficient funding is in place. The possible limitations of sustaining this relationship are how this is done when funding runs out, and who takes responsibility for ensuring the continuation into the future.

The policy set out in the PR process ensures a minimum level of engagement from employers. This took the form of a short questionnaire of two employers, in some instances, which was performed more as a tick box exercise, rather than a meaningful process that assists in enacting change in the programme. It is essential to formalise the processes described above and implement structured relations into the programme's policy.

5.3.3 Improved communication on course (re) design

The mapping and mutual understanding between the programme team of digital skills within accounting programmes are crucial. This will aid discussions of potential overlap between modules and allow for a more integrated approach

for these skills, rather than a stand-alone siloed approach at the beginning of a programme. Conversations regarding all modules, regardless of whether they are predominantly numerical or theoretically orientated, ought to incorporate a digital skill component as part of each module's learning outcomes. Furthermore, the integration of digital skill components should also be incorporated into the assessment structure, thereby fostering greater student engagement and participation.

This should be further supported by PABs who should encourage digital skill implementation as part of their exemption process. Moreover, the current national digital skill policy, as outlined in section 2.3.6.1, suffers from a lack of precision and is devoid of any mandatory requirement. Consequently, it is recommended to revise the programme policy to incorporate an external third-party accreditation for students. This accreditation would serve to showcase their adeptness in digital skills to potential employers. A prime example of such an accreditation is the Microsoft Office Specialist (MOS) certification. Funding for this initiative would need to be allocated by the university and the attainment of this certification could be integrated into the independent learning component of the programme. Notably, the MOS certification holds global recognition, attesting to a distinct level of proficiency, where accounting students could take relevant modules such as Microsoft Excel.

5.4 Contribution to knowledge

This research is particularly timely and unique, conducted in parallel with the establishment of a new university structure. This period also saw participants engaging in a programmatic review, a formal process of implementing changes

in academic programs. Such timing offers a unique vantage point, providing insights from individuals directly involved in enacting programme changes.

Methodologically, this study stands apart in its field. Unlike previous research on this topic, which did not utilise a grounded approach for data analysis, this study breaks new ground. In contrast to the predominant use of quantitative methods like surveys in past research, such as in the Joint Information Systems Committee (JISC) study by Armah & Van Der Westhuizen (2020), or the application of established frameworks like TPACK (Technological Pedagogical Content Knowledge) in Thomas (2020) and TAM (Technology Acceptance Model) in Watty et al. (2016), this study employs a grounded approach. This method was chosen to ensure a thorough exploration of the research questions, deviating from the common tendency among accountant-researchers to rely on quantitative analysis.

This study unveils fundamental findings that underlie its exploration, delving into an extensive review of existing literature within the subject domain. Leveraging this literature, the research enhances participants' perspectives, contextualising them within the current body of knowledge. Moreover, it contributes valuable insights to the ongoing research landscape in this specific field. Particularly in the following areas:

1. Lack of Autonomy due to Exemption Requirements:

This research makes a significant contribution to existing literature by specifically identifying how exemption requirements constrain autonomy in curriculum design within accounting programmes, particularly regarding the

integration of digital skills. While the limitation of autonomy in curriculum design due to exemption requirements is acknowledged in the broader literature, its direct effect on the incorporation of digital skills in accounting education has not been previously explored. This finding offers a nuanced understanding of the challenges faced in modernising accounting curricula, to include essential digital competencies.

2. Collaboration with Industry

To address the challenges in implementing WIL, universities could forge stronger partnerships with industry. These collaborations can help in designing meaningful work experiences that are beneficial for both students and employers.

3. Impact of University Structural Changes

The study uniquely captures the impact of a university's structural change on the integration of digital skills, a factor not extensively covered in existing literature. It captures a moment of significant transition in Irish higher education, offering insights into the challenges and opportunities posed by such institutional restructuring in the field of accounting education.

3. Faculty Development

Universities must invest in the continuous professional development of their faculty to keep pace with technological advancements and pedagogical strategies. Accounting educators should expand their interpretation of digital skills beyond basic tools like Excel to include a range of technologies and platforms that foster effective communication and collaboration.

4. Curricular Flexibility

Universities need to explore ways to increase flexibility in their credit systems to accommodate the evolving demands of the accounting profession. This might involve re-evaluating exemption policies and credit allocations to make room for emerging competencies.

5. Integrated Digital Curriculum

There is a need for a more integrated approach to teaching digital skills. Instead of isolated modules, digital competencies should be woven into various subjects, allowing students to apply these skills in different contexts. This approach requires faculty training and development to ensure they are equipped to teach these integrated skills.

6. Addressing the Homogeneity Perception

Educational strategies should be developed to challenge the stereotype of accounting students as a homogenous group, encouraging diverse personality types and promoting a more inclusive learning environment.

5.5 Limitations and further research opportunities

In this study, I have emphasised the pivotal role of staff members as primary decision-makers responsible for implementing changes in the HE accounting curriculum. This research provides a platform for their insights and perspectives. However, it is important to acknowledge that conducting the study during the highest level of COVID-19 restrictions in Ireland at the time, presented certain limitations. These restrictions prevented face-to-face interviews with participants, and as a result, staff members became the most

accessible group for this study. This was determined by the experience of conducting a previous study on a similar topic where the participants were new accounting graduates in the workplace. Sourcing participants for that study during this uncertain time was exceedingly challenging. Furthermore, this choice was also influenced by the prevailing circumstances which deterred me from including employers in the research. Given that many businesses were focused on survival during this uncertain time, engaging in research was not going to be among their top priorities. However, this does open an opportunity for a more robust, longitudinal study to include more stakeholders in the data collection process namely students, employers, and PABs.

This will give insights from all the main stakeholders involved in the accounting curriculum and may encourage the fostering and strengthening of relationships between these groups, as recommended in this study. This could also be expanded further by a larger geographical spread of universities and could be used in other undergraduate programmes that have a professional discipline attached such as engineering. Following on from this other research opportunities could focus on longitudinal studies to track the outcomes of graduates from programs that have successfully integrated digital skills and WIL components. This would provide empirical evidence of the long-term benefits of such curricular changes.

While the aspects of the uniqueness of this study are highlighted in section 6.5 above, this also contributes to issues of generalisability and repetition which are acknowledged as limitations in conducting qualitative research. While the findings of this study can be applied to any undergrad programme, it is primarily

situated in accounting education where there are more stakeholders to satisfy due to the professional nature of the qualification.

This study underscores the need for a paradigm shift in accounting education, moving away from a narrow focus on technical skills to a more balanced approach that equally values communication, digital literacy, and other soft skills. By aligning educational outcomes with the dynamic requirements of the accounting profession, graduates can be better equipped to thrive in the rapidly evolving business landscape.

5.6 Chapter Summary

This chapter reintroduces the research questions and provides comprehensive answers by integrating the findings of this study within the existing body of literature. It not only situates these findings in the current academic discourse but also underscores significant contributions to the understanding of digital skill implementation for accounting students. The chapter offers practical recommendations to tackle the identified challenges and underlines unique contributions that enrich the existing knowledge in this field. Furthermore, it recognises the limitations of this study, suggesting avenues for future research to enhance and build upon these initial findings.

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