

Understanding the variation in MBA students' experience of Learning Technology in Pakistan



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This thesis is submitted in partial fulfilment of the requirements for the
degree of Doctor of Philosophy.

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Declaration

This thesis results from my work and includes nothing that is the outcome of work done in collaboration, except where specifically indicated. It has not been submitted to support an application for another degree at this or any other university. To the best of my knowledge, this thesis does not contain a reference to any published material that has not been duly acknowledged. Many of the ideas in this thesis were the product of discussion with my supervisors Professor Vivien E. Hodgson and Dr Uzair Shah.

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Abstract

The advances in information and communication technology (ICT), particularly in the last few years, have influenced teaching and learning activities across educational institutions. There has also been an increase in research studies that explore how students and teachers interact with diverse types of digital technologies available to them. However, despite this rapid expansion of digital learning across the world, little research has been published on how Pakistani campus-based students interact with technology during their studies. This research study explores the different ways in which MBA students experience learning technology within a less developed and under-explored educational context of Pakistan.

Phenomenography has been used as the research approach to highlight the *variation* in students' experience of learning technology and the contextual factors within which this experience is situated. In phenomenographic terms, experience represents an internal relationship between the experiencer (i.e., MBA students) and the that which is experienced (i.e., learning technology). Semi-structured interviews were conducted with 45 students in two of the leading business schools of Pakistan. These data sets were analysed using the *referential/structural* framework of phenomenography, based on Aron Gurwitsch's theory about *Anatomy of Human Awareness*. The *referential* aspect formed the basis of analysing the variation in the *meanings* these students associated with their experience of learning technology, while the *structural* aspect facilitated in understanding the 'figure-ground' relationship of this experience.

The analysis of the student descriptions reveals three distinct ways of experiencing learning technology, i.e., *engaged*, *instrumental*, and *alienated*. Each of these categories of description also highlights the strong interplay of the contextual factors which influence the students' experience of technology, such as their socio-

economic backgrounds, prior exposure to technology, variation in teaching approaches, to name a few. Two of these categories of description link closely to the established phenomenographic concepts of *deep and surface level* approaches presented by Marton and Säljö (1976, 1984) and further elaborated by Ramsden and Entwistle (1983) and Biggs (1987). The third category (alienated experience) offers a *transitional dimension* in which the students describe how they transition from an initial phase of isolation and adjust to their learning environment.

This study's significance derives from the way it provides insight into the experience of these MBA students based in a majorly instructor-led learning environment, within a less developed country. The findings highlight how students in these regions, when exposed to different types of digital technologies, make an effort to change from mere *passive recipients* of knowledge to *active participants*. The students' descriptions of experience reveal that the use of learning technology enables them to understand that help and support are available to them beyond their classrooms and from people other than their teachers – a phenomenon that has not been very common in Pakistani universities.

Dedication

I dedicate this work to my parents Prof. Dr Anwaar Ahmad & Mrs Talat Nishat, who have always encouraged me to pursue my true passions. It was my father's dream that one day one of his children would follow his footsteps and pursue a doctorate.

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Acronyms and Abbreviations used

BS	Business School
MBA	Master's in Business Administration
IT	Information Technology
ICT	Information and Communication Technology
TEL	Technology-enhanced Learning
e-Learning	Electronic Learning
m-Learning	Mobile Learning
LMS	Learning Management System
VLE	Virtual Learning Environment
SNS	Social Networking Sites
OSP	Outreach Scholarship Programme
HEC	Higher Education Commission

1 INTRODUCTION

Chapter 1: Introduction

1.1. Researcher's Background and Motivation

In the past few years, particularly since the beginning of the 21st century, technology has emerged as an ever-present element of our lives. It has changed the way people access information, gain knowledge, communicate, and collaborate in a learning environment. As far as I can remember, my first interaction with technology was when my school purchased its first desktop computer in 1996. I browsed the Internet on *Netscape Navigator* using a dial-up connection. Since then, I have always been fascinated by how this technology has gradually influenced the way humans tend to experience the world around us. This was probably the reason I opted to choose Information Technology as my major during the undergraduate degree. It was the first time I experienced learning through digital resources, for example, searching for information on the internet, reading PowerPoint slides, using word processors, etc. Similarly, when my university introduced us to a Learning Management System (LMS), I was pleasantly surprised to see my lecture notes being organised in one place, with no stress about chasing the class representative to get the softcopy from the teacher. However, back in 2007, I remember my LMS only as an organised repository for downloading the lecture materials.

Before going to Australia for my MBA in 2012, I worked for one of the world's largest IT companies - IBM, as a Technical Consultant. I observed how sophisticated software solutions, management systems, and portals had automated complex business processes to gradually move towards a paperless society. As I was working at an offshore location (Pakistan), most of the meetings, training, and workshops were conducted online. Being accustomed to an instructor-led, face-to-face teaching environment, this virtual and self-paced learning experience further intrigued my interests in exploring how technology is influencing the way we humans teach and learn.

My MBA studies in Australia gave me the chance to closely observe how learning technology is being used in the developed countries' educational system. I observed that this pace of technology integration was much faster than that in Pakistan. The LMS was not only a repository for downloading lecture materials but an interactive platform for academic discussions, uploading assignments, conducting exams, and much more. For example, some of my courses were delivered online only, with instructors uploading video lectures and managing all assessments through the system. This was the first time I began to understand the importance of *context* and its role in shaping our experience of any given phenomenon. I often observed and compared the contextual differences in Pakistani and Australian universities' learning environments. Some of these unanswered questions proved to be my biggest motivation to switch my career from the corporate sector to academia.

While teaching at two public-sector universities in Pakistan, I realised that it was still a new phenomenon in the educational sector despite the rapid influx of technology in other sectors. Due to a lack of awareness and exposure, students, and teachers, and even institutions, were not very clear about the potential of integrating learning technology into the course design. Therefore, when I attempted to introduce some technology elements into my pedagogical practice, I observed a variety of patterns. While some of my students were quite comfortable with digital tools being used in the course, others gradually distanced themselves from academic activities, showing a kind of passive resistance. I was often tempted to ask them directly about their concerns about the use of technology. However, considering the student-teacher power dynamics in Pakistan, the students are often reluctant and shy to discuss such issues directly with their teachers.

These experiences in my personal and professional life developed my research interests in this area. As I searched for relevant literature that explored such issues within the Pakistani higher education sector, I found it quite limited and focused on generic topics. Therefore, when I struggled to find answers to my questions as a teacher, I decided to explore them as a researcher. This endeavour brought me to Lancaster University, where I opted to conduct a study that explores the variation in

MBA students' *experience of learning technology* in the relatively under-explored context of Pakistan.

1.2. Rationale behind this study

Based on my research interests outlined in the previous section, I began to consult the relevant literature to understand the area better and frame the scope of my research study. I found that the use of technology in higher education has long been a popular area for research, discussion, and debate amongst academicians, researchers, and practitioners. According to Kirkwood and Price (2014), there has been considerable growth in adopting learning technology in higher education, particularly since the early '90s. Rumble (2001) highlighted the distinct phases of how learning technology has evolved over the years, e.g., from the use of radio and television as broadcasting mediums to support remote teaching and learning to the development of multimedia systems that use text, video, and audio technologies. Presently, we are witnessing the fourth generation of learning technologies that comprise of personal computers, laptops, World Wide Web, and internet (Rumble, 2001).

In most of these studies, there appears to be a consensus among researchers that the use of technology in higher education is a significant development as it supports and enhances students' learning experience. According to Selwyn (2016, p. 1006), students' use of technology has gradually become an “...*expected part of the routine of academic study and campus life*”. Over the years, the dominant research theme in this area has been to explore the impact of technology on study and learning practices. According to Edmunds et al. (2012), research in this domain has mainly sought to identify both the extent of technology usage and its effects on the understanding and experience of students and teachers. The recent years have also seen a considerable rise in studies that explore the *downsides* of students' use of technology in education. For example, Henderson et al. (2016) discussed students' perceptions of both useful and less useful aspects of technology-use in university education. The rationale for conducting such studies is to develop a better understanding of the student

encounters with technology and assess what more might be achieved through technology-enabled learning.

During this preliminary literature review, I observed that studies that specifically focus on students' use of technology sometimes report contrasting and contradictory findings. According to these studies, the use of learning technology did not have a ubiquitous (or even consistent) presence amongst students, therefore as Henderson et al. (2016, p. 236) state that "...it makes little sense to presume that all... students are making use of the same digital technologies in the same ways". In some of these studies, the findings and claims have also initiated contentious debates and discussions in the literature. For example, Prensky's(2001) reference to *digital natives and immigrants*, or Tapscott's(1998) claim for a *Net generation*, portrayed the current cohorts of university students as grown-up digitals, having a natural aptitude to technology and therefore expected to be able to use it in all aspects of their studies. For example, Jones et al. (2010, p. 722) refer to a speech by Brenda Gourley, the then VC of the UK's Open University, in which she said that "...this is the generation who thinks instant messaging, text and Google are verbs, not applications!". However, as stated earlier, there have been counterclaims as well. Some researchers (such as Bayne & Ross, 2007; Bennett et al., 2008; Ellis & Goodyear, 2010) have provided empirical and theoretical evidence to show that the Net generation's concept is more complicated than the literature might suggest. Such debates have raised the question if there is a distinct generation of students entering the universities or not? I will discuss these contrasts and contradictions in the findings of prior studies in Chapter *Two*.

Realising the importance of *context* in a research study, I observed that a prominent gap in most of these studies was a limited discussion on the contextual factors that might have influenced the findings. Although most authors did specify the settings in which their study was based, they did not illuminate the interplay of contextual factors and their conclusions. This, to some extent, began to contradict my personal learning experience (highlighted earlier), in which contextual factors played a significant part. Furthermore, most of these studies are based in developed countries, citing examples specific to those educational settings. The studies based on

Asian settings also focus more on developed regions like China, China, Taiwan, Hong Kong, Malaysia, to name but a few. This further encouraged me to think about locating my study in a relatively under-explored context. As Czerniewicz and Brown (2013, p. 45) also emphasise that it is important to understand that “*students across a range of contexts have varied skills, experience, and interests around the use of technology...*” and research should unpack how students navigate the complexities of using technology at university.

Considering this, I decided to locate this study in the context of Pakistan’s higher education sector. As stated earlier, the relevant literature in this domain is relatively scant. The majority of available studies have used a *broad institutional lens* to discuss technology adoption issues in the universities (Farid et al., 2015; Kanwal et al., 2017). Although some of these studies do examine the *perceptions* of students and teachers regarding the use of technology (Ellahi & Zaka, 2014; Hussain et al., 2018; Qureshi et al., 2012), they do not discuss any specific issues faced by the participants in their learning environments or within their academic routines, as they use technology. As I will elaborate in Chapter *Two*, much of this literature is based on quantitative data analysis. A notable qualitative research study is that of Hodgson and Shah (2017), in which phenomenography was used to discuss the lecturers’ understanding of learning technology within their pedagogical practices.

Based on this preliminary review highlighted above, I hope that conducting this research in an under-explored educational context of Pakistan might offer some interesting insights into students’ experience of learning technology and highlight the contextual factors associated with this experience.

1.3. Aims of the study

Considering some of the contradictions in the published literature (as discussed in the previous section) on the possible benefits of using technology in higher education, there is a growing recognition of the need for more research that explores the use of technology within the *lived experiences* of students; in Stokoe et al. (2013, p.

76)'s words, research that explores "...what students do as they live their lives". In this study, I am more interested in exploring students' experience of learning technology within their studies rather than their beliefs or perceptions about the use of technology in higher education. Therefore, my research question for this study is:

What are the different ways in which MBA students experience learning technology within their studies?

The primary aim is to identify the *variation* in the descriptions of experience provided by MBA students about their use of learning technology during studies, in two of Pakistan's leading business schools. The use of *phenomenography*, as explained in Chapter *Three*, will facilitate in identifying this *variation* and also revealing the *contextual factors* within which these students' descriptions of experience are situated.

The notion of *context* in this study has been used in two subtly different ways. First, it is used in a *broader* everyday sense to describe the socio-spatial setting in which something exists, and which can help explain it, such as the national context, field/disciplinary context, or institutional context. Second, there is a more *specialised* use of the word *context* in phenomenographic studies, when presenting, analysing and discussing the research findings. This distinction will be further elaborated in Chapters *Three* and *Four*.

Furthermore, in this study, I do not distinguish between any formal or informal learning technology types. The term *learning technology* refers to any type of digital tool/software, technological artefacts, and smartphone applications that support students in their academic activities. This can range from basic word processors, slideshow tools, institutional learning management systems, and digital libraries, to informal social media platforms and smartphone applications such as Facebook, WhatsApp, Skype, etc.

In the educational context of Pakistan, Nawaz and Kundi (2010) state that successful digital initiatives in higher education are dependent on the "*change in perceptions of the users about the nature and role of technologies*" (p.52). As a teacher, I also see my students as active learners, not passive receivers of knowledge. I believe that

individuals are *sense makers*, as they actively construct knowledge when interacting with the environment. Instead of merely recording information, they interpret it, which enables them to associate a meaning to that phenomenon. Therefore, it is their perspective and voice about the use of learning technology that my study aims to explore and highlight, rather than present my assumptions or generalised inferences.

As stated in the previous section, the scope of the published literature on Pakistan's higher education sector is quite limited. It mostly focuses on discussing technology adoption issues in educational institutions, particularly the lack of infrastructure, scarcity of technological skills, and an overall inability to accept any change in the traditional instructor-led teaching and learning. These studies do not indulge in highlighting the specific issues of students and teachers as they interact with various types of digital technologies within their learning environments. Furthermore, there appears to be a general tendency to adopt a positivist approach and search for objective reality. Therefore, I felt a need to explore further how students in Pakistani universities are experiencing learning technology within their studies.

1.4. Research Approach

This study's research focus is on exploring how people experience a given phenomenon - in this case, learning technology. As stated above, the study aims to highlight the different ways in which Pakistani MBA students experience learning technology during their studies in a mostly instructor-led environment. It might be difficult to interpret and explain the students' experience of this phenomenon and the associated context using a set of generalised hypotheses and a series of statistical tests. Therefore, given the research objectives of this study, an interpretive research approach was considered more suitable.

Within the interpretive research paradigm, phenomenography's knowledge interests attracted me to explore it in some depth. According to Marton (1986, p. 31), a phenomenographic research approach facilitates "...mapping the qualitatively different ways in which people experience, conceptualise, perceive and understand various aspects of,

and phenomena in, the world around them". This research approach primarily focuses on studying the *variation* in the experience of a given phenomenon, as described by the subjects (i.e., the research participants). I will explain the underlying assumptions and theoretical aspects of phenomenography later, in Chapter *Three*, and discuss the rationale for choosing it over other methodologies.

Phenomenography adopts a descriptive orientation (Sandberg, 2005). It does not claim to provide reasons or justifications for the variation in people's descriptions of experience. Rather, it permits a holistic perspective for identifying this variation and analysing experience in terms of the *meaning* and *structure* associated with it. The primary objective is to uncover the different ways of seeing the same reality. In this research, I do not make claims to explain why students experience learning technology in the ways they describe, or if one way of experiencing is more authorised than the other. Of course, the logical relationships (and hierarchies) in phenomenographic research findings highlight the distinction between more desirable and less desirable ways of experiencing a phenomenon.

This study is located in a Pakistani context and focuses on highlighting the students' perspective, which is, for the most part *missing* from the published literature. The research approach is useful for exploring the diverse elements, issues, and challenges associated with students' experience of learning technology during their MBA studies. Furthermore, phenomenography is particularly useful in relatively unexplored contexts as, according to Marton (1994), research in a relatively unexplored context can contribute to a better understanding of a phenomenon.

1.5. Research Context: Pakistan

Pakistan is the world's fifth-most populous country, with a population exceeding 212.2 million, according to the official census in 2017.¹ The country comprises regions with significantly differing socio-economic realities, such as literacy rates, poverty,

¹ Latest statistics are available from Pakistan Bureau of Statistics at <http://www.pbs.gov.pk/content/population-census>

access to quality education, health services, and infrastructural facilities. For example, the literacy rate in some of the developed cities goes up to 75 per cent but falls to as low as 9 per cent in less developed rural (remote/tribal) areas of the country (*Pakistan Economic Survey*, 2019).

Despite these issues, the country had witnessed a rapid influx of information technology, particularly after 2002, when the first formal IT policy and implementation strategy was rolled out. Since then, the government has continued to invest in the country's technological infrastructure. According to the Pakistan Telecommunication Authority (PTA)², as of January 2020, there are around 76.38 million Internet users in the country, which is an increase of 17 per cent over 2019. The grant of 3G/4G mobile data licences to telecom operators in 2017 proved to be quite beneficial for the country, as mobile subscriptions jumped by 7.7 per cent to 165 million in 2019. These technological infrastructure developments have also led to increased popularity and usage of social media platforms, such as Facebook, Twitter, and Instagram. According to the #Digital2020 report for Pakistan (Kemp, 2020), as of January 2020, there are 37 million social media users in Pakistan, an increase of 6.2 per cent since 2019. Furthermore, the number of mobile subscribers in 2020 rose to 75 per cent of the country's total population. However, as stated earlier, the social inequalities present in the country continue to pose a significant challenge for the country's growth and development.

The higher education sector in Pakistan has responded positively to technological developments in the country. The Higher Education Commission (HEC), since its establishment in 2002, has made serious efforts to promote the use of technology for teaching and learning in the universities. The universities have been provided with significant financial support to upgrade their technology infrastructures to be on a par with international standards. In 2017, HEC launched its 'Vision 2025' (*Higher Education Vision 2025*, 2017), an ambitious development plan for

² The latest figures are regularly updated and are available at the official website of the Pakistan Telecommunication Authority <https://www.pta.gov.pk/en/telecom-indicators>

the higher education sector, which included the expansion of ICT facilities in the universities. Some of the key features of this plan are:

- Provision of 300,000 Internet-enabled laptops to university students
- Provision of free Internet facilities to 94 public-sector universities
- The institutionalisation of learning management systems across all universities
- Creation of technology-enabled smart classrooms
- Implementation of a national cloud infrastructure
- Upgrades to the Pakistan Education and Research Network (PERN) telecommunications infrastructure
- Establishment of a Research & Development Centre with Huawei Technologies
- Setting up Information Technology academies and testing centres

Some of these initiatives, such as the free laptop scheme for university students and the provision of funds to universities to deploy high-speed Internet facilities on campuses, have been executed successfully. However, the fluctuating political situation in the country, and growing economic problems, has resulted in a significant decrease in HEC's yearly budget (Khattak, 2020), directly hampering the speed of its projects launched under Vision 2025.

Although there is growing interest in using learning technology in Pakistani universities, little is known about *how* these digital tools are experienced by the students enrolled in these institutions. The research gaps in the relevant literature will be discussed in the next chapter (section 2.3). Given these contextual facts highlighted above, this study aims to explore the variation in Pakistani MBA students' experience of learning technology during their studies.

1.6. Research Organisations

The data for this study were collected from two of the leading business schools in Pakistan. The intended research participants from both these schools were final year MBA students. This was done to ensure that only those students who had significant exposure to various aspects of their universities' learning environment were

interviewed. These business schools did not grant permission to use their actual names in the research study; therefore, they will be referred to as *BS-1* and *BS-2* throughout the thesis. The following sub-sections provide some contextual background for both business schools.

1.6.1. Business School 1 (BS-1)

The first business school (BS-1) is part of a federal university, with its campus located in Pakistan's capital city, Islamabad. It was established in 1999 with the objective of providing high-quality education in management sciences. The school underwent a rebranding and reorganisation in 2008 to embrace the challenges and opportunities of an ever-changing marketplace. Over the years, it has emerged as one of the premier business schools in Pakistan. It offers graduate and postgraduate programmes in Business Administration and Accounts & Finance. Being a federal institution, it accepts students from all parts of the country. As of 2017 (the period of data collection for this study), the school had approximately 1,275 students enrolled in various degree programmes.

The school has strict admission criteria, i.e., students are required to pass a number of aptitude tests and a face-to-face interview with a faculty panel to gain admission to the MBA programme. However, to promote equal opportunities for all students, the institution is part of the Pakistani government's *Outreach Scholarship Programme*³. It offers scholarships covering the tuition fees and living costs of students from low-income households and less developed parts of the country. Before the data collection activity, I was not aware of this arrangement; however, while recruiting research participants, I had the opportunity to interview a few of the students enrolled under this scheme.

A significant majority of the students interviewed at this business school had studied in elite schools/colleges and been raised in urban regions of the country. They had significant prior exposure to technology and spoke confidently about their experience of using various digital tools in their MBA studies. However, a few of the

³ Details can be found at: <https://www.hec.gov.pk/english/scholarshipsgrants/Ehsaas/Pages/default.aspx>

students enrolled under the outreach programme described the challenges associated with their technology experience by reflecting on their socio-economic backgrounds and lack of prior exposure to technology.

During the fieldwork, I observed that the school had a significantly developed technological infrastructure and provided its students with good quality teaching and learning facilities. There were two institutional systems, a Learning Management System (LMS) to coordinate the students' academic activities, and a Campus Management System (CMS) to manage various administrative processes, such as course enrolment, tuition fee payments, and attendance monitoring, etc. Furthermore, established technological support, such as high-speed Internet, video-conferencing facilities, upgraded computer labs, and data centres for research purposes was also provided to the students. The university had established an *Incubation Centre* to provide help and support to its students with entrepreneurial ambitions. The centre offers both infrastructural and professional support to students wishing to launch their own start-up companies after completing their study programme. A career advancement office was recently established to provide the students with the necessary guidance on exploring better career prospects, including better use of digital tools (e.g., social media) and other learning resources available on the Internet.

1.6.2. Business School 2 (BS-2)

The second business school (BS-2) was located in the Pakistani city of Lahore. The school is a constituent part of a private sector university in Pakistan. It was established in 1999, and as of 2017, had a strength of around 1,500 students enrolled in various undergraduate, graduate, and postgraduate research programmes. A distinction between BS-1 and this business school was that the latter mainly catered to Lahore's student population and the adjoining less developed rural areas. Therefore, there was a significant variation in the research participants' socio-economic, cultural, and regional backgrounds in both the business schools. In this business school, the students enrolled under the *Outreach Scholarship Programme*, and otherwise, both described how contextual factors such as prior exposure to technology, challenges of

living in less developed regions and studying in less privileged schools/ colleges influenced their experience of learning technology during MBA studies.

During the fieldwork, I had the opportunity to interact with various faculty members and observe some of their lectures and seminars. There was a clear preference for face-to-face teaching and less reliance on the use of learning technology. During the interviews, students in this business school struggled to describe the relationship of their course of study with the learning technology they were using. The students appeared to be more dependent on predefined course outlines and the instruction of their teachers. They mostly gave quite generic descriptions of their experience of technology, with some students only providing the names of the digital tools they used.

Concerning the technological infrastructure, this business school was less well equipped, as compared to BS-1. At the time of data collection, the institution did not have a functional learning management system, as it was in the process of deployment. Similarly, there was an in-house ERP system known as the *Student Information System* to manage administrative processes, but that was not operational at that time due to technical issues. However, the school provided facilities such as the Internet, access to digital libraries, and computer labs to its students. During the interviews, the students in this business school mostly described their use of informal digital tools, such as social media platforms and smartphone applications, for their academic work.

1.7. Structure of the thesis

This thesis comprises six chapters. In Chapter *One*, I have started by presenting background information to highlight the factors related to my personal and professional life that motivated me to opt for this topic. The next section provides a rationale for this study by discussing the increasing role of technology for university students, particularly after the emergence of digital artefacts, such as social media platforms and smartphone applications. This is followed by a discussion of this

study's aims and objectives and the research methodology used to achieve them. The final sections introduce the Pakistani educational context in which this study is based. It highlights how the role and use of technology in Pakistani universities are changing due to initiatives at the governmental and institutional levels. These changing dynamics within the country make it more meaningful to dig deeper into the lived experiences of one of the most important stakeholders in this scenario – the students. To conclude, I introduced the two business schools where the data for this study were collected.

In Chapter *Two*, I shall present a review of the literature relevant for this study. The review will mainly explore published research on the expanding role of technology in higher education and how university students in their studies use it. Towards the end of this chapter, I will present a review of prior studies that specifically explore this phenomenon in the context of Pakistan. Although this literature is quite scant, most of the available studies used quantitative analysis to draw inferences and present generalised results. Such research gaps encouraged me to focus on students' experience of technology within Pakistan's relatively less developed educational context. This provides further justification for the potential contribution of this study to the existing body of knowledge.

In Chapter *Three*, I will discuss the research methodology used in this study, i.e., phenomenography. I will present an evaluation of other research methodologies within the interpretive research paradigm to develop my arguments to justify the choice of *phenomenography* as an appropriate research approach for this study. The chapter also explains the theoretical underpinnings of phenomenography, including its ontological and epistemological assumptions. It also explains the steps taken during data collection and analysis, including some of the challenges encountered during each phase. The final section highlights the procedure adopted in this study to evaluate the quality of my research study.

Chapter *Four* presents the findings and analysis in the form of different categories of descriptions found in this study. These categories highlight the different

ways in which students described their experience of learning technology during their MBA studies. The analytical framework of *structured awareness* or the *referential/structural* framework (Marton & Booth, 1997) is used to analyse the *meanings* and *structure* associated with students' experience. The analysis for both the schools is presented separately to clearly describe the variation in student experiences both within and across the business schools, and also highlight the contextual factors that influence this experience. In the final section, I introduce the idea of Learning Orientations presented by Taylor (1981) to evaluate if there is a *plausible association* between the categories of description found in this study and the learning orientations and interests exhibited by the students.

Then, Chapter *Five* discusses this study's research findings in light of the literature reviewed in the second chapter. This will facilitate assessing the research contributions of this study. The first section discusses how the categories of description link closely to the established phenomenographic concept of the *deep and surface level* approach presented by Marton and Säljö (1976). The second section expands the discussion presented in the previous chapter about the association of learning orientations and categories of description found in this study. It discusses if learning orientations predispose the students towards adopting a particular approach (deep or surface), which subsequently influences how they experience technology within their studies.

The final Chapter *Six* will present the conclusion and contribution of this study. The first section revisits the thesis structure to highlight how each chapter has been organised and the information it presents. It then elaborates on the research contribution of this study, its implications for various stakeholders, and some of the research's limitations. Keeping these aspects in mind, I will then propose some directions for future research. Towards the end of this chapter, I will share some of my reflections on how this doctoral study journey has affected me as a student, teacher, and researcher. It was while writing this chapter that the COVID-19 crisis struck the world. Therefore, the last section of the final chapter will present my further

reflections on how the findings of this study could help the higher education sector in Pakistan as it struggles to deal with this crisis.

In this thesis, considering the exploratory nature of the research study, new ideas from the literature, such as Learning Orientations, are introduced to assist in elaborating and discussing the findings. Although some of the main ideas are briefly introduced in the literature review (Chapter 2), they are then further explored and discussed in Chapters *Four* and *Five*, to highlight plausible connections that emerge from the research findings.

2 LITERATURE REVIEW

Chapter 2: Literature Review

In this chapter, I present a review of the literature conducted for this study on the use of technology in higher education, particularly how students interact with technology during their studies. This review enabled me to further refine my research question and identify some research gaps in the existing literature. It also helped me develop my understanding of the importance of relating the contextual factors with the findings of a research study. This process of reviewing the relevant literature and identifying the research gaps has also allowed me to think about and plan a possible research design for my research, particularly regarding the application of a phenomenographic research approach.

2.1. Review of the research on the use of technology in education

The advances in Information and Communication Technology (ICT), particularly in the last two decades, have influenced how teaching and learning activities are conducted in the educational sector. From the integration of personal computers, projector screens, digital blackboards to extensive use of the Internet, learning management systems, and electronic resources, higher education institutions across the world are making serious efforts to improve the quality of education through the use of technology. According to Selwyn (2016), digital technology is now *woven deeply* into the fabric of university teaching and learning “*from the institutional provision of learning management systems and e-journals to the widespread use of word-processing, email, Google and Wikipedia*”(p.1006).

These advances in digital technologies have given both students and teachers confidence that it has the potential to transform teaching and learning and reduce time and space barriers to quality education. According to Madge et al. (2009), as digital technologies became more powerful, accessible, distributed, and intelligent, they

significantly impacted the core teaching and learning practices. In this study, the definition of Learning Technology pertains to the use of technology *for* learning, i.e., any digital technology used by students during (the support of) their academic activities. The extant literature in this domain refers to this phenomenon in various ways, such as *educational technology*, *e-learning*, *technology-enhanced learning*, and, more recently, *digital learning*.

The review of relevant literature reveals that there have been different theoretical viewpoints about the use and role of technology in education, particularly about learning *with* technology or learning *through* technology. The term *e-learning* first emerged around the year 2000 to refer to the technology-mediated methods used to support student learning, including elements of assessment, tutoring, and instruction (Wheeler, 2012). With the advancements in technology, terms like *technology-enhanced learning* and *digital learning* subsumed e-learning, primarily to accommodate the emergence of Web 2.0 applications such as social media, wikis, blogs, webinars, podcasts, etc.

The literature on technology-enhanced learning appears to focus more on the *technological aspects* that can trigger learning (Kirkwood & Price, 2014). The emphasis is on highlighting how the latest digital technologies are paving the way for extending learning beyond the classroom. For example, according to Fawns (2019), digital technology has *permeated* the classroom in the form of laptops, mobile devices, internet, etc. It affects the way students engage with information before, during, and after their formal lessons. However, such a rationale and assumption about the role of technology in education has not been endorsed by all researchers. According to Säljö (2010), digital technology is not only a teaching and learning device that can be introduced to boost learning in an existing educational system. Instead, the use of technology should be seen as *a means for transforming* how students interpret learning.

Within this academic debate, another genre of technology-mediated learning – *networked learning* emerged, in which the focus was on seeing technology as a *space for learning*, rather than a tool. Goodyear et al. (2003) defined it as learning in which ICT

is used to *promote connections*: between one learner and other learners, between learners and tutors, between a learning community and its resources. This definition's main aspect is the word *connections* and how technology is seen as a facilitator that enables learners to develop and promote their connections with other learners, teachers, and learning resources. The focus is on the use of technology rather than the technology itself, which highlights a more dynamic approach to the use of learning technology within education.

Research on the educational use of technology and its potential for transforming teaching and learning has been a major research theme in the relevant literature. According to Selwyn (2016), much academic research has focused on writing how university teaching and learning are being *enhanced* and even *transformed* by the flexibility and adaptability of digital technologies. Even in developing countries, the research is highlighting how the increased integration of technology (particularly the latest digital tools) into higher education has made it possible for universities to reach out to students in rural and remote geographic areas (Bharucha, 2018; Hussain et al., 2018; Kumar, 2014). In the last few years, however, there has been a substantial increase in studies highlighting the *detrimental aspects* or *digital downsides* (Selwyn, 2016) of using technology in education. These studies have mostly highlighted the problematic aspects of technology-use, from the students' perspective. It will be discussed in detail in the following sub-section (See section 2.1.2).

Despite technology's promise and growth within higher education, there are still some *barriers* to its rapid adoption and acceptance. With reference to teachers' use of technology in classrooms, Ertmer (1999) identified two types of barriers that impacted them. The *first-order barriers* were external, such as lack of appropriate infrastructure, resources, training, and support. The *second-order barriers* were more internal to the teachers' beliefs, attitudes, and perceptions about technology use. Over the years, it has been argued that although first-order barriers pose significant obstacles to technology adoption, they can be reduced (Ertmer et al., 2012). However, some recent empirical research in this area (Kearney et al., 2018; Mercader & Gairín, 2020; Romero, 2019) has shown that second-order barriers pose a greater challenge. For example,

Romero (2019), in her study on teachers' use of rubrics in Moodle to evaluate learning in a Chilean higher education institution, found that *pedagogical beliefs* were the most significant barriers to the integration of technology in evaluation processes. This is particularly true for developing countries where limited awareness about the benefits of using technology and close adherence to specific academic traditions often leads to reluctance in adopting new teaching and learning styles.

The different theoretical viewpoints discussed in this section reflect the different prevailing understandings about using learning technology within higher education. These studies highlight the variations in how learning technology is understood, experienced, and used by students and teachers. Some of the studies often report contradictory findings, which will be discussed and explained in the next section.

2.1.1. Understanding the students' experience of technology in education

Studies focusing on university students' use of technology have mainly described the academic activities for which digital technologies are being used. As Selwyn (2016) claimed, students' use of digital technology in higher education is now seen as an *unremarkable feature of the contemporary university* (p.1006). According to Ellis and Goodyear (2010), the landscape is dominated by the use of learning management systems, office tools such as email, presentation tools, word processors, web searching tools for information discovery, and in some disciplines, extensive use of specialised tools for statistical analysis, etc.

As digital technologies become more powerful and accessible, the students' use of it in education is mostly directed at information retrieval, preparation of assignments and projects, and other similar academic activities (Henderson et al., 2016). According to Bosch (2009), increased access and availability of digital tools have made learning content much more freely and instantaneously available to students, who are able to download their lecture notes and other materials with a single mouse click. In a recent study based in the Nigerian higher education context, Musa et al. (2019) found that learners no longer rely solely on printed books for their educational

needs, as the Internet and the World Wide Web have made it easier for them to access a wealth of learning materials in every subject and a variety of formats, from anywhere and at any time.

In the literature on students' use of technology in education, a popular strand of research specifically examines the use of *Learning Management Systems* (LMS) and *Virtual Learning Environments* (VLE) such as Moodle, Blackboard, Kallidus by university students. Although often used interchangeably, the terms LMS and VLEs have some distinctions in how they are implemented and used in educational institutions. According to Pinner (2011), VLEs are often used as a place for collaboration and having academic discussions, while LMS is seen more as a repository for accessing a range of digital resources.

Most of these studies explore the students' and teachers' perceptions about the acceptability of LMS (Aliyu et al., 2019; Escobar-Rodriguez & Monge-Lozano, 2012; Murillo et al., 2020), level of satisfaction (Damnjanovic et al., 2015; Sabah, 2020), achievable learning outcomes (Pérez-Pérez et al., 2020) and mode of engagement and assessment of its specific features and functionalities (Magogwe et al., 2015). For example, Teo et al. (2019), in their study based within the Macau higher education context, used the *Technology Acceptance Model* (TAM) to find that factors such as usefulness and ease of use significantly affect the students' attitudes and behavioural intentions to use Moodle. TAM is a well-known theoretical model, originally proposed by Fred D. Davis in 1986, to explain user behaviour towards the acceptance or rejection of information technology. It is considered an influential extension of Theory of Reasoned Action (TRA) Park (2009) and provides a basis with which one traces how external variables affect a user's perceived usefulness and perceived ease of use about a technological system.

With reference to the developing countries, the focus of the research studies has been on exploring the *underutilisation* of the learning management systems. For example, Magogwe et al. (2015), in their study of sub-Saharan African institutions, concluded that although the use of LMS did increase student participation in

academic activities, the focus was on using only some specific features of the system. Campus-based students mainly perceived it as a *supplementary tool* that improves the efficiency of tasks that have already been done, such as downloading course materials, checking course announcements, automating assessment management, etc.

Studies based in developed countries have mostly evaluated the *value* of deploying such institutional systems (Frances et al., 2015) and the benefits they can bring to students and teachers (Jackson & Fearon, 2014). For example, Frances et al. (2015) conducted a study at the Dublin Institute of Technology to investigate the students' use of their VLE and the value it adds. They found that only a small minority of their research participants had used many features of the tool as part of their academic practice, as most of them cited reservations about the time and effort involved in utilising such technologies to the full. Dahlstrom et al. (2014), in the context of US universities, also found similar results, as the use of LMS did not extend beyond the basic features of content sharing, coursework submission, and management. Bryant (2017) attempted to clarify this aspect by arguing that an LMS is a management system, not a learning system, and its function is to monitor and control academic activities. Therefore, it is only natural that students and teachers prefer to use only *some* of its features.

One of the possible causes of this underutilisation of institutional systems appears to be the increased popularity of informal digital tools, such as social media platforms. Thus, within the relevant literature, we see a systematic transition towards studies that highlight this aspect more prominently. The focus of research has gradually shifted from exploring the use of institutional systems to less formal digital tools, particularly the Social Networking Sites (SNS) and smartphone applications. Some of these studies have reported how students are increasingly using the Internet and other Web-based platforms to get instant access to various digital resources that contain visuals, illustrations, videos, etc (Henderson et al., 2017; Prestridge, 2014). For example, Wentzel and de Hart (2020) examined students' use of *podcasts and videocasts* in their studies. They found that most students perceive such *additional* learning resources as having value, i.e., providing them with the required support to

understand the content easily. Similarly, other studies have also found that students use various synchronous and asynchronous communication tools, such as instant messaging services, smartphone applications, and social media platforms, to establish spaces for *cooperation and collaboration* that extend opportunities of learning beyond the classroom (Bryant, 2017).

Even in the context of networked learning, where the focus has traditionally been on exploring students' expectations and experience in *formal educational settings* (Goodyear et al., 2005; Hodgson & McConnell, 1992), some of the more recent studies, for example, De Laat and Dohn (2019) have called for widening the scope of networked learning to use its concepts to explore research areas around the design of online spaces, use of web and mobile technologies for learning and the increasing use of social media platforms as an educational tool.

A detailed review of studies that explore the educational potential of the latest digital technologies, particularly social media platforms, will be presented in *Section 2.2*.

2.1.2. Contrasts and contradictions in students' experience of learning technology

The previous section briefly highlighted that during the last few years, there has been a substantial increase in studies that explore the *downsides* of students' use of technology in education. For example, Henderson et al. (2016) and Selwyn (2016) have highlighted the type of digital technologies considered *useful* and *less useful* by university students according to their perceptions and experience during studies. According to them, while some students are quite comfortable using a range of digital tools, including web-based systems, and online platforms, for some students within the same learning environment, the use of technology is a *distraction* and at times a passive, solitary, and sporadic experience (Henderson et al., 2016). There are other studies as well, which have discussed issues around the overuse and addiction of the Internet (Hong & Chiu, 2016), online plagiarism, and other forms of technology-based academic cheating and malpractice (Çelik & Odacı, 2013) and information overload (Taylor, 2012).

A possible reason for such contrasting student perceptions about the use of technology in education is the increase in empirical research exploring the students' use of technology in specific educational contexts. At times, these studies' findings have initiated contentious debates and discussions in the literature, particularly around the variation in technological skills, knowledge, and exposure of learners. For example, empirical studies have challenged Tapscott's (1998) notion of a *Net generation* and Prensky's (2001) arguments about *digital natives and immigrants* in which they claim that the present-day generation of students entering the university is more *digitally adept and attuned*. According to Tapscott (as cited in Jones & Ramanau, 2009):

"Today's youth are different from any generation before them. They are exposed to digital technology in virtually all facets of their day-to-day existence, and it is not difficult to see that this is having a profound impact on their personalities, including their attitudes and approach to learning."

However, as more studies began to examine this claim in various learning contexts, their findings suggested *caution* in defining a new generation of students only in relation to their lifelong exposure to digital technologies (Ellis & Goodyear, 2010; Jones et al., 2010). For example, Ellis and Goodyear (2010) argued that while there is a need to understand students' technological needs and how they are likely to change, this understanding should be based on *evidence* rather than speculation.

In the UK, for example, Margaryan et al. (2011) found that students use a *limited range* of established technologies for their learning activities. They also found that students' attitudes to learning appeared to conform to fairly traditional pedagogies. Jones et al. (2010) also found that students reported varying digital confidence and skill levels, often reporting surprise and confusion at the array of available technologies. Similarly, Kennedy et al. (2008) also concluded that first-year Australian students only possessed a *core set of technology-based skills*, outside of which they exhibited varying levels of technical knowledge and skills. Selwyn (2008) argues that policymakers in universities and governments should not simply adopt a *technological determinist argument* that universities will have to adapt to a changing student population marked by their exposure to digital technologies from an early age. Instead, subject and disciplinary differences must also be taken into consideration, as

highlighted in some of the studies cited above. As Ellis and Goodyear (2010) stated, it is dangerous to treat generations of people as if everyone in a generation shared the same characteristics and to assume there are *sharp breaks* between generations.

The literature review presented in this section highlights the need to conduct more comprehensive research on students' experience of technology, as Kennedy et al. (2008) stated that technology use has been, and will continue to be, varied and idiosyncratic rather than uniform. More specifically, there is a need to go beyond these basics, as Park (2009) suggests that there is a need to understand how students perceive and react to elements of learning technology. Similarly, Henrie et al. (2015), while examining the challenges of student engagement in online courses, found that the use of technology in learning does not have a *ubiquitous* or even consistent presence; therefore, it makes little sense to presume that all students are making use of the same learning technology in the same way (Henderson et al., 2016).

2.1.3. Use of technology in Business Schools

In the last two decades, an emerging area of research concerning management education is integrating and adopting learning technology by management (or business) schools. According to Arbaugh (2014), the last decade has seen a rise in the studies examining the use of technology in management education. This is due to the increase in courses that blend online and classroom-based delivery approaches. Furthermore, Web-based instruction and online degree programmes have gradually become more prevalent in business schools, particularly in developed countries. Most of these studies have investigated how business schools in different learning contexts have integrated or are planning to incorporate technology within the course design and curriculum.

A review of some of the early studies in this domain reveals that the researchers have been quite critical about the *slow response* of business schools in accepting the benefits of technology use in education. For example, Beeby and Jones (1997) strongly criticised business schools for failing to move with the times and being slow in responding to changes in the environment. Similarly, Leidner and Fuller (1997)

commented that the general trend towards improving business education has *largely failed* to keep pace with technological advancements.

Responding to the calls of engaging in serious research exploring the use of technology in business education, researchers began to explore the factors that can encourage business schools to adopt technology more effectively. According to Alavi and Gallupe (2003), technology has brought a significant change to management education's nature. Therefore, it is important to examine how this change impacts business schools' teaching and learning practices worldwide. Similarly, Friga et al. (2003) note that to cope with the new business environment's challenges, business schools gradually began to develop technology-enriched pedagogies to *incorporate technology* into their curricula. Arbaugh and Duray (2002) discuss the aspect of *competition* among education providers to increase technology integration in business schools.

Despite this increase in research discussing the use of technology in business education, there was criticism about it not addressing certain critical issues. For example, Hodgson and Watland (2004) argued that research within management education and learning, in general, does not seem to discuss the particular challenges associated with the use of technology in education and does not address the “...*critical issues...that are raised for learners and teachers alike when learning via technology*” (p.111). Similarly, Oliver and Trigwell (2005) also suggested that researchers can redeem the benefits of integrating technology into business education by conducting studies that focus more on *variation in learners' experiences* and what happens when they interact with that environment.

The more recent research seems to address this issue, to some extent. According to Arbaugh (2014), the literature on the use of technology in management education has gradually transitioned from basic reporting of the benefits of educational use of technology to a more in-depth analysis of the issues faced by students and teachers. For example, Prestridge (2014) highlights how business schools are equipping their classrooms with new learning technologies and finding *innovative ways* to use the

Internet and other digital tools, such as social media platforms, to increase student engagement. Similarly, Whitaker et al. (2016) present a comprehensive analysis of how the latest digital technologies and digital learning trends, such as MOOCs, are being used in business education. According to them, business schools today recognise technology as an *inevitable* and *beneficial* element for their students. However, in some of these studies, the authors have also tried to clear the misconceptions that technology use in education tends to reduce the interaction, collaboration, and learning necessary to support quality education (Redpath, 2012).

The recent studies focusing on business students' use of technology have mostly discussed *student satisfaction* and *student engagement* by integrating technology in course design and curriculum (Kardes, 2020; Pye et al., 2018; Sahni, 2019). For example, Kardes (2020) discusses the new realities of a tech-savvy student profile in business schools and how the classrooms and traditional teaching methods can be upgraded through digital technologies. He proposes a set of digital tools that educators can integrate into the classroom to improve students' learning experience. Similarly, Wu et al. (2017) examined the attitudes of students and teachers towards using ICT tools in management education in three Taiwanese universities. They found that students perceived the ICT tools of collaboration and social media to be helpful in learning and in increasing the prospects of their future employment. Also, the teachers found these ICT tools to be useful in enhancing student participation in academic activities.

Studies about business students' use of technology have also explored their perceptions about using the institutional LMS (De Lange et al., 2003; Osgerby, 2013; Wells et al., 2008). For example, Osgerby (2013) conducted a study to examine students' perceptions of using an LMS at a UK university. She reported that the deployment of such systems had facilitated student learning to some extent; however, there were issues of resource availability, skill deficiency, and lack of institutional communication concerning the use of new technological systems. However, more recently, Sahni (2019) found that blending classroom teaching with e-learning activities enhances business students' engagement and satisfaction. The increased use

of technology and online learning systems in business education can provide the necessary support to various designs and practices required to accommodate different student needs, backgrounds, and circumstances.

The academic research in this domain has mostly been quantitative in nature. It relies on survey questionnaires and statistical analysis to analyse the impact of technology use in business education. According to Hodgson and Watland (2004), studies in management education and learning are mostly positioned towards the objective end of the methodological continuum. Arbaugh (2014) also argues that quantitative approaches remain the dominant theoretical lens through which business students' attitudes towards technology have been examined. However, there is a need for more focused research that can explore what people bring to their educational experiences by discussing specific issues concerning learners' experience of technology.

Given the diversity of perspectives presented in these studies, there appears to be a need to develop a better understanding of how learners can effectively use learning technology within the context of business education. Therefore, this study will analyse the different ways in which MBA students in two Pakistani business schools use learning technology during their studies.

The next section will review studies that evaluate the educational benefits of some of the latest digital technologies, mainly social media platforms. Once again, the review will highlight the contrasting perspectives and polarised views present within the findings of these studies.

2.2. Use of social media as a learning technology

The role of digital media in higher education has been discussed in research studies for several years now. However, recently there has been a growing interest in exploring the educational benefits of *social media*, particularly the use of SNS. Boyd and Ellison (2007) define social media as the Web-based platforms that enable users to generate and share content, thus facilitating subsequent online interactions with

other users. Some of the most popular social media platforms on which the recent academic research has focused are Facebook, Twitter, YouTube, WeChat, and LinkedIn.

Research in this domain has mostly focused on exploring social media's educational value, emphasising the *scope* of its use and the *outcomes* it has achieved (Voivonta & Avraamidou, 2018). According to Manca and Ranieri (2016), research into the educational use of social media has moved from being *nascent* to *burgeoning* in the last few years. However, as is the case with most new ideas that explore the relationship of digital technologies with established educational practices, there is usually tension between those who advocate its quick integration into the educational system and those who are rather sceptical of the claims made regarding the advantages of such digital tools for teaching and learning. Selwyn (2014) refers to this as *booster* and *doomster* discourses that paint radically opposing pictures of the potential of technologies.

The extant literature in this domain has gradually shifted from presenting a general overview of using social media in higher education to the impact of specific tools on teaching and learning activities. For example, Maziriri et al. (2020) explored student perceptions toward using YouTube as an educational tool for learning. They found that using YouTube in a formal learning environment was positively received by the students who described that using YouTube video tutorials as an instructional aid increased their engagement and critical awareness. Similarly, Almobarraz (2018) obtained similar results in a Saudi Arabian context, where undergraduate students at a university rated YouTube as an important information resource that supported them in their learning. Cetinkaya (2017) examined the students' perspective on the use of WhatsApp in formal education. The analysis showed that students had a positive opinion towards the use of WhatsApp and perceived it as a *supportive technology*. As this is a fast-changing research area, several other similar studies have explored the impact of a range of latest digital tools (e.g., Facebook, Twitter, Skype, etc.) on student learning.

Within this range of the latest digital tools, Facebook is the most popular platform among university students. As of 2019, Facebook had well over 2.5 billion active users⁴, including students. Studies conducted as early as 2007 indicated that most university students were diligent users of Facebook and were already using it to communicate with their peers on issues related to their courses of study (Caruso & Salaway, 2007; Madge et al., 2009; Selwyn, 2007). The popularity and use of this tool have only increased with time, as has the research on its potential benefits as a learning technology. Henderson et al. (2013), through their synthesis of the literature, argue that social media provide an innovative platform for communication, interaction, and collaboration in the learning process. The research focus in prior studies that explored the academic utility of Facebook shifted from its use as a simple collaborative tool (Lampe et al., 2011; Mason, 2006) to a possible *replacement* or *proxy* for formal learning management systems (Thomsen et al., 2016; Wang et al., 2012).

The majority of research studies in this area have analysed Facebook's social characteristics to see if it can be used as a useful platform for productive collaboration between learners. According to Bicen and Cavus (2011), social media platforms such as Facebook provide students with digital spaces for *interaction and expression* in higher education. Wu (2012) elaborates this aspect further, arguing that the educational value of Facebook comprises three main aspects. First, it provides an *interactive medium* for both students and teachers. It also offers emotional support for students, even allowing for the existence of negative emotions to work as a form of a *decompressor*. Second, it promotes cooperation and collaboration as students can easily engage in discussions, jointly work on academic tasks, and remain up to date with the latest developments in their department or university. Third, it provides students with the opportunity to build their profile, fully revealing their personality and traits in a more comprehensive way.

Some of these prior research studies have exemplified how Facebook can be a valuable pedagogical tool that enhances student learning. For example, Greenberg (2013) conducted an empirical study to demonstrate that Facebook's use in an

⁴ Latest figures obtained from: <https://www.statista.com/topics/751/facebook/>

educational setting positively influenced students' attitudes and enhanced their engagement. Similarly, some studies have shown that integrating Facebook into pedagogical approaches increases student participation in various teaching and learning activities (Junco et al., 2011), and subsequently influences their academic performance (Hrastinski & Aghaee, 2012). Woodley and Meredith (2012) suggest that social media and other recent technologies can also be used to support students in their transition into the university environment, as these technologies can provide them with the required information and access to networks. Some more recent studies (Adalberon & Säljö, 2017; Dalsgaard, 2016; Suebsom, 2015) have specifically explored the potential of using Facebook Groups for peer-to-peer learning. These studies have found that some students join a Facebook group for support, empathy, and connection, while others seek a shared space where they can work with their peers.

In the relevant literature, there has been a strand of research highlighting the *other side* of the story as well. These studies acknowledge that social media platforms, particularly Facebook, are widely used by students, but their formal academic purpose remains contested (Donlan, 2014). In some of the early studies in this domain (Bugeja, 2006; Mazer et al., 2007), researchers argued that the time spent on Facebook for social purposes was sometimes at the expense of the time available for academic study, and so they even favoured a ban on the use of Facebook and other digital tools on campus premises. However, as the popularity of these tools continued to grow, the research focus shifted to highlighting how these tools are used by students for informal learning and developing social networks with their peers (Hew, 2011; Manca & Ranieri, 2016; Selwyn, 2009). According to Selwyn (2009):

"...online exchanges [Facebook posts] ... are merely a continuation of how students talk to each other in other contexts – such as the chatter of the back rows of the lecture theatre, coffee shop or after college telephone conversations." (p.170)

Students who reported using Facebook for academic purposes, notably peer-to-peer communication around group work and assessment, did not always conceptualise this as learning.

More recent studies have raised concerns about social media's utility as a learning tool, mainly due to privacy issues. According to Prescott, Wilson, et al. (2013), Facebook is worth considering as a shared space, but it requires discretion. The recent Facebook-Cambridge Analytica Scandal (Chan, 2019) was one of the largest data breaches in history when millions of Facebook users' personal data were harvested without consent. Therefore, while the research findings on and instructional affordances of social media platforms have been explored in a variety of dimensions and different learning contexts, there still appear to be some *unchartered waters* (Boyd & Ellison, 2007) that require further investigation. As Selwyn (2009) concluded in their study, research in this area paints a picture in which social networking is at some kind of boundary or *liminal state* – an argument which still appears to be valid today.

2.2.1. Comparison with institutional systems

In this ongoing discussion on the educational value of social media platforms, another popular research theme within the literature is the evaluation of using Facebook in *formal educational settings*, by comparing with institutional systems such as Moodle, Blackboard, etc (Anderson & Dron, 2017; Deng & Tavares, 2013; Petrovic et al., 2014; Thomsen et al., 2016). A majority of these studies have explored the differences in students' beliefs and attitudes towards these tools, particularly analysing their habits, past experiences, and perceptions.

For example, Mpungose (2019) examined South African university students' preference for using WhatsApp as an e-learning platform over the institutional system. The findings revealed that students prefer to use a more familiar informal e-learning platform (WhatsApp), instead of Moodle, as it helps them to *socialise* with the module activities. Findings further revealed that both Moodle and WhatsApp as a formal e-learning platform had their strengths and limitations. So, when universities adopt and use only one of these platforms, i.e., Moodle, the students feel bound by the university policy. This seems to be a hindrance to the effective use of any adopted e-learning platforms. Similarly, Deng and Tavares (2013) compared Facebook and Moodle and found some contrasting differences in students' perceptions. Moodle was

perceived as a formal and academic system for downloading course materials, where the students felt obliged to post serious and structured messages. At the same time, Facebook was acknowledged as a platform for sharing information, exchanging experiences, discussing various academic and social issues, and seeking help and support from each other.

Most of the prior studies comparing LMS with other digital technologies frequently discuss the reasons for the *popularity* of social media platforms among students. According to Stutzman (2008), students at the University of North Carolina preferred social media platforms over their course management system for conducting discussions, as they were more *familiar* with those tools. Bosch (2009) also found a significant increase in student participation and engagement in learning activities when using Facebook as the course site. More recently, some studies have put forward another idea that students are more interested in *taking control* of their educational spaces (Bryant, 2017; Charteris et al., 2018). For example, according to Bryant (2017), students are often given limited control of the course pages in their LMS. They are frequently not allowed to introduce or even comment on the content, features, direction of the course, discussion topics, etc. Therefore, social media platforms appeal to the students because they are not controlled in the same manner as an LMS.

Similarly, Charteris et al. (2018) also observed that UG students in an Australian university used an exclusive Facebook group to supplement their study. These groups were being operated in addition to the existing LMS as they were free from the influence of their teachers' surveillance. Students often opt to use informal platforms for the *exclusivity* of those learning spaces, as LMS or other institutional systems are frequently monitored. Although these studies outline a clear distinction between the academic utility of different types of digital tools being used by the students, most of them have concluded that the *interactive freedom* provided by social media platforms opens up a greater possibility for students to be more involved in their learning activities. Therefore, educators need to explore further the potential of such digital tools, particularly Facebook, as an important learning technology.

2.2.2. Teachers' use of social media

One important debate in the relevant literature concerns *teachers' use of social media* platforms to communicate with their students. Some studies (Bosch, 2009; Prescott, Wilson, et al., 2013) have supported such interaction as both students and teachers become *more approachable* to each other. According to Bosch (2009), social media platforms have made it easier for students to ask questions they might not feel comfortable asking during class, as there is a reflective degree of anonymity within this form of communication. He further argues that the use of social media and other technologies for communication facilitates in breaking down the traditional power hierarchies between students and instructors. Duboff (2007) conducted a qualitative study at Yale and concluded that faculty members who used Facebook to communicate with their students felt that it helped break down barriers between themselves and their students.

On the other hand, some studies consider this type of communication inappropriate (Hewitt & Forte, 2006; Madge et al., 2009), mainly because it affects the teacher's *credibility*. For example, Imlawi et al. (2015) stated that an instructor's credibility might be affected by the content of their online profiles, which at times may be inconsistent with students' expectations. A study by Stirling (2016) pointed out that teachers' use of social media platforms can contribute to a *context collapse*, where previously clear hierarchies and modes of interaction between teachers and students are challenged and at times reformulated.

2.2.3. Perspectives from developing countries

Most of the research exploring the use of social media in education has been conducted in the context of developed countries. However, some studies have examined this phenomenon from a developing country perspective as well. For example, Bosch (2009) conducted an ethnographic study at the University of Cape Town and argued that there are potentially positive benefits of using Facebook in teaching and learning, particularly for the development of *educational micro-communities*. More recently, Vikneswaran and Krish (2016) recommended using

Facebook as an online tool for enhancing the writing skills of Malaysian students. Similarly, Bharucha (2018) analysed the perspectives of business students in India on social media use in education. In the Pakistani context, Hussain et al. (2018) conducted a study to understand social media's role as a learning technology for social science students in Pakistan. They found that careful use of such digital tools promotes opportunities for virtual interaction among university students.

What distinguishes these studies from those based in developed countries is that most research in developing countries appears to focus more on evaluating Facebook as an economical educational tool, which can *potentially reduce the digital divide and inequality of access* (Kumar, 2014) in these countries. For example, Kumar (2014) found how youth from the lower socio-economic strata in India used Facebook to consume, produce, and share content with other Facebook users worldwide, thereby breaking down *imposed social boundaries* and expanding their circles of relationships. Similarly, Hussain et al. (2018) found that social media, as learning technology, lowered the communication barriers within different social groups of students. In the context of Indian educational institutions, Bharucha (2018) also concluded that technology-led reach and easy access make a *socio-economic difference* to the lives of Indian learners.

2.2.4. The continuing debate

The review of the prior studies presented above suggests that the educational potential of social media platforms such as Facebook has mostly been explored from a *social* rather than an academic perspective. According to Selwyn (2007), Facebook is mainly used for social reasons, not for formal teaching purposes, although it is sometimes used informally for learning purposes. In most of these studies, the focus has been on analysing the academic utility of these tools as technology-mediated platforms for communication, cooperation, and collaboration, for both students and teachers. For example, Davies (2017) stated that even if students are using SNS to participate in discussions about their assignments, lectures, or to share information, the primary use is to stay in contact with each other. Madge et al. (2009) showed that Facebook is primarily used for social purposes, as the students considered it part of

the *social glue* that helps them settle into university life and keeps them together. Similarly, Liu (2010) conducted an online survey of 221 students to assess their reasons for using different social media tools. He found that 85 per cent of respondents used social media only for *social engagement*. Magogwe et al. (2015), while presenting the student perspective, argued that, as compared to the institutional LMS, Facebook makes it easier and convenient for the students to develop connections with other students and teachers.

Despite such polarised view in prior studies (as discussed above), there appears to be a consensus amongst researchers that social media platforms can only assist with educational practices and should not be seen as a complete replacement of traditional learning systems. According to Towner and Muñoz (2011), the use of SNS and other digital technologies should be regarded as *optional and complementary* artefacts that can hopefully enhance students' learning experience. Undoubtedly, recent technological innovations impact all levels of academia and academic settings. According to Aydin (2012), social media, in particular, provide an empowering educational environment that promotes collaboration and communication. However, the question remains as to whether these platforms can have broader use in educational contexts, i.e., the enhancement of teaching and learning or integration with course designs and curricula. This suggests that the discussion exploring the educational use of social media platforms is still inconclusive. There is a clear need for more research to examine if social media can be accepted and integrated as a learning technology within established teaching and learning practices and how contextual factors influence this phenomenon.

The detailed review of literature conducted in the previous sections suggests that technology will undoubtedly be one of the forces contributing to the development and transformation of higher education. However, with rapid technological advances and increased integration of less formal digital tools (e.g., social media) into higher education, there is a need to conduct further research on the issues and challenges this integration brings. And one possible way to explore such issues from the perspective of students and teachers is as they are the main actors in a learning environment.

2.3. Use of learning technology in Pakistan's higher education sector

The research on the use of learning technology in Pakistani universities has seen a surge in the last decade, as the country has witnessed significant growth and development in the IT and telecom sectors. The focus of these studies has gradually transitioned from examining generic issues around the adoption of ICT by students and faculty (Hassan & Sajid, 2013; Warriach & Tahira, 2014) and the deployment of e-learning systems (Kanwal et al., 2017; Qureshi et al., 2012) to more specific issues, such as the implementation of MOOCs (Iqbal et al., 2016), the use of SNS as learning technology (Hussain et al., 2018; Pervaiz, 2016), and more recently the potential of mobile-learning (m-learning) for Pakistani students (Iqbal et al., 2017; Raza et al., 2018).

One popular theme in the relevant literature is the investigation of the challenges and issues of *adopting ICT in higher education* (Abbas et al., 2017; Chandio et al., 2018; Hanif & Tariq, 2014; Hassan & Sajid, 2013). For example, Chandio et al. (2018) found that the use of technology is considered an important aspect of quality education in Pakistani universities; however, lack of proper infrastructure, equipment, training, and inequitable access remain major issues for these institutions. Similarly, Abbas et al. (2017) highlight budget allocation problems for ICT projects in Pakistani universities. According to their study, most of these projects are planned in different phases, where the continuity of implementation is lost with the change of administration. Thus, at times, projects are not completed or, if completed, they face challenges of maintenance and upgrading. This has a direct impact on the acceptance of ICT for academic work by staff and students of those universities; as Ellahi and Zaka (2014) state, as Pakistani universities struggle with limited resources and a lack of technical expertise, issues and problems related to the use of technology become more pronounced.

In some of these studies, authors have used variants of the Technology Acceptance Model (TAM) to analyse how ICT is being implemented and used within

Pakistani universities (Arif & Kanwal, 2016; Chandio et al., 2018; Kanwal et al., 2017). In the studies referred above, the researchers have used TAM as the foundation for developing the hypotheses to quantitatively predict learners' attitudes towards adoption, acceptance, and continued use of information technology.

One particular research area that appears to be the focus of several studies is the deployment and use of *e-learning systems* in universities (Farid et al., 2015; Nawaz et al., 2013; Qureshi et al., 2012; Sana & Mariam, 2013). In these studies, e-learning has mostly been defined as the use of computers and other digital technologies for online content delivery and providing students with access to digital learning resources. Most of these studies have conducted *quantitative analyses* to highlight the impact, issues, and prospects associated with the implementation of e-learning systems. For example, Qureshi et al. (2012) investigated the challenges faced by Pakistani students while using their institutions' e-learning systems. They concluded that computer access, technical language, and privacy issues were major challenges in adopting e-learning in Pakistan. However, the arguments presented in most of these studies use a broad institutional lens for analysis, with little discussion on the contextual aspects. These studies have not highlighted the impact of the contextual factors present within Pakistani learning environments on the specific issues of students and faculty.

More recently, with the expansion of the country's higher education sector over the last few years, some researchers have examined the possibility of implementing a *blended learning model* in Pakistani universities (Shahzad et al., 2016; Soomro et al., 2018). In these studies, the authors have explored if combining face to face teaching with some online modalities can be a viable option for universities in Pakistan, and what are some of the barriers to adopting this model. For example, Soomro et al. (2018) found that implementing the blended learning model in Pakistani universities was still at the *awareness level* due to inadequate mentorship by the institutions. This learning model still requires much more effort in terms of infrastructural development and administration support.

In the relevant literature, studies that specifically explore students and faculty's perceptions, attitudes, and behaviours towards the use of technology have mostly used survey questionnaires and statistical analyses to present generalised results. These studies have not given much consideration to the individual thoughts and experiences of their research participants, or the contextual factors surrounding those experiences. For example, the focus of these studies has been on examining Internet usage among university students (Bashir et al., 2016) or their digital practices during studies, such as the use of digitised learning resources (Arif et al., 2018; Rafiq & Ameen, 2012) and a growing reliance on digital devices (Rashid et al., 2018; Siddiquah & Salim, 2017). As stated earlier, an in-depth discussion of contextual aspects seems to be absent from the statistical inferences presented in these studies. However, in a study on e-learning adoption in Pakistan, Kanwal et al. (2017) argue that the successful integration and implementation of technology systems requires policymakers, practitioners, and experts to consider *region-specific* issues around technology acceptance and use, as this eventually affects continued use of the system.

2.3.1. Latest strand of research in the Pakistani context

With the remarkable growth of the telecom sector in Pakistan, as discussed in the first chapter (see Section 1.5), there has been a considerable increase in research exploring students' use of social media platforms within their education (Arif & Kanwal, 2016; Hussain et al., 2018; Javed & Bhatti, 2015; Pervaiz, 2016). Most of these studies have conducted quantitative analyses to show that Pakistani students' acceptance and attitudes towards social media tools are generally positive. Some studies have discussed the impact of social media use on students' academic performance (Arif & Kanwal, 2016; Javed & Bhatti, 2015), while some authors paint a comprehensive picture by highlighting both the advantages and risks of using social networking within the higher education sector of Pakistan (Pervaiz, 2016).

In some of these studies, the impact of using SNS as learning technology has been analysed using specific scenarios and examples. For example, Arif and Kanwal (2016) conducted a study on distance learning students of a public sector university.

They found that Facebook was being used as an effective means for knowledge sharing and communication. Similarly, Javed and Bhatti (2015) examined social media use by medical students and concluded that these digital tools helped the students improve their academic performance. Iqbal (2018) investigated how SNS were being used by libraries in Pakistani universities to promote and enhance their services for students and teachers. According to him, most libraries used SNS to update their profiles daily, market their products and services, or share news and event details. Although some early studies discussed issues around the lack of infrastructure and social inequalities within the country, some more recent research on Pakistan's higher education sector highlights the growing familiarity with and exposure of Pakistani students to the latest digital technologies.

In this new strand of research on the use of learning technology in the educational sector, some of the latest studies have also investigated students' perceptions of m-learning (Iqbal et al., 2017; Raza et al., 2018). As mobile usage in Pakistan continues to increase exponentially, particularly in the last few years (as discussed in the previous chapter), these studies have explored the potential of m-learning among university students and their perceptions of this emerging learning technology. The findings have mostly indicated a positive attitude of students towards m-learning. However, Iqbal et al. (2017) found differences in usage patterns according to the study discipline. He concluded that educators in Pakistan should be mindful of differences when designing m-learning programmes as *one-size-fits-all* initiatives will not serve every purpose. In another study, Iqbal and Qureshi (2012) proposed that universities already using an institutional LMS should develop a mobile version to increase student participation in learning activities. Despite exploring this phenomenon in various dimensions, most of these studies have evaluated whether m-learning can be used as an effective tool to overcome the digital divide in developing countries like Pakistan.

2.3.2. Use of learning technology in Pakistani business schools

The focus of this research study is on MBA students and their experience of learning technology. Therefore, it is important to review existing studies that highlight the technology used in Pakistani business schools. Within the relevant literature, there is a dearth of quality research that explores the use of technology in business schools in Pakistan. According to Khan et al. (2011), historically, business education has remained an under-explored research domain in Pakistan; however, since 2001, Pakistan's Higher Education Commission has taken some serious steps for the development of business schools and equipping them with modern research facilities and IT-based systems and tools (Kaleem, 2005; Kolachi & Wajidi, 2008). Despite the growth of business education in Pakistan, research conducted on it within the last decade is restricted to newspaper articles, editorials, and social media blogs.

Concerning the use of technology in Pakistani business schools, a study by Kaleem (2005) explored the effectiveness of technology in business education and its impact on the quality of the business graduates produced. This quantitative study gathered data from four different business schools in Pakistan and found significant variation in the results across the institutions. While some students expressed satisfaction with the learning technology being used in their university, some cited their concerns about awareness, infrastructure, and lack of digital skills. The author argues that the mere allocation of technological resources is not enough to meet student expectations. Another study by Zeeshan et al. (2011) investigated faculty and management's perceptions at Pakistani business schools concerning the impact of technological advancements on business education in the country. The authors used quantitative research methods to show that the pace of introducing technology within Pakistani business schools was quite slow. Although both faculty and management at these schools realised the importance of integrating technology into education, there was strong variation in their understanding of the benefits and effective utilisation of these technologies.

2.3.3. Limitations of the literature on use of technology in Pakistan

The studies discussed in this section are mostly quantitative research relying on hypotheses and statistical analyses of data. A few of the more notable qualitative studies are those by Chandio et al. (2019), Hodgson and Shah (2017), and Rafiq and Ameen (2012). I found Hodgson and Shah's (2017) study quite relevant to my research, as they used phenomenography as a research approach for discussing lecturers' understanding of using learning technology within their pedagogical practice in a public-sector university in Pakistan. Although there have been calls by researchers to conduct more qualitative analysis to explore the Pakistani educational context further, the literature shows that quantitative studies involving complex statistical inferences dominate the research landscape in this domain.

The review of relevant literature presented in this section also highlights a widening gap between the developed and developing countries in terms of the research conducted on the use of technology in education. Ellahi and Zaka (2014) state that there is still a large bridge to cross between developed and developing countries in terms of the depth and breadth of research on the effectiveness of ICT in education. According to Hanif and Tariq (2014), research on the implementation of technology-enhanced learning in Pakistani universities has really *never taken off* and has remained in the back seat. Farid et al. (2015) suggest that the use of educational technology in Pakistani institutions has not been able to attain the expected popularity due to issues such as lack of resources, infrastructure, and institutional support.

There is a need to conduct more in-depth research in relatively under-explored educational contexts to highlight issues that can reduce the barriers to adopting technology in education. Shohel and Kirkwood (2012), in their study on the use of learning technology in Bangladesh, suggested that there was a need for research to address the challenges and difficulties associated with using learning technologies in *technology-poor contexts*. More recently, Czerniewicz (2016) also referred to a changing trend in terms of the rapid adoption of learning technology in the West, but significant

disparities in the developing countries, which need to be highlighted through focused research.

In this section, I conducted a review of prior studies that have explored the phenomenon of using learning technology in the Pakistani context, to illuminate the limitations of this body of literature. Although the research focus in these studies has diversified over the years, there has been little variation in the approach, methodology, and overall research design of these studies. According to Ellahi and Zaka (2014), technology adoption is not as simple as the deployment of a system. It is, in fact, social change in terms of technology and pedagogy, which merits in-depth and comprehensive research. Influenced by these thoughts and my interest in this area, this phenomenographic study will explore the different ways in which MBA students in Pakistan experience learning technology in their studies.

The next sections will discuss some phenomenographic studies that examined this phenomenon of using learning technology from the *students' perspective*, to establish further the grounds for conducting this research study.

2.4. Review of Phenomenographic studies that explore *Students' Experience*

In this study, phenomenography is used to explore the variation in students' experience of learning technology in Pakistan. This section will review some of the prior phenomenographic studies that have focused on exploring *students' experience* of a given phenomenon, particularly learning technology. This review is intended to illustrate how this research approach can be applied to generate insights that contribute to a better understanding of higher education learning.

The development of the phenomenographic research approach traces its origin in some of the early work on the investigation of students' experiences of studying and learning in higher education. According to Tight (2016), it is the only approach that has been *substantially developed* within higher education research by higher education researchers. In most of the early phenomenographic studies, the focus was

to systematically explore and conceptualise the relational nature of key aspects of the student experience of learning.

Early phenomenographic research led to the now well-established idea of *deep and surface level learning*. This arose from the study of Marton and Säljö (1976), in which they asked a group of students to read an academic article and then answer a few questions about the *process* and *outcome* of this learning experience. The students described the distinctions in the *process of learning* as deep or surface approaches, primarily based on the different aspects of the learning material on which they focused. Marton and Säljö (1976) initially called these distinctions as the *levels of processing*; however, later renamed them as *approaches to learning* (Marton & Säljö, 1984), with the rationale that approach included not only process but also intention and that the approach depends on both the context and the content (Entwistle, 1991).

The studies examining the students' approaches to learning found that the surface learners focused on the text itself, intending to *reproduce* the main facts. In surface approaches, the students often adopt a strategy of *rote learning* and rush into the *retention of information*. On the other hand, deep learners were directed towards the learning material's *intentional content*, i.e., trying to comprehend what the author wants to say. These learners engaged and thought critically about the text, exploring it *beyond* the main point, rather than focusing on memorisation. The idea of approaches to learning has been further established and substantiated by several research studies, particularly those of Ramsden (1981), Entwistle and Ramsden (1983), and Biggs (1987).

Ramsden (1981) and Entwistle and Ramsden (1983) found that some students may use both deep and surface approaches to learning, depending on what is required and the conditions under which they are learning. They referred to it as *strategic learning*. The strategic learners use *cues and clues* (Ramsden, 1981) about the task and are motivated by learning that results in positive outcomes such as the achievement of high grades. Biggs (1987) used a questionnaire-based approach and found a conceptually similar approach to learning, which he called as *Achieving*. This approach

entailed competition, ego-enhancement, and short-term performance, in which the focus was to obtain the highest possible grade and behave as model students.

The early phenomenographic studies were often criticised for being more logical rather than theoretical (see Section 3.2.7); however, phenomenography has grown in scale, scope, and influence (Ellis & Goodyear, 2010) and has emerged as a widely used research approach in studying aspects of teaching and learning in higher education. Although it is now being applied in a wide variety of disciplines, such as healthcare (Barnard et al., 1999; Larsson & Holmström, 2007), nursing research (Sjöström & Dahlgren, 2002), and fashion design (Drew et al., 2001), the research questions in these studies still relate to education and learning.

2.4.1. Use of phenomenography in research on experience of learning technology

Phenomenography is a popular research approach in studies examining the *educational use of technology*, particularly in the higher education sector. It has been particularly productive in revealing the importance of variation in how students and teachers conceive of and approach various aspects of learning (Ellis & Goodyear, 2010), particularly the use of technology.

A majority of these studies have mostly focused on examining the variation in students' conceptions of using technology in education (Barnard & Gerber, 1999), the usefulness of their institutional VLEs (Lameras et al., 2008; Love & Fry, 2006), or their experience of Web-based learning (Tsai, 2009). For example, Love and Fry (2006), while examining the students' perceptions of their institutional VLE, found that some students experienced it as a *springboard* that facilitated them to download learning resources and prepare for exams. On the other hand, some students within the same learning environment experienced it as a *safety net* that was only used when they could not attend their classes or communicate with tutors.

Similarly, Ellis and Goodyear (2010), in their book on students' experiences of e-learning in higher education, have discussed the findings of the phenomenographic studies conducted by them and their colleagues, involving students from the

University of Sydney. One of the key outcomes of these research studies is recognising that student approaches to learning become *structurally more complex when e-learning is involved* (p.30). For example, in one of the studies, they explored variation in students' experience of learning *through face-to-face and online discussions*. They found significant relationships between key aspects of students' experience, particularly between their conceptions of learning and approaches they adopted for engaging in these discussions. According to Ellis and Goodyear (2010), in both face-to-face and online contexts, *cohesive conceptions* of learning were related to deep approaches of engaging in discussions, while *fragmented conceptions* of learning, related to surface approaches of engaging in discussions.

In the second study reported by Ellis and Goodyear (2010), the researchers explored students' learning experience through inquiry. The focus was to examine how students independently or collaboratively research an assigned topic using digital and non-digital sources. They found that a surface approach to problem-based learning involved approaching the problem as an information collection exercise, with little emphasis on critical evaluation of the chosen information. There was an over-reliance on a generic search engine to source information and resolve inquiries. On the other hand, the deep approach to online inquiry included using professional resources in tandem with a generic search engine to provide a broader information context.

With the advent of the latest digital technologies, including social media platforms, phenomenographic studies have also shifted on exploring how students experience these latest tools. For example, some of these recent studies examine the variation in students' conceptions of *mobile learning* (Khan et al., 2019), *approaches to group work* in an ICT-mediated learning environment (Ellis, 2016), *use of iPads* during studies (Souleles et al., 2015), research students' use of ICT (Markauskaite & Wardak, 2015), and experience of learning using *networked technologies* (Cutajar, 2017). Barnes (2018) recently conducted a phenomenographic analysis of data collected through *Facebook status updates*. She argues that by looking at ways to adapt phenomenography to work better for what a researcher is looking to discover, the phenomenographers can attempt to breach their *tribal borders*.

Another popular strand of research in this domain is the use of phenomenography to explore the variation in lecturers' conceptions and experience of technology within their pedagogical practices (Cutajar, 2019; Ellis et al., 2009; Hodgson & Shah, 2017; Khan & Markauskaite, 2017). For example, Hodgson and Shah's (2017) study was based in the Pakistani learning context and presented the different ways in which lecturers in a public sector university understood learning technology within their teaching practices. It is the only phenomenographic study conducted in Pakistan and offers new insights from this relatively under-explored educational context.

In recent years, there has also been an increase in doctoral studies adopting a phenomenographic research approach to explore educational technology topics. For example, Cutajar (2014) studied Maltese students' accounts of their networked learning experiences. Similarly, Khan (2014) investigated vocational teachers' ways of thinking about ICT-enhanced teaching and teaching approaches associated with using ICT in teaching in an Australian context. From a developing country's perspective, Nguyen (2017) presented the students' conceptions of networked learning while studying at a Vietnamese university. In most of these studies, the research aim was to explore a given phenomenon and highlight the diverse contextual aspects within which the experience of their participants was situated.

2.4.2. Use of phenomenography in Management education research

The close association of phenomenography with education has somehow constrained it to remain embedded within education and learning research. It has mostly been adopted in studies that explore conceptions of students and teachers about various phenomena in management education. According to Hodgson and Perriton (2012), phenomenography offers the ability to categorise variation in the *experience of managing*; therefore, it can be used as a suitable approach in management learning for studying *practice*. Lin and Tsai (2008) used the phenomenographic approach to explore the students' conceptions of learning management. According to them:

“...almost none of the studies in management education have explored higher education students’ conceptions of learning, particularly in the domain of management...if students’ conceptions of learning management can be carefully explored, it will facilitate management educators to improve students’ learning outcomes and provide a foundation for developing curricula.” (p.562)

One of the early phenomenographic studies in management learning was conducted by Burgoyne and Hodgson (1983), who reported how managers experienced their work and learning as managers. Despite the paper being published in a high-quality research journal, phenomenography could not establish more than a tentative presence in management education research. As Hodgson and Perriton (2012) note, phenomenography *failed to thrive* as an approach in this domain because of its partial application, failure to take socio-economic contexts into account, and its close association with educational questions. Dunkin (2000) has advocated that phenomenography as a research approach has the potential for a wider application, as it respects the uniqueness of individual experience and subjectivities and the diversity of influences shaping that experience.

In the year 2000, almost seventeen years after the early phenomenographic studies on management learning were published, Jorgen Sandberg’s paper (Sandberg, 2000) was published in which phenomenography was used as the research approach to understand *human competence at work* by examining the variation in workers’ conceptions of their work. Since then, there has been a gradual increase in applying this research approach to a broader range of sub-disciplines, such as Accounting, Marketing, Project Management, etc. The use of an interpretive approach to understanding a phenomenon and the focus on individuals’ lived experiences have enabled researchers to explore a diverse range of phenomena within the broad discipline of Management. However, the emphasis has been on management education (i.e., issues around teaching and learning) instead of management per se. According to Hodgson and Perriton (2012), most of the studies published after 2000 have explored learners’ experience of management education and learning.

The review of relevant studies, particularly those published after 2000, highlights that one of the notable contributions is that of Ursula Lucas. She used phenomenography to understand the *conceptions of students and lecturers* in the context of Accounting. Lucas (2000, 2001, 2002) explored students' conceptions towards accounting and highlighted the variation in analytical and conceptual skills of students and how learning context influences learning approaches. For example, she identified that students conceptualised two different worlds while studying accounting, i.e., a world of *detachment* and a world of *engagement* (Lucas, 2000), which usually determines if they will adopt a deep or surface-level approach to their studies (Lucas, 2001). The purpose of using phenomenography was to obtain a rich and detailed view of the students' lifeworld, rather than a representative one. Similarly, in another study based in an Australian business school, Tempone and Martin (2003) explored how students iterated between theory and practise when working on assignments related to accounting and finance. More recently, Eskola (2011) adopted phenomenography in her doctoral study to explore the variation in conceptions of what constitutes *good learning* in the field of Accounting.

In some of the other areas, Wright et al. (2007) explored doctoral supervisors' conceptions about supervising management students, while Chen et al. (2008) used phenomenography to examine the ways of conceiving and accomplishing work among Chinese project managers in the construction business. As stated earlier, more recent research has further diversified the application of this approach to a wider range of phenomena. For example, Pimpa (2010) studied the experience of *online engagement* in the business learning context among international and local students in Australia, and Lin and Niu (2011) explored students' conceptions of learning marketing. There is a gradual increase in acceptance and use of phenomenography as a potential research approach to examine the variation in the experience of a given phenomenon in different contexts, as it not only provides the readers new ways to consider their own context but also learn about other contexts as well.

The review of prior studies in this section has helped to establish that the phenomenographic research approach has mostly been adopted in management

education research, where the aim was to tap into rich descriptions of experience provided by research participants to explore a given phenomenon from *their perspective*, while also highlighting *contextual aspects*.

Summary of the chapter

The chapter has conducted a literature review for this research study. It has enabled me to refine the research question by identifying research gaps in the existing body of knowledge around the educational use of technology in general, and students' experience, perceptions, and understanding of technology in particular. It has also helped to develop insights into the various contextual aspects discussed in these research studies. In conducting this review of the literature, the underlying aim was to establish further the grounds for conducting a phenomenographic analysis of MBA students' experiences of learning technology in Pakistan.

The chapter is divided into four main sections. In the first section, I presented an overview of research exploring the use of technology in education to familiarise the reader with some of the aspects and issues that will be frequently referred to in this study. This section focused on highlighting students' perspectives, understanding, and experience of this phenomenon, particularly the contrasts and contradictions reported in prior studies. Furthermore, the role, use, and integration of technology in management education have also been discussed at length to highlight some of the issues and challenges associated with this phenomenon.

The second section reviewed studies evaluating the educational potential of the latest digital technologies being used by students, particularly social media platforms such as Facebook. This section highlights how students' use of learning technology in their studies has gradually transitioned from formal institutional systems to less formal digital tools. Although most of the studies evaluate the educational potential of social media, there are studies which see it as a distraction for students and hence advise caution in its rapid adoption. Furthermore, the review in this section also suggests that the educational potential of social media platforms has mostly been

explored from a *social perspective* rather than an academic one. The review of such polarised views about the use of social media in education suggests that the academic debate and discussions on this topic have remained inconclusive. There is a clear need for more research that examines if social media can be accepted and integrated as a Learning Technology within established teaching and learning practices

In the third section, I conducted a review of prior studies investigating the phenomenon of using technology in the Pakistani context. I have highlighted how, over the years, the research focus in these studies has shifted from the discussion of generic issues, such as the challenges of adopting ICT and e-learning systems in education, to more specific topics, such as the implementation of MOOCs, the use of social media platforms, and the potential of m-learning. Furthermore, the review highlights the scarcity of research exploring this phenomenon in the context of business education, with the latest peer-reviewed study having been published in 2011. This section also highlights that majority of research published in Pakistan is mostly quantitative, relying on sets of hypotheses and statistical analyses of data. Similarly, in terms of the quantity, quality, and diversity of research conducted on the use of technology in education, there appears to be a widening gap between the developed and developing countries.

The final section reviewed prior phenomenographic studies conducted in this domain. This was done to achieve two objectives, first to understand how this research approach has been applied in studies exploring students' use of technology and second to review how it has been applied in the context of management/business education and learning.

3 RESEARCH METHODOLOGY

Chapter 3: Research Methodology

This chapter describes the research methodology and design adopted to explore the students' experience of learning technology. It starts by discussing the *rationale* for choosing a phenomenographic research approach and compares it with some of the other methodologies in the interpretive research paradigm. The *theoretical framework* is then explained to highlight the underlying assumption, core theoretical aspects and analytical frameworks associated with phenomenography. The third part of the chapter focuses on the *research design* and describes how the study was conducted in practice. The final part discusses the *quality checks* employed in this study, particularly those concerning rigour, trustworthiness, and credibility.

3.1. Determining the Research Approach

This section introduces phenomenography as the research approach for this study. Although the detailed theoretical underpinnings of the research approach will be described in section 3.2., the brief overview presented here will help in explaining the rationale for choosing it over other research methodologies.

3.1.1. Using phenomenography as a *possible* research approach

Phenomenography allows us to explore the lived experiences of people and understand their conceptions of certain aspects of the world. Its research interest lies in studying the *variation* (at a collective level) within the descriptions of experience provide by subjects (in this study - MBA students). According to Marton (1986):

"Phenomenography is a research method for mapping qualitatively different ways in which people experience, conceptualize, perceive and understand various aspects of, and phenomena in, the world around them." (p.31)

The focus of phenomenography is to identify and describe the different ways in which people experience a given phenomenon. Marton and Booth (1997) explain

that phenomenography is based on the idea that there are a limited number of ways in which a phenomenon can be experienced. As a phenomenographer, our prime interest is to capture the *totality of ways* in which people experience or are capable of experiencing a given phenomenon.

Phenomenography takes a relational approach, whereby an *object* (the phenomenon under investigation) and the *subject* (the people experiencing the phenomenon) are not treated separately. It is based on the underlying assumption that the person and the world are inextricably related through people's lived experience of the world (Säljö, 1979). According to Marton and Booth (1997):

“... in order to make sense of how people handle problems, situations, the world, we have to understand the way in which they experience the problems, the situations, the world that they are handling...” (p.111)

Marton (1981), in one of his seminal works on phenomenography, explained that there cannot be a world that is independent of descriptions or describers. People only have access to the world through their experience, and therefore we cannot separate that which is experienced from experience per se. This experience of a given phenomenon is then explored using the participants' description of their world by taking a *second-order perspective*.

By adopting the second-order perspective in phenomenography, we orient ourselves towards people's experience of the world and then make statements about it. Unlike the more commonly adopted first-order perspective, where the aim is to describe various aspects of the world, the second-order perspective aims at describing people's experience of various aspects of the world. According to Marton and Booth (1997):

“... [a second-order perspective] means taking the place of the respondent, trying to see the phenomenon and situation through her eyes, and living her experience vicariously. At every stage of the research, the researcher has to step back consciously from her experience of the phenomenon and use it only to illuminate the ways in which others are talking of it, handling it, experiencing it, and understanding it.” (p.121)

These aspects explaining the second-order perspective will be elaborated on and discussed further in Section 3.2.4.

The research interests, theoretical underpinnings, and features such as the second-order perspective make phenomenography a suitable approach for this study. It not only allows me to explore the students' experience of learning technology using their descriptions of experience but also analyse the contextual factors within which this experience is situated. As stated earlier, the phenomenographic analysis of the data has enabled me to bring forward the unheard voice of students, within an under-explored educational context of Pakistan. The theoretical underpinnings of phenomenography will be explained later in the chapter.

3.1.2. Evaluating alternative research methodologies

Within a research study, it is critical to determine an appropriate research methodology that aligns with the research objectives. As this study focuses on exploring peoples' *experiences* of a given phenomenon, the choice of a research approach fell under the *interpretive research paradigm*. The following section presents an evaluation of research methodologies that were considered for this study. It is important to clarify that this evaluation does not suggest that one research approach is inherently superior to any other. It merely hinges on the question of how a particular methodology is different from phenomenography, and if it can meet the research objectives and answer the research question.

Phenomenology

Phenomenography and phenomenology, both have the relational, experiential, and contextual characteristics and share the same *object of research*, i.e., descriptions of experience that highlight how a phenomenon appears to people. Although both the research approaches contain the word *phenomenon*, which means "*to bring to light*" (Larsson & Holmström, 2007, p. 55), there are key distinctions on how descriptions of experience are used and analysed by researchers in each approach.

In phenomenography, the suffix *-graph* is used to represent a research aim to explore the *different ways* in which a group of people understand and experience a phenomenon, whereas in phenomenology *-logos* highlight an approach that aims to uncover the *essence* of a phenomenon (Larsson & Holmström, 2007). The relevant literature comprises academic debates about the theoretical similarities between phenomenography and phenomenology. However, Marton (1981) rejected this idea, stating that phenomenography is *not* an offspring of phenomenology, as the former tries to characterise variations in experience, while phenomenologists try to explore the essence of a phenomenon. Marton and Booth (1997) further elaborate that both research methodologies can be members of the *same family*, but “...they are nothing more than cousins by marriage” (p.117).

Phenomenology studies structures of conscious experience as experienced from the first-person point of view, along with relevant conditions of experience (Smith, 2018). Although practised in various guises for centuries, phenomenology came into its own in the early 20th century in the works of Edmund Husserl (Zahavi, 2003). It was initially defined as the study of *appearances of things* or *meanings things have in our experience*. According to McIntyre and Smith (1989), the central structure of an experience is its *intentionality* – the way it is directed through its content or meaning towards a certain object in the world. Intentionality derives from the Latin verb *intendere*, which means *to point to* or *to aim at* Wilson (2003). Husserl’s interest in intentionality was inspired by his teacher, Franz Brentano and referred to it as the *principal theme* of phenomenology (Smith, 2018). McIntyre and Smith (1989) further clarify the concept of intentionality through simplified examples, such as when we see a tree, our perception is a perception of a tree or when we think that $3+2=5$, we are thinking about certain numbers and relationships among them. Therefore, each such mental state or experience is a representation of something other than itself. This *representational character* of mind or consciousness, i.e., it being of or about something, is intentionality.

In phenomenology, the phenomenon is investigated per se (i.e., essence or inner core), whereas a phenomenographic study will explore the *variation* in experiencing

the same phenomenon (Åkerlind, 2012). In relation to this study, phenomenography is being used to explore the different ways in which MBA students in two Pakistani business schools experience learning technology within their studies. In contrast, a phenomenological research objective would have focused on understanding the essence of experiencing learning technology within MBA education in Pakistan, without considering the element of variation.

Another distinction between the two research approaches is the way questions are posed to the research participants. For example, in phenomenology, there is a clear line between *conceptual thoughts* and *pre-reflective experiences* (Jones, 2014). A phenomenological study is directed towards the pre-reflective level of consciousness, where the aim is to describe either what the world would look like without having learned how to see it or how they taken-for-granted world of our everyday existence is lived (Marton, 1981). However, in phenomenography, we deal with both the conceptual and the experiential, as well with what is thought of as that which is lived.

In terms of the research outcomes, a phenomenological study generates a set of themes that constitute the essence of a phenomenon (Manen, 2007). In contrast, the outcome of a phenomenographic study is a set of categories of description that represent the different ways in which a phenomenon is experienced (Marton, 1981). In this study, the research objective is to uncover the variation in students' experience of learning technology rather than understanding the essence of the experience. Therefore, a phenomenographic research approach resonates more appropriately with the research objective.

Ethnography

Ethnography is a qualitative research methodology that traces its origins in sociology and anthropology and is concerned with the study of social interactions, behaviours, and perceptions that occur within groups, teams, organisations, and communities (Hammersley & Atkinson, 2007). It is an *observational approach* that examines work as it is practised in a naturalistic setting. The researcher is required to experience the environment in the same way as the people (subjects) in that

environment to identify patterns in the social life, activities, interactions, norms, and rules of a given context and situation (Brewer, 2000).

The origins of the term lie in nineteenth-century Western anthropology, where an ethnography was a descriptive account of a community or culture (Hammersley & Atkinson, 2007). The move towards naturalistic observational methods in anthropology is generally attributed to Bronislaw Malinowski and the conviction that only through living with and experiencing native life in a given environment can a researcher really understand that culture and way of life (Rouncefield, 2011). Ethnography provides an opportunity for the researcher to gather empirical insights into social practices that are normally hidden from the public gaze (Atkinson, 2007). According to Bryman (2001), ethnographers are required to develop a strong association with the research participants (subjects) and the situations they study, to grasp the natives' point of view. Hammersley (1985) explains this further, saying:

"The task [of ethnographers] is to document the culture, the perspectives, and practices, of the people in these settings. The aim is to 'get inside' the way each group of people sees the world." (p.152)

Therefore, ethnographers develop an understanding *from within* and present the complexities of the ordinary, everyday life of their participants, as lived in particular settings.

In ethnography, researchers usually employ a relatively open-ended approach, i.e., they begin with an interest in some particular area of social life and have a *foreshadowed problem* in their mind (Hammersley & Atkinson, 2007), the overall orientation is an exploratory one. Owing to this initial exploratory character of ethnography, it will often not be clear where, within a setting, observation should begin, which participants need to be shadowed and how the sampling strategies would work. Data collection, for the most part, is relatively unstructured, i.e., it does not involve following through a fixed and detailed research design at the start (Hammersley & Atkinson, 2007). It consists of the researcher participating in people's daily lives for an extended period, watching what happens, listening to what is said

and asking questions through informal and formal interviews, collecting documents and artefacts (Bryman, 2001). The actions and accounts of people are studied in naturalistic settings, rather than under conditions created by the researcher, e.g., experimental setups or structured interviews.

The ethnographic stance entails viewing the social world from the standpoint of its participants (Rouncefield, 2011), and the data analysis is undertaken in an inductive thematic manner, i.e. it involves interpretation of the meanings, functions and consequences of human actions and institutional practices and how these are implicated in local and broader contexts. This requires the researcher to closely study participants' use of specific language or their acts that transmit their sensemaking as they create, experience, and explain social realities (Hammersley & Atkinson, 2007).

Regarding this study, ethnographic research would have involved prolonged immersion and participation in the day to day lives of MBA students to discover their practices, activities, and interactions with learning technology. It was difficult for me to negotiate such access to the MBA students, and that too inside their classrooms. It would have been quite challenging for me to get permission from the management of business schools for such a prolonged observational study. Furthermore, within a doctoral study, it is quite difficult to spend this much time on data collection, given the strict deadlines of progress reviews and appraisals. Therefore, keeping in view the research interests of ethnography and the practicalities involved in its application, phenomenography was considered a better match.

Ethnomethodology

Ethnomethodology views itself as a foundational discipline, i.e., it takes as its topic of study the things that other approaches take as a given. It is the study of those methods by which members of a group or society make sense of the everyday world around them and make their actions in response to the world accountable to others (Garfinkel, 1967). It means the methods people use on a daily basis to accomplish their

everyday lives. In this methodology, the people in an environment, their subjective orientations and experiences are the foci of interest.

The motivation for this endeavour stemmed from Harold Garfinkel's observation that in the formation of sociological theories about ordinary, everyday things, the recognisable features of those things seemed to disappear. They were lost in the abstract constructs which were overlaid upon them by way of explanation. According to Button (1981), ethnomethodology studies how a person's social world (a world comprised of everyday objects, action, and interaction) is constructed, accomplished, and maintained. Its main contribution to the understanding of social life is its capacity to produce insights about what is regarded as obvious, given, or natural (Leiter, 1980). Ethnomethodologists are particularly interested in examining the ways people apply abstract rules and common-sense understandings in situations to make actions appear routine, explicable, and ambiguous (Bogdan et al., 1975). It describes these actions rather than explaining or theorising them as it sees theorising as adding no value to the understanding that members of the setting already have about their world.

Ethnomethodology views social life as being constituted through spoken and written language. The three key tenets of ethnomethodology are *reflexivity* – to uncover the context and embeddedness of actions, *interaction* – making sense of activities in everyday life, and *indexicality* – language-in-use, code, grammar, or vocabulary that is shared among people in a certain setting (Whittle, 2018). The researcher usually has to accept whatever data the setting offers and gather what is there rather than bring themes and approaches from outside the setting and then go looking for specific things by using specific tools. In ethnomethodology, the researcher must be led by the phenomenon under study to determine *what counts as data* and *how best to capture it* (Garfinkel, 2002).

In relation to this study, ethnomethodologically motivated research would have focused on depicting the working sensibility of MBA students. The observation would have been directed at the kind of things students take for granted or presuppose while

using learning technology, the sort of things they routinely notice, or the type of things they are on the lookout for and how do they react to the things that occur within their sphere of attention, etc. However, the objective of my study is on exploring how people *experience* a certain aspect of their world and the variations within it, rather than examining how students make sense of their daily interactions with that phenomenon. Therefore, a phenomenographic approach was preferred over other interpretive methodologies.

In summary, phenomenography is a research approach that is relational, empirical, and non-dualistic in nature and aligned more closely with the research objectives of this study. The next section will explain both the theoretical and analytical frameworks associated with phenomenography to highlight how they have been applied in this study.

3.2. Defining the Theoretical Framework

3.2.1. Origins of phenomenography

Phenomenography traces its origins to the research on *Approaches to Learning* carried out at Gothenburg University (Sweden) in the 1970s. Although the term is said to have been coined by Ference Marton in 1981, certain studies claim that Ulrich Sonnemann first used the term in 1954 (Barnard et al., 1999; Dahlin, 2007; Limberg, 2008). In a later study, Marton (1986) also confirmed that the term phenomenography was being used before as well. The term phenomenography has its roots in Greek words that mean *description of appearances* (Limberg, 2008).

The core theoretical assumption of phenomenography is that there can be differences in how people within the same environment understand or experience a particular phenomenon (Marton & Booth, 1997). These differences can be considered as *different interpretations* of the same reality. Marton (1981) proposed the idea of a research approach that could *systemise* forms of thought about these different interpretations of the same reality. According to him, phenomenography aims to

capture the variation in ways people “...experience, conceptualise, perceive and understand’ various aspects of the world around them” (Marton, 1981, p. 181).

In subsequent studies, researchers have defined phenomenography in different ways, according to their understanding of its theoretical assumptions. For example, Säljö (1988) described it as an approach that deals with the problem of analysing the meaning that people ascribe to the world. According to Entwistle (1997), phenomenography seeks to explore the different conceptions people constitute from the world of their experience. Barnard et al. (1999) provide an elaborated definition and refer to phenomenography as a qualitative, non-dualistic research approach that identifies and retains the discourse of the research participants and focuses on people’s understanding of their experience of the world around them. Despite the slight variation in choice of words or terminologies, *descriptions of experience* and *variation* lie at the heart of all such diverse explanations of phenomenography.

This research approach has mainly been used within the educational context, focusing on exploring variation in understandings of educational concepts (Åkerlind, 2015). Earlier phenomenographic studies mostly focused on practical issues around learning and relied more on logic rather than theoretical underpinnings. They focused on exploring students’ understanding of scientific concepts from disciplines such as Physics, Mathematics, etc (Marton & Booth, 1997). According to Marton (1986), the emphasis of phenomenography was on the pedagogical potential of this field of enquiry, “encouraging teachers to pay attention to students’ ways of thinking and to facilitate students’ realisation that there are different ways of thinking” (p.47). Over the years, phenomenography has emerged as a multidisciplinary research approach for qualitative studies.

According to Hasselgren and Beach (1997), as the early studies were mostly empirical and pragmatic, the need to spell out philosophical commitments was not felt very strongly. Several years after the first phenomenographic study, Marton and Booth (1997) presented a detailed discussion of the key theoretical aspects of the research approach. According to Åkerlind (2005), the epistemological and ontological

assumptions, theoretical basis, and specifications of the methodological requirements underlying the approach were developed much later. This invited criticism by researchers from a variety of angles, details of which will be discussed later in the chapter.

The prior studies on phenomenography, particularly those which highlight its theoretical foundations, refer to it either as a research approach, methodology, research tradition or a paradigm, position, or a perspective. At times, some of the authors have even used two different characterisations of phenomenography within the same article. In this study, I use the term 'research approach' to refer to phenomenography, as it encompasses distinctive theoretical and methodological positions. It provides a theoretical framework using which the phenomenographers get a firm idea of what they are likely to find through their research, i.e., different ways of experiencing a phenomenon. Furthermore, it also provides specific strategies for data collection and analysis; hence my understanding of phenomenography is as a research approach.

3.2.2. Theoretical underpinnings

Phenomenography lies within the *interpretive research paradigm*, which assumes that the person and the world are inextricably related to each other through the person's lived experiences of the world. It is a *relational approach* that explores the relationship between the individual and some specific aspects of the world. Säljö (1997) states that phenomenography aims at understanding the limitations to the ways in which individuals can experience a specific aspect of the world. As discussed in the previous chapter, some of the early phenomenographic studies (for example Marton & Säljö, 1976; Svensson, 1977) used the example of approaches to learning as a research object to illustrate that the approaches adopted by students are not an inherent trait but may vary from one learning context to another, depending on factors such as understanding the disciplinary content, perceptions of course design, views of the learning environment, etc.

Phenomenography is based on a *non-dualist* ontology (Marton, 1986), which rests on the assumption that the world we communicate in and perceive is the world we experience. Marton (2000) explains this point in the following manner:

“From a non-dualist, ontological perspective, there are not two worlds: a real, objective world, on the one hand, and a subjective world of mental representations, on the other. There is only one world, a really existing world, which is experienced and understood in different ways by human beings. It is simultaneously objective and subjective...” (p.105)

Similarly, Säljö (1997) defines a non-dualist stance as a position where the internal (thinking) and the external (world out there) are not posited as isolated entities. This implies that when people describe their experience of a phenomenon, they are describing their *internal relationship* with that phenomenon. To understand this relational aspect of phenomenography, let us consider a simple example provided by Marton (1994) in which a group of students were asked how the number 7 can be obtained. Some might sense it as $5+2$, and others might say $1+6$ or $3+4$, etc. Their decisions about the possible pairing likely came from their experience of number 7, or as a result of some reflection or some other possibilities. But, in all cases, 7 has been conceptualised as the sum of two pairs; therefore, it is not possible to deal with an object without experiencing it in some way. Thus, *experience* within a phenomenographic study represents the relationship of the *object* (the phenomenon under investigation, e.g. learning technology) and the *subject* (the people experiencing the phenomenon, e.g. students). The following figure, referenced from Bowden (2005, p. 13), explains the relation within phenomenographic research:

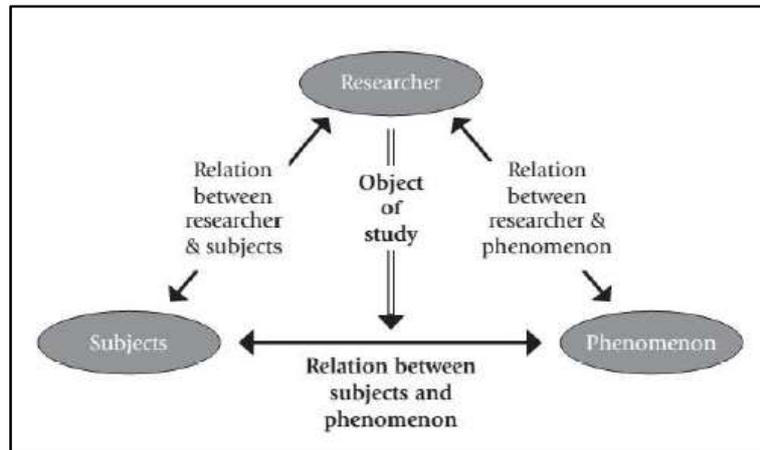


Figure 1 Concept of relationality in phenomenography (Bowden, 2005, p.13)

The *epistemological* assumption of phenomenography is that how an individual experience the world is different from others, and these differences can be communicated to others through our *descriptions*. According to Marton and Booth (1997), we cannot describe a world which is independent of our descriptions and as humans, we can only *describe the world as we experience it* and using the words available to us. As stated earlier, these *descriptions of experience* form a core characteristic of the phenomenographic research approach. Säljö (1988) used the term ‘filter’ to refer to these descriptions of seeing the world. He said:

“There is always a filter through which the world is seen if it is to be meaningful. The interest in this filter – the conceptions of reality that we acquired as participants in human communication – is what characterizes phenomenography as a scientific undertaking.” (p.38)

It is these different understandings held by a particular group of people (e.g. in this case, *the MBA students in two Pakistani business schools*) about a given phenomenon (e.g. *learning technology*) that a phenomenographer aims to explore, analyse, and then present to the world.

One of the key features of phenomenography is that it facilitates exploring both the *meaning* and *structure* associated with human experience. According to Marton (1981), a phenomenographic study always has two areas to explore: first, the range of *distinct ways of experiencing* a given phenomenon; and second, the *part-whole*

relationship between these different ways of experiencing. In doing so, the *context* within which the experience is situated is also revealed. In this case, the notion of context is grounded in the phenomenographic approach to studying experience. Developing an understanding about the context helps in establishing the sense of the descriptions of experience provided by the research participants. According to Marton and Booth (1997), our experience of the phenomena is moulded, modified, transformed and developed through the context in which we experience them in. The later sections in this chapter (section 3.3) will highlight how analytical frameworks are used to discern these aspects from the experience of a phenomenon.

A critical aspect of awareness is the phenomenological concept of *appresentation*. That is, even if not all, of the aspects of the phenomenon, are discerned it is still experienced as a whole. Marton and Booth (1997) applied this concept to the experience of a phenomenon and stated that “...*even if an entire object of concern is not visible, it is still appresented*” (p.99). They state that when humans have a perceptual or sensuous experience of something, in addition to what is presented to them – that which they see, hear or smell, they experience other things as well. For example, when we hear the sound of a tram that has not yet come around the corner, the tram itself is presented. When we look at a face, we experience a human being, a female or male body, but even more, a person. That which is not seen is not even visible, is *appresented*. In this study, this implies that in simultaneously discerning a few or several structural elements of the experience of learning technology, the student gives it meaning, i.e. describing the *whole* act of experiencing learning technology during their studies.

The next sections will highlight other important features of phenomenography, such as its research perspective, the unit of investigation, and research outcome.

3.2.3. Unit of investigation

In phenomenography, the aim is to capture the various facets of a phenomenon as they appear to a group of people. These ways of experiencing something constitute the *unit of investigation* in phenomenography, known as conceptions (Limberg, 2008). It is through these conceptions that an individual describes their experience of that

phenomenon. Furthermore, in this research approach, the conception or way of experiencing a phenomenon is different from opinions, thoughts, or attitudes a person might have about that phenomenon (Larsson & Holmström, 2007).

According to Marton and Booth (1997), conceptions are defined as ways of understanding, experiencing, seeing, or conceptualising the world. Marton and Pong (2005) explained this further and said:

“the basic unit of description in phenomenographic research...has been given various names, such as...ways of conceptualising...ways of experiencing...ways of seeing...ways of understanding...and so on...”
(p.336)

Within phenomenographic research, conceptions are considered to be the smallest unit of analysis, and the researcher aims to explore these conceptions held by people about the phenomenon under question. In this study, conceptions are the different ways in which MBA students describe their experience of learning technology within their studies. These conceptions are then presented in the form of categories of description, which will be explained later in the chapter (section 3.2.5).

3.2.4. Second-order perspective

The research interests of phenomenography focus on exploring *people's experience* of a given phenomenon, i.e., the emphasis is on highlighting their voice. This is made possible through the adoption of a *second-order perspective*, in which the phenomenon is explored through the descriptions of experience provided by the participants (Booth, 1993). Marton (1981) refers to it as a perspective *from the inside*, i.e. it enables us to understand how a phenomenon is conceptualised by the people experiencing it, rather than what we as researchers think about it. The researcher is oriented towards describing people's way of seeing, understanding, and experiencing the world around them. The researchers attempt (as much as possible) to *bracket* their presuppositions and beliefs about that phenomenon. The concept of bracketing will be elaborated in the data analysis section of the chapter.

The second-order perspective emphasises *collective meaning* and *variation* in the given phenomenon, as experienced by people (Marton & Pang, 2008). This is different from the first-order perspective, where the focus is on understanding the *invariant essence of a phenomenon* through people (Richardson, 1999). According to Åkerlind (2018):

“From a second-order perspective, human experience and variation in experience is the core of the investigation; from a first-order perspective, human experience is but the medium for collecting data, and variation in human experience ... is white noise, to be filtered by statistical tests of significance to better determine the reality underlying the noise.”(p.6)

This means that if we are interested in exploring how people experience a phenomenon, the answer cannot be derived from what we as researchers know about that phenomenon or how we have experienced it. We have to explore the lifeworld of those particular groups of people to find the answer(s) to our research question(s). Such differences between the first- and second-order perspectives are an important determinant of the research approach for this study, as the focus here was to explore the students' experience of learning technology using their descriptions of experience.

3.2.5. Categories of description

The goal of a phenomenographic study is not limited to the identification of people's conceptions about a given phenomenon. Phenomenographers are expected to organise these ways of experiencing into *categories* that can be thought of as a structured map of how a group of people experience a given phenomenon. According to Marton (1986), categories of description represent the different ways of experiencing a phenomenon. They are derived after careful and iterative analysis of the descriptions of experience provided by the research participants and are generally in a logical or hierarchical order (Marton, 1994). According to Barnard et al. (1999), categories of description express the *“conceptions of the object of study within the context of the reality portrayed by interviewees”* (p.219).

Both conceptions and categories are distinct yet interrelate features of phenomenography. According to Sandberg (1997), conceptions refer to people's ways of experiencing a particular phenomenon, while categories represent the form in which these conceptions are presented. Marton and Booth (1997) explain this in the following manner:

"...we can have in mind that which is described (ways of experiencing) or the way in which it is described (categories of description) ...we cannot separate them of course..." (p.127)

The categories can be seen as a *structured pool of conceptions* underlying the possible interpretations of reality (Marton, 1981). They may or may not describe the entire range of possible conceptions of a phenomenon. However, they can be enhanced steadily, as new possibilities are continually added to those previously available.

Marton (1988) defines four main characteristics of a category of description, i.e. it should be *relational* – deal with the subject-object relation comprising the conception, *experiential* – based on the experience of participants, *content-oriented* – focusing on the meaning of the phenomenon being studied, and *qualitative* or descriptive. Each category should reveal something different, and each category should stand in a logical relationship with other categories. According to Prosser (2000), the formation of categories is based on distinctive features and differentiates one conception from another. Similarly, the number of categories discovered within a research study is determined by the *extent of variation* present within the descriptions of experience provided by the participants (Marton, 1981).

The categories of description within a phenomenographic study are determined through an iterative process of data analysis. These are usually based on ways of understanding expressed in more than one interview, and they are mutually exclusive (Larsson & Holmström, 2007). Descriptions that have been arrived at from a second-order perspective should be brought together, irrespective of the source of variation they represent, the discipline to which they belong, or the school of thought from which they stem (Marton, 1981). Åkerlind (2005, p. 323) chalks out three main criteria for the development of a category:

- i. Each category should reveal something distinctive;
- ii. Categories should be logically related to each other; typically, as a hierarchy of structurally inclusive relationships;
- iii. Outcomes are parsimonious, i.e. variation in experience is represented in as few categories as possible.

This implies that, in most cases, a logical relationship will exist between the categories of description. Some aspects are certainly more basic than others, and these logical relationships between categories help reveal the different layers of the perceived world (Marton, 1981). This structural arrangement of the categories of description is called the *outcome space*, which will now be explained in the next section.

3.2.6. The outcome space

In a phenomenographic study, the final step in the data analysis includes an exploration of the logical relations between the categories of description. These logical relations between conceptions are represented *diagrammatically* in the form of an *Outcome Space* (Åkerlind, 2005; Barnard et al., 1999). According to Marton (2000), an outcome space is the logically structured complex of the different ways of experiencing an object, thus acting as a synonym for the phenomenon. He further relates the structure of an outcome space to the concept of *layered awareness in humans*, i.e., some aspects make up the core, while others represent the field surrounding the core.

The outcome space in a phenomenographic study can be illustrated as a table, image, or diagram and serves the purpose of depicting how each category relates to the others. According to Laurillard (2005), some categories can be more complex than others, resulting in a hierarchical, chronological, or climatic structure, in which categories are arranged according to the level of the explanatory power. The most common type is the hierarchical outcome space, in which the arrangement is from lower-order to higher-order categories. The lowest level depicts the most simplistic way, while the highest level indicates the most sophisticated way of experiencing a phenomenon. For example, Tsai (2004) presented an outcome space to highlight the

different conceptions of learning science held by Taiwanese students. He found seven different categories of description, which were hierarchically related, with *memorising* as the most simplistic conception and *seeing in a new way* as the most sophisticated one in the hierarchy. The level of sophistication increased as the categories moved from 1 to 7. Each part of the hierarchy acts as a *cross-reference to the original descriptions* of the experience provided by the research participants (Säljö, 1997).

The outcome space is the result of iterative analysis of the data, conducted by the researcher. Its structure is dependent on the researcher's analytical thought process, and it might not be possible for other researchers to replicate similar outcome spaces using the same data set and context. As Marton and Booth (1997) explain:

"...the outcome space...produced by one researcher is a representation of their understanding and (therefore) different researchers should expect to produce different outcome spaces." (p.125)

Therefore, a researcher needs to clarify at the outset that the categories generated in a phenomenographic study are specific to the context within which the study is taking place. In this study, adopting a phenomenographic research approach, I do not claim that the discovered categories of description represent all possible conceptions of students around the use of learning technology in Pakistan. It is not possible to generalise the findings of a phenomenographic study to an entire population, as the findings will be specific to the MBA students of the two business schools only. The findings of a phenomenographic study contribute new knowledge about the different ways a phenomenon can be experienced and the contextual aspects which influence that experience. It is useful to look at this variation in experiencing a given phenomenon, in similar or different contexts, as it provides us with new ways to consider our situation or explore a relatively unexplored context.

The next section will now highlight some of the criticisms of phenomenography and a description of how I have understood and address them in this study.

3.2.7. Criticisms of phenomenography

Within the phenomenographic research tradition, there are several aspects, features, and theoretical assumptions that have initiated debates and discussions amongst researchers. Giorgi (1999) interestingly commented that phenomenographers have spent much effort in “...trying to explain what it isn't” (p.91), as phenomenography initially emerged from a strong empirical basis, rather than a theoretical or philosophical one (Åkerlind, 2012). This led to a *heterogeneous* application of the research approach (Harris, 2011), as researchers attempted to alter or adjust, and at times even redefine some of its key aspects to match their research objectives better.

The most frequent criticism on phenomenography is that the early studies were quite pragmatic and focused more on the collected data and the subsequent findings, without having a thorough discussion on the theoretical basis (Hasselgren & Beach, 1997). However, as per my review of relevant studies, the first attempts to theorise phenomenography were made by Ference Marton in his research related to conceptions of learning (Marton, 1986, 1988; Marton et al., 1993). These theoretical foundations were then elaborated and explained further in studies such as Marton and Booth (1997) and Bowden and Marton (1998). Åkerlind (2012), also argues that debates and critiques within the wider phenomenographic literature are often based on misunderstandings and a lack of clarity around the unique methodological requirements of the approach.

Some of the earlier critiques of phenomenography were about its similarity to phenomenology (Larsson & Holmström, 2007; Morgan, 1984; Prosser, 1993; Richardson, 1999) which have already been discussed in an earlier section (see section 3.1.2). Another frequent critique on phenomenography has been around the methodological aspects, particularly the nature of the collected data (Säljö, 1997), the correctness of the categories of description and its knowledge claims (Webb, 1997).

I will now highlight the critiques I find relevant to my research study. In most of the cases, I have approached these criticisms, not as dismissals but as a caution, as

Entwistle (1997) states that criticism of phenomenography should be seen as a warning to researchers about the pitfalls which lie in their path.

Bracketing and Second-order perspective

A core feature of phenomenography is the reliance on participants' descriptions of their experience to illuminate various facets of a given phenomenon. For a researcher, this means living the experience of a phenomenon *vicariously* (Hasselgren & Beach, 1997), i.e., stepping back from one's own experience, beliefs and presuppositions around that phenomenon and exploring other people's understandings of it. Some researchers (Ashworth & Lucas, 2000; Säljö, 1997; Walsh, 2000; Webb, 1997) have cited their concerns about the ability of phenomenographers to analyse data without influence from their presuppositions, existing beliefs, and prejudices. According to Walsh (2000), it is challenging to set aside particular ways of viewing the world and implicit personal beliefs. Similarly, Bowden (2000) elaborated this point, saying:

"...it is not possible for the researcher to be that person (participant); the researcher interprets the communication with the person." (p.16)

As I developed my understanding of the phenomenographic research approach, I also found it quite challenging to step back from my presuppositions and beliefs about the use of technology in Pakistani business schools. I realised that the failure to *bracket* would allow the researcher's lifeworld to take precedence over that of the participants. Although this can be problematic, I do not see it as a limitation of this research approach. In fact, using a second-order perspective to explore how students describe their experience of learning technology was one of the core reasons for adopting this methodology in this study. Despite coming from the same country (Pakistan), and being educated in a similar learning environment(s), I could not have commented on how MBA students in Pakistan are experiencing learning technology today and what contextual factors are influencing that experience.

The second-order perspective within phenomenography allowed me to bring forward the voice of the students and analyse the phenomenon through their eyes.

Furthermore, the intent to explain the research methodology and research design in such a detailed manner in this chapter is also an attempt to *partially bracket* my presuppositions and beliefs about the phenomenon of learning technology.

Characterisation of the Empirical Evidence

In phenomenographic literature, another important debate is about the characterisation of the empirical evidence collected during the study, i.e., if the categories of description describe different experiences or only the *people's account* of differing experiences. Säljö (1997) raised this question about the ability of phenomenographic interviews to access people's experience of a phenomenon. He argues that during interviews, the participants might only be presenting different ways of talking and reasoning about a phenomenon, rather than their experience of it. Therefore, their descriptions may or may not represent their experience. Consequently, it is important to understand that research findings represent people's account of their experience of that phenomenon.

In this study, while partially acknowledging this point, I interpreted Säljö's remarks as words of caution, rather than a critique or limitation. During the interviews, I was conscious of not losing the contextualisation within which the study is based and emphasised to the students the need to describe examples from their experience of learning technology. I was quite mindful that these interviews should not take the form of a debate or a discussion. This study does not focus on my experience of learning technology, rather on my understanding and analysis of some Pakistani MBA students' experience of learning technology. I will elaborate on these points in detail in the section on *Research Design*.

Correctness of categories of description

Webb (1997) questioned the *correctness* of all the categories of description within a phenomenographic study. He argued that in a phenomenographic study, one of the categories usually represents the correct meaning, while the others are considered discredited accounts of the phenomenon. According to him:

"In practice, phenomenographic studies usually concern ... [a] researcher ... sorting the descriptions into a 'handful' (very often five!) categories, based upon 'the most distinctive' characteristics ... one of the categories displays correct meaning, correct knowledge or correct understanding while the others are recapitulations of earlier, now supposedly discredited accounts." (pp.200-201)

In my view, phenomenography does not claim to make statements if a particular category represents a more authorised conception or if others become discredited accounts. However, this argument of Webb (1997) is valid in the sense that in phenomenographic studies, there is usually a better way of experiencing a phenomenon. This way of experiencing is usually more desirable and powerful than the others. For example, in some of the early studies, the rationale for exploring different conceptions of learning was to help teachers understand and distinguish between the more elaborate ways of understanding the phenomenon.

The established phenomenographic concepts of deep and surface-level approaches to learning (Marton & Säljö, 1976) can be used to exemplify this argument. Using approaches to learning as a research object, the researchers illustrated that some students adopted a deep approach that involved seeking the in-depth meaning of the content. In contrast, others took a surface approach that involved rote memorisation, little reflection and reproducing the contents of the textbook. The purpose of identifying these variations was to facilitate the teachers to implement strategies to change the relatively less desirable conceptions of the phenomenon (i.e., surface approaches) to the more desirable ones (i.e., deep approaches) to enhance the quality of learning.

In this study, as well, I have not claimed if one particular category represents the correct or authorised way of experiencing learning technology. Each category represents a different way in which MBA students experience learning technology within their studies. Of course, as discussed in the example above, some categories describe a more desirable experience of learning technology, as compared to others. This aspect will be discussed in more detail in Chapter *Five*.

Based on my understanding of the relevant phenomenographic literature, I feel that the focus of these critiques is not so much on the theoretical underpinnings of the research approach or the purpose for which it is being used in studies. The ambiguity lies in how it has been *applied* and *used* by different researchers over the years. As Säljö (1997) noted:

“...Marton’s (1995) account [of phenomenography] is a programmatic statement about what phenomenography is, or rather, what it should do ... it does not analyse how phenomenographers (should) do research, generate and analyse data, make use of their results, and so forth.” (p.175)

However, as stated earlier, phenomenography has emerged as a multidisciplinary research approach as it is now used by researchers in a wide range of disciplines, such as healthcare, scientific subjects, and even fashion design. I would agree with what Hasselgren and Beach (1997) concluded:

“...phenomenography is not good for nothing nor a brother of phenomenology. It is productive research which can be developed in a number of ways ... it has the potential to provide useful information in investigations of learning, learning outcomes and experiences of learning processes etc....” (p.200)

3.3. Analytical Frameworks of phenomenography

The unit of phenomenographic research is a *conception* or a way of experiencing a phenomenon, as stated earlier. To analyse these conceptions, two analytical frameworks have been developed by phenomenographic researchers. These are the *what/how* framework and the *referential/ structural* framework (Marton & Booth, 1997). The word *framework* has been added to these distinctions because it facilitates framing the research design and process of analysis within a phenomenographic study (Harris, 2011). According to Reed (2006):

“...it is not simply enough to determine a set of different categories to have a phenomenographic result. It is rather the differences and similarities that serve to link and differentiate one category from another, i.e., the structure and meaning related to the categories.” (p.4)

The application of these frameworks in a phenomenographic study helps in analysing the variation in conceptions of experience, as the researchers are able to shift their focus from methodological to more theoretical aspects of the study (Pang, 2003).

It was discussed in previous sections how the application of phenomenography, including frameworks, has been heterogeneous. According to Harris (2011), this application in some research studies has been *logical rather than theoretical*, mainly because a theoretical rationale did not underpin the frameworks. Marton and Booth's (1997) book on *Learning and Awareness* provided an elaborated theoretical framing around these analytical frameworks, by borrowing some key terminologies from phenomenology. Harris (2011) refers to this effort by Marton and Booth as an attempt to *legitimise* the research approach of phenomenography.

A review of some of the prior phenomenographic studies reveals that researchers have, at times, rearranged the components in these frameworks, to suit their research objectives. For example, in some studies (Booth & Ingerman, 2002; Cope, 2004; Cutajar, 2017; Hodgson & Shah, 2017; Marton & Pong, 2005; Tan & Prosser, 2004; Trigwell & Prosser, 1997) both frameworks have been used separately, i.e. each component in the respective framework has been applied to the data separately. Whereas, some other researchers (for example Edwards, 2005; Irvin, 2006; Marton et al., 1993) have adopted a two-tiered approach which Harris (2011) calls as a *synthesised version* of the frameworks. In these studies, the authors have combined all the four components, i.e., what, how, referential, and structural into hierarchical layers to analyse their collected data.

While reviewing the relevant studies, I came across another set of phenomenographic studies in which only a select few components of the frameworks have been used for analysis. For example, Marton et al. (1993) and McKenzie (2003), do not discuss all the components of the frameworks in each of their categories of description. Similarly, there are studies in which phenomenographers have taken the liberty of slightly modifying the labels of the components to make them look more aligned with their research question(s). For example, Åkerlind (2005) used the term

themes of expanding awareness to refer to her categories. Similarly, in some doctoral studies (Cutajar, 2014; Harding, 2011; Nguyen, 2017; Zhao, 2016), the application of the *referential/ structural* framework varies considerably. For example, Harding (2011) used the labels of *foreground*, *background* and *margin* to explain the structural aspect. Similarly, Cutajar (2014) discusses the structural aspects of her analysis of Maltese students' experience of networked learning without discussing the components of *internal* and *external* horizons. More recently, Nguyen (2017) opted to use the original theoretical concepts discussed by Marton and Booth (1997) and divided the structural aspect of experience into the theme, thematic field, and margin.

In this study, it was important to use frameworks as they formed the foundation of the data analysis in the study. They helped in discerning students' experience of learning technology into smaller components for deeper analysis. However, considering the way they have been applied in prior studies, it was a challenging decision to adopt a particular way. There was a choice to use either multiple frameworks in a synthesised manner or just to use one of them.

The next sections highlight the characteristics, underlying assumptions, and theoretical concepts of both the frameworks which formed the basis of how I have applied them in my study.

3.3.1. What/How framework

The *what/how* framework traces its roots in the concept of *intentionality* put forward by Franz Brentano explained earlier in section 3.1.2. Marton and Booth (1997) explain the theoretical basis of this framework and refer to it as a *special case of intentionality* (p.84). They explain the concept of intentionality, as discussed in the original works of Brentano, to clarify how it was first used in phenomenology, and then borrowed in phenomenographic research as well.

Intentionality refers to the *property of thoughts*, i.e. thoughts are always about an object, which is *beyond* the thought itself (Marton & Booth, 1997). According to Brentano's understanding of intentionality, every psychic (mental) activity has an

external object associated with it. This means a person cannot be thinking about nothing – there can be no hearing without something being heard, no believing without something being believed (Brentano, 1924, as cited in Marton and Booth, 1997). Relating this to the idea of learning, Marton and Booth (1997) explain that when someone thinks about learning, there has to be an *object* associated with the thought. They further elaborate that *to learn* has two objects associated with it, i.e. *the direct object* (content that is being learned) and *indirect object* (quality of the act of learning or what the act of learning aims at). Therefore, the *what/how* framework allows researchers to analyse data in light of not just what is being understood but also the “...*process, actions, and motives behind this understanding*” (Harris, 2011, p. 117). In phenomenographic studies, this framework is used for understanding how people conceptualise and understand their *actions*, as well as the *intentions* associated with a given phenomenon. The *what* aspects highlight the *meanings*, a person associates with a given phenomenon, while *how* aspects describe the *process* or *approach* taken by the subject.

The focus of early phenomenographic studies was on student learning; therefore, Marton and Booth (1997) explain *what* and *how* aspects as two components of learning. For example, in a study, Säljö (1982) asked a sample of children to read a text about forms of learning, after which they were interviewed to highlight their understanding on *what the text was about* and *how they had gone about the task of reading it*. In another study on children’s conception of learning, Pramling (1983) perceived the *what* aspect as learning, and the *how* aspect as the approach taken by the child in arriving at particular learning. Marton (1988) further developed the framework to explain qualitative differences in the outcomes of learning. According to his study, the outcomes of learning represent *what* aspects, while the approach to learning represents *how* aspects. He further argues that it is reasonable to move to the second tier of the framework and recursively examine the *what/how* aspects again. His study also shows that it is not necessary for the *what* aspects to relate only to one *how* aspect, there can be various structural aspects which determine the meanings associated with conception. In a later study on examining the conceptions of learning Physics, Prosser

and Millar (1989) used the *what* aspect as the *conception* (what is focused on), and the *how* aspect as the *process* (how an explanation is given).

In their seminal work on Learning and Awareness, Marton and Booth (1997) presented a significant development within the framework. They introduced a second level in the framework, that comprised *direct object*, *indirect object*, and *act*. According to Harris (2011), the *direct object* represents the primary aim or purpose of the conception, while the *indirect object* represents the type of capabilities that the learner is trying to master or develop or the *intentions* behind an act. The *act* is a precise way in which a given phenomenon is experienced. The direct and indirect object are considered the *what* aspect, while the act defines the *how* aspect. Although the framework has been discussed extensively in the relevant literature, some aspects still require more elaboration, particularly around the theoretical association of the *how* aspect and the concept of intentionality.

3.3.2. Referential/Structural framework

The *referential/structural* framework facilitates understanding the *experience* of a given phenomenon. According to Marton (2000), the experience of a phenomenon can be analysed both in terms of its *meaning* and *structure*. He said:

“The nature of a way of experiencing something can be defined in terms of two intertwined aspects. When we talk about different ways of experiencing something, we have to deal with differences in structure and differences in meaning.” (p.30)

The *referential* aspect aims to capture the meaning associated with a phenomenon, while the *structural* aspect refers to the parts of that conception and its context. To experience a given phenomenon, it is important to first discern it from its environment, to recognise it as a phenomenon and assign it a meaning (Marton & Booth, 1997). To understand these abstract concepts, let us consider an example provided by Marton and Booth (1997) about seeing a motionless deer at night in a dark forest. To see it as *something*, the first thing is to discern it from its surrounding trees and bushes. This will give us an idea about its contours, its outline, where it starts

and where it ends, etc. But, to discern it from its environment, we have to also recognise it as a particular phenomenon and assign it a meaning. Therefore, both referential and structural aspects of the experience are dialectically intertwined to each other, as Marton and Booth (1997) said that “...*structure presupposes meaning, and at the same time, meaning presupposes structure*” (p.87).

To understand the *structural* aspect of a phenomenon, not only do we have to discern it from the surrounding environment (e.g., discerning the deer from the dark forest) but we also have to discern its parts – the way they relate to each other and the way they relate to the whole. For example, on seeing the deer in the woods and its contour, we also see parts of its body and their relationships. Thus, the structural aspect can be analysed in two ways: discerning the *phenomenon from its context* and relating it to that context or to other contexts, and also discerning the *parts of that phenomenon* to find out how they are related to each other and the phenomenon as a whole (Marton, 2000).

The *structural* aspect further comprises an *internal horizon*, which relates to discerning the parts of what we experience, and an *external horizon*, which is concerned with discerning the experience from the context in which it is situated. In the given example of seeing a deer in a dark forest, that which surrounds the phenomenon experienced, including its contours, is the external horizon. It extends from the immediate experience of seeing a deer in a dark forest through all other contexts in which related occurrences have been experienced, such as walks in the woods, deer in the zoo, etc. The internal horizon will comprise the deer itself, its parts, its stance, and its structural presence.

The *referential/structural* framework allows a researcher to identify and examine the different parts of the experience and how these parts are interrelated (Harris, 2011). As stated above, intertwined with the structural aspect of the experience is the referential aspect – the meaning. In seeing the parts and whole of the deer and the relationships between them, we also see its stance, i.e., relaxed and being unaware of our presence or alert to some sound unheard by us.

The theoretical foundation of the *referential/structural* framework lies in Aron Gurwitsch's theory on the *Anatomy of Awareness*, presented in 1964. According to Marton and Booth (1997), there is a link between a human being's way of experiencing something and the structure of their awareness. They define awareness as the "*totality of a person's experiences of the world, at each point in time*" (p.100). Relating this with the phenomenographic research approach, the aim is then to investigate the different ways in which human beings are aware of a certain phenomenon.

Marton et al. (2004) further elaborate this and state that awareness is *layered* because whenever people attend to something, they discern certain aspects of it and, by doing so, pay more attention to some things and less attention or none at all to other things. They further explain that a person might be aware of innumerable things at the same time, but it would be wrong to imagine that the person is aware of everything in the same way. From a theoretical perspective, awareness at any point in time has a *figure-ground structure*, i.e. some aspects come into our *focus awareness* and are figural, while others make up the ground and recede into the background (McKenzie, 2003). However, Marton and Booth (1997) clarify that one should not assume that foreground or background, implicit or explicit, are two distinct categories of awareness. These are rather different degrees of how explicit aspects fall within the awareness of a person. This change in the experiencer's *structure of awareness* represents the variation in experiencing a phenomenon within a similar situation and context, exploring which is the primary interest of all phenomenographic studies, including this one. Therefore, human awareness is both *structured* and *thematized*.

These components, i.e., the internal and external horizon, are also derived from Gurwitsch's concepts of *theme*, *thematic field*, and *margin* (Marton & Booth, 1997). The object of focal awareness, i.e. the aspects that are in the focus of a person's attention at any point in time, makes up the *theme*. The aspects of the experienced world that surround and are related to the theme make up the *thematic field*. These aspects are considered materially relevant and form the background, out of which the theme emerges as the centre. The following figure (figure 2) illustrates these overlapping aspects:

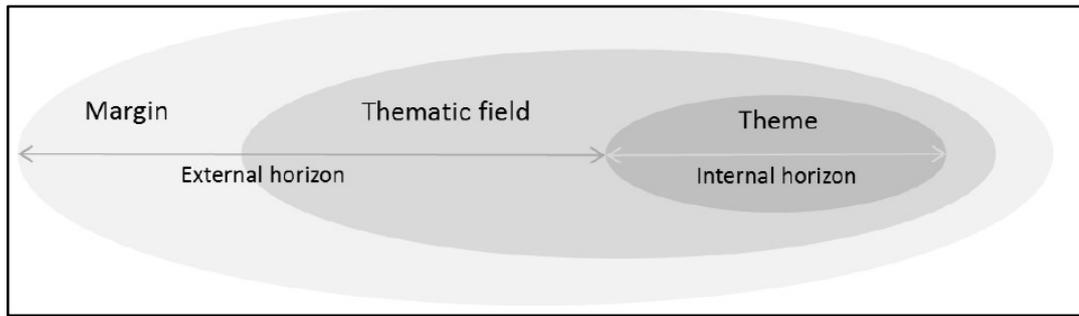


Figure 2 Diagrammatic representation of the Structure of Awareness (Cope, 2004, p.6)

According to Cope (2004), the thematic field “...extends into the very life world of the subject both backward into the history and forward into the way he or she continues to interact with the object”(p.11). A particular theme could have a variety of thematic fields associated with it, depending upon an individual’s background and interests. Finally, *margin* represents those aspects which are co-present with the theme but have no relevance to or influence on it. As per Marton and Booth (1997), these aspects usually temporarily co-exist in one’s awareness and are dependent on place, time, and state.

In phenomenography, the notions of theme, thematic field, and margin are represented by internal and external horizons. The internal horizon comprises the theme, and the external horizon contains the thematic field and margin. I will use another example from Marton and Booth (1997) to elaborate on the relation between the theory of awareness and the *referential/structural* framework. When a person is reading a book (e.g. Marton and Booth’s *Learning and Awareness*), the actual text in the book becomes the *theme* of the reader’s focal awareness (internal horizon). At the same time, their prior understanding of concepts such as the nature of experience, ways of understanding a phenomenon, phenomenology, etc. belongs to the *thematic field* (external horizon). Moreover, some things *temporarily coexist* during the reader’s reading activity without being related to it (e.g. the room in which they are sitting), these become the *Margin*. Together, all these components constitute the *structural aspect of human awareness* of a given phenomenon.

3.3.3. Application of framework(s) in this study

Considering the evaluation of both frameworks as discussed above, the *referential/ structural* framework seemed more apt for this research study as the focus is to explore students' experience of learning technology and the variation within it, rather than to uncover the intentions underlying their use of technology. According to Marton and Booth (1997), the *referential/ structural* framework can contribute towards a better understanding of the structure of the conception, or way of experiencing, while the *what/how* framework is more suitable to get a richer, in-depth analysis of the meanings associated with conceptions. Moreover, this framework also facilitates highlighting the contextual aspects within which students' experience is situated.

A comparison of the frameworks, in terms of both their theoretical links and application in phenomenographic studies over the years, shows that the *referential/ structural framework* is relatively more convincing and rigorous, as it has a somewhat more transparent relationship with relevant theory. The structured approach to data analysis adopted in this framework also seems more likely to be able to address the validity concerns surrounding the research process. The specific steps undertaken in the application of the *referential/ structural* framework in this study will be explained later in the chapter (section 3.5).

The next section will discuss the research design of this study, including details of the pilot study, the process of data collection, and phenomenographic data analysis.

3.4. Research Design

This section describes the research design for this study, including details of the data collection, selection of an appropriate research method, pilot study, conducting phenomenographic data analysis, and the issues and challenges encountered in each of these phases.

3.4.1. Bracketing

In the previous section, it was discussed how the focus of a phenomenographic study is on exploring the relationship between the subject and a given phenomenon. Therefore, researchers are required to *bracket* their personal experiences, presuppositions, beliefs, judgements, and understanding of the phenomenon being investigated (Bowden, 2005). This allows them to focus on their participants' descriptions of experience and ensure that the research findings are genuinely reflective of the subjects' experience of the phenomenon.

It is, however, important to understand that bracketing does not mean that the researcher empties their mind of all possible past knowledge. Instead, the researcher is required to put aside only those presuppositions which might influence the phenomenon under investigation, which is also practically quite difficult. In relation to this study, despite being educated in the same country and within a similar learning environment, there were significant differences in the contextual factors. This made it easier for me to achieve *partial bracketing* and understand the experience of my research participants with empathy and engagement.

Bracketing is specifically relevant in the data collection and analysis stages of the study. This is to ensure that the descriptions of experience are recorded and reported faithfully and interpreted without the influence of any presuppositions. There is a possibility that, without bracketing, a researcher may be tempted to add or adjust categories not supported by the data or try to impose a framework on the data where this is not justified (Walsh, 2000). The analysis is then not based on the collected data, but the researcher's interpretations and thoughts.

In this study, I do not claim that I was able to bracket all of my presuppositions and beliefs about the use of learning technology in Pakistan. However, I have made conscious attempts to suspend them as much as possible. The content and structure of the interviews were designed to provide an opportunity for my research participants to describe their experiences freely. Furthermore, as part of partial

bracketing, I have consciously added my reflections in this thesis to clarify my interpretations and thoughts about the phenomenon under investigation.

3.4.2. Choosing a suitable research method

The choice of a suitable method for data collection is affected by the research objectives and the intended use of the research outcomes. In Phenomenography, majority of the studies derive their data from semi-structured interviews in which the participants are invited to describe and reflect on their experience of a given phenomenon. According to Ashworth and Lucas (2000):

"The most appropriate means of obtaining an account should be identified ... allowing maximum freedom for the research participant to describe their experience." (p.300)

A review of some phenomenographic studies (for example Alsop & Tompsett, 2006; Ashworth & Lucas, 2000; Drew et al., 2001; Trigwell, 2000; Yates et al., 2012) suggested that researchers have mostly used semi-structured interviews to capture *rich descriptions* of their participants' experience of a given phenomenon. These interviews are designed in a way which allows the research participants to account for their experiences within their own frame of reference, rather than one imposed by the researcher (Entwistle, 1997).

In this study, the primary objective was to explore the *experience* of learning technology; therefore, I required the students to describe their experience freely and comprehensively. Thus, semi-structured (and open-ended) interviewing emerged as the most suitable research method for data collection. It has facilitated me to conduct a deep enquiry into my research participants' lifeworld.

Before proceeding ahead with designing the interview questions, to ascertain my choice of the research method, I also explored some of the other methods used in prior phenomenographic studies. According to Bowden (2000), in phenomenography, equal amounts of attention are given to the phenomenon under investigation, the subjects of the study, and the data collection method. The next sub-sections will

discuss these alternative research methods to provide a rationale for my choice of semi-structured interviews as an apt method for this study. This will then be followed by a detailed explanation of how the content and structure of the interviews was designed.

Written Responses & Open-ended Questionnaires

Some phenomenographers, such as Ashworth and Lucas (2000), Limberg (2008), and Rossum and Hamer (2010), have discussed the possibility of collecting *written responses* from participants using open-ended essay questionnaires. These questionnaires require the participants to write down their understanding of a given phenomenon. Although this research method was less-time consuming and easier to organise, I felt that face-to-face interactions with my research participants would provide me with a chance to clarify certain interpretations or thoughts during the interviews. Furthermore, it would also allow me to ask the students to give examples for any abstract ideas and to elaborate on relatively unclear aspects.

Similarly, given the demographics of the student population in both business schools, their diverse backgrounds, and writing competencies, I feared that an essay questionnaire might become a test of their writing skills, rather than a method of data collection. The students might feel under pressure to try and improve the structure and content of their written responses, rather than focusing on answering the questions. Therefore, this research method was not used.

Stimulated Recall

It is often referred to as an *introspective method* of data collection and is particularly suitable for examining processes. It has frequently been used to study learning processes, interpersonal skills, and decision-making processes (Hodgson, 2008). This method involves playing back a recorded protocol of a situation, interaction, or event to a person(s) to simulate the thoughts or feelings that they were having at the time of the event. Stimulated Recall was originally developed by B. S. Bloom to compare the thoughts of students during lectures Bloom (1953). The basic

intent of the method is to “allow the subject to relive an original situation with vividness and accuracy” (Bloom, 1953, p. 161). Criticism on this method is that it makes the participants relive only a specific aspect of the phenomenon, rather the whole of it. According to Lyle (2003), while stimulated recall may facilitate deeper analysis of feelings and thoughts, with reasonable accuracy, the participants may only be describing their feelings about what they currently see or hear, and not the thoughts or feelings at the time of actual interaction with the phenomenon.

Recent years have seen some use of this method, mostly in studies related to medical science and clinical research (for example, Barrows, 2000; Schipper & Ross, 2010). It remains an underutilised research method because its existence and usefulness are not widely recognised and appreciated (Barrows, 2000). In the field of Management, the use of stimulated recall has been quite limited as well (Hodgson, 2008). Some studies on management learning (Burgoyne & Hodgson, 1983), educational leadership (Muir, 2010), and understanding teachers’ learning processes (Endacott, 2016) have used this method.

In this study, it was not feasible to use this research method, as I did not have access to the recorded interactions of the students with learning technology in the past. I could not simulate an actual situation when the students had used technology during their studies, and then ask them to reflect on it. Therefore, this method was not used.

Student-skill Inventories

This method has been used as a systematic attempt to *quantify a qualitative research* approach while staying true to the original idea of phenomenography (Lucas & Meyer, 2005). It uses a set of objective questionnaires comprising direct quotations from prior phenomenographic studies conducted in the same domain (Tait & Entwistle, 1996). The objective is to allow the participants to describe their experiences of learning systematically. According to Tait and Entwistle (1996):

“...while interviewing may provide rich descriptions of a students’ lifeworld and analysis of qualitative variations, inventories provide quantitative

findings that may confirm (or disconfirm) these variations across a population sample.” (p.114)

The most commonly used inventory is the *Approaches to Studying Inventory (ASI)* developed by Entwistle and Ramsden (1983).

Reviewing some of the studies that have used this method, I concluded that the primary objective of these researchers was to try and *operationalise* the categories of description discovered in prior phenomenographic studies. This research study was neither looking for quantitative findings nor attempting to operationalise constructs from any previous work. Furthermore, the focus of this research method seemed inclined towards discovering *learning* or *study patterns* in students, rather than collecting rich descriptions of their experience of a given phenomenon. Therefore, it was deemed unsuitable for this research study.

Given the above evaluation, I was convinced that semi-structured interviews, carefully designed around the objectives of my research study, would enable me to delve deeper into the lived experience of the research participants (i.e. students). The next sections will now highlight the aspects of interview design, selection of research participants, and details of the interviewing process.

3.4.3. The *pilot* study

Pilot interviews or trial studies are conducted to analyse and reflect upon the content and structure of the research instrument (e.g. questionnaire, interview, etc.). As this was my first experience of conducting phenomenographic interviews, I wanted to make sure the collected data aligned with the research objectives. According to Bowden (2005), pilot interviewing helps in checking the suitability of interview questions for the overarching research objectives of the study. In this study, pilot interviews provided me with an opportunity to practise my interview skills and assess if I could successfully elicit the required descriptions of experience from my participants or not.

Before the pilot study, I prepared the following interview questions as part of an ethical approval application at Lancaster University:

- i. *What does the use of learning technology mean to you? Moreover, what is the meaning you associate (conception) to the use of learning technology within your studies?*
- ii. *How do you use learning technology within your education?*

I conducted two trial interviews with Pakistani students studying in a Management degree programme at a UK university. After the interviews, I asked the participants to provide detailed feedback on the content and structure of the interview and my interviewing skills. I saw this feedback as positive criticism. Some of the main feedback points were:

- The wording of the questions appeared too direct. Ideally, the questions should encourage the participants to narrate a story or share experience around the use of technology. The questions in trial interviews indirectly encouraged the participants to share their opinions on the given phenomenon.
- The second question on the how aspect was not very clear as the participants were not able to understand the kind of response, they were expected to give for it.
- As an interviewer, I was advised to hold back my leading questions to avoid engaging in discussions or debates with the participants. Furthermore, I had to be conscious of my facial expression during the interviews so that I would not convey any signal of agree/ disagreement with the participants

This feedback was used to review the content, structure, and interviewing style in the actual fieldwork conducted in the two business schools I visited.

The experience of conducting a pilot study helped me to develop further my understanding of the non-dualistic, second-order perspective required in phenomenography. It enabled me to better understand the concepts of *empathy* and *engagement* for opening up to the lifeworld of my research participants (Ashworth & Lucas, 2000).

3.4.4. Designing the interview

Phenomenographic interviews are generally semi-structured interviews and do not follow any specific protocol. Marton (1986) suggests that interviews should use open-ended questions to let the participants *choose the dimensions* of the question they want to answer. This allows them to focus on aspects specific to their experience of a given phenomenon. A phenomenographic interview always has a central focus, which revolves around the research objectives of the study. Using a set of questions, the researcher encourages the participants to describe their experience of the given phenomenon. Limberg (2008) highlights that before preparing interview questions, the researcher should thoroughly understand the inner and outer structure of the phenomenon. The intent behind this is not to impose a particular view on the research participants, but to allow the researcher to be as open as possible to the varying experiences that may be encountered during the interviews.

For this study, two important design considerations were the *structure* and *content* of the interviews. In terms of the structure, a review of prior phenomenographic studies suggests that interviews should usually begin with a starting question that opens the discussion on the given phenomenon. This allows the participants to *describe their experience* as freely as possible. According to Booth (1992):

“...a semi-structured interview ... gives the phenomenographer the possibility to probe the subject’s understanding [of the phenomenon]... by having a small number of pre-determined questions which deliberately approach the phenomenon from a variety of directions and thus increase the chances of a full exploration [of the phenomenon].” (p.59-60)

The main questions should be followed by a series of prompts, as the researcher needs to be *open* and *sensitive* to the responses provided by the participants. The researcher may alter the sequence of questions depending on the flow of the interview and may ask the participants for further elaboration if some points remain unclear. Limberg (2008) also suggests giving the participants an assignment of *information-seeking* character, and then ask them about their ways of approaching the task. In this study, considering that my research participants were university students, the prime focus

was to give them the space to be as open as possible about their experience of learning technology and avoid any *judgmental* statements Bowden and Green (2010).

In terms of the content, the choice of words and phraseology in the questions was very important, particularly after the feedback I received in the pilot study. Marton (1986) also cautions that an individual rarely expresses a conception in its complete form and may emphasise particular or all aspects of a given phenomenon. Simply asking what a phenomenon means to an interviewee will not guarantee a response that comprehensively describes their experience of that phenomenon. According to Bruce (1994), the focus of the interview should be on the *relation* between the participant and the research object of interest, rather than on the participant and the research object itself. Bowden (2000) also suggests that the questions in a phenomenographic interview should be *diagnostic* so that they can reveal different ways of experiencing the phenomenon in that context.

Considering these points and the feedback received in the pilot study, the final interview questions were as follows:

1. *Can you think of a time when you used learning technology in your studies or for your university work? What did you use it for? When was it?*
2. *How do you use learning technology within your studies? Can you show it to me? Is there a possibility of a short demonstration?*

The aim was to design a set of sharp and focused questions that would allow the research participants to share their narrations, stories, and descriptions without interruption. However, to clarify some of the points or ask a participant for some elaboration, I used the following prompts and probing questions as well:

- *“What do you mean when you say...” or*
- *“Could you explain that further?” or*
- *“Could you give an example of ...”*

The sequence and frequency of prompts varied in each interview, depending upon the route taken by the participant. For example, some of the interviewees required more probing, as I felt the participants needed to clarify some of their points. Similarly, there were interviews in which the students comprehensively described their experience of learning technology, so there was minimal probing during the entire conversation. Furthermore, preparing an interview plan also made it easier for me to start all the interviews with a consistent opening scenario, followed by the interview questions.

The next section describes some details about the research participants and how they were recruited for this study.

3.4.5. Participants in the study

The main requirement for the research participants in this study was that they should be MBA students enrolled in a Pakistani university. At both the business schools, I had requested the management to arrange an introductory seminar with their *final year* MBA students, so that I could introduce my research study and ask for voluntary participation. The intent was to interview those students who were more accustomed to their respective learning environments, as they would be able to describe a relatively more comprehensive experience of learning technology.

It was during the fieldwork that I became aware that some of the MBA students were enrolled under the *Outreach Scholarship Programme (OSP)*, as already highlighted in section 1.6. It was during the introductory seminar that some of these students approached me to enquire if they could also participate in the study. As a researcher (and phenomenographer), I encouraged their participation as it further enhanced the diversity of my participant sample. At the beginning of the fieldwork, I was a little concerned about finding enough participants as some of the students who had committed to an interview did not turn up at the scheduled time. However, after the first few days, the activities accelerated, and the rest of the fieldwork was completed smoothly.

A total of 45 interviews were conducted in the two business schools. During two of the interviews, female students were not comfortable with audio-recording. Therefore, I took notes while these students described their experience and also gave them the option to provide written responses to the interview questions. The final distribution of research participants in both business schools was as follows:

Table 1 Distribution of Research Participants

Business School	Location	Total Participants	Male Students	Female Students	OSP Students
1	Islamabad	23	15	8	6
2	Lahore	22	16	6	5

As the data collection activity progressed, the challenge was to decide when to stop. Although an important signal for phenomenographers is to assess when the variation in participants' descriptions begin to exhaust, there is always this chance of further revelations in the next interview. Several researchers have made their recommendations on this issue, but Booth (2001) in particular, explains that:

“Data is collected from a sample of people, deliberately chosen to cover the population of interest ... the aim is to exhaust the variations in experience; a collection of data can be extended if the variation is felt to be under-represented, or cut short if no new material is forthcoming.” (p.172)

Similarly, Bowden (2005) also cautions researchers to maintain a balance to ensure that there is sufficient variation in their data sets while keeping the data size manageable. In this study, when I began to notice that students were not describing any new aspect and the content was becoming repetitive, I was convinced that I had achieved a reasonable balance.

3.4.6. Interviewing process

The data collection phase for this study was spread over four months (May–August 2017) and included the time taken to design the interview questions, conduct a pilot study, and obtain ethical approval from Lancaster University. After securing permission for data collection from both business schools, I travelled to Pakistan to

conduct the interviews within campus premises to ensure that my research participants felt comfortable. The process of interviewing was completed during the summer break for Pakistani universities to ensure the students were not busy with lectures, project work, or any type of examination. As an interviewer, I wanted to make sure that the participants did not rush through the interview questions and could spend some time thinking about them.

During the introductory seminar (as described earlier) at both the business schools, I explained my research objectives, reasons for conducting the interviews, some procedural details and certain issues related to data confidentiality and protection. I gave a copy of a *Participant Information Sheet* (PIS) (Appendix 1A) to all attendees and requested voluntary participation. The students were also required to sign a consent form before the interview (Appendix 2A). There was much interest at BS-1 as a considerable number of students signed up. At BS-2, some students were either reluctant to participate because they were not familiar with the concept of research interviews, or they were struggling to understand the information sheet in English. Therefore, in this business school, I also provided Urdu translations of the information sheet (Appendix 1B) and consent form (Appendix 2B) to further help the participants in understanding the research objectives and their role in the research study. This initiative increased the number of students signing up for interviews.

During the interviews, I followed some of the relevant literature on phenomenography, particularly the guidelines on data collection provided by Ashworth and Lucas (2000). These guidelines appeared more practical to me, as I was able to relate to most of them during my fieldwork. I mainly considered the following points:

- i. As a researcher, I should aim to develop empathy and engagement with the lived experiences of the participants, as suggested by Ashworth and Lucas (2000).
- ii. The route taken during the interview or sequence of themes being discussed is dependent upon the respondent; however, as Rossum and Hamer (2010) argue,

it is the responsibility of the interviewer to keep the interview focused around the objectives of the study.

- iii. Care should be taken while leading the interview, and prompts should only be used to elicit further elaborations, without influencing the participants towards certain outcomes. Researchers should avoid making judgemental comments (Bowden, 2000).
- iv. Phenomenographic interviews can take the form of an extensive dialogue in which consistency of focus is not easy (Ashworth & Lucas, 2000). While inconsistencies within the ideas expressed by participants can be pointed out, researchers need to be conscious not to introduce their views about the phenomenon in an unplanned manner.
- v. Overall, it is the responsibility of the researcher to notice when a particular theme has been discussed in-depth and whether to conclude the interview or to discuss a new theme.

The interviews started with explaining my research objectives again to make sure that my research participants and I understood the same definitions of terms like *experience*, *description*, and *learning technology*. A copy of the information sheet was provided again before the interview. Within the consent form, the clause about audio-recording was read aloud to ensure that there was no confusion around it. The reason for taking extra care was that I did not want to make my recording devices so apparent that they begin to impede my participants' attention. I used two audio-recording devices (an iPhone and iPod) as a risk aversion strategy. During the interviews, I also made notes, in case any point required further elaboration by the student.

Before starting the formal questions, I again asked the participants if they required any further clarifications. The interview questions presented in the previous section were put to all 45 participants; however, the prompt questions did vary depending upon the responses received. The interview recordings ranged from 30-40 minutes. The length of the interview was not a point of concern for me, as Alsop and Tompsett (2006) remark that each account includes "*as much information and detail, or as little, as the subject chooses*"(p.246). Some of the interviews were followed by a short

demonstration where the students showed how they interacted with different types of digital tools and devices during their studies.

During the first few interviews, I realised the challenge of *bilingualism* for Pakistani students. Therefore, I asked the participants to choose whatever language they preferred to describe their experience. In the end, out of a total of 45 interviews conducted in this study, 34 were in Urdu. This did increase the workload in terms of translation and transcription but made it easier for the participants to express themselves freely.

The next section will highlight some of the challenges encountered during the data collection phase, and the steps taken to address them.

3.4.7. Issues & challenges during fieldwork

Some of the challenges I encountered during the data collection phase are as follows:

- Establishing contact with business schools and getting permission for data collection is a tedious activity, which at times requires personal references. Although I had started to approach officials in various business schools in Pakistan soon after my first progress review meeting, getting a response from them became a challenge. I had to use some personal references to expedite the process of getting the required permissions. All the necessary documentation, such as the abstract, interview questions and information sheet, were sent to the management of the business schools in advance, after obtaining ethical approval for the study from Lancaster University.
- During the fieldwork, it became apparent that most of the students (particularly at BS-2) had not participated in a qualitative research study before. Some students were a little troubled at the prospect of being interviewed, as a few students approached me with concerns like *what would happen if they are unable to answer correctly or could I share the questions with them in advance* so they could do some preparation before the interview. This made it more important

for me to take extra care to ensure that the interviews take place in a relaxed and comfortable environment. To ease out the situation, I also engaged in social conversation with the students around their studies, university life, and studentship experience.

- For studies based in an educational context, like this one, some researchers have recommended additional caution during interviews. According to Rossum and Hamer (2010), when conducting interviews with students, the interviewer should pay attention to what participants are saying and should not respond to them as a teacher. After the first few interviews, I had to learn to stick to my researcher's cap and not get distracted by the digressing thoughts of my participants or some errors in their reasoning. The focus of the interview should remain on exploring the students' understanding of the given phenomenon.
- Some students struggled to articulate their thoughts clearly. Although I had given them a choice to speak in either Urdu or English, a few students found it challenging to describe their inner thoughts. In some of the initial interviews, I struggled to control the frequency of prompting to seek clarification from the participants. However, as interviews progressed, I realised I had to give my participants more time to comprehend the questions and then respond at their own pace and comfort.

The next section will now describe the steps taken for conducting phenomenographic data analysis in this study, along with some of the issues and challenges encountered at various stages.

3.5. Phenomenographic Data Analysis

Phenomenographic data analysis is a process of discovering different ways of experiencing a phenomenon; however, as Marton (1986) says, there is no specific algorithm for it. Booth (1993) captures the essence of the phenomenographic data analysis process, stating:

“...the analysis process is essentially dialectical – the statement, the individual interview, the totality of interviews, all lend meaning to one another. The interviews have to be seen simultaneously as a whole, as taking up individual themes in certain sections, and as being permeated with references to the totality of themes of interest...” (p.188)

A review of some prior studies showed that researchers have used an array of approaches for conducting data analysis, depending upon their research objectives. This has been a point of criticism on some of the early phenomenographic works, as discussed earlier. As stated above, there is no single process or technique prescribed for phenomenographic data analysis, over the years several researchers (for example Alsop & Tompsett, 2006; Booth, 1993; Dahlgren & Fallsberg, 1991; Marton, 1986; Sjöström & Dahlgren, 2002) have proposed some general guidelines and series of steps. Despite some minor variation in the sequencing of steps, the underlying objective of these guidelines is to find categories of description that highlight the different ways in which people describe their experience of a given phenomenon.

3.5.1. The general guidelines

The first challenge was to understand the specific principles outlined for phenomenographic data analysis. After a careful review of some of the prior studies, I found the guidelines provided by (Marton, 1981, 1986, 1988) to be very useful as they provided a good starting point. According to Marton (1986), phenomenographic data analysis is an interactive, time-consuming and labour-intensive activity as it entails the continual sorting of data. He explained:

“[in phenomenography] ...definitions of categories are tested against the data, adjusted, retested, and adjusted again. This is, however, a decreasing rate of change and eventually, the whole system of meanings is stabilised.” (p.43)

Similarly, some other studies such as Åkerlind et al. (2005), Ashworth and Lucas (2000), Säljö (1997), Walsh (2000), also refer to phenomenographic data analysis as an *iterative* rather than a sequential process, which requires continuous interaction with

the data. The intended outcome is the identification of a number of categories that reflect the different ways of experiencing a given phenomenon.

According to Limberg (2008), a preliminary analysis is accomplished as soon as the researcher begins to become familiar with the data set(s) during the data collection and transcription phase. Therefore, the efforts to *bracket* my presuppositions and beliefs that started during data collection continued in this phase of the study as well. According to Booth (1993), during the data analysis, the researcher is *expected* to step back consciously from their own experience of the phenomenon to understand and highlight how others are talking about it and experiencing it.

During the review of some prior phenomenographic studies, I observed that, in most cases, the authors provided a study-specific account of the process they adopted for data analysis. However, Dahlgren and Fallsberg (1991) provided a sequential *seven-stage cycle* using which a phenomenographic data analysis can be conducted. As I began to trace its origins, I found it to be inspired by the data analysis guidelines provided by Marton (1986). Similarly, Booth (1993) also provides a comprehensive overview of the processes involved during the analysis of a phenomenographic study. As a researcher, I found the guidelines provided in both of these studies quite useful because the authors established a clear link of all the steps of data analysis and the core principles and theoretical assumptions of phenomenography.

Before proceeding with data analysis, I had to address another important question, whether to use *filtered data* or *whole transcripts* for my analysis. The next section will discuss the choice I made and the rationale for it.

3.5.2. The choice between *Pool of Meanings* and using *Whole Transcripts*

Given that there is variation in the practises adopted by researchers for conducting a phenomenographic data analysis, a key decision for me early on was to evaluate the merits and demerits of either using *filtered data* or the *whole transcripts* for analysis.

The *filtered data* approach involves marking important sections of each transcript and then combining them for analysis in one decontextualized *pool of meanings*. According to Marton (1986), although the pool of meanings comprises a collection of *decontextualized fragments*, yet they are interpreted within the larger interview context. The selection of smaller excerpts helps a researcher understand particular meanings being described by the research participants (Åkerlind, 2012). On the other hand, Bowden (1996) argues that data analysis should be conducted using whole transcripts, as the pools of meaning approach involve a “...*danger of losing focus in this way if you cut the interview transcripts into pieces and re-assemble the similar pieces from different transcripts together*” (Bowden, 2005, p. 85). According to him, the pools of meaning approach downplays the importance of original transcripts and implies that filtered excerpts may become detached from their original context and make the task more difficult.

The proponents of the pool of meanings approach have given counter-arguments as well. According to Åkerlind (2012), when working with whole transcripts, the researcher may develop an *analytic focus* on the individual interviewee, rather than the group of interviewees as a collective. This may reduce the clarity of the key aspects of meaning that researchers search for, as the meaning a phenomenon holds for an individual may vary during the course of an interview. From a practical perspective, removing irrelevant or redundant components of the interview and selecting the excerpts that seem to exemplify meanings more clearly makes the data more manageable (Svensson & Theman, 1983).

In this study, I used both the approaches, although in different stages of data analysis. In the initial stage, I marked certain excerpts from the transcripts to clearly understand the meaning being conveyed by the students, as some statements seemed to address the research theme more directly than others. Contrary to what literature suggested, this did not reduce the importance of considering the larger context when interpreting those filtered excerpts. As the analysis progressed, I revisited, compared, contrasted and consulted the original transcripts several times to understand the *meaning, structure and context* described by the students. Therefore, in my analysis of

the data, both the approaches complemented each other and enabled me to find the categories of description and the variation within them.

3.5.3. Adopting a systematic approach for data analysis

The guidelines about phenomenographic data analysis provided me with a clear direction to plan this stage systematically. I was aware that all the steps in data analysis would involve *several iterations*, and I would have to refer back to my original transcripts many times. Given the quantity of data (45 transcripts), this systemisation later proved beneficial. The following figure (figure 3) presents an overview of the three stages of data analysis followed in this study.

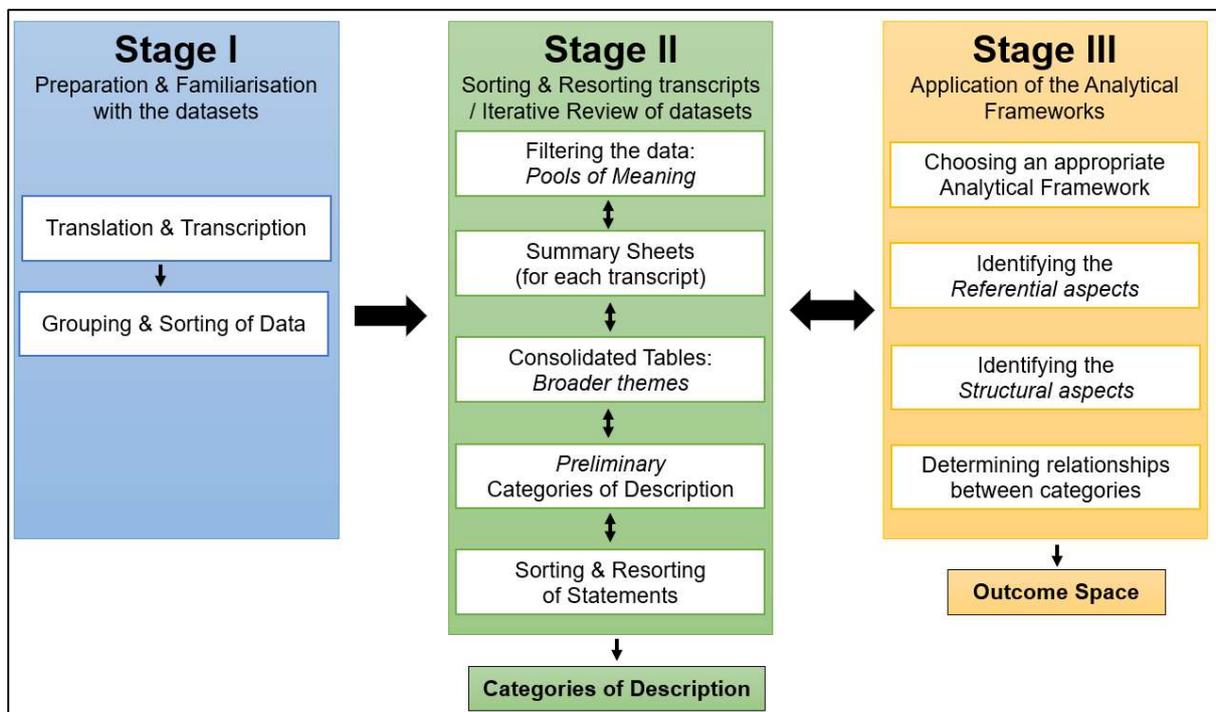


Figure 3 Stages of Phenomenographic Data Analysis

Each of these steps will now be explained in detail using relevant quotes and excerpts from the guidelines provided by Marton (1986), and Booth (1993).

Stage I: Preparation & Familiarisation with the data set(s)

Step 1: Translation & Transcription of Interviews

In this study, the interviews were conducted in both English and Urdu or a combination of both, as stated earlier. Therefore, some of the transcripts had to be translated, as well. The translation was a time-consuming activity, but not problematic as Urdu is my first language. All the interviews were first transcribed (verbatim) and then translated into English. In some cases, I had to listen to the original recordings several times to make sure there were no errors, particularly related to typography and the translation of certain words. I was particularly conscious in this step as there was a chance that some sentences might lose their meaning when translated. There were no major issues, except for a few cases where I struggled to understand the accent of some of the participants (i.e. *Punjabi Dialect*), so those recordings were played several times.

In phenomenography, interviews are transcribed verbatim (Bowden, 2000). I opted to transcribe all the interviews myself, as it helped me to familiarise myself with the data sets. As it was my first experience of transcription, it took slightly longer than anticipated to complete the task. Although my transcription speed improved with every interview, I was happy to spend more time on this activity to ensure there were no omissions. According to Åkerlind et al. (2005) and Trigwell (2000), complete and accurate transcripts are the only evidence for the research outcome in phenomenographic studies, therefore ensuring the transcription quality is vital. Ashworth and Lucas (2000) also suggest that the transcription should aim at *accurately* reflecting the emotions and emphases of the research participants. It is important to mention that the transcription software provided by Lancaster University to its research students, i.e. *f4transkript*, helped me tremendously with this task.

The connection with the data early on during transcription proved to be beneficial in the crucial stages of data analysis, particularly the application of analytical frameworks. As Booth (1993) said while transcribing the interviews, the researchers immerse themselves in them, as it allows them to focus on different

themes of interest and be aware of all the data at the same time. In this study, while reading the transcripts the first few times, I also tried to gain a sense of the overall meaning of each of them by underlining key words and scribbling some notes.

Confidentiality of the data was always ensured, and each transcript was given a code derived from the acronym of their respective business school (BS1 or BS2) and a randomly assigned digit code. For example, if a transcript's code is BS1-14, it refers to a student from Business School 1, whose transcript has been randomly assigned the digit 14. In Chapter *Four*, excerpts from transcripts used for describing the findings contain these codes, to help the reader get a better sense of the analysis.

The decision to transcribe the interviews myself allowed me to develop a familiarity with the data sets. The next step was to sort and group the data to *immerse* myself in the process of analysis further.

Step 2: Grouping the data sets

Considering the number of interviews in this study (45), it was important for me to first group the transcripts into some order to initiate the data analysis in a logical and manageable way. The starting point was to divide the transcripts into two sets, according to the business schools. As the *context* is considered very important within a phenomenographic study, I felt it was justified to analyse the students' descriptions of experience with respect to the specific contexts in which they were situated.

This grouping of transcripts proved to be quite useful later, as it formed the basis of a very important decision in data analysis, i.e. to analyse the two data sets separately. I was able to analyse the students' experience of learning technology in each business school separately, apply the analytical framework and, more importantly, highlight relevant contextual factors in detail. The findings of this study will be presented in the next chapter.

Stage II: Iterative review of the data set(s)

Step 1: Filtering the data – the pool of meanings

The next stage of data analysis was an iterative process of reading the transcripts several times. However, this time, the transcripts were examined with a focused approach, i.e. I kept the research questions of this study in front of me to home in on statements where students specifically described their *experience of learning technology*. According to Marton (1986), the first phase of analysis involves a kind of a *selection procedure* based on criteria of relevance. He said:

“Utterances found to be of interest for the question being investigated ... are selected and marked ... the phenomenon in question is narrowed down to and interpreted in terms of selected quotes from all the interviews...” (p.42)

Considering this point, I marked those utterances I thought were relevant to my research question in each of the transcripts. This activity resulted in a collection of selected quotes and excerpts for each of the data sets (BS1 and BS2), which formed a *pool of meanings*. As stated earlier, this also helps in distinguishing the data between what is immediately relevant and what is not. Furthermore, adopting this approach in the initial stage of data analysis helped me to focus more clearly on the *meaning* students associated with their experience of learning technology.

This step formed the basis for the next crucial step of the analysis, i.e., the identification of emerging themes and the formulation of categories of description. Marton (1986) explains as follows:

“The researcher’s attention has now shifted from individual subjects ... to the meaning embedded in the quotes themselves. The boundaries separating individuals are abandoned, and interest is focused on the ‘pool of meaning’ discovered in the data”. (p.42)

At this stage, the inevitable tension between remaining *faithful* to the data and the tidy construction of categories as cautioned by Walsh (2000) was taken into account, to ensure that I did not push the data into some sort of artificial meaning and structure.

Step 2: Condensation of data

After several rounds of reading and rereading the transcripts, I prepared tabulated summary sheets for each of the 45 interviews. These summary sheets allowed me to compile important aspects of the given phenomenon, as described by students in each of the transcripts. According to Booth (1993):

“...the researchers look for similarities and differences in the subjects’ statement, and their understanding of the statement hovers in a state of uncertainty, looking for further implications of the original interview context and the context of the totality of interviews.” (p.188)

The summary sheets were used to search for similarities and differences present within the statements. I used different colour codes to group the statements that appeared to be linked to a broader theme. These statements (*Utterances*) were then categorised under a broader theme. Dahlgren and Fallsberg (1991) refer to this step in data analysis as *condensation*. Marton (1986) explains it in the following manner:

“...a step-by-step differentiation is made within the pool of meanings (and) as a result of the interpretive work, utterances are brought together into categories on the basis of their similarities”. (p.43)

Appendix 3 presents a sample of the summary sheets prepared in this step. It will provide the reader with an idea about the structure of these sheets and the kind of information contained in them.

In this step, I used NVIVO (Qualitative Data Analysis Software Package) for arranging, annotating, searching, and sorting the transcripts. I uploaded all the transcripts to the software and used it to mark transcript sections (and statements) that were of interest to me and added identifiers to them. The software allows the user to annotate transcripts and add comments where necessary, and then auto-generate a collection of selected statements, based on identifiers (nodes). It is important to clarify that NVIVO was used to organise the data sets and assist in the generation of pools of meaning. The process of finding categories of description from these pool of meanings

was done manually, using an iterative approach. A sample of the node summary sheet generated by NVIVO is provided in Appendix 4.

Step 3: Consolidation of data

Once the summary sheets had been analysed carefully, the next challenge was the *consolidation* of data. This required the sorting and arrangement of data from the summary sheets, according to broader themes that emerged during the data analysis. These consolidated tables were prepared in two stages. The first stage focused on the *comparison of significant statements* from each of the summary sheets to explore the variation in students' experience and identify the range of meanings students associated with this experience. According to Åkerlind (2012), the focus of phenomenography should be on the "...range of meanings within a sample group, as a group, and not on the range of meanings for each individual within the group" (p.117).

These significant statements were interpreted both along with other statements in the same transcript, as well as those present in other transcripts within the same data set. This activity continued iteratively until I was confident that no new information was being elicited. The same process was repeated for all 45 summary sheets. Appendix 5 comprises of a sample of the consolidated tables prepared in this step.

Step 4: Discovering preliminary categories of description

The second stage of preparing consolidated tables of data involved *grouping the statements* that described similar ways of experiencing learning technology. I used different colour codes and tables to organise these similar statements into *consolidated sheets*, each representing a *preliminary* category of description. Again, this was done iteratively as I had to move back and forth between the original transcripts to ensure the sense and meaning of the filtered excerpt were being preserved. According to Åkerlind (2012), the whole process is a strongly *iterative* and *comparative* one, involving the continual sorting and resorting of data. Thus, the process continued until the consolidated tables became stable. An example of a consolidated sheet is presented in figure 4:

Sr.No.	Preliminary Category of Descriptions	Details
1.	Access to Learning Materials	Recommended and additional material, Videos, Visual Aids – help in clearing concepts.
2.	Communication & Connectivity	Student to student communication via chat groups – better and quicker, formal communication with teachers via email,
3.	Prior Exposure to Technology.	Not allowed by family to use smartphones, limited understanding about use of technology when starting the university – took help from other students, 'expectation' to have basic IT knowledge
4.	Basic Academic Work	Assignments and Projects, Automation of tasks (Course Enrolments, Fee Payments etc)
5.	Contingency Factors	Electricity Issues – so prefer to use mobile rather than laptops, Gender-Specific Issues (late sittings)
6.	Self- Development	Learning English Language through online tutorials and video lectures – necessary for survival.

Figure 4 Sample of the Consolidated Tables used in data analysis

During this step, I was also conscious about identifying those characteristics that distinguish one preliminary category from another, as this would help to determine the borders between categories of description, as advised by Marton (1986). He states:

“...categories are differentiated from one another in terms of their differences ... quotes are sorted into piles, borderline cases are examined, and eventually, the criterion attributes for each group are made explicit.” (p.43)

In doing so, the *meaning* associated with each category was reviewed and compared in relation to others. This step resulted in the identification of the following preliminary categories of description from the analysis of the first dataset (BS1):

- Access to learning materials and other information sources
- Organisation of course-related activities
- Improved communication and connectivity
- Developing cooperation and collaboration
- Means of overcoming sociocultural barriers

These preliminary categories were reviewed and reconsidered as transcripts from the second data set (BS2) were analysed. If the statements were similar, the quotations from these transcripts were added to the respective consolidated table. However, if the statements differed from the ones analysed for BS1, another consolidated table was

added, which subsequently represented a new preliminary category. This process continued until all the summary sheets from the second data set had also been analysed. This approach to conducting a *preliminary data analysis* using data pools, utterances, and their meanings has also been used in prior studies, such as Prosser et al. (1994), and Åkerlind (2005).

Step 5: Stabilising categories of description

This section elaborates on how these preliminary categories of description developed into final categories and the process behind it. Keeping in mind the iterative and comparative nature of phenomenographic data analysis, I kept on reviewing the preliminary categories of description and their associated utterances, linking them back to the original transcripts. As Marton (1986) also states that groups of quotes are arranged and rearranged and narrowed into categories until the researcher can distinguish between those cases that define core meanings and other borderline cases.

Hasselgren and Beach (1997) also suggest that when reading and re-reading transcripts, the meanings of statements and expressions may constantly conflict with each other and with researchers' understanding of the phenomenon. Therefore, according to Åkerlind (2005), the researcher should avoid concluding too quickly about the nature of the categories. Furthermore, Marton and Booth (1997) also elaborate that each of these categories should *reveal something distinct* about the ways of experiencing a phenomenon and should stand in a *logical relationship* with other categories.

In this study, the purpose of adopting this iterative process was to ensure that each category represented a distinct way of experiencing learning technology. As I reviewed the preliminary categories of description highlighted in the previous section, I felt that they focused on describing only a particular aspect of the students' descriptions of experience, i.e. their *use* of various tools and software within their studies. The focus of my research was to explore the students' overall experience of learning technology, which encompasses more than just the use of some digital tools.

I also evaluated these preliminary categories against the four characteristics of categories specified by Marton (1981), i.e. relational, experiential, content-oriented, and qualitative. The interpretations of the statements (quotes/ passages) for each of the preliminary categories of description were read, re-read, and re-analysed to check if there was a missing link. Although this was a very time-consuming and tedious exercise, it was necessary to ensure that the research question of this study was satisfactorily answered. Therefore, during this step, some of the statements were re-sorted, causing a collapse and merger of some of the categories. Another layer was added on top, and existing preliminary categories became sub-categories, with slightly revised nomenclature. The final categories of description will be discussed at length in the next chapter. These categories were more reflective of the students' experience of learning technology in their studies.

Before starting the data analysis, a statement that always came to my mind was one from Ashworth and Lucas (2000) around *premature* closure of the analysis. They state:

"...analysis should avoid premature closure for the sake of producing logically and hierarchically related categories of description..." (p.300)

Therefore, during the phase of data analysis, as the *rate of change* in this step gradually decreased Marton (1986), I was confident that I had found a stable set of categories of description for this study. Furthermore, the final categories of description also met the criteria outlined by Åkerlind (2005), explained at the start of this chapter (see section 3.2.5.).

Stage III: Application of the referential/structural framework

In this study, the application of phenomenographic analytical frameworks formed the foundation of the data analysis, as it facilitated understanding various components of the students' experience of learning technology. As stated earlier, the *referential/ structural* framework seemed more apt for this research study, as the findings focus more on the students' *experience of learning technology* rather than their

underlying intentions. Furthermore, this framework also helped in analysing and discussing the *contextual factors* within which the students' experience of technology was situated. While interrogating the data to find *referential* and *structural* aspects of each category, I asked the following questions:

Referential Aspect

- *What are the different ways in which students have experienced learning technology within their MBA studies?*

Structural Aspect

- *What did the students focus on (immediate focal awareness)?*
- *What remained in the background of awareness?*
- *Were there any aspects that formed the margin? If so, what were these?*

Details of the research findings, how the referential/structural framework has been applied in this study and the diagrammatic representation of the logical relations between the categories (the *outcome space*) will be presented and explained in the next chapter.

The next section will highlight some of the challenges encountered during the stages of data analysis, and the steps taken to address them.

3.5.4. Issues and challenges during data analysis

The problems and challenges arising during the three stages of data analysis are presented below:

- As a researcher, I made every effort to bracket my presuppositions and beliefs by writing down my reflections before starting the data analysis. However, certain imprints of my thoughts and experience of the given phenomenon might still be present in the final analysis.
- At times, I had to remind myself that I only had access to participants' descriptions of their experience, and not to the actual *person-phenomenon* relationship. While some authors have discussed this issue as a limitation of

the phenomenographic research approach, I found it to be a strength. It allowed me to bring forward the voice of my research participants loudly and clearly. The categories of description reflect the experience these students had with learning technology, and not how I viewed this relationship as an outsider.

- In all stages of data analysis, I strived to avoid abstraction, as cautioned by (Säljö, 1997). Therefore, while explaining any important aspect in the categories or during application of the framework, I referred to transcript data and provided evidence in the form of quotes and excerpts. As Bowden (2005) states “*if it is not in the transcript, then it is not evidence*” (p.15).
- The most important challenge was to remind myself to focus on the *collective level*. Some transcripts incorporated more than one category of description, and similarly, some categories spanned more than one transcript. Therefore, it was important for me to mark important statements from each transcript and first develop a pool of meanings, as suggested by Marton (1986).

During the data analysis, I tried to follow a systematic approach (as outlined previously) so that the analysis could be conducted in a manageable way, and I could achieve the desired research outcomes. A reason for having such a detailed section on data analysis was to justify the criticism made on phenomenographic studies that do not clearly articulate their steps of data analysis.

This concludes the section on Research Design, in which I have explained all the important steps and milestones involved in the data collection and analysis stages of this study. The final section of this chapter will discuss issues of ensuring *quality* within a qualitative research study.

3.6. Ensuring the *Quality* of research

Evaluating the quality of a research study is important to ensure the findings are considered trustworthy and credible. Concepts such as reliability, validity, and generalisability are mostly associated with quantitative research; however, some authors (Golafshani, 2003; Krefting, 1991; Leininger, 1985) have suggested redefining

these concepts so that they can be applied to qualitative research as well. This was mainly done to address one of the frequent critiques on qualitative research, i.e., *lack of scientific rigour and transparency in analytical procedures* (Noble & Smith, 2015).

In this study, while thinking about the quality checks, the main question in my mind was if qualitative research is inherently different from quantitative research, both in terms of philosophical positions and purpose, then how can we apply the same quality checks (e.g. validity, reliability, etc.)? Although developing universal criteria for ensuring the quality of qualitative research studies has remained a contentious issue within the literature, I have reviewed some of the alternative frameworks developed (or proposed) by researchers (Creswell, 2018; Lincoln & Guba, 2005; Merriam & Tisdell, 2015; Tracy, 2010) to establish trustworthiness, rigour and credibility of a qualitative study.

3.6.1. Auditing the quality of a phenomenographic study

This study uses phenomenography – a research approach that has unique underpinnings, research object and principles within the interpretive research paradigm. Therefore, it becomes difficult to adopt and follow the traditional quality-checks such as validity, reliability or generalisability. Marton (1994), for example, argued that when a question is raised about the replicability of results, it implies a view of the analysis as a kind of measurement procedure. In phenomenography, the analysis to find out different ways of experiencing a phenomenon is a discovery procedure, not a measurement. He further explains that this discovery does not have to be replicable but should be communicated in such a way that other researchers could recognise instances of the different ways of experiencing the given phenomenon.

In phenomenography, there have been attempts to apply validity and reliability as possible mechanisms for checking quality (Åkerlind, 2005, 2012; Sandberg, 2005); however, such debates in the relevant literature, have mostly remained open-ended and inconclusive. For example, according to Åkerlind (2005), the validity or more specifically *communicative validity* in phenomenography ensures that the study

investigates what it aimed to investigate. However, Prosser (2000) argues that validity in phenomenographic studies cannot be seen as a one-off quality check, because given the nature of this research approach, the issue of validity is *essentially embodied* in every stage of the study.

Similarly, reliability has been discussed in phenomenographic studies as the possibility of replicating the outcome space by other researchers (Booth, 1992; Cope, 2006). However, as per the understanding I developed around phenomenography, how a researcher interrogates the data, identifies utterances, develops structural relationships, and eventually discovers categories of description might not be replicable by other researchers. Marton (1988) also acknowledges this issue, as different researchers may define distinctive categories, even when facing the same cluster of data. In some of the prior studies (Marton, 1986; Säljö, 1988), *interjudge reliability* has been suggested as a possible quality check, in which a second researcher analyses the same data but with reference to the already identified categories of description. Sandberg (1997), however, commented that interjudge reliability tends to overlook the original researcher's procedures and might lead to theoretical and methodological inconsistencies. Therefore, as per my review of prior phenomenographic studies, issues of validity and reliability have mostly been discussed at a time, when phenomenography was being positioned as a good quality research approach to the quantitative researchers. In this study, it was more logical for me to establish the mechanisms for ensuring the rigour and credibility of my research findings by documenting all the stages of the study, as clearly as possible.

Based on a review of some prior phenomenographic studies mentioned above, I adopted the following strategies to establish rigour in this study:

- Avoided personal biases, attempted to bracket my presuppositions about the phenomenon under investigation and focused only on exploring the students' experience of learning technology within their studies.

- Developed an appropriate research design that would allow me to explore students' experience; phenomenography was considered and argued as the most relevant research approach.
- Carefully designed the interview questions so that they were both open-ended and focused, i.e. conversation focused only on the phenomenon in question; a pilot study was also conducted to improve/refine the content and structure of these questions.
- Research participants were all final-year MBA students; the purpose of collecting data from two different business schools was to maximise the scope of experience and perspectives.
- Followed the guidelines of experienced phenomenographers for conducting data analysis; each stage of the analysis had its purpose and use, and the entire process has been documented clearly and accurately.
- Categories of description have been described in terms of their meaning and structure; these categories were discovered after an iterative process of analysing and re-analysing transcripts, grouping and re-grouping excerpts, quotes, and passages. Various features of the categories have been explained using relevant quotes extracted from the original transcripts.

Although these strategies collectively reflect on the quality of my research study, as a researcher, I felt the need to review the alternate frameworks proposed by researchers to evaluate the quality of qualitative research studies. I found the eight *big-tent* criteria proposed by Tracy (2010) to be quite comprehensive, flexible, and adaptable, as each quality criterion can be approached via a variety of paths, depending upon the specific researcher, context, theoretical affiliation and the study itself.

In the following section, I conduct a review of my research study against these eight quality criterion proposed by Tracy (2010).

3.6.2. Applying *qualitative* quality checks

Table 2 Applying 'qualitative' quality checks on this study

No.	Criterion	Definition	Evidence from the current study
1.	Worthy Topic	The study is timely, significant, relevant, and interesting, on a topic that may raise the level of awareness and is about little-known phenomena.	<ul style="list-style-type: none"> • Exploring students' experience of learning technology within the relatively under-explored context of Pakistani business schools, • highlights the students' perspective, within the traditional learning environment of Pakistani HEIs, • Existing literature in the Pakistani context is quite scant, and mostly uses quantitative research methods.
2.	Rich Rigour	Enough data to support claims; appropriate sample & context; appropriate practices and procedures for data collection & analysis.	<ul style="list-style-type: none"> • 45 interviews with MBA students, from two business schools, • All aspects of research methodology & design discussed and demonstrated through examples in Chapter <i>Three</i>;
3.	Sincerity	Self-reflexivity about subjective values; biases; transparency in methods and challenges.	<ul style="list-style-type: none"> • Transparency through explanation of the complete research process in detail, including all the issues and challenges encountered at each stage, • Process of bracketing, limiting the personal bias explained as well.
4.	Credibility	Trustworthiness and plausibility of the research findings; thick descriptions, concrete details – showing rather than telling; analysing the phenomenon from the participants' perspective.	<ul style="list-style-type: none"> • Chapter <i>Four</i> describes research findings in detail, • categories of description explained with relevant quotations from actual interview transcripts, • a second-order perspective has been used to understand how students' experience learning technology in their studies. • participants from two different business schools; variation in demographics, socio-economic backgrounds, prior exposure to technology to ensure varied voices are heard.
5.	Resonance	Findings reverberate with and affect the audience.	<ul style="list-style-type: none"> • Arranged the report into sections and described each aspect carefully to inform the reader about the study, • students in less developed countries (particularly in South Asia) can get useful insights;

6.	Significant Contribution	The study brings clarity to confusion, makes visible what is hidden, generates a sense of insight and understanding.	<ul style="list-style-type: none"> • First phenomenographic study on students' experience within the Pakistani context, • offers insights into students' experience in a relatively under-explored context, • uses the concept of <i>structured (layered) awareness</i> to describe students' experience.
7.	Ethical	Procedural ethics; situational and culture-specific ethics.	<ul style="list-style-type: none"> • Explained the research objectives, purpose & other details before the interviews, voluntary participation, • signed consent forms, copies of PIS available in both Urdu & English; right to withdraw from research, • confidentiality & anonymity guaranteed
8.	Meaningful Coherence	The study achieves what it purports to be about; meaningfully interconnects literature, research questions, findings, and interpretations with each other.	<ul style="list-style-type: none"> • Final dissertation structured in such a way that each section is connected, and the overall report is coherent, • research design (methodology & method) is based upon the research objectives & research gap identified in the literature, • discussion connects with the findings and literature.

3.6.3. Obtaining the ethical approval for the research study

It was important for me to understand and follow the ethical guidelines provided by Lancaster University for the conduct of a research study. Therefore, before starting the fieldwork and collecting data, I applied for ethical approval for my study from the university's ethics committee. This process took over a month, and the approval form was first reviewed by my supervisors and then submitted to the committee. The ethical review application covered several aspects including the mechanisms for contacting research participants, ensuring the anonymity and confidentiality of their names, data protection both during and after data collection, guidelines for conducting research in a country other than the UK, and a sample of the information sheet, consent form, and indicative interview questions.

After obtaining ethical approval from Lancaster University, I also received permission to conduct my fieldwork from both business schools, before proceeding to

Pakistan. As stated earlier, both business schools had organised a one-hour seminar in which I presented an overview of my research study and invited students for interview. Their participation was solely voluntarily, and a copy of the Participant Information Sheet in both English and Urdu was made available to them. Similarly, before starting an interview, the student (participant) was required to sign a consent form. An Urdu translation of the consent form was also available to ensure that students fully understood the information before signing it. They were also briefed about their right to withdraw from the research at any stage of the interview.

The confidentiality and anonymity of the research participants have been ensured throughout the data collection and analysis activities. According to Sin (2010), *pseudo names* and *disguising locations* can help to prevent the recognition of participant identities; therefore, I have used codes (e.g. BS1-01, BS2-02) in the transcripts and other summary sheets. Similarly, as the business schools did not permit me to use their names in published research, their names have also been anonymised. The collected data was then stored in a university-recommended cloud drive, which was encrypted and password-protected, to ensure data protection. In some cases, where transcripts and summary sheets had to be printed, they were stored in locked cabinets, in office premises provided to doctoral students by the university.

The importance of maintaining ethical standards within a research study has increased in the last few years. Realising this, I have tried to adhere to the guidelines provided by Lancaster University to ensure the ethical conduct of my study and also to acknowledge the contribution of the research participants.

Summary of the chapter

This chapter has presented the details of the research methodology adopted in this study. The first section discussed the overall research approach adopted in the study. It presents an overview of phenomenography as a suitable research approach, followed by an evaluation of some of the other methodologies within the interpretive research paradigm to provide a rationale for the choice of a research methodology.

In the second section, I highlighted the theoretical framework of this study by explaining the origin, philosophical underpinnings, and other key features and characteristics of the phenomenographic research approach. In the third section, I explained the two analytical frameworks of phenomenography and highlighted their characteristics. The purpose of thoroughly discussing these theoretical foundations was to present an evaluation of how these concepts have been applied in this study.

The next sections presented the research design of the study. First, the details about the data collection phase were presented, including the choice of a research method, selection of research participants, interview design, pilot study, and the actual process of interviewing. In the final part, I have highlighted some of the issues I faced during the fieldwork. The next section explained the stages of data analysis, including the details of steps such as translation, transcription, condensation, and consolidation. In this section as well, I highlighted the challenges faced during this phase, such as bracketing, fear of losing focus on the collective perspective, and avoiding abstraction.

The final section discussed issues around evaluating quality in this study. The main argument in this section was that qualitative research is inherently different from quantitative research in terms of its philosophical underpinnings and outcomes. Therefore, it is not possible to apply checks like validity and reliability in this study. In this section, I first discussed how the aspects of reliability and validity had been addressed in phenomenographic literature. I have used some of the guidelines provided in prior phenomenographic studies to evaluate the rigour of my research study. Next, I applied the framework proposed by Tracy (2010) to evaluate the quality of qualitative research studies.

4 FINDINGS & ANALYSIS

Chapter 4: Findings & Analysis

In this chapter, I will present the findings and analysis of the data sets from both business schools. It elaborates on the discussion points from the previous chapter and highlights how the phenomenographic research approach and its theoretical frameworks have been used to analyse the data and generate the research findings.

The primary research objective of this study was to explore the *variation* in MBA students' experience of learning technology within their studies in the context of Pakistan. The findings of this study examine the given phenomenon from the students' perspective by recognising them as important stakeholders within the learning environment of Pakistani universities. The findings also provide an opportunity to understand the *contextual factors* influencing the students' experience of learning technology.

Phenomenography is used as the research approach to explore the students' experience. As stated earlier, in phenomenographic terms, experience represents the internal relationship of the experiencer (in this case, MBA students) and the experienced (i.e., learning technology). The second-order perspective adopted in this research approach further allows highlighting how the students describe their experience of technology, using their words, linguistic expressions, and even language of choice. According to Marton (1986):

"...[researchers] in phenomenography do not try to describe things as they are, nor do we discuss whether or not things can be described 'as they are', rather we try to characterize how things appear to people." (p.33)

The findings presented in the next few sections are based on the *descriptions* of students' experience collected during the fieldwork, as they are the only accessible data source in this study. To keep the students' perspective intact, I have, as a researcher, made every effort to bracket my presuppositions and beliefs about the given phenomenon.

The next section will briefly revisit the core concepts of the *referential/ structural* framework before discussing how they are applied in this study.

4.1. Applying the Referential / Structural Framework

In the previous chapter, I presented an evaluation of how some of the prior studies used the analytical frameworks of phenomenography. Based on this evaluation, the referential/ structural framework was found to be better aligned with the research objectives. The *referential aspect* captures the *meaning* students associated with their experience of learning technology, while the *structural aspect* facilitated in understanding how the students arrived at this meaning. The structural aspect was further divided into *internal* and *external* horizons, which helped in understanding the components that were present in the *immediate focal awareness* of the students' descriptions, as well as those which formed the *background*. Together, all of these components facilitated in explaining the concept of *layered awareness* in humans, as explained by Marton and Booth (1997) and discussed in the previous chapter.

The use of referential/structural framework has helped in the data analysis by discerning the *meaning* and *structure* associated with students' experience of learning technology, and also revealing the *contextual factors* within which this experienced is situated. The word context in this chapter refers to the students' *experienced context* i.e., what the student experiences as being relevant for making sense of the situation and the given phenomenon, use of learning technology during studies. Thus, the contextual factors interwoven with the students' experience of learning technology will also be highlighted and discussed.

Considering the theoretical aspects of the framework discussed above and the data collected in this study, the following scenario portrays a *snapshot* of the research findings of this study, which will then be explained in the subsequent sections:

There are several students enrolled in the MBA programme of a leading business school in Pakistan. These students are mostly studying the same courses, attending lectures delivered by the same set of teachers, and using similar digital tools. The focal awareness of one group of students (e.g. Group A) about learning technology may, at some point, be directed towards the use of the Internet to access a broader set of learning resources to

develop a subject-specific understanding. At another point, they may use communication technologies and social media to connect with peers and a wider learning community. While being aware of these points, the students in Group A may also simultaneously be mindful of their prior exposure to technology, challenges, or opportunities within their learning environment, infrastructural issues, etc. However, these aspects may be in the background. Together, all of these aspects constitute these students' experience of learning technology during their MBA studies.

Within the same batch of students, another group (e.g. Group B) is also aware of using the Internet to access digital resources, but only for completing their academic work and getting good grades. They are also aware of using the latest communication technologies, but only for doing group projects. In addition to being aware of their prior exposure to technology, these students are also conscious of their socio-economic backgrounds, etc. These components might be in their focal awareness, rather than in the background.

Thus, the students in Groups A and B are present in the same learning environment but are experiencing learning technology in different ways, because the components of their focal awareness (internal horizon) and background/ context (external horizon) fluctuate, which influences the meaning they then associate with their experience of the phenomenon.

It is this variation in students' experience of learning technology that is highlighted through the use of *referential/structural* framework. It not only helps in distinguishing between categories of description but also provides the basis for linking all the categories together – the context in which the experience is situated.

To identify the *referential aspect*, it was important to understand the “*a particular meaning of an individual object (anything delimited and attended to by subjects)*” (Marton & Pong, 2005, p. 336). To interrogate the data and understand the referential aspect, the main question I asked was:

What are the different ways in which students have experienced learning technology within their MBA studies?

Using the quotes extracted from the transcripts and placed together in a pool of meanings, distinct categories and associated sub-categories were identified first. The referential aspect for each category was then identified by delving deeper into the meaning the students associated with their experience of learning technology. This also enabled in further highlighting the *variation* in students' descriptions of experience.

The *structural* aspect comprised of the combination of features discerned and focused upon by the subject. The main task in this step was to analyse the figure-

ground relationship for each category and thus identify *internal* and *external* horizons. To analyse the structural aspect from students' descriptions, I specifically sought the answers for the following questions:

- *What did the students focus on?*
- *What remained in the background of awareness?*
- *Were there any components that formed the margins?*

During the analysis, it was observed that some of the components in the internal and external horizons of students' descriptions of experience in both the business schools differed significantly from each other. For example, in BS-1, the students have mostly described how their prior exposure to technology and the institutional support influenced their experience of technology. However, in BS-2, the focus was more on describing the influence of varying socio-economic backgrounds and infrastructural issues. These aspects will be discussed later in the chapter.

The next section(s) will describe and discuss the research findings of this study. The categories of description found through the iterative process of data analysis are presented first, followed by a detailed explanation of each category separately, to highlight all the features (sub-categories) that emerged in each category.

4.2. Research Findings: Categories of Description

The phenomenographic analysis of the data has captured the variation in the students' experience of learning technology. As stated earlier, in this study, the *experience* was comprehended as an *internal relationship* of the phenomenon under investigation (i.e., learning technology) and the group of people experiencing it (i.e., students). This relationship has been explored and examined through the descriptions of the experiencer.

During the interviews, the students described not only details of different types of digital technologies used by them in their studies, but also the influence of contextual factors (e.g. socioeconomics, culture, infrastructure, etc.) on their

experience of technology. Some of these descriptions were quite focused, as the students reflected on their initiatives to engage and experiment with the different digital tools and online platforms available to them. In contrast, other students focused more on describing how technology was assisting them to achieve their specific academic aims, such as completion of coursework and securing better marks. It is the presence of such diverse features within these descriptions of experience that helped me to categorise my data sets into meaningful yet distinct categories of description.

The iterative process of analysing the data in this study resulted in the identification of three broader categories of description that represent the different ways in which students at both business schools experienced learning technology in their studies. These are:

1. Engaged Experience

- a. *Accessing a broader range of learning resources*
- b. *Networking with a wider learning community*
- c. *Exploring better career opportunities*

2. Instrumental Experience

- a. *Completing the academic tasks to meet the course requirements*
- b. *Communication and Collaboration for academic activities*

3. Alienated Experience

- a. *Alienation from the Learning Environment*
- b. *Overcoming alienation*

Each broader category comprises of some sub-categories, which represent the features described by the students about their experience of learning technology. These features have been aggregated under formal sub-categories, as highlighted above. The nomenclature of the categories is based upon the broader themes being described by the students. For example, students describing an *engaged experience* actively used technology in their studies that involved experimentation and some level of critical thinking. At the same time, students describing *instrumental* and *alienated* experience focused more on particular features of their experience of technology, as will be

explained in the next sections. It is also pertinent to mention here that not all of these categories were present in both business schools.

During the interviews, students described various aspects of their experience of learning technology; therefore, at times, a single transcript mapped onto more than one category, and likewise a category spanned multiple transcripts. As Åkerlind et al. (2005) also suggest, in phenomenography, it is common to see that any given transcript may not be spanning a category of descriptions as a whole or may span more than one category. During the analysis, as a researcher, I reminded myself to be conscious that it is the collective perspective that needs to be brought out, rather than what an individual student has described.

Before sharing the detailed research findings for each business school, the next section will present an overview of the three categories of description and associated sub-categories.

4.2.1. Engaged Experience

This category represents an *engaged experience* of learning technology, as described by the students. As stated earlier, these descriptions were more focused, as the students described their initiatives of exploring and experimenting with diverse types of digital technologies available to them. The descriptions of experience provided by these students portray them as active participants within their learning environment, as their use of technology was not limited to any pre-defined objective, and they seemed open to the use of any tool, which could benefit them academically, professionally, or even personally. These students had *significant* prior exposure to technology as most of them had been studying in established schools and colleges and had mostly lived in urban areas of the country. According to their descriptions, they appeared quite aware of the latest technologies, such as smartphone applications (e.g. WhatsApp, Skype, etc.), social media platforms (e.g. Facebook, Twitter, etc.), and electronic devices (e.g. tablets, iPads). This contrasts with the generalised conclusions reported in prior studies on Pakistan about the lack of technological awareness and

infrastructural issues but aligns with arguments around social inequalities and the digital divide.

During the interviews, these students gave coherent accounts of their experience of learning technology and not only shared the names of the digital technologies being used by them but also gave complete accounts of how they were using them in their studies. The students' descriptions of an engaged experience of learning technology can be further divided into three main sub-categories:

- Ability to access *a broader set of learning resources* using the Internet and other online learning platforms available to them, to develop a better understanding of their subjects.
- Opportunity to *develop networks with a wider learning community* for academic engagement with peers, teachers, and even people outside the university as well.
- *Explore better career opportunities* both during and after completion of their studies.

4.2.2. Instrumental Experience

This category represents an *instrumental experience* of learning technology, in which the students described using technology as a *means for pursuing a specific aim*. In this case, the aim was to complete their coursework, get good grades, and meet all the requirements of their MBA programme on time. According to students' descriptions of experience, they had a basic level of prior exposure to technology, as they had an awareness of some of the latest digital tools but had not used them specifically for educational purposes. Their use of technology during MBA studies was limited to the *requirements of the coursework, the instructions of their teachers* and, at times, the institution.

In this category, the students mostly described scenarios of using different tools and software to work on their assignments and projects. According to the descriptions, the students were not very clear about the reasons for using a particular tool or its benefit for their studies. They were mostly using digital technologies

recommended to them by their teachers. There was little discussion of any initiatives to explore the use of digital technologies on their own. The students' descriptions of an instrumental experience of learning technology can be further divided into two sub-categories:

- *Completion of academic tasks*, such as assignments, projects, and other logistic activities such as attendance monitoring, course enrolment, etc.
- *Communication* with peers and teachers for a range of academic activities, such as group coordination during projects, sharing important messages and information about class schedules, assignment deadlines, etc.

4.2.3. Alienated Experience

This category represents the students' *alienated experience* of learning technology in which they described their feelings of an initial phase of isolation from their peers and teachers present within the learning environment. The use of term *alienation* in this study is inspired by the work of Mann (2001) on learners' experience within a learning environment. She defines it as an experience someone may have of education in which they feel unable to engage or contribute in ways which are meaningful and productive. In this category, the students' descriptions of experience are more focused towards their *struggle* and *inability to adjust* with the learning environment, owing to the presence of technology.

The students describing an alienated experience of learning technology mostly came from less-developed rural areas of Pakistan. They were enrolled under the outreach scholarship programme, as explained in the first chapter. These students had little or no prior exposure to technology, as some of them described not having heard about smartphone applications or social media platforms before coming to university. According to their descriptions, it initially became difficult for them to become part of a classroom comprised of other students who were well aware of and well-versed in the latest digital technologies. It was particularly difficult for them to understand the technological aspects of their coursework, such as the use of a particular software package for an assignment or project.

The students in this category described how their fear of not being able to complete their academic tasks on time, or not being able to communicate with other peers or teachers using the latest technology-mediated platforms made them feel somewhat *passive* in the learning environment. However, in this category, some of these students also described how the use of technology had enabled them to overcome this initial phase of isolation and transition to a more engaged or instrumental experience of technology. This *transitional dimension* will be explained later in the chapter.

The students' descriptions of an alienated experience of learning technology can be further divided into two distinct but inter-related sub-categories:

- Feeling *alienated in a tech-savvy learning environment* due to the presence of technology
- Using learning technology to *overcome alienation* and become part of the learning environment.

The figure on the next page (figure 5) presents the outcome space for this study, highlighting the features of the three categories of description, as explained above. The subsequent section(s) will then present the research findings from the two business schools separately. The rationale for conducting separate analysis is to clearly highlight the contextual factors within which the students' experience of technology is situated. It also helps in explaining the variation in student experiences both within and across the business schools. The *referential* and *structural* aspects associated with each category of description will be discussed. Each section will contain some excerpts from actual transcripts to support the argument being made. The quotes end with nomenclature that represents the two business schools (BS1 or BS2), and a digit randomly assigned to each transcript, to ensure the confidentiality of the participants.

Outcome Space: variation in students' experience of learning technology

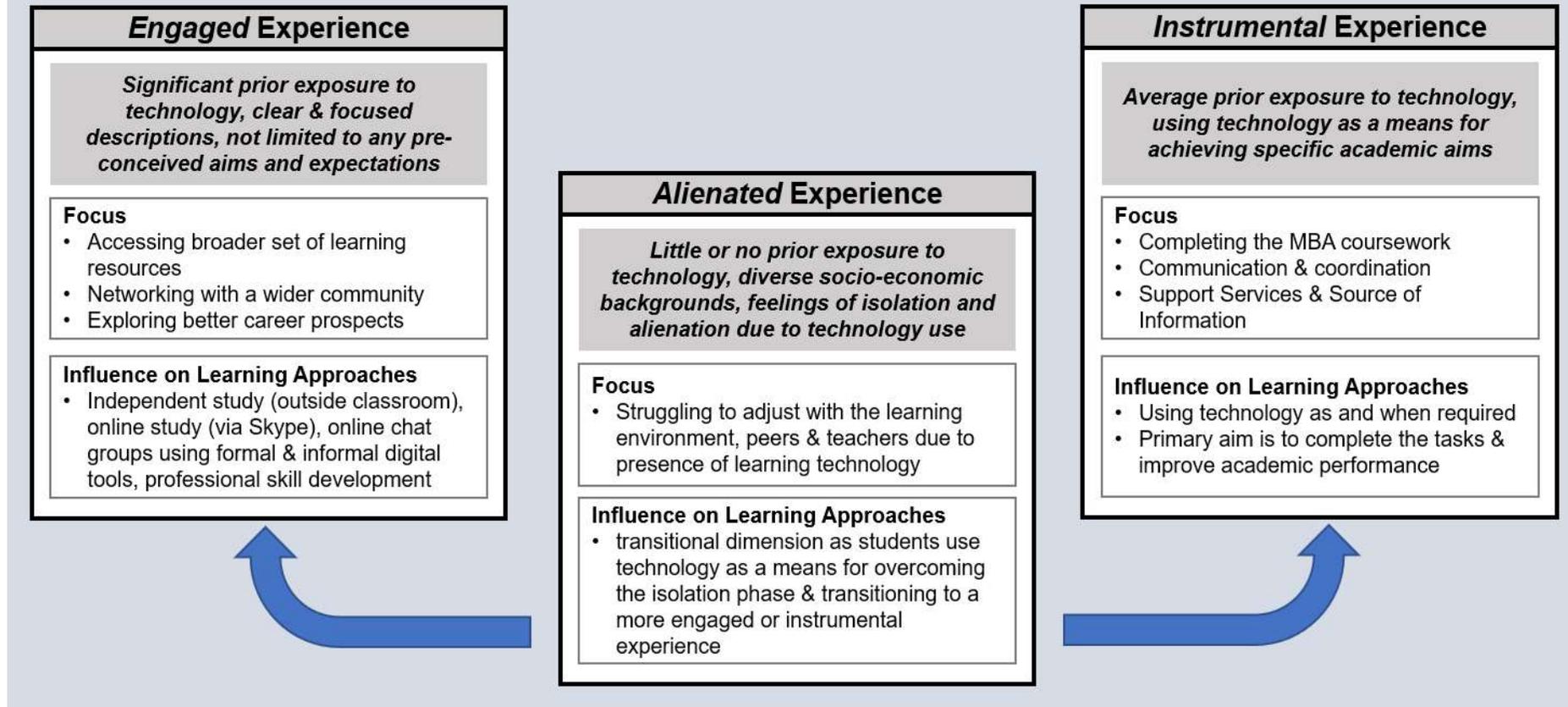


Figure 5 The Outcome Space

4.3. Data Analysis for Business School 1

The first business school (BS-1) is part of a federal university, with its campus in Islamabad, Pakistan. The school had a significantly developed technological infrastructure and provided its students with good quality teaching and learning facilities. A majority of the interviewed students had studied in elite schools/colleges and had significant prior exposure to technology. The detailed contextual background for the business school has already been provided in the first chapter (section 1.6). The analysis in this section is based on the data collected from 23 interviews conducted with final-year MBA students at this school. As stated earlier, prior exposure to technology for these students varied from *basic* to *significant*. In this data set, six students were enrolled under the outreach scholarship programme as well.

The diagram below (figure 6) presents an overview of the *referential* and *structural* aspects associated with students' engaged experience of learning technology:

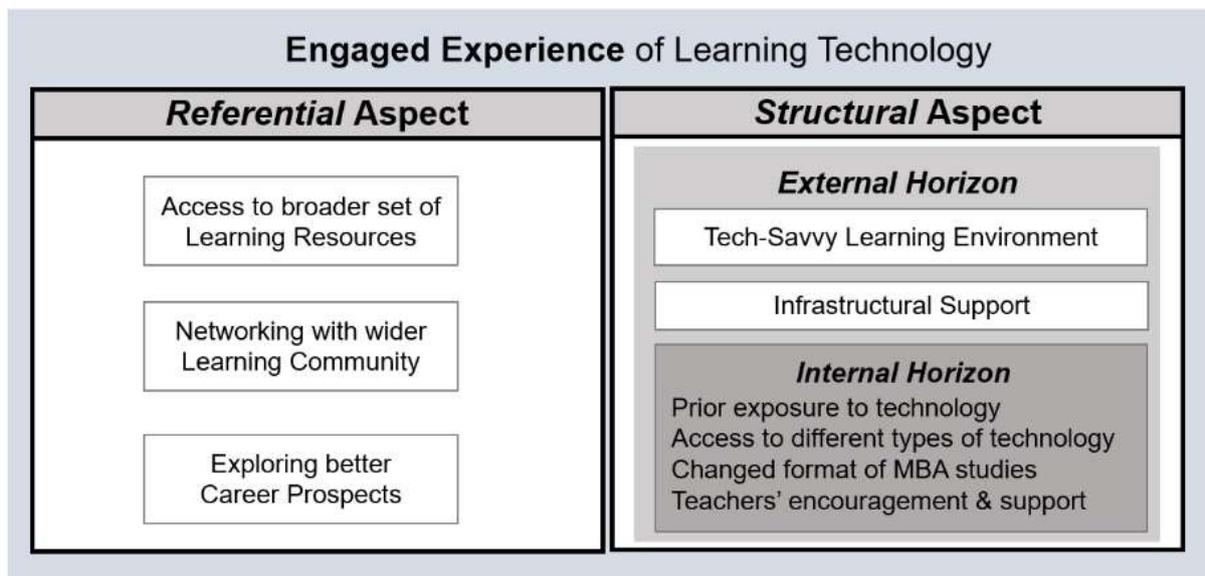


Figure 6 Referential & Structural aspects of Engaged Experience (BS-1)

Each component will now be explained in the sections that follow.

4.3.1. *Referential aspects of Engaged Experience*

The *meaning* students associated with their engaged experience of learning technology comprises the following components:

- i. Accessing a broader set of learning resources
- ii. Networking with a wider learning community
- iii. Exploring better career opportunities

Accessing a broader set of learning resources

Students in this business school mostly associated their experience of learning technology with their ability to access a broader range of digital learning resources. They shared their experience of using technology to access and use both the recommended reading materials, such as slide notes, handouts, book chapters, etc., along with additional digital resources available on the Internet like research papers, blogs, and online content on websites and social media platforms. One of the students said:

...things have become much simpler now ... I can access all my course materials provided by the teachers through Moodle, which is available 24/7 ... but these days it is quite common for me to get some additional materials using the Internet. I download articles from JStore and Emerald; use websites like Wikipedia, Investopedia, and even some Facebook pages... **(BS1-13)**

While describing their experience of accessing and using a broader range of learning resources, these students stated that it not only helped them to complete their academic work but also develop their understanding of a specific subject. For example, a student described this feature of experience in a more detailed manner, stating:

... for several courses now, I have to consult sources other than the textbooks. Therefore, I use the Internet to search for and use articles and case studies that can help me understand the topics in a better manner. Similarly, there are video tutorials and lectures which can be more helpful at times and serve as an alternative to reading lengthy book chapters. **(BS1-08)**

In the passage above, the student has described how, by using learning technology, s/he is *not being restricted* to textbooks and recommended reading materials. The

student can read journal articles online, watch video lectures, and consult other digital resources to get help during studies and further develop their understanding. However, some of the students specifically clarified that they saw technology as a *facilitator* for their studies, and not a *replacement* for their teachers. They described using technology only as a supporting artefact within their face-to-face teaching and learning.

Some students also described that access to a broader range of learning resources helped them *retain their focus and attention* on the course. They explained that they were more attentive in lectures where the teachers use a variety of lecture materials, such as slideshows, videos, animations, etc. This not only makes lectures interesting for them but also encourages them to explore the use of technology on their own.

Networking with a wider learning community

The second important feature in this category relates to the improved *connectivity* provided through the use of the latest digital tools. The students described using a variety of tools to engage in academic discussions with their peers, teachers, and even people outside the university. Students described using technology-mediated communication mediums to share learning resources, have online discussions, seek guidance, and support from peers, and even receive rapid feedback from teachers and supervisors. One of the students said:

I feel I am more reliant on different types of technology ... for talking to other students ... I can share information and ideas with others and even keep myself updated. While working on various tasks ... I know I can always call a friend through ... and discuss everything... **(BS1-13)**

In the above passage, the student describes how the ease and flexibility of contacting other students to get help or support in different academic issues (at times outside regular working hours) were gradually influencing the students' overall learning approach. The student has developed the confidence to discuss and resolve a variety of academic issues through peer support in a learning environment that is traditionally teacher-dependent.

These students described that they were aware of the importance of connectivity and networking within their studies. Some of them, while describing this particular feature, stated that this easier way of communication was helping them to develop *informal networks* amongst themselves. The students described how the use of such technology-mediated communication platforms allowed them to bridge the communication gaps that were present a few years ago due to less developed technological infrastructure in the country.

To further elaborate on the influence of improved connectivity in their learning approaches, a few of the students shared how they were now able to work on group projects during holidays using Skype. According to one student, the latest digital tools were helping her in the following manner:

...we belong to different areas of Pakistan, and sometimes we need to work on projects during the break ... Skype is helping us to overcome such issues, especially related to coordination within a group. We can work easily now ... coordinate important matters and ensure that our work is completed on time ... even if some of the group members live in different parts of the country... **(BS1-17)**

Other students also described that *online group study* had become part of their academic routine, particularly before exams. They referred to it as *Skype Study*. A student explained this point thus:

We are mostly using [online tool] to talk to each other ... during these online discussions, it is just amazing to see so many minds communicating with each other. It is during these online sessions that we often come up with unique and interesting ideas for our projects and assignments...**(BS1-12)**

In the above excerpt, the student describes how online group discussions are facilitating *so many minds* to communicate together and generate ideas for projects and other forms of coursework.

The students in this business school also described using a variety of communication mediums to connect *more frequently* with their teachers. According to the students, their experience of learning technology meant a reduction in some of these *invisible layers* of communication between them and their teachers. One of the students said:

...while studying at this university ... and when communicating with teachers ... I often experienced several invisible layers, which influenced the way I interacted with them ... there were delays, a certain level of formality and hesitation, etc. But, with these latest technologies, it has become much simpler and quicker to contact the teachers ... get the necessary guidance in a timely way...(BS1-08)

In the above excerpt, the student describes how it has become easier for them to get the required advice and help from their teachers, which was otherwise hindered by *delay, formality and hesitation* – suggesting that technology has made it easier for them to communicate with their teachers.

The scope of these technology-mediated informal networks was not restricted to peers, as the students were using digital tools, particularly Social Networking Sites (SNS) like Facebook, to connect with a learning community outside the university. They described using Facebook pages and closed groups to share learning resources flexibly, engage in meaningful academic discussions by commenting on different posts, seek and provide assistance to each other on a range of issues. For example, some of these students planned to pursue further education at foreign universities, so they were able to get all the necessary guidance from different Facebook pages, and the members present in those online networks.

According to the students' descriptions, such opportunities to network with a wider learning community helped develop their ability to work in diverse groups, which was one of the core learning outcomes of their MBA programme. Furthermore, some of the final-year students described how the development of such online networks on social media platforms was also assisting them in searching for better employment opportunities.

Exploring better career opportunities

The students interviewed in this study were all final-year MBA students, as stated earlier. While describing their experience of learning technology, they also shared how use of the latest digital tools was helping them to explore better career opportunities. They described using websites, career portals, and social media groups to find the latest information about job-market trends, internship and employment

options, and other opportunities for skills development, such as training, workshops, and online courses.

The most frequent feature of students' descriptions was their use of technology to be more connected with potential employers. They described using portals like LinkedIn to become more aware of the changing dynamics in the industry, and the kind of skills and expertise required by the employers. For example, one of the students said:

... I am more aware of the internship opportunities now ... employers usually have their careers website now ... so we can get the latest information about job vacancies, person specifications ... some of those companies encourage people to apply online ... making the process much simpler and quicker. I get job alerts almost daily ... from a variety of sources.
(BS1-08)

Some of the students, who had just completed internships, gave detailed accounts of how the use of digital technologies allowed them to secure better opportunities than their peers. As internships constituted a mandatory part of the MBA programme, being more aware of the latest internship opportunities allowed them to secure better options. Previously, they had no choice but to accept internships offered to them by the university, which seldom matched their areas of specialisation and career ambitions.

The students also described how their experience of learning technology supported them with professional skills development. The most common example described by students was the use of online training for writing CVs and preparing for assessment centres and interviews. According to the students' descriptions, the development of industry-specific knowledge and skills could improve their chances of securing better employment opportunities after completing their MBA degrees. For example, one of the students shared a detailed account of completing an online course on Data Science, which, according to him/her, was a *high-demand skill* in the Pakistani job market (BS1-20). The student said:

...you know all of us will get an MBA degree in the end ... but quite a few of us will have the skills required for getting a good job. My experience with technology is helping me develop those skills ... and gradually I have become confident that I will be able to get a good job after completing my degree in the coming year... **(BS1-12)**

According to the above passage, the use of technology was helping the students to develop their skills and gradually gain confidence that they would be able to get a good job after completing their studies.

Another important aspect that emerged in this sub-category was the students' use of technology to explore *diverse* career options – which is unique in the Pakistani context. The students described not feeling restricted to pursue a defined career path that involved searching for a salaried managerial position after MBA. These students described how their use of technology during studies was helping them to explore further and develop their entrepreneurial ideas. According to their descriptions, their modules on subjects like Entrepreneurship, E-Commerce, and Digital Marketing initially inspired them to explore this option. Use of the Internet and other digital tools and resources then helped them to prepare their formal business plans and feasibility studies. As one of the students said:

I found a lot of stuff on the Internet about preparing business plans, innovative ideas, approaching investors, customer preferences, etc. There are motivational videos, blogs, and online groups from where one can find information about the consumer market in Pakistan, the availability of raw materials, the cost of production, legal issues etc. ... the ideas are there. However, the use of online resources makes it easier to plan and implement those ideas. I feel help is available online ... we just need to search for it... **(BS1-17)**

Similarly, some students described using technology to *get clarity* about their career ambitions (BS1-23). For example, one of the students wanted to join the family business but was unsure how s/he could contribute to it. The student said:

...my family runs a small laundry business here in Pakistan ... recently, while using social media for a marketing project, I realised that I could use similar tools to promote my own family's business. I can develop a modern website for the business and implement the latest marketing and promotional techniques by integrating technology into the business. I think, if I can make some contribution towards the family business in this manner, that I will definitely consider it as a full-time career option after the MBA... **(BS1-23)**

In the above excerpt, the student describes how the use of social media during a marketing project developed the student's interest in the subject, which in turn helped in clarifying the career ambitions.

This section highlights how the use of learning technology during studies facilitated the students to only explore better career prospects, but also take chances to *digress* from the defined career paths for the Pakistani MBA students.

4.3.2. Structural aspects of Engaged Experience

The *structural* aspect of the students' *engaged experience* of learning technology was analysed by discerning its components in terms of *internal* and *external* horizons. As stated earlier, the internal horizon comprises those aspects that appear to be within the *immediate* focal awareness of students' descriptions of experience. While the external horizon represents all those components that remain in the background, but occasionally appeared in the students' descriptions of their experience. According to Marton (1994), the external horizon forms the *context* in which the experience of a given phenomenon is situated.

The following sections will explain the aspects that constitute both the internal and external horizons of students' engaged experience of learning technology.

Internal Horizon

In the students' description of an *engaged experience* of learning technology, the following components were identified as being in their immediate focal awareness:

- Prior exposure to technology
- Access to different types of technology
- Changed format of MBA coursework
- Teachers' support and encouragement

Each of these components will now be explained using relevant quotes from interview transcripts.

Prior exposure to technology

One of the most prominent features of students' descriptions of experience was their prior exposure to technology (i.e. before starting MBA studies) during their school or college education. Students describing an engaged experience of learning

technology mostly had significant prior exposure to technology. They were well aware of the latest digital tools, including smartphone applications, social networking sites, and other online learning platforms. According to one of the students:

...I did have my smartphone and laptop much before I started my MBA, so all these things were not new for me ... I knew how to use basic tools like Microsoft Word and PowerPoint ... this was surely to my advantage **(BS1-01)**

Some of these students even demonstrated their use of certain tools and gadgets (e.g. smartphones and tablets) after the interview to show their level of comfort with different types of technology.

Students described how their prior knowledge of certain tools, particularly the Internet, word processors, slideshow makers, etc. facilitated them to adjust to the learning environment of their business school. They shared details of coursework assigned to them during the first few semesters, and how their prior exposure to technology helped them smoothly complete the assigned tasks. One of the students gave a specific example, saying:

I had been using Google and other similar websites during my college days as well ... that exposure helped me during the first semester as I was able to search for different learning resources like research papers, e-books, Web articles, etc. quite easily... **(BS1-02)**

The students also described that they were already familiar with the latest communication tools, such as WhatsApp, Skype, and Facebook, which proved to be quite helpful in their studies. Although they had not explored the academic utility of such digital tools before starting their MBA, but gradually developed an understanding of how they can be used to support their academic work, for example, for communication and coordination during group projects, etc. According to one student:

... I have been using WhatsApp for many years ... but this was my first time of using it for any study-related activity. We had a group project where we managed all group coordination through this chat group ... it was my first experience of using this tool for something related to my studies ... otherwise, I had been using it only for personal communication... **(BS1-16)**

Similarly, some students described using Facebook groups and pages to connect to a wider academic community outside the university. According to their descriptions,

they were already aware of the existence of Facebook groups where they can share learning resources and engage in subject-specific academic discussions. This prior knowledge of such platforms also proved beneficial to them during their studies. According to one of the students, it provided them with a *head start* (BS1-02) in their studies, as compared to other students with relatively limited technological exposure.

Concerning the exploration of better career prospects, some students described how their prior exposure to technology helped them secure better internship opportunities. Their ability to use the Internet proficiently and their familiarity with online career portals assisted them in activities such as completing online recruitment forms, seeking help in CV development, and drafting cover letters, etc. On the other side, some students shared that their limited awareness about the academic utility of certain digital tools caused issues for them. For example, according to a student, the prior knowledge and exposure to technology might have helped him in securing a more relevant internship opportunity that aligned with his area of specialisation (BS1-16). The students said:

...I wish I had exposure to online tools before ... as I could have secured a better and more relevant internship opportunity ... I was not aware that many companies conducted online recruitment these days ... some students had uploaded their CVs on various websites and therefore got much better options for internships ... this internship experience does play a crucial role in enhancing our hiring chances in the future. **(BS1-16)**

The excerpts produced above show that *prior exposure to technology* was one of the core components that formed the internal horizon of these students' descriptions of experience, as they frequently referred to it while describing their engaged experience of learning technology.

Access to different types of technology

The students, while describing their *engaged experience* of technology, frequently referred to different types of digital technologies available to them. They described using institutional systems like Moodle, digital libraries (e.g. JStore, Emerald) and other websites like Wikipedia, Investopedia, SlideShare, etc. to download and use a range of learning resources. According to the students' descriptions, having access to

a range of digital technologies made it easier for them to use a variety of learning resources during their studies. According to one of the students:

...you have many options these days, to be honest ... I can access Moodle or any other website using my phone, tablet, or laptop ... I am sure most of us in the university have an unlimited mobile data package (therefore) ... connectivity is not an issue anymore ... with access to so many different types of tools ... it is quite natural for students like myself to engage more with the available technology ... and explore how it can assist me during my studies. (BS1-11)

According to the above passage, access to a variety of digital resources facilitated the student to have a more engaged experience of learning technology. The experimentation helped the student to explore the educational use of these digital tools.

One interesting aspect of this sub-category was the students' descriptions of using both formal and informal digital technologies in tandem. Students described how informal tools such as social media platforms (e.g. Facebook, Twitter, etc.), and smartphone applications (e.g., WhatsApp, Skype, etc.) were being used for academic purposes, along with their institutional learning management systems. For example, some students shared their experience of using both a Facebook Group and Moodle course page in parallel, to complete a project report. The student said:

Facebook groups, at times, provide detailed information about companies and the latest business trends ... similarly, Twitter is another important tool from where I can find information about stock markets, exchange rates, M&A deals, etc. Such information is quite helpful for adding the latest facts and figures to my project reports ... of course, a lot of reading material is already available on Moodle ... so I prefer a combination of all these resources while doing my work. (BS1-10)

The ability to use a range of digital tools was helping the students to access learning materials in a format that suited their learning needs. According to the students' descriptions of experience, they could access and download learning resources in a *format that matches their learning style* (BS1-12). For example, some of the students preferred video lectures over slideshows; for others, having access to research papers, case studies, and podcasts helped them to learn their subject comprehensively. One of the students referred to this as the *freedom* to use learning materials that assist them in retaining focus (BS1-17). The student said:

I will quote an example from one of my subjects ... our teacher used a combination of short documentaries, newspaper articles, and case studies during lectures. He also conducted various online activities via Moodle ... it not only made the subject interesting for the students but also helped me to develop a more comprehensive understanding ... I remember it even today because that is one of the few courses in which we had the opportunity to study concepts from a variety of perspectives. **(BS1-17)**

Similarly, the students also described how easier access to a range of personal devices, such as laptops, tablets, smartphones, Internet-devices, was proving to be quite helpful in their studies and enabling them to have a more engaged experience of learning technology.

Access to a range of digital tools also enhanced the ability of the students to communicate with peers, teachers, and the wider learning community outside the university. The students frequently described their use of smartphone applications such as WhatsApp, FaceTime, and other social media platforms, like Facebook and Skype, to communicate *easily, frequently, and quickly* with others. One of the students said:

...using Skype, WhatsApp, and Facebook for communication with other students and teachers is a common phenomenon in our university ... there are Facebook and WhatsApp Groups in our class ... communication has become effortless and quick... **(BS1-05)**

The students were also using these tools to connect to a wider learning community outside the university. One of the students shared a detailed scenario in this regard, stating:

...social media has changed the way we connect with others ... we can share information and discuss many issues, using Facebook and Twitter. As you can see [demonstration] ... I have subscribed to these Facebook pages and communities, where students, researchers, and teachers from around the world share their academic experience, upload short videos, and reading materials ... which motivate you to think about different topics and explore them in depth ... I can share my opinion about those topics by posting comments on the pages ... similarly, if I want to discuss an issue, I can post in the group, and other members can share their ideas or suggestions with me quite easily ... I would say it is a quick and easy way to get some feedback on your work and also develop your network... **(BS1-01)**

There are several important points in the excerpt above, as the student describes in detail the kind of activities for which such Facebook groups and pages are being used. These groups encourage the students to develop a better understanding of a subject and explore it in more detail. Furthermore, according to some of the students, they

were also using these groups to develop contacts and grow their professional networks, which could potentially be useful when searching for internship and job opportunities.

The excerpts in this section highlight that the feature of having access to a range of digital technologies was in the immediate focal awareness of the students, as they described their experience of learning technology. Thus, they have frequently referred to the digital tools that facilitated them to have a more engaged experience of technology during their studies.

Changed format of MBA coursework

The students' descriptions of their experience of learning technology also contain frequent references to the *changed format* of their MBA coursework, for which they are often required to use technology. Students described how the nature of their academic activities (i.e. assignments, projects, exams) has gradually changed, making technology an integral component of course design. For example, the students described the frequent use of the Internet (e.g., search engines, websites, digital libraries, and other online platforms) to download digital resources, which had to be consulted along with the lecture slides, handouts, and textbooks provided by the teachers. One of the students shared some of their latest course outlines wherein they were now advised to consult digital resources, in addition to recommended textbooks. According to the student:

...it is usual now that within course outlines, our teachers provide us with a list of additional readings ... we have to use the Internet to download these resources and consult them alongside the usual textbook ... this was not done before ... so I do use technology because the structure and design of my courses are changing... **(BS1-11)**

In the above passage, it is important to note that while describing the use of technology to access and utilise a broader set of learning resources, the student states that, *this was not done before*. It suggests that this is a relatively new phenomenon for these students during their studies.

Regarding the changes in the format of the MBA studies, the students also described their experience of working on small-scale research projects. During these projects, the students were required to use technology to recruit research participants, design and share online questionnaire and at times, conduct online interviews. The students described using the latest web-based tools and social media pages to post their *calls for participation* or *requests for filling* online questionnaires. The use of Facebook pages for such activities helped them to reach out to a wider audience. Similarly, one of the students, working on a final-year project, shared a detailed account of using Skype to interview the research participants. She said:

...earlier, I could have easily managed to do a different project or to skip this requirement of interviewing people from other cities ... but now the standard and quality of final-year MBA projects have increased so much ... that students have to come up with unique ideas... **(BS1-02)**

According to the above passage, the project requirement was to interview participants from across the country, and it was difficult to make travel arrangements. Therefore, the use of technology allowed the student to think of an out-of-the-box idea while maintaining the standard and quality of the project. Similarly, some students described that the changes to the format and requirements of their research projects required them to use statistical software and online tools for sorting and analysis their data sets.

The students in this business school also explained that their teachers also expected them to utilise the digital resources available to them in a better way, and cope with the changing format of their MBA studies. For example, one of the students described preparing financial statements for a project report using commercial software, although a hand-written one could have been included as well. Similarly, some students described using Facebook pages to engage in academic discussions in a wider learning community and then include some of those points in their coursework to show their effort to explore an assigned topic in a variety of dimensions. According to one student:

I was working on a project for the course on Business Sustainability ... there was an issue that required some explanation, so I posted my question on one of the Facebook groups I subscribe to ... within minutes I got several responses, some with links to various websites

and learning resources ... some of these resources are so relevant and useful...that it can help you complete your assignments or, at times, project reports ... this extra effort now seems like a routine aspect of our studies... (BS1-10)

The excerpts presented in this section have highlighted how the changed format of the MBA coursework influenced these students to use different digital technologies. This aspect appeared to be in the immediate focal awareness of the students, as they described their experience of technology.

Teachers' support and encouragement

One of the most prominent aspects of the students' descriptions of their experience of learning technology at BS-1 was the *support* and *encouragement* received from their teachers. The students described how their teachers motivated them to explore and experiment with available digital technologies to understand their academic utility. According to the students' descriptions, there were instances when their teachers encouraged them to increase their use of the latest communication tools and media for better connectivity and coordination of academic work. For example, students explained how some of their teachers advised them to use Facebook Groups over email, as social media have emerged as a more mainstream, popular, and flexible medium of communication. According to one student:

... (name of teacher) told us to create a Facebook group and then discuss all sorts of issues in it, as it's more mainstream, popular, flexible, and quicker than traditional email ... people check their Facebook accounts more often than their email ... it is the trend whether we like it or not... (BS1-22)

Similarly, in some cases, the students described how their teachers encouraged them to use online collaborative tools, such as Google Docs, cloud drives, and other smartphone applications that can offer support during group projects. One of the students said:

I remember it was one of our teachers who encouraged us to use WhatsApp and Skype for coordination during group projects ... most of us were already using WhatsApp but had not used it for any academic work before ... he (the teacher) explained how such tools would make the job a little easier for us ... we can have online discussions and meetings, sort out and compile our work in a much shorter time ... we are using WhatsApp groups these days during projects for progress reports, task distribution, file-sharing, meetings via

audio and video calls, etc. We make sure each member is on the same page and, to be honest, that is what matters in a group project... **(BS1-08)**

Some students also added that their teachers provided hands-on training and demonstrations within their lectures on the effective use of search engines and digital libraries for downloading and utilising the digital resources required to improve the understanding of a subject. While describing this aspect, one of the students said:

...in almost all of our courses, we get the desired support from the teachers ... they inform, guide, and at times train us in using different types of tools ... for example (name of teacher) encouraged me to use digital libraries and databases so that I could download research papers and case studies, which can help me understand some of the concepts in a more comprehensive manner. Similarly, there was a project where I had to prepare a short documentary ... it was the course instructor who trained all the class on various online tools and video editors... **(BS1-13)**

According to the above passage, some of the teachers conducted training for their students, to familiarise and encourage them to use the digital tools required for the completion of their course-related work. The teachers undertook such activities *in addition* to their workload of conducting weekly lectures and seminars.

Other than academic issues, many students also described instances where their teachers provided career counselling and advised them to use online portals such as *LinkedIn*, *Rozee.pk*, and *Jobs.pk* to diversify their search for suitable internships and job opportunities and to establish professional contacts within the industry. Similarly, one of the students gave a detailed account of how one of the teachers in the university was guiding the student utilise digital resources while preparing the feasibility of an entrepreneurial venture. The student said:

After I completed my course on Entrepreneurship ... I was quite motivated to launch my own business after completing my studies ... my teacher was quite happy to learn this when I shared my idea with her ... she has been very encouraging and supportive ... it was she who advised me to utilise digital resources available over the Internet to prepare and refine my business plan, conduct market analysis, and establish professional networks in the industry ... which could prove very useful in the future..." **(BS1-16)**

The excerpts and passages in this section highlight the level of support and encouragement the students received from their teachers when using technology during their studies. Thus, this component was present in the immediate focal awareness of the students at BS-1.

External Horizon

For the students describing an *engaged experience* of learning technology in this business school, the components which formed the external horizon of their experience were as follows:

- Tech-Savvy learning environment
- Infrastructural support from the university

Each of these components will now be explained separately, using relevant quotes and extracts from the original student transcripts.

Tech-Savvy learning environment

The feature of being present in a *tech-savvy* learning environment formed a prominent component of the background in which the students' engaged experience of learning technology was situated. In accordance with the theoretical underpinnings that define the external horizon, such aspects facilitate in examining the influence of contextual factors on the students' descriptions of a given phenomenon.

The students described that being present in a technology-supportive learning environment in which there was *less scepticism* (BS1-12) about the use of technology during studies facilitated them to have a more engaged experience. For example, one of the students said:

...we have this BYOD [Bring Your Own Device] policy in the university ... even some of the teachers expect the students to have some kind of device like a phone, tablet, or laptop with them while they are in the university... **(BS1-02)**

Another student commented further on the university's environment and stated:

...I feel in our university, technology is everywhere these days ... it seems everybody is talking about things like the Internet, Google, WhatsApp, etc. throughout the day ... the most common phrase I hear these days from students and even teachers is to *share that particular thing on the WhatsApp group* ... that shows how technology is becoming so important for our daily academic routine... **(BS1-17)**

The above passages highlight that learning technology had a visible presence within the learning environment of this business school (BS-1), as the students were

encouraged to use a diverse range of digital tools to support their studies. Some of the students described that the tech-savviness in their learning environment helped in inducing a *community feel* in them.

The students also shared that the support and encouragement to use learning technology provided to them by their teachers and the institution further enabled them to take initiatives to experiment with the available digital tools. A frequent example was the use of social media platforms and smartphone applications for developing technology-mediated *peer networks* to interact more frequently with each other. According to a student:

...most of us are using the Internet either on our phones or laptops ... information sharing is going on via social media pages or WhatsApp groups ... even timetable changes, or other university-related notifications and updates are now shared digitally ... so all of this has a very stimulating effect on me, and I feel more connected and engaged with everyone...
(BS1-10)

In the above passage, the student describes the *stimulating effect* of using learning technology during studies, as they felt more connected and engaged with other students and teachers.

The technology-supportive environment of the business school was allowing the students to develop their learning approaches as well. Some of the students described how the simultaneous exposure to both formal and informal types of digital technologies within their learning environment gradually motivated them to realise that support is available to them *beyond the classroom* and from people *other than teachers*. As one of the students explained:

...I know I cannot learn everything during a fifty-minute lecture ..., but I also know I am always connected with my university and other students ... through ... Moodle, Facebook groups, WhatsApp groups, etc. ... (so) although we have face-to-face teaching everyday ... I now have this additional option of studying in the library or even at home ... using various forms of available tools... **(BS1-08)**

Some of the students described exploring *self-study* options with the help of online learning platforms and digital tools, which is not a common phenomenon in a learning environment that is mainly instructor-led. According to relevant literature on Pakistan's higher education system (as discussed in Chapter *Two*), teachers are seen

as authority figures in Pakistani universities. It is usually difficult for students to adopt an independent study approach; however, as is evident from the excerpt above, some of the students described using learning technology to become less teacher-dependent in their studies.

Infrastructural support in the university

This aspect links closely to the initial point of a technology-supportive learning environment at BS-1. However, the reason for separately discussing this component is that some of the students specifically referred to the developments in the technological infrastructure at their business school and how this influenced their experience of learning technology. The students describing an engaged experience of learning technology shared examples of the supportive technological infrastructure at their business school, implying that this aspect formed an important component of the background in which their experience was situated.

The students described their university's initiative of upgrading the computer labs and network facilities, providing Internet access on campus, setting up video-conferencing rooms, installing smart-screens in lecture halls, and deploying thumb-scanners for taking attendance. According to one of the students:

...I have seen many improvements to the facilities over the past year, or so ... the labs have developed, we have access to digital resources ... the Internet is available throughout the day ... some of our larger lecture halls have smart-screens, so I think our university is playing its part in providing us with good technological facilities, that can support us during our studies... (BS1-05)

Similarly, the students also described how their university was collaborating with the Higher Education Commission (HEC) of Pakistan to provide access to digital libraries and databases to download digital learning resources. As explained in the first chapter, the university recently established an *incubation centre* to provide support for students with plans to launch their own start-up companies during or after completing their course of study.

Some of the students also described the gradual improvements and up-gradation of their institutional learning management system (Moodle) and the campus

management system (CMS), that has automated several of their academic and administrative activities. According to the students, these systems provided them with an *ample amount of support* outside the classroom and beyond regular working hours (BS1-09).

One of the most notable features of this component of the external horizon is that contrary to the published literature on Pakistan's higher education sector and the acceptability of learning technology, the students in this business school described a very encouraging picture. According to these students, the infrastructural development led to the creation of a technology-supportive learning environment in which the students were given the freedom and space to use both formal and informal digital tools to support their studies.

The table on the next page (table 3) presents a summary of the referential and structural aspects discerned from students' engaged experience of learning technology at BS-1.

Table 3 Summary of the Referential & Structural aspects of Engaged Experience at BS-1

Structural Aspects Referential Aspects	External Horizon					
	Internal Horizon				Infrastructural support in the university	Tech-savvy learning environment
	Prior exposure to technology	Access to different types of technology	Changed format of MBA coursework	Teachers' encouragement		
Access a broader set of learning resources	"...I had been using Google... during my college days...that exposure helped me... to search for different learning resources like research papers, e-books...quite easily..." (BS1-02)	"...I use the internet to get the latest information...then...a lot of reading material is already available on Moodle ... I prefer a combination of all these resources while doing my work..." (BS1-10)	"...we are now expected to use the latest facts and figures downloaded from the internet in our project reports..." (BS1-11)	"teachers encourage...us to consult a wide range of learning resources available on the internet and through digital libraries...it helps develop a better understanding of subject..." (BS1-01)	"...we have an LMS and CMS deployed by university...we can also access digital libraries freely now to download various digital resources..." (BS1-13)	"...some of the teachers expect the students to have some kind of device like a phone, tablet, or laptop with them while they are in the university..." (BS1-02)
Network with a wider learning community	"I had this routine of having online discussions in various Facebook groups, much before I started my MBA..." (BS1-05)	"...we are using a range of tools like Skype, WhatsApp and Facebook to contact each other... at times we also get messages on Moodle..." (BS1-17)	"...for some assignments, I feel I need to discuss with students from other departments...so Facebook helps with that..." (BS1-08)	"... (teacher) told us to create a Facebook group (for discussion) ...as it is more ...popular, flexible, and quicker than traditional email..." (BS1-22)	"...information sharing is done via social media pages or WhatsApp groups ... even timetable changes or other university-related notifications... are now shared digitally" (BS1-10)	"...most of us use mobile internet...the campus also has free WIFI...so most of us are always connected through chat groups...or emails. (BS1-13)
Explore better career prospects	"...I wish I had exposure to online tools before ... as I could have secured a better and more relevant internship opportunity..." (BS1-16)	"...I have made profiles on career portals like LinkedIn...I also watch YouTube videos on resume writing and preparing cover letters...it helps in skill development" (BS1-08)	"use of technology in our studies is helping us develop those skills which are required in the job market these days" (BS1-12)	"...I had several consulting sessions with my teacher where he guided me on using digital tools to prepare my business plan for the start-up company..." (BS1-16)	"...the incubation centre of the university...provides the graduates with the IT infrastructure required in setting up their start-up companies..." (BS1-17)	"...advertisements for jobs and internships are posted on university's official Facebook pages, and Twitter handles..." (BS1-08)

4.3.3. Referential aspects of Instrumental Experience

In this category of description, the *meaning* students associated with their experience of learning technology was to use it only as a *means to pursue a particular aim*. In this case, the aim was to complete the coursework of their MBA studies, secure good grades, and get their degree on time. The diagram below (figure 7) highlights the components of the *referential* and *structural* aspects discerned from the students' descriptions of an instrumental experience of learning technology.

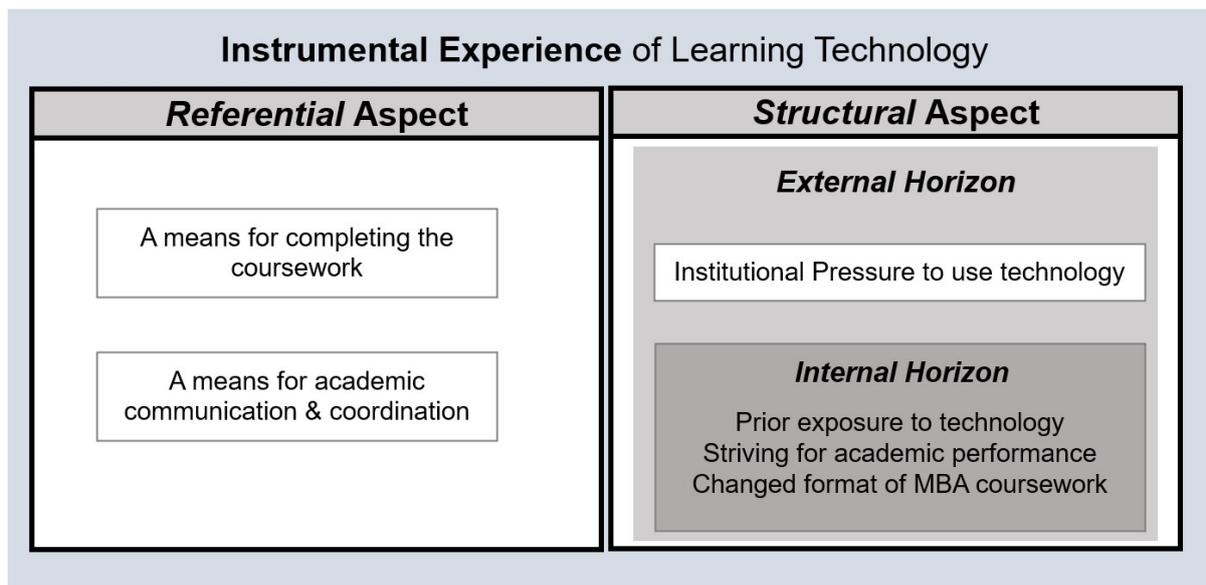


Figure 7 Referential & Structural aspects of Instrumental Experience (BS-1)

Each of these components and their corresponding features will be explained in the following sections, using relevant quotes and excerpts from the interview transcripts.

The *referential aspect* comprises the following:

- A means for completing the coursework
- A means for academic communication & coordination

A means for completing the coursework

From a *referential* aspect, one of the meanings students associated with their instrumental experience of learning technology was to use a range of digital technologies to complete their course-related activities and secure better marks. These students described the nature of their coursework for which they are often required

to use a specific tool or software package. For example, one of the students described a complete sketch of his/her usual academic routine in which technology (in diverse forms) was being used for several activities:

...If you ask me to recall one full day at the university, I can think of numerous instances where technology is being used ... starting with PowerPoint lecture slides, downloading them from Moodle, using Google and other websites to collect data for assignments, note-taking and drafting assignments using Word ... every task has become dependent on some form of technology... **(BS1-15)**

The above excerpt highlights that a variety of tools, software packages, and online platforms are being used for activities such as lecture delivery (e.g. PowerPoint slides), sharing of learning materials (e.g. LMS, Facebook), communication and coordination during group-based tasks and collaboratively working on projects (e.g. Facebook, WhatsApp, Skype).

The distinguishing aspect in this category is that the students' descriptions have a specific focus around the use of technology for completing their MBA coursework. The analysis of relevant interview transcripts shows that the most frequently used words by the students were *required*, *directed*, *instructed*, and *grades*. The students mostly shared their experience of using technology whereby they were asked to use a particular tool by their teachers or if it was the only option to complete their assignment. As one of the students said, the use of technology in their studies has gradually become a *requirement* (BS1-14), there is no other way to complete the assigned work and pass the course. One of the students explained this point further, saying:

...technology is everywhere around us ... every semester, we are given several assignments and projects that require the use of different tools and software ... that actually leaves me with no choice ... I have to use only those tools so that I can complete my work on time ... all of this is directly linked with the grade I get in that course... **(BS1-19)**

Some of the students described detailed scenarios where they were required to use a specific tool or software package to complete an assignment or project report. For example, one of the most frequent examples was a final year research project for which the students were *required* to use specialised data collection (e.g. Google Forms) and analysis (e.g. SPSS, Stata) tools to complete their projects. Similarly, some of the

students majoring in Accounting & Finance described how they were now using commercial software to prepare financial statements, involving complex logic and calculations, for their assignments and projects. One of the students said:

...the nature of tasks has changed ... and the way we are expected to complete those tasks has also changed ... a manual financial sheet is no longer acceptable ... therefore, I have to use Excel to prepare those sheets and then include them in my assignments or project reports... **(BS1-09)**

Within these descriptions of experience, the prime focus of the students was to use technology to complete assigned tasks on time and secure good grades. To achieve this aim, the students described how they were using a blend of formal and informal digital tools. For example, the students shared how they were using their institutional LMS (Moodle) for downloading lecture notes and then circulating them to their peers via Facebook groups. According to their descriptions, Moodle was considered the main *go-to place* for downloading lecture materials, uploading coursework, checking for plagiarism, receiving tutor feedback, and maintaining the academic calendar. However, some of the latest tools, such as smartphone applications and social media platforms, were providing them with *additional support* (BS1-15) to complete their academic work smoothly.

Students describing an instrumental experience of learning technology also shared how they were using the Campus Management System (CMS) at their business school to manage some of the administrative activities of their coursework. This included course enrolment each semester, monitoring attendance, checking grades, generating tuition fee vouchers, etc. It is important to mention that students describing their use of the institutional CMS also used the word *required* to highlight that they needed to perform all these activities via this automated system.

A means for academic communication and coordination

The component of *improved connectivity* through the use of technology was another important feature of the students' descriptions of an instrumental experience of learning technology. The students described how they were mostly using smartphone applications and social media platforms to communicate with their peers

and teachers. However, the difference between the component of connectivity in this category and the one described in engaged experience is that this communication had a much narrower focus, i.e., the students described using technology for communication *within the class* on issues related to coursework, timetables, assignments and exam deadlines, etc.

The students described the concept of official *online chat groups* that were created and maintained either on WhatsApp or Facebook by class representatives (CRs), their main purpose being to disseminate important information on issues like timetables, changes to lecture venues, upcoming assessment deadlines or, at times, an important message from teachers. The CRs acted as administrators of these groups and moderated discussions to ensure that information being shared focused only on academic activities. According to one student:

We have a chat group for our class ... where the CR regularly shares information and messages about our class schedules, details of assignments, and projects. At times, he is asked to circulate a message from the teacher to the entire class ... so instead of sending separate messages to 55 students, he can just post a single message in the chat group, and everyone can receive it instantly. **(BS1-03)**

In this category, another important feature was the students' description of using digital tools for collaborative working during group projects. The students frequently shared examples of how applications like WhatsApp, Skype, and Facebook have made it easier for them to manage communication and coordination during projects. As one of the students said:

...in the MBA we must often work on projects that require coordination and teamwork ... before, all this was managed by the group leader manually, and we used to waste much time just organising group meetings. We understand that everyone cannot be present at the university all the time ... and sometimes we must work on projects during the holidays ... so now we use several tools to organise online group meetings we share documents and all project materials, easily and securely. This ensures all group members are on the same page and have access to the same versions of the files... **(BS1-07)**

In the above excerpt, the student makes a comparison between *manual coordination*, which was done earlier, and the use of the latest digital tools to provide support in group work these days. According to the students, the use of technology to manage

coordination work allowed them to focus more on actual tasks such as collecting information, preparing reports and presentations, etc.

Concerning the use of the latest tools for communication, the students also described how they were using the *audio/video call features* of various applications to organise online meetings and group study sessions. The availability of digital technologies helped them to overcome the barriers of time and location associated with face-to-face meetings. According to the students' descriptions, there was a recognition that these online communication media were causing them to develop the habit of working collaboratively on different academic tasks. According to one student:

...recently, while preparing for an exam, I was searching for a particular handout given by the teacher ... I couldn't find it on the LMS, so I just sent a message to the WhatsApp group, and within five minutes, I got a response from another student who provided me with the required notes ... it feels good to know that you are always connected with other students ... even outside the classroom... (BS1-15)

In the above excerpt, the student describes how online chat groups are helping them to get academic support outside regular working hours. The emphasis is on *being connected* through the use of learning technology. Other students also shared similar examples of using technology for academic communication and coordination. The prime focus of such communication was to complete academic work on time and secure good grades.

4.3.4. Structural aspects of Instrumental Experience

The *structural* aspect of students' instrumental experience of learning technology will now be discussed by discerning the components present in the immediate focal awareness (internal horizon) of the students' experience, and those which form the background (external horizon).

Internal Horizon

The internal horizon for students' description of an instrumental experience of learning technology comprised the following components:

- Prior exposure to technology
- Striving for academic performance
- Changed format of MBA coursework

Each of these components will now be discussed using relevant quotes and excerpts from interview transcripts.

Prior exposure to technology

This component discusses the prior knowledge and familiarity of the students with the digital technologies being used during their studies. The students have specifically described their prior exposure to the digital tools being used for their course-related activities, such as Microsoft Word, PowerPoint, etc. According to the students' descriptions, their prior exposure to technology fluctuated slightly, as some of them had already used basic word processors and slideshow makers in their schools or colleges. However, there were other students, from rural backgrounds, who described having some basic familiarity with such tools but having never used them formally for educational purposes.

In this category of descriptions, the students described this component with respect to their ability to secure better marks and get an advantage over their peers. For example, one of the students said:

...knowing how to use tools like MS Word, Excel and PowerPoint...gives you an advantage during your studies...I was given a task to prepare a presentation within the first week of studies...as I knew how to use the tool, it became much easier for me to complete the task on time...(BS1-09)

In this excerpt, the student relates the aspect of prior exposure to technology and the ability to complete an assigned task on time and eventually getting an advantage, i.e., a better grade or mark. There were other examples where students described that their prior familiarity with the Internet and the use of certain tools and software made it easier for them to complete their coursework on time and as per the requirements of their teachers. Similarly, some of the students discussed their prior exposure to smartphone applications and social media platforms, which made it easier for them

to join online chat groups and stay updated with information being disseminated by teachers or class representatives.

Some of the students who were somewhat less familiar with digital technologies also described how this impacted their academic performance. According to their descriptions of experience, they had the additional task of first learning the digital tool and then using it for academic purposes. For example, one of the students said:

...I had to prepare a report using Excel, and I had no idea how to do it ... It was like additional work for me to first learn the tool and then complete my assignment ... of course, students with prior technical knowledge were always at an advantage ... (BS1-21)

In the above excerpt, the student describes a specific scenario where the student was required to use an unfamiliar digital tool to complete the assigned task. This resulted in the student having to first learn the tool and then work on the assigned task.

For students describing an instrumental experience of technology, this component appeared to be in their immediate focal awareness, as they often referred to the academic advantages a student has if they have some prior knowledge and exposure to the digital technologies being used these days.

Striving for academic performance

In this category of descriptions, the students have mostly described their use of technology to get good grades and improve their academic performance. They described how the use of digital tools was allowing them to *improve the quality of their submitted work* (BS1-13) and also ensure its timely completion. This had a direct impact on their academic work and the appreciation they receive from their teachers. One of the students said:

...if I have used information from various sources in my assignment ... I always get good marks ... the teachers also appreciate the work of those students who use data from Google and other websites in their assignments... (BS1-07)

In the above excerpt, the student highlights the importance of getting good marks in their coursework and how technology plays a vital role in this achievement. For example, it is through technology that students can access a broader range of learning

resources, which helps them prepare comprehensive assignments and project reports. According to the students, the teachers also appreciate students who make the extra effort to consult additional learning resources while doing their regular coursework (BS1-15). The student said:

...getting good grades is important for every student, and these latest tools and software are helping me do that ... I can do my work quickly, easily, and accurately ... for example, the simple function of 'spell-check' in Microsoft Word can significantly improve the quality of my assignment ... and I can get a better grade. **(BS1-15)**

Both excerpts highlight how the students strive for excellence within their studies and how learning technology is playing a supportive role in this. In the above passage, the student even provides an example of how a simple feature of a particular tool can help in improving the overall quality of the work and getting a better grade.

There were students (mostly specialising in Accounting & Finance) who shared their experience of using certain tools and software to improve the *accuracy* of their work and get good marks. These students described their experience of working with numbers and doing tasks that involved complex calculations. To reduce the chances of errors in their work, the students were using commercial software (e.g. Peachtree, Microsoft Excel, etc.), to make sure there were no calculation errors in their work. According to the students' descriptions, this had a *significant* impact on their grades and overall academic performance. A student explained this point, saying:

...at times, the preparation of financial statements requires complex calculations ... before, when I used to do it manually, there was always a chance of human error that would result in a deduction of marks ... by using software ... I feel more confident that my work is accurate, and I will be able to get good grades in that course... **(BS1-19)**

Similarly, some research students were using a range of tools and software (e.g., SPSS, Stata, etc.) to improve the quality of their work and secure a better grade in the final project.

One of the important features described by the students was the use of technology to improve coordination in group projects and assignments, as it directly influenced their grades (BS1-15). Some students described using a variety of tools to manage communication and coordination during group work, as this improved the

overall quality of the final product, i.e. a project report or presentation. According to their descriptions, a better organised and coordinated project enhanced their chances of completing their academic work on time and getting more appreciation from the teacher and ultimately a better grade. One of the students said:

...while working on projects...students who know how to use smartphone applications do not waste time in communication and coordination issues...they focus on the task, complete it on time and get good grades. **(BS1-15)**

In the above passage, the student describes how improved communication and coordination during group projects (through the use of technology) helps the students to focus on the actual task and secure better grades.

The passages and excerpts shared in this section highlight how students describe the use of learning technology as a means for getting good grades and improving academic performance. This component appeared to be in the immediate focal awareness of the students' descriptions of an instrumental experience of technology.

Changed format of MBA coursework

This aspect is quite similar in meaning to the one discussed in the first category, i.e., the engaged experience of technology. However, in this case, the students only focused on describing their *extensive reliance* on technology use for their coursework. They described how they were *required* to use technology as the format of their MBA coursework has changed rapidly over the past few years. The students gave several examples to explain this point, for example, the mandatory use of word processors for typing assignments as opposed to handwritten ones, consulting a range of digital resources to prepare project reports, or even preparing documentaries and podcasts as outcomes of a research project. As one of the students said:

...use of technology is important for getting good grades, especially in Accounting courses as we have to prepare computerised financial statements...manual hand-written is no longer accepted... **(BS1-03)**

Another student gave a different example and said:

...as a student ...I feel the tasks have changed with time ... tools like Google Forms, MS Excel, and SPSS have become a permanent part of our research projects ... it feels like every step of a project requires the use of a particular tool... (BS1-19)

The students described these examples to highlight how the structure and format of their assessment schemes in MBA studies have changed so that now they are *expected* to use particular tools or software which are either required for the task or ones recommended by their teachers.

Among the descriptions of their experience, some students explained that the frequency of group-based projects and assignments within their MBA studies has increased. They are expected to work in groups for a range of academic activities, making it necessary to communicate and coordinate with each other regularly. Therefore, their gradual reliance on smartphone applications and social media platforms has increased. One of the students said:

...each course now involves either a group project or some kind of team activities that count as a major assignment ... we need to use WhatsApp, Facebook, or Skype to manage our coordination and set up online meetings ... not all group members can be physically present all the time ... and we cannot allow such reasons to delay the work... (BS1-03)

In the above passage, the student describes that as the format of their assessments requires them to work in groups or pairs, they now use tools like WhatsApp and Facebook to organise *online group meetings*.

In the first category that described an engaged experience, the students discussed that the changed format of their MBA coursework encouraged them to explore and experiment with a range of formal and informal digital tools. However, in this category, the students mostly described how the use of technology had become a *requirement* and *obligation* in the changing format of their MBA studies. The passages presented in this section highlight how students described that the changing format of their coursework and assessment scheme required them to use a specific set of tools and software packages. This aspect appeared to be in students' immediate focal awareness as they frequently linked their use of a specific tool or software package with a related academic activity.

External Horizon

The external horizon of students' instrumental experience of learning technology included a component that highlighted a form of *pressure to use institutional systems*. This component will now be explained, citing relevant quotes from the students' descriptions of their instrumental experience of learning technology.

Pressure to use institutional systems

Within relevant students' descriptions, the component that formed the background to their experience of learning technology was *pressure to use learning technology*, particularly institutional systems. These students frequently described their experience of using *Moodle* and the *Campus Management System* as they were asked to use these systems by the institution. According to their descriptions of experience, the university encouraged and at times *constrained* them to use these tools for their academic and administrative work, which resulted in undue pressure. According to one of the students:

...Moodle has gradually become part of our daily academic routine ... all the lecture notes, handouts are provided through it ... assignments and project reports have to be uploaded as well ... more recently, plagiarism checking tools have been integrated with it as well ... the university now requires all students and teachers to use Moodle for all kinds of academic activities ... it is no longer optional. **(BS1-21)**

In the passage above, it is important to note that the student, while describing the different activities for which they are now required to use Moodle states that *it is no longer optional*. This indicates the *institutional pressure* on these students to use these systems.

The students explained that the institution had made it mandatory for them to use institutional systems, as alternative manual processes had been scrapped or the students were charged a *financial penalty* (e.g. fine) if they were found to be inactive on these systems for a specified duration (i.e., four weeks). One of the students explained this point in the following manner:

...there is a fine for not using the institutional systems ... we get an automated email after two weeks of inactivity on Moodle, and after a month, the student's account is disabled,

and we have to pay that fine to get it restored ... hence, I say using technology is not an option but a requirement now... (BS1-15)

The students are now using these systems to manage their academic and administrative activities; however, according to some of their descriptions, institutional pressure at times tends to *overshadow their overall experience of learning technology* (BS1-19).

The students also described their use of Campus Management Systems (CMS) for managing most of the administrative activities related to their courses. For example, the students described using CMS every semester for activities such as course enrolment, attendance monitoring, generating tuition fee vouchers, checking grades, etc. One of the students narrated the use of CMS in the following way:

...we now have to use CMS for activities like course enrolment, attendance monitoring, applying for transcripts, etc. Earlier, we had manual procedures in place as well, but now CMS has been made 'mandatory' by the university... (BS1-07)

Another student elaborated this point further, saying:

...the CMS is quite helpful ... it has simplified many things for us, but yes, it is quite complex to use, and we have not been given any training on that. The issue is we do not have 'any other option' now ... we have to manage a lot of 'stuff' through that system ... the university no longer accepts paper-based forms... (BS1-21)

Similarly, some of the students also discussed other support (logistical) activities for which their institution mandated the use of technology, such as the use of biometric thumb-scanners for taking attendance and using RFID-based identity cards to access university printers and scanners. These descriptions suggest that there was pressure on students to use the institutional systems within their study routines.

The table on the next page (table 4) presents a summary of the referential and structural aspects discerned from students' instrumental experience of learning technology at BS-1.

Table 4 Summary of the Referential & Structural aspects of Instrumental Experience at BS-1

Structural Aspects Referential Aspects	External Horizon			
	Internal Horizon			Institutional pressure to use technology
	Prior exposure to technology	Striving for academic performance	Changed format of MBA coursework	
A means for completing the coursework	"...knowing how to use tools like MS Word, Excel and PowerPoint...gives you an advantage during your studies...I was given a task to prepare a presentation within the first week of studies...as I knew how to use the tool, it became much easier for me to complete the task on time..." (BS1-09)	"...use of technology is important for getting good grades, especially in Accounting courses as we have to prepare computerised financial statements...manual hand-written is no longer accepted...so in a way, I am required to use specific tools..." (BS1-03)	"I feel the tasks have changed with time...tools like Google Forms, MS Excel and SPSS have become a permanent part of our research projects..." (BS1-19)	"...Moodle has gradually become part of our daily academic routine...the university now requires all students and teachers to use Moodle for all kinds of academic activities...it is no longer optional." (BS1-21)
A means for academic communication & coordination	"...Skype study has become quite a common practice in students...we usually conduct these online sessions for revision before the exams...most of us already familiar with Skype...so we just found an academic use for it..." (BS1-21)	"...while working on projects...students who know how to use smartphone applications do not waste time in communication and coordination issues...they focus on the task, complete it on time and get good grades." (BS1-15)	"...every module comprises of a mandatory group-based project or paired assignments, so we have to use online chat groups for coordination..." (BS1-09)	"...the CR has created a WhatsApp group where all important announcements and messages are shared...it is compulsory to join the group to remain updated with what is going on in the class..." (BS1-07)

4.3.5. Referential aspects of Alienated Experience

This category highlights the students' alienated experience of learning technology in which they described their feelings of an initial phase of isolation within a tech-savvy learning environment of their business school. A majority of these students came from less developed areas of Pakistan and did not have *any* prior exposure to digital technologies.

The following diagram (figure 8) presents the *referential* and *structural* aspects discerned from their descriptions of an alienated experience of learning technology:

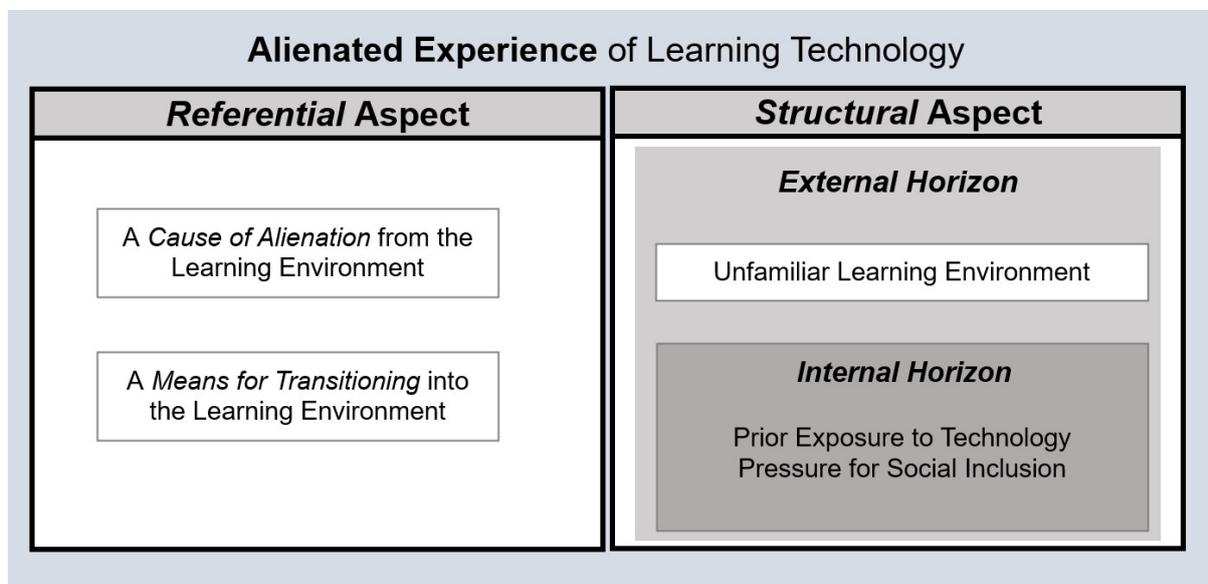


Figure 8 Referential & Structural aspects of Alienated Experience (BS-1)

Each of these components and their corresponding features will be explained in the following sections, using relevant quotes and excerpts from interview transcripts.

From a *referential* aspect, the students associated two contrasting but interrelated meanings with their experience of learning technology. They described their experience of learning technology:

- As a cause of alienation from the learning environment
- As a means for transitioning into the learning environment

A cause of alienation from the learning environment

The students described how the *presence of technology* in their learning environment resulted in an initial phase of isolation for them. As stated earlier, most of these students came from less developed rural areas of Pakistan, and according to their descriptions, it was already difficult for them to adjust easily to university life. Furthermore, when they were asked to use a range of digital technologies to complete their academic work, they struggled to handle the situation. This *excessive presence* of and *dependence* on the use of technology isolated them from their peers and teachers, particularly during the first few semesters.

Some students also described their fear of not being able to meet the expectations of their teachers about the use of digital tools. These students often referred to their socio-economic backgrounds and prior exposure to technology and how this influenced their experience of technology in MBA studies. As the students struggled to adjust to the new academic setting, this resulted in the development of a gap between them, their peers, and the teachers. According to one of the students:

...there was this requirement of using the Internet, software for typing and presentations, etc. ... I had to learn so much in a short period to adjust to the environment and then focus on my studies ... suddenly, I felt I was not part of this environment, and maybe I have come to the wrong university... (BS1-20)

Similarly, another student explained this point further by stating that s/he was unable to make the connection between the use of technology and assigned academic work, as the student had not used such tools and software for educational purposes before:

...I had never even heard the names of some of the software I was being asked to use in my assignments ... I was unable to make any connection as to why I was being asked to use these specific tools ... of course, it impacts on the way you feel about the overall environment... (BS1-06)

According to the above excerpts, the inability to meet *preconceived expectations* around the use of technology gradually resulted in feelings of isolation from the learning environment and the other participants of it. The students described not feeling part of the environment in which they were studying.

Apart from being unable to complete their academic work, these students also described the challenge of not being able to communicate with other students and teachers using the prevalent technology-mediated communication mediums. According to the students' descriptions, the most popular media of communication in their business school were social media platforms and smartphone applications. As the students did not have any prior knowledge of these tools, they were *unable to join* online chat groups or participate in online discussions in Facebook Groups and on Moodle pages. This further widened the already-present communication gap between them and other students in their class. One of the students said:

...after the first few days at university, I began to think that having technical knowledge was an undisclosed entry requirement of the MBA programme ... I was aware that I had to complete my assignments ... but the issue was that I did not know how to communicate with other students or even the teachers ... most of them were using WhatsApp and Facebook groups, which I did not know how to use ... I feel this further widened the communication gap between all of us... (BS1-14)

In the above excerpt, the student describes how the extensive dependence on the use of technology within their studies made him/her question if technological know-how was an *undisclosed entry requirement* of the MBA programme. Similarly, another student also discussed that due to the isolation caused by the inability to use technology, the student began to question if this university and course of study were the right choice for him/her (BS1-18).

One important aspect of this category was that some students described their difficulty in understanding lecture content through slideshows. They were in the habit of reading textbooks and printed materials; therefore, it was somewhat challenging for them to use soft copies of lecture materials. It is these descriptions of feeling alienated from the academic and social spaces of their learning environment that distinguish this category from the others. Students in the same learning environment and even the same classroom were experiencing learning technology in very different ways.

A means for transitioning into the learning environment

A contrasting yet related component of this category is the students' descriptions of using technology to *overcome their isolation* and *transition* into the learning environment. According to the students' descriptions, although it took a considerable amount of time for them (i.e. a few weeks, in some cases a few months) to adjust to the environment of their business school, the use of technology was one of the factors that supported this transition. One of the students, while describing his/her initiative to overcome feelings of alienation, stated:

...I knew the isolation I was in could not continue for long, as I had to complete my coursework, interact with others and eventually focus on completing the degree ... some students and teachers help you in this phase ... but beyond a certain point, I felt I had to take some affirmative action for myself rather than waiting for others to rescue me ... technology provided me with the required support to come out of this isolation zone...
(BS1-06)

The students also described the help and guidance they received concerning the development of their technical skills from their teachers and other students, as well as external sources such as coaching and training centres.

In this category of description, the *transitioning* aspect has been described in two different ways. Some students described feeling more concerned about their academic performance and inability to complete their coursework due to a lack of technological skills. Therefore, they shared their experience of learning specific tools and software that could help them do their assignments and projects. For example, one of the students said:

...during this adjustment phase...I felt beyond a point it was important for me to understand that technology is an important part of the academic life in this university and the sooner I develop my technical skills, the better it would be for me to focus on my studies...and get good marks. **(BS1-14)**

According to the above excerpt, the student appears to have transitioned from an alienated experience of learning technology to a more instrumental experience. Similarly, another student elaborated on this point by describing his/her socio-economic background, limited technical skills, and their impact on the overall academic performance. The student said:

...I feel the biggest challenge for me was to understand the lecture content and other instructions given by the teachers in English, as I was educated in an Urdu-medium school and college ... but I also knew that I had to improve my English language skills so that I could complete my assignments, participate in class discussions, and get good marks! So, since the last two semesters, I have been using video tutorials on YouTube and other online courses to improve my language skills... (BS1-18)

Therefore, according to the students' descriptions, the *meaning* these students associated with their experience of learning technology appears to gradually transition from *something* that isolated them from their learning environment to an *artefact* that allows them to complete their coursework on time and secure good grades.

Another way in which the students described their transition is that their lack of technical skills was making it difficult for them to *develop their subject-specific knowledge* (BS1-11) or derive any benefit from the university experience about *professional skill development* (BS1-07). According to one student:

...after the first few weeks, as I began to come out of that isolation and engage with these tools and software ... I realised it was starting to open up new avenues for me ... there were so many things to be explored and learned ... I was not only able to develop my understanding of the subjects I was studying but also gain some knowledge about job opportunities in the market... (BS1-04)

In the above excerpt, the student describes transitioning from an initial phase of isolation to a more engaging experience of learning about technology to explore how it can be used to overcome some of the challenges they were facing. Some of the students described difficulties directly related to their socio-economic backgrounds and how the use of technology provided the necessary support. For example, a student gave the example of using digital resources available on the Internet to improve his/her English-language skills so that the lecture content could be understood easily and the student can also participate in the online chat groups. The student said:

...after the first semester, I also felt the need to develop my language skills so that at least I could understand the lecture content and then try to communicate with other students and teachers ... Of course, this requires time ... but still, I feel things have started to move in the right direction... (BS1-20)

These excerpts from the students' descriptions highlight that they appeared to transition from an alienated experience of learning technology to a more engaged experience. Despite having different interests as regards their courses of study, these students described how the use of technology supported them blending into the learning environment as active participants.

4.3.6. *Structural aspects of Alienated Experience*

The *structural aspect* of students' alienated experience of learning technology will be discussed in terms of the components that form the internal and external horizons.

Internal Horizon

The components which appeared to be in the immediate focal awareness of students' descriptions of an alienated experience of learning technology are:

- Prior exposure to technology
- Pressure for social inclusion

Each of these components will now be discussed using relevant quotes and excerpts from interview transcripts.

Prior exposure to technology

This component is particularly important in this category as the students have frequently referred to their prior exposure to technology and how it has influenced their present-day experience during MBA studies. According to the students, their lack of prior exposure became one of the biggest challenges for them as they started their university education. For example, one of the students explicitly stated, "...I saw a multimedia projector for the first time at this university..." (BS1-18). Such a strong statement highlights the nature of this component and its impact on students' experience of learning technology.

The students discussed an initial phase of isolation, in which they required time to adjust to the new learning environment. According to the students, it was their *prior*

exposure to technology, or lack of it, that determined the length of this isolation phase.

For example, one of the students, while explaining this point stated:

I think if I had some previous experience of using technology ... I would have felt a lot more 'comfortable' using the different tools that we were required to use ... I think I was a little disadvantaged in the sense that ... my attention was diverted to learning the digital tools...rather than my studies and assessments. **(BS1-06)**

In the above passage, the student uses the word *disadvantaged* to make a comparison between his/her experience of technology and that of other students in the same business school. According to the student's description, a more significant prior exposure to technology might have made it easier to interact with the digital tools required for their academic work. Other students also gave detailed accounts of the issues and challenges they faced during their studies due to a lack of prior technical exposure.

One important aspect that emerges from this component is the *fear* associated with the lack of prior exposure to technology. Some of the students described that they feared not being able to complete their work or maintain their focus on studies, due to their limited technical skills and knowledge. According to the students, they feared that the excessive emphasis and pressure on developing technical skills during the first few semesters would have a significant impact on their academic performance and might eventually cause them to fail their courses. For example, one of the students stated:

...I felt everything was a bit too much focused around technology and the use of a particular tool to complete even the simplest of assignments ... at times I developed a fear of failing my courses because I did not know how to use the technology ... that fear further isolated me from the rest of the students... **(BS1-20)**

The above excerpts highlight that this component appeared to be in the internal horizon of the students' descriptions of experience, as they frequently described how their socio-economic backgrounds and lack of prior exposure to technology during school or college life resulted in a range of challenges for them during the initial phase of their MBA studies.

Pressure for social inclusion

The second component that formed the internal horizon of students' alienated experience of learning technology was the *pressure for social inclusion*. According to their descriptions, there were social groups (or communities) of students within their class connected through technology-mediated communication media such as WhatsApp, Facebook, etc. As stated earlier, these online chat groups were a prominent feature of students' experience of learning technology; however, the students with limited technical exposure found it quite challenging to become part of these groups. According to a student:

...I felt left out, to be honest ... just because I did not know how to use WhatsApp or Facebook, I was unable to join the online chat groups and was not aware of any discussions being conducted by other students of my class ... I could not become part of the social group of students due to my limited knowledge of technology... **(BS1-14)**

According to the above excerpt, the student felt left out after not being able to join the online chat group, as this caused the student to miss out on the opportunity to become aware and even participate in the online academic discussions. Similarly, some students described feeling a little shy and uncomfortable in contacting other students, as they were unable to use several of the latest smartphone applications and social media platforms. For example, one of the students explained this issue in the following manner:

...most of the students were using a Facebook group to communicate with each other and discuss various matters...I had never used Facebook before...so for some days I did feel left out...but on the other hand... I felt very shy asking other students to help me use Facebook and join this online group... **(BS1-18)**

Some of the students described how the pressure for social inclusion resulted in them feeling more isolated and alienated. According to their descriptions, they began to think that these online chat groups and social media pages were only for a *select few students* who were well versed in the latest digital technologies (BS1-06). These online chat groups were seen and used as a way of getting to know each other, and students with limited technical skills were unable to join or participate in these social groupings.

Another important aspect that emerged in this category was the teachers' use of the latest digital tools for communicating with their students, which further enhanced this pressure of inclusion. According to the students' descriptions, some of their teachers preferred to communicate via WhatsApp or Facebook groups, making it more important for these students to develop their technical skills and learn how to use these digital platforms. According to one of the students:

...our teacher created this WhatsApp group during the course so that students could share their issues or questions, and he could respond quickly and easily ..., but as I did not know how to use WhatsApp, it took me some time to figure out and develop the required confidence to use this app and communicate actively with other students and my teacher ... at times you feel a little isolated and even pressurised because you are not part of a certain group... (BS1-06)

This pressure for social inclusion also encouraged some of these students to explore and experiment with the available digital technologies. One of the students said:

...I gradually focused on improving my communication skills...to communicate with other students and teachers properly... it was important for me to become part of this social circle in our university...at the earliest. (BS1-18)

In the above excerpt, the student describes realising the need to improve his/her technical skills and become an active participant in the learning environment as quickly as possible.

The above passages and excerpts highlight how students described feeling isolated within their learning environment. Their lack of prior exposure to technology and the pressure of social inclusion exerted on them emerged as the key components of the internal horizon of their descriptions of an alienated experience of learning technology

External Horizon

The component that formed the background to the students' alienated experience of learning technology was their presence in an *unfamiliar learning environment*. It will now be discussed, citing relevant quotes from interview transcripts.

Unfamiliar learning environment

The students describing an alienated experience of learning technology frequently referred to the environment of their business schools as something *unfamiliar*. Within the relevant students' descriptions, it was common to see words like *surprised*, *confused*, *puzzled* and *struggled*. The choice of such words while describing their experience of learning technology shows that their unfamiliarity with their learning environment appeared to form the background within which this experience of technology was situated.

It is important to note that most of these students belonged to *less-developed rural areas* of the country and were enrolled under the *outreach programme*. These students specifically described their socio-economic backgrounds and how it became difficult for them to adjust to the unfamiliar setting of the university. Most of them shared how they were using technology for the first time for educational purposes. According to one student:

...when I came to university ... it was all new ... the LMS, CMS, use of websites and digital resources for doing assignments, and projects ... conducting online study sessions ... it was more than I could absorb and understand at one time; therefore, I felt I needed time for adjustment to a rather unfamiliar environment... **(BS1-18)**

In the above excerpt, the student describes an experience of learning technology where it eventually became more than what the student could absorb and understand. Therefore, the main challenge was to interact with learning technology within an unfamiliar learning environment. The students have described that one of the major contributing factors of this unfamiliarity was the excessive dependence on the use of technology, as this made them feel isolated from their peers and even teachers. According to one of the students:

...I did not know I was required to learn various tools and software before joining the MBA programme...for several weeks I could not settle into the learning environment...this feeling was creating a distance between other students and me... **(BS1-20)**

In the above passage, the student describes feelings of alienation from the environment by relating the lack of technical skills to the distance being created between the student, peers and even the teachers.

Some of the female research participants in this study also described the influence of cultural and religious factors on their experience of learning technology. Some of these students were studying in a co-education system for the first time; therefore, it was more difficult for them to adjust in an environment where they were required to share their contact details in online chat groups and on social media pages. One of the students said:

...this is my first experience of studying in a co-education system ... I was quite uncomfortable to share my number in WhatsApp groups ... of course, it was an altogether different set-up for me ... you do not feel part of the overall environment... **(BS1-04)**

The analysis of their descriptions shows that it is this *discomfort* and *pressure of conformance* that forms the background to their experience of learning technology.

The table on the next page (table 5) presents a summary of the referential and structural aspects discerned from students' alienated experience of learning technology at BS-1.

Table 5 Summary of the Referential & Structural aspects of Alienated Experience at BS-1

Structural Aspects Referential Aspects	External Horizon		
	Internal Horizon		Unfamiliar learning environment
	Prior exposure to technology	Pressure for social inclusion	
A cause of Alienation from the learning environment	"I think if I had some previous experience of using technology for studies, I would have felt a lot more comfortable using kind of tools and software we were required to use... I think I was a little disadvantaged in a sense..." (BS1-06)	"...most of the students were using a Facebook group to communicate with each other and discuss various issues...I had never used Facebook before...so for some days I did feel left out...but on the other hand... I felt very shy asking other students to help me use Facebook and join this online group..." (BS1-18)	"...I did not know I was required to learn various tools and software before joining the MBA programme...for several weeks I could not settle into the learning environment...this feeling was creating a distance between other students and me..." (BS1-20)
A means for Transitioning into the learning environment	"...I would fear failing the courses because I did not know how to use technology...this fear further isolated me from the rest of the students...but I knew I would have to overcome this issue to complete my tasks on time and get good grades..." (BS1-20)	"...I gradually focused on improving my communication skills...to communicate with other students and teachers properly... it was important for me to become part of this social circle in our university...at the earliest." (BS1-18)	"...I felt beyond a point it was important for me to understand that technology is an important part of the academic life in this university and the sooner I develop my technical skills, the better it would be for me to focus on my studies..." (BS1-14)

4.4. Data Analysis for Business School 2

The second data set (referred to as 'BS-2') comprises the descriptions of experience of MBA students in the second business school, located in Lahore, Pakistan. As already explained in section 1.6, this business school catered to a student population of both urban Lahore and the adjoining rural areas. Therefore, the participant sample contained a greater diversity of socio-economic backgrounds, as compared to BS-1. The student descriptions at BS-2 also reveal certain visible differences between both the business schools, particularly in terms of the technological infrastructure, authoritative presence of the teachers, and a preference for instructor-led teaching and learning activities.

The students' descriptions of experience at BS-2 can be categorised into two categories of descriptions, i.e. *instrumental experience*, and *alienated experience*. The analysis of this dataset did not find any evidence of students describing an engaged experience of learning technology. Their descriptions were more focused on providing the names of the digital tools and software being used by them for their academic work, without establishing a clear purpose for such choices. Similarly, the influence of certain aspects such as prior exposure to technology, socio-economic background and the role of teachers was more prominent in the descriptions of experience provided by students in this business school.

The following sections will now explain the *referential* and *structural* aspects for both these categories, using relevant quotes from original interview transcripts.

4.4.1. *Referential* aspects of Instrumental Experience

In this business school as well, students describing an instrumental experience used technology as a means for completing their MBA coursework and assessments. The following diagram (figure 9) presents an overview of the *referential* and *structural* aspects associated with this experience:

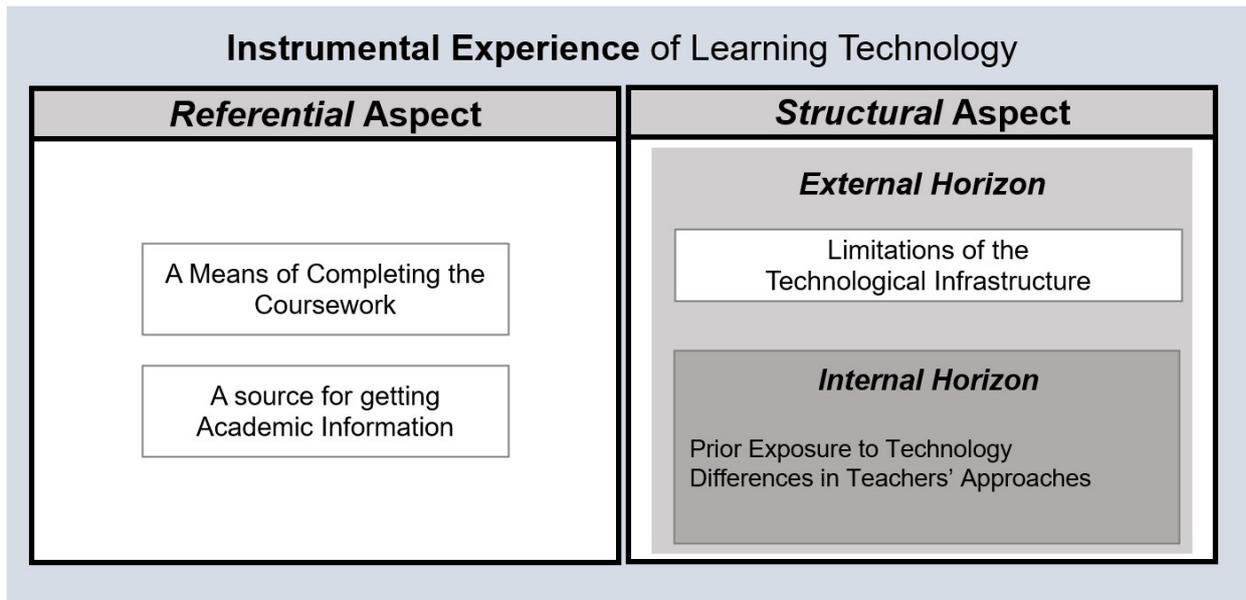


Figure 9 Referential & Structural aspects of Instrumental Experience (BS-2)

Each of the components will now be explained in the sections below.

The *referential* aspect of this category was quite similar in both the business schools; however, students in BS-2 were more concerned about the use of learning technology to *meet the requirements of their teachers*. In contrast, as explained earlier, students at BS-1 described using technology instrumentally to complete their coursework for improvement of their academic performance. For students at BS-2, the *referential aspect* of their descriptions of experience comprises of the following:

- A means for completing the coursework
- A source for getting academic information

A means of completing the coursework

In this category of descriptions, the most frequent example was of using the Internet, particularly the search engines such as Google to search for information that could be used in preparing assignments and project reports. The emphasis in these descriptions was on the *instructions* provided by the teachers around the use of technology. For example, the students described consulting digital resources for a project report, *only if* their teachers required them to do. A student, while describing

an example of a task where s/he was required to use a combination of digital tools, said:

...for instance, in a recent project report, I had to include certain diagrams, flowcharts, financial sheets, and then there was a requirement to design a cover sheet, automated table of contents, reference list, etc. These tasks cannot be done manually, and so I had to use some digital tools ... and if the instructions are not followed, then obviously marks get deducted ... it is not a choice anymore... **(BS2-14)**

In the majority of the students' descriptions of experience at this business school, the role of teachers and their teaching approaches appeared to have a significant influence on how students interacted with learning technology.

The core distinction between the descriptions of an instrumental experience of learning technology at BS-1 and those provided by students in this business school is that the latter had not experienced using any institutional system during their studies. For these students at BS-2, their experience of learning technology solely comprised of the commercial software provided to them by their teachers (e.g., SPSS, MS Excel, etc.) and the informal digital tools (e.g. social media platforms, smartphone applications) they opted to use themselves. According to their descriptions of experience, they were aware of the institutional plans to deploy a learning management system sometime soon. However, so far (i.e., at the time of these interviews) they had not experienced any. The institution had deployed a Student Information System (Sis) in a bid to automate some of the administrative functions, but it was also not being used due to its complicated user interface and functionality.

During the interviews at BS-2, most of the students simply named the digital tools and software they were *required to use* in their coursework. When prompted to elaborate on their experience, these students struggled to explain their use of a particular tool and its relationship to their course of study. For example, according to a student:

...we are required to use different types of software in our assignments, projects and even during the lectures...it is not optional anymore...if a teacher asks us to use a particular tool, then naturally it becomes compulsory to use it...to get good marks and pass the course. **(BS2-02)**

In the above excerpt, it is important to note that the student does refer to the use of technology as a requirement for coursework, but then do not share any further details about the *kind of academic activities* for which such digital tools are being used. There were other students as well, who only provided a rather generic description of their experience of learning technology, without sharing any specific examples. Those who described some examples mostly focused on sharing details of the digital tools and software *mandated* for them by their course instructors. For example, according to a student:

For the course of Accounting, I have to use Excel now...we are not allowed to prepare hand-written manual tables...the teacher would not accept such assignments...so I feel my use of technology during studies has increased in the past few months. However, it is mostly for completing the assignments or projects. **(BS2-05)**

In the above excerpt, again, the student only provides the name of the tool without sharing further details. Such descriptions of experience highlight that the majority of MBA students in this business school were not very clear about the role and purpose of learning technology in their studies. Other students also gave similar examples, which suggest that their experience of learning technology mostly focused on the requirements of their coursework and associated academic tasks.

A source for getting academic information

The students in this business school described using a variety of digital platforms and smartphone applications as *sources of information*, that helped them to keep track of the activities going on in their class, department, and the university. The students described subscribing to official Facebook pages, and Twitter handles of the university to stay updated with the latest information. According to their descriptions, as the institution did not provide them with any formal online system, most of them were using social media pages and smartphone applications as the primary mode of communication. For example, one of the students said:

...we mostly use WhatsApp groups and Facebook for communication and activities such as file- sharing, updating each other on different issues, such as assignment deadlines or class timings, etc., and even for coordinating during projects ... it helps me to manage and organise my course-related work easily..." **(BS2-11)**

These online groups facilitated the dissemination of information from the teacher or the class representative (CR) to all the students. According to student descriptions, these online groups had a strict and defined scope, i.e., to share information about class timings, venues, assessment deadlines, etc. and were only created after getting consent from the relevant course instructors.

Similarly, the students also described that in the absence of formal learning management system, they were using their Facebook groups as the *central space* to share lecture materials and other digital learning resources. According to their descriptions, this was a *quicker* and *easier* medium of sharing resources. One of them explained this point and said:

...we use the official Facebook group of the class to download all the lecture materials and other resources provided by the teachers ... before, all these materials were shared with us via email, but that was not a reliable option ... now at least we have a central space for accessing lecture notes... **(BS2-13)**

In the above excerpt, the student describes the use of a Facebook group as a repository for downloading lecture materials. This online group was developed as an alternative to the mechanism of sharing lecture notes via email.

This section highlighted the *referential* aspect associated with the students' descriptions of an instrumental experience of technology at BS-2. As evidenced by the excerpts produced above, the students' experience of learning technology was either restricted to the software mandated for them by their teachers, or the informal digital tools and smartphone application they had to use, in the absence of any formal institutional system.

4.4.2. Structural aspects of Instrumental Experience

The *structural* aspect of students' instrumental experience of learning technology at BS-2 will be discussed by discerning the components present within the *internal* and *external* horizons.

Internal Horizon

The components which appeared to be in the immediate focal awareness of the students' descriptions of experience are:

- Prior exposure to technology
- Differences in teachers' approaches

These components will be discussed separately using relevant quotes from interview transcripts.

Prior exposure to technology

In this category of descriptions, there was visible segregation between the students who had basic exposure to the digital tools being used during their studies, and those who had significant prior exposure to technology but had not used it for academic purposes before. A frequent example within the students' descriptions was the prior knowledge about social media platforms and smartphone applications. However, most of them were not aware if such tools could also be used in their studies. According to a student:

...I was using Facebook before I started my MBA ... but I did not know we could use its group feature to share lecture materials and discuss other academic matters..." **(BS2-02)**

Another student elaborated this point further and said:

...WhatsApp and Viber were very frequently used for communication with friends, even before I came to this university ... but while using it during group projects, I realised its academic utility, and how beneficial it can be... **(BS2-18)**

As stated earlier, some of the students described that they were already using social media platforms like Facebook and smartphone applications like WhatsApp, Skype, etc. before the start of their MBA studies, but were not aware of their academic utility.

Some students described using popular websites like Google, Wikipedia, SlideShare during their school or college education. Similarly, some of them had already worked with word processors and slideshow makers, but they described not being fully aware of their features and functionality. According to their descriptions,

it was the format of their MBA coursework and the design of their assessments that caused them to develop their technological skills. According to one student:

...I had used Word for drafting some documents before and even prepared a slideshow at college ... but that was just basic stuff ... the technical proficiency required during MBA studies was something very different for me ... some assignments and project reports require the use of advanced features of these tools ... of which I had no prior knowledge or training... (BS2-20)

According to the above excerpt, although the student had some basic knowledge about using software like Microsoft Word and PowerPoint, this proficiency was not enough for the kind of academic work they were required to do for their MBA studies. Similarly, other students also described how they had to learn some of the advanced features of the digital tools and software they already knew, to complete their course-related tasks.

Within the students' descriptions of experience, some of the students often compared themselves with students who had relatively better prior exposure to technology. The students who had significant prior exposure to digital tools were generally more *active* and *participative* during lectures. In contrast, students who lacked technical skills felt *shy* and *hesitant* in participating in class discussions and communicating with their peers. One of the students said:

...students who knew how to use these tools always completed their assignments on time and as per the teacher's requirements ... they actively participated in class discussions and always got very good marks ... that naturally adds pressure to use technology and perform well. (BS2-11)

The above excerpt highlights that prior exposure to technology influenced how these students experienced learning technology during their studies.

In this category, students also described how their prior exposure to technology helped them connect quickly with their peers through the use of *online chat groups*. These students shared examples of getting assistance from other class fellows to improve their knowledge and skills around certain tools and software required for their academic tasks. For example, according to a student:

...I knew how to use WhatsApp, and this helped me to connect with other students quickly...I was able to get help from my friends on this group...they have helped me to

overcome issues around the use of technology and focus more on my studies ... I feel my prior knowledge of using smartphones and other digital tools helped me during my studies. (BS2-20)

The excerpts and passages shared in this section highlighted how prior exposure to technology influenced these students' experience of technology. The frequency with which the students describe this aspect suggests that it was present in their immediate focal awareness.

Differences in teachers' approaches

In this category of descriptions, as stated earlier, the role and influence of the teachers formed a prominent feature of the students' descriptions of experience. These students frequently referred to the *directions* or *instructions* they received from their teachers about the use of technology for academic purposes. The most common example was the requirement to submit *typed assignments* using a standard word processor. According to one student:

...it all depends on the teachers if they require a printed version of the assignment or they want us to email them a soft copy...teachers' approach varies from course to course... (BS2-19)

The above excerpt not only describes the influence of teachers on their students' experience of learning technology but also highlights the variation in their teaching approaches. These students described how the use of the same tool or software significantly varied across different modules, owing to the differences in their teachers' understanding and approach about the use of learning technology. For example, some teachers required them to use the Internet to consult additional digital resources during their studies. In contrast, there were teachers in the same semester that advised them to *stick* to the recommended textbooks only (BS2-05) and considered the use of the Internet as a *distraction* for university students.

The students described relevant examples to elaborate on this point. According to them, if during a module, the teacher uses PowerPoint slides, YouTube videos, or other digital resources, then they are also encouraged to use learning technology for that particular module. However, if the teacher adopts a more traditional approach

(mostly reliant on textbooks and class notes), the students are then expected to adjust their learning approach accordingly. As one of the students explained:

As I recall ... I feel my use of technology during the MBA has varied from course to course, depending upon the teacher's approach ... for example, when a teacher uses research papers, videos, website references, and other digital resources from the Internet in their lecture materials ... I also feel the need to do the same ... so my use of the Internet increases ... I make sure I am meeting the course requirements and getting good marks ... however, if a teacher asks us only to follow textbooks or notes ... there is no need to use the Internet or any other tool... (BS2-13)

In the above excerpt, the student describes how *compliance with the teaching instructions* about the use of technology and adjustment *with the teaching approach* usually guarantees good marks in that module. Other students also shared similar experiences as their use of learning technology varied from module to module.

According to the students' descriptions, the choice of using a particular tool or software package within a module also depended on the teacher's comfort with and exposure to technology. For example, the students described how some of their teachers mandated the use of specialised software for certain tasks (e.g. data analysis in research projects), while others gave their students a choice to opt for relevant tools themselves. According to one student:

... to be honest, in the struggle to get better grades, we are always oscillating between the requirements of our teachers ... for example, some of them encourage us to use social media and Facebook groups, but others are very sceptical about them. Similarly, some teachers allow us to use Google Search or Online Dictionaries during lectures, but in some classes, we are asked to switch off our phones and laptops... (BS2-11)

In the above excerpt, the student uses the phrase *oscillating between the requirements of our teachers* to highlight the variation in teaching approaches and its subsequent influence on their experience of learning technology.

As stated earlier as well, one important aspect that emerged in the students' descriptions at BS-2 was that the teachers usually approved the *mode of communication* being used by the students. For example, some of the students explained that their online chat groups on WhatsApp and Facebook were only created after getting their teachers' consent. Furthermore, there were some students (mostly female) who explained that they would have felt *uncomfortable* using technology-mediated chat

groups if the teacher or the institution had not approved them. One of the students said:

...our teacher asked us to create this (Facebook) group around a year ago so that we could all communicate with each other and with him as well ... outside the classroom. It was and still is the only option we have for communicating with all the students. (BS2-20)

Other students also described using WhatsApp groups during projects and group assignments only because their teachers considered them useful media (BS2-19). However, some of the students did clarify that it was due to the absence of a formal institutional learning management system that their teachers permitted them to use smartphone applications and social media platforms as an *acceptable medium* of communication (BS2-13).

During the short demonstrations that followed the interviews, some of these students shared the instructions sent by their teachers, guiding them about using different digital technologies for academic purposes. This aspect emerged as an important component of the internal horizon of students' descriptions of an instrumental experience of learning technology at BS-2.

External Horizon

The component that formed the background of students' instrumental experience of learning technology at BS-2 was the description of the *limited technological infrastructure* at their business school. This component will now be discussed using relevant quotes and excerpts from relevant interview transcripts.

Limitations of the technological infrastructure

In this business school, the students frequently described the issues and challenges of studying in a learning environment with limited technological infrastructure and how it influenced their experience of technology. The focus of these descriptions was on the absence of a learning management system and a dysfunctional information system (SiS). The analysis of the relevant student descriptions shows that this component formed the external horizon against which their experience of learning technology was situated.

The students mostly shared their experience of not having a formal learning management system and an extensive reliance on informal digital tools, such as social media platforms and smartphone applications, to manage their academic work. For example, one of the students said:

...we were told last semester that an LMS was being deployed, but it is not operational yet ... therefore we have formed these Facebook and WhatsApp groups to share lecture materials and discuss assignments and project-related work ... in the absence of a formal institutional system...(BS2-02)

Similarly, there were other students who described using Facebook and WhatsApp groups as the main digital platform for resource sharing, academic discussions, and all kinds of communication between the students. This aspect contrasted significantly from the descriptions of experience provided by students at BS-1, who at times, described a comparison between the formal institutional systems and the informal digital tools being used by them. At BS-2, the students described using social media platforms and other informal digital tools as the only form of learning technology available to them for their academic work. As stated earlier, some of the students did refer to a *Student Information System* (Sis) that was deployed a few years earlier, but it was not functional anymore. Interestingly, a few of the students in the same MBA class were not even aware of this system, when asked during the interview.

During the interviews, the students in this business school also raised their concerns about some of the other facilities on campus, such as the access to and speed of the Internet, the condition of the computer labs, and the limited availability of the commercial software. These students described how such issues restrict their ability to complete their academic work on time. One of the students said:

...I usually try and complete all my work before coming to campus as the Internet speed is unreliable these days ... I have heard they are working on improving it, but at the moment, we are mostly using our mobile data... (BS2-02)

According to this excerpt, the students were using their own Internet devices as a workaround to complete their coursework. Similarly, some students described issues around the condition of the computer labs, so most of them had to bring their own devices. According to the students' descriptions, students who did not have a laptop

or a smartphone faced the biggest challenge in this scenario. A student explained this issue in the following manner:

...I do not have a laptop ... at times I have to use the computers in the labs to work on my assignments and even to download lecture notes and copy on a USB ... but most of the time, the computers are not working properly ... these days power failures are quite frequent, and there are no backup generators in the lab at the moment... **(BS2-05)**

Some of the other issues discussed by the students in their descriptions were the limited facilities for printing and scanning and the limited availability of commercial software required for completion of their academic work. According to the students, they struggled to find a licensed version of different online tools and software, even though these recommended to them by the teachers of the institution. According to one student:

...the issue is not about the use of technology but about access to that technology ... I remember not being able to find a licensed version of Stata for a project in the last semester... **(BS2-18)**

Some female students described their concerns about communicating with other students through informal digital tools. They were particularly concerned about sharing contact details on chat groups that were accessible to other male students as well. However, due to the unavailability of any other system, they also had no option but to join these groups. According to a student:

...it was a difficult decision about joining the WhatsApp group, as I was not very comfortable sharing my phone number ... but there was no other option for getting the lecture slides and other learning materials... **(BS2-11)**

The excerpts and passages presented above suggest that the limitation of the technological infrastructure at BS-2 forms the background in which these students' experience of learning technology was situated. According to their descriptions, they were using technology to complete their academic work but were simultaneously dealing with a range of infrastructural issues present within their business school.

The table on the next page (table 6) presents a summary of the referential and structural aspects discerned from students' instrumental experience of learning technology at BS-2.

Table 6 Summary of the Referential & Structural aspects of Instrumental Experience at BS-2

Structural Aspects Referential Aspects	External Horizon		
	Internal Horizon		Limitations of the technological infrastructure
	Prior exposure to technology	Differences in teachers' approaches	
A means for completing the coursework	<p>"...I had used Word for drafting some documents before and even prepared a slideshow at college...but that was just basic stuff...the technical proficiency required during MBA studies was something very different for me...some assignments and project reports require the use of advanced features of these tools...of which I had no prior knowledge or training..." (BS2-20)</p>	<p>"...it all depends on the teachers...if they require a printed version of the assignment or they want us to email them a soft copy...teachers' approach varies from course to course..." (BS2-19)</p>	<p>"...we were told last semester that an LMS was being deployed, but it is not operational yet...therefore we have formed these Facebook and WhatsApp groups to share lecture materials and discuss assignments and project-related work...in the absence of a formal institutional system." (BS2-02)</p>
A source of getting academic information	<p>"...we mostly use WhatsApp groups and Facebook for communication and activities such as file-sharing, updating each other on different issues, such as assignment deadlines or class timings, etc., and even for coordinating during projects ... it helps me to manage and organise my course-related work easily..." (BS2-11)</p>	<p>"...I remember one of our teachers asking us to create a WhatsApp group for easier communication and coordination...we used it for some time, but then in the next semester another teacher did not allow the use of WhatsApp or Facebook for academic issues" (BS2-05)</p>	<p>"...it was a difficult decision about joining the WhatsApp group, as I was not very comfortable sharing my phone number ... but there was no other option for getting the lecture slides and other learning materials..." (BS2-18)</p>

4.4.3. Referential aspects of Alienated Experience

The difference between the descriptions of an alienated experience of learning technology at BS-2 and that described by students at BS-1 is that in this business school, the students' descriptions focused on the alienation caused by the tech-savviness of other students, rather than the learning environment. According to their descriptions, they experienced *excessive isolation* during the first few weeks at the university, with the *inability of using technology* as a significant cause.

The following diagram (figure 10) presents an overview of the *referential* and *structural* aspects associated with the students' alienated experience of learning technology at BS-2:

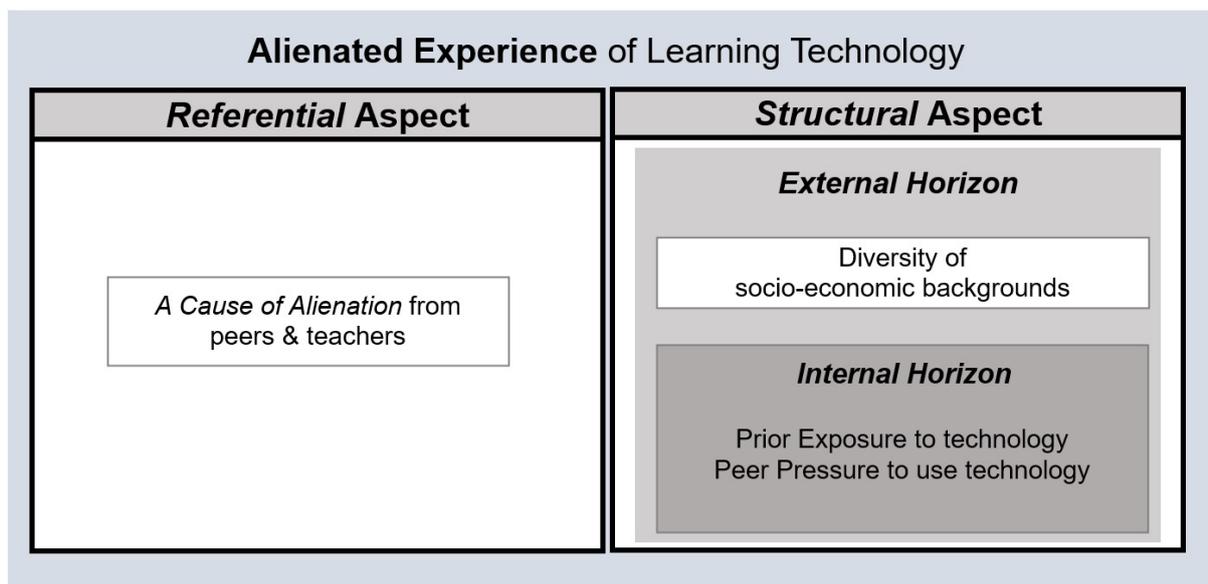


Figure 10 Referential & Structural aspects of Alienated Experience (BS-2)

Each of these components will now be explained in detail.

A cause of Alienation from peers and teachers

From a *referential aspect*, the meaning these students associated with their experience of technology was mostly around feeling isolated due to the presence of *other students* in their class, who were quite accustomed to using digital technology for academic purposes. According to the students' descriptions, they felt somewhat

uncomfortable in a classroom where there was such a strong variation in technological knowledge, expertise, and prior exposure. One of the students said:

...the initial few days were quite difficult in the sense that I could see other students using software, websites, and other Internet-based tools quite comfortably to complete their assignments ... I often felt I should have opted for a different university, maybe in my city ... as I did not know how to use these tools... (BS2-03)

The student describes the *initial discomfort* experienced due to the proficient use of technology by other students in the class. This discomfort gradually resulted in these students feeling *less connected* with their peers, and even the teachers. Another student explained this point further, saying:

...there was a clear gap between us [me and other students] in terms of technical knowledge. I mean, at times, you do not feel part of a certain group if you are the only person who struggles with the use of technology, while others are kind of experts... (BS2-16)

According to the student, the *clear gap* in the technical knowledge of students enrolled in the same class *glorified* the limitations of those students who were already struggling to adjust with a new learning environment and use technology for academic purposes.

In the students' descriptions of an alienated experience of learning technology, most of them disclosed that their first formal interaction with technology was only after starting their university education. During the interviews, these students described their first interactions with basic technological artefacts such as the Internet, email, printers, scanners. They have mostly used words like *fascination*, *surprise*, *unaware*, to describe their experience of technology. For example, according to a student:

...my first interaction with computers was when I started my MBA around a year ago. I remember the first assignment given to me, where I prepared a ten-page report by hand, stapled it in a pretty folder, and went to submit it. I could see surprised faces looking at me, and I felt so embarrassed that I was unaware that I had to use some software to type my assignment and then email that to the teacher... (BS2-21)

In the above passage, the student uses the word *embarrassed* to describe feelings of not being able to use technology in a manner required by the teacher and the institution. According to the students' descriptions, they felt that without developing their

technical skills, particularly around the social media platforms and other smartphone applications, they might never be able to *compete with other students* (BS2-22) and *complete their MBA degree* (BS2-15).

The analysis of the data from BS-2 revealed that some of the students also described their *attempts* to use learning technology to transition to a phase where they are *at least* able to use some basic digital tools to complete their academic work. The word *attempt* is used to suggest that at the time of these interviews, these students described passing through this transitional phase and did not confirm if they were able to come out of isolation or not. Contrary to the students' descriptions at BS-1 that focused on a transition to either an engaged or instrumental experience, the students at BS-2 described being more inclined towards the use of technology to meet the *minimum requirements* of their coursework. One of the students said:

I knew English was going to be an issue for me ... as I was not able to understand the lecture materials, or the assessment details provided to us by the teachers ... I have learned how to use all this basic software, like Word, Excel, PowerPoint, and Internet-based tools, so that I can at least complete my assignments, understand lectures and even communicate with other students and teachers... (BS2-22)

Another student explained this feature further in the following manner:

...my biggest concern was the completion of my assignments and projects ... I did not want this isolation phase to affect my grades ... so I have worked on my technical know-how and skills so that I can complete my work according to the requirements of the teachers and get better marks ... and technology is supporting me in this... (BS2-17)

The above excerpts highlight that the initiatives that these students were attempting to take focused more on learning digital tools to complete their academic tasks and meet the *requirements* of their teachers and the degree programme.

This section highlighted the *referential* aspect of students' alienated experience of learning technology at BS-2. The next section will discuss the *structural* aspect of this experience, by discerning the components that formed the *internal* (components in the immediate focal awareness) and *external horizon* (components that formulate the background) of the descriptions provided by the students.

4.4.4. *Structural aspects of Alienated Experience*

The structural aspect of students' alienated experience of learning technology at BS-2 will now be discussed.

Internal Horizon

The internal horizons of students' alienated experience of learning technology comprise the following components:

- Prior exposure to technology
- Peer pressure to use technology

These will now be discussed using relevant quotes and excerpts from interview transcripts of MBA students at BS-2.

Prior exposure to technology

Within the students' descriptions of an alienated experience of technology, there is a segregation between students from urban areas, and those coming to the university from less developed rural areas. The students who described being brought up in urban areas had some basic exposure to the latest digital tools but were unaware of their academic utility. On the other hand, students from rural backgrounds described having little or no prior exposure to technology, which eventually became a significant cause of concern for them. For example, one of the students said:

...before coming to university, I was used to my classroom having a blackboard and chalk ... when I came here, I was both fascinated and confused when the lectures were delivered on projectors ... notes were available in electronic format ... I was not required to take any notes during lectures ... all of it was quite different for me as I had not seen this before...
(BS2-08)

In the above excerpt, the student makes a comparison between how technological artefacts like multimedia projectors, the use of learning platforms, and lecture materials in electronic formats have replaced the *blackboard and chalks* present in the traditional learning environments. According to the student, although this new experience was quite fascinating, it was equally confusing as well, as they had limited prior exposure to technology.

Some of these students also described how their limited prior exposure to technology affected their academic performance. These students shared their fears of *dropping out* of their course of study, as they struggled to understand the technological aspects of their coursework and assessments. For example, one of the students said:

...at times I was afraid of dropping out of the degree programme ...I was not able to understand the requirements of using different software within the assignments and projects ... I scored very low in some of the projects ... so I began to think, what if I fail some of the courses? **(BS2-17)**

Other students shared similar experiences, where it became challenging for them even to complete some basic learning activities, such as downloading lecture materials, using the Internet or specific websites, or working with particular software, etc. According to a student:

...when you do not know how to download lecture notes or search for research papers on Google and access the e-books, academic work becomes quite challenging. **(BS2-03)**

Therefore, according to the students' descriptions, prior exposure to technology became an important factor that determined the nature and frequency of the challenges faced by students in their academic activities.

One important feature in this category of descriptions is the use of technology-mediated communication media. The students described how prior exposure to technology influenced their ability to communicate with other students and teachers. According to their descriptions, they had never used tools like WhatsApp, Facebook, or Skype before coming to university. However, in the absence of a formal institutional system like LMS, there was no alternative but to use these platforms to communicate with each other. This gap in prior exposure to technology between students in the same classroom resulted in communication barriers, which further *intensified* feelings of isolation in one group of students. For example, according to one student:

I was told I could chat with other students in the WhatsApp group ... but the issue was that I did not know what WhatsApp was or how to use it. Such incidents isolate you at times ... even in the presence of many peers sitting around you... **(BS2-07)**

Another student shared similar concerns:

I got my first laptop after I came to Lahore and started my MBA ... I had to buy one because there was no other mechanism for downloading lecture materials or contacting teachers and other students ... I was told I was required to use the Internet for most of my academic work ...so I needed a device to do that... (BS2-15)

Not having sufficient prior knowledge about these tools, these students were unable to join the *online chat groups* and communicate freely with other students. The analysis of the students' descriptions of an alienated experience highlights that the issues around their *prior exposure to technology* were part of their immediate focal awareness, as it provides a structure to their descriptions.

Peer pressure to use technology

This component is one of the prime features of this category of descriptions, as the students often described how other students in their class were using learning technology. The contextual information about BS-2 shared earlier highlighted the diversity of students present at this business school. A majority of these students had not used any form of technology for educational purposes before; therefore, they described passing through an initial phase of adjustment to their university's environment. According to some of these students' descriptions, this adjustment became uncomfortable as students began to compare and contrast their experience of technology with that of their peers. According to one student:

I felt some students were quite proactive in their approach to using diverse types of tools, and they already knew what tool would suit which task... (BS2-15)

This excerpt describes a kind of *peer pressure* being exerted on the student while using learning technology. Some of the students also described that prior knowledge and exposure to technology gave an advantage to some of their peers, who were able to understand the requirements of the coursework, use the specified tools or software and complete their work on time. These students were able to achieve good grades, further intensifying the pressure on those students struggling to use technology. Another student said:

...most of my class fellows had their laptops and smartphones ... I would often see them use the Internet during lectures, open slide notes on their laptops and participate quite

actively in class discussions ... they better understood the lecture content and got good marks in the end... **(BS2-06)**

Some students also described the positive side of this *peer pressure*, as it enabled them to come out of the isolation phase and gradually adjust to their university's environment. It motivated them to improve their technological know-how and learn the tools which they thought were necessary for the completion of their academic work. For example, according to the students' descriptions of experience, they observed their peers as they used online dictionaries and search engines on their phones and laptops during lectures to translate difficult words into Urdu or understand some concepts better. Such activities allowed them to participate in lectures actively. Similarly, another student explained this point and said:

...while trying to adjust to my studies, my primary concern was that I was unable to prepare assignments and project reports as required by the teachers ... I would often miss assignment deadlines or score very low marks ... this motivated me to learn all the software and tools which were needed for my academic tasks ... I feel this concern for completing my academic work on time and as per teachers' requirements made me learn and use technology during my MBA studies... **(BS2-22)**

Another student elaborated this point further:

...as a person I feel motivated by seeing others perform well ... I have seen my friends learn these latest tools to complete their work and get good grades. This has been my source of motivation to improve my technical skills in the last two semesters... **(BS2-17)**

The student describes how seeing other students use learning technology encouraged him/her to improve their technical skills. Another student also shared how s/he *adjusted* their learning approach, after seeing other students in the class use technology for their educational benefit. The student said:

...I saw my friends doing so well in group projects, assignments, and even exams ... they always consulted additional learning resources using the Internet ... and shared them in our online chat groups ... so I also adjusted my learning approach after seeing them doing so well in their studies... **(BS2-06)**

The excerpts in this section presented the examples shared by the students, which highlight how the peer pressure to use technology encouraged them to develop their technical skills. These students described how they were able to learn from the experiences of their peers and adjust their approach to learning. Although the

students' descriptions of experience reveal a *gradual realisation* about the benefits of using learning technology, the element of peer pressure appears to play a vital role in their efforts to come out of the initial phase of isolation.

External Horizon

The component which formed the external horizon of the students' alienated experience of learning technology was the *diversity* in their *socio-economic backgrounds*. This component will now be discussed using relevant quotes and excerpts from interview transcripts.

Diversity of socio-economic backgrounds

In earlier sections, it was highlighted that the participant sample from this business school mostly comprised students brought up in less developed rural areas of Pakistan who had moved to Lahore city only for pursuing their education. In their descriptions of experience, these students frequently described their socio-economic backgrounds and how it restricted them to actively participate in academic activities that required the use of technology. According to one of these students:

...coming from a rural area, I had not seen or used the software or tools I was required to use for assignments ... this was something beyond my control ... I began to feel that, to use technology during my MBA studies, I would always be dependent on someone else ... it surely demotivated me, and I felt a little alienated from other students... (BS2-21)

This student describes that the influence of having a *rural background* on the experience of learning technology is a factor beyond the control of the student. In the above passage, the student describes that the inability to participate in academic activities due to limited technological skills was a demotivating factor that sparked the feelings of alienation and isolation.

Other students also described how they had to learn the digital tools first, to either complete a pending task or join the online student groups and social media pages. A student said:

...completing the assignments and other work was important for me, but not being able to communicate with other students was a bigger challenge ... I had no idea what Facebook

or WhatsApp was ... we do not use them back home ... so in addition to basic software, I had to learn these tools as well so that I could join chat groups and be more aware and updated about activities going on in the classroom and the university... (BS2-04)

In the above excerpt, the phrase *we do not use them (digital tools) back home* highlights how students related their socio-economic backgrounds to their present-day experience of learning technology. Another important aspect of this category is how these students compared their experience of learning technology with some of their tech-savvy peers in class. These students, in particular, referred to the *BYOD culture* at the business school, i.e. students bringing their laptops, smartphones, tablets, and other devices to the university and using them during lectures. One student said:

...I remember seeing my friends download lecture materials on their phones and frequently using the Internet ... I did not have a mobile phone before coming to university ... we do not have a mobile Internet facility back home... (BS2-09)

In the above excerpt, the student discusses the infrastructural challenges in his/her hometown that restricted access to the latest digital tools. According to these students, they would often see other students using their own devices during lectures to support their learning activities. However, they were unable to keep up, owing to limited prior exposure to technology.

One important feature related to students' socio-economic backgrounds was the inability of some students to understand lecture content and other information (especially around the use of technology) in English. These students described the scenarios where the teachers provided them with detailed instructions about using particular tools or consulting digital resources while doing assignments or project reports. However, they were unable to understand those instructions. One of the students said:

I had mostly studied in Urdu-medium schools ... so when I came to university, it was difficult to understand lecture content or the procedure for accessing emails and downloading lecture notes ... for quite some time, I did not know how to join the Facebook Group of our class ... there were two issues for me ... I could not understand English that well ... and I did not know how to use these tools... (BS2-07)

According to the above excerpt, the student had studied in Urdu-medium schools and colleges, which made it more difficult for this student to adjust to the university

setting. The student described the struggle to understand the procedure for downloading lecture notes or joining social media groups as all the instructions were available in English. Similarly, another student shared the experience of using video lectures in *Hindi* language (similar to the local Urdu language in Pakistan), to develop an understanding of course contents, as it was difficult to understand the contents in English. The student described watching video lectures on YouTube and making notes to understand the difficult concepts. According to the student:

...it was difficult for me to understand lectures in English ... I tried to find some materials in Urdu, but there were no relevant ones. Some friends recommended searching for video lectures in Hindi, and I found short clips of twenty minutes each on various topics by Indian professors, who explained things in the local language ... this made it easier for me to learn and understand the course content... **(BS2-22)**

Some female students also described the sociocultural challenges they attempted to overcome through the use of technology in their studies. These students referred to their family backgrounds and how it was challenging for them to travel from distant places every day to attend lectures or consult the resources in the library in the evening. However, they were now using various digital tools to overcome such issues and retain their focus on studies. According to a student:

...I come from Kasoor city every day to the university ... my family does not allow me to live in a hostel ... at times it became tough to travel to the university ... now ... my friends can share lecture slides and even audio recordings of lectures with me on WhatsApp ... we can even call each other on Skype and work together on assignments and projects... **(BS2-17)**

Another student shared her experience and said:

...at times I was required to sit in the library until evening and work with other students on some project or assignment ...my father was not very happy with this arrangement, and so he picked me up from the university ... however, these days I can use the online library and the Internet to download the required information ... we have our WhatsApp and Facebook groups to coordinate project work and even share all kinds of resources ... files, audios, videos, pictures, etc. **(BS2-03)**

The excerpts presented in this section highlight how the component of *diversity in students' socio-economic backgrounds* appears to form the background within which their alienated experience of learning technology is situated.

The table on the next page (table 7) presents a summary of the referential and structural aspects discerned from students' alienated experience of learning technology at BS-2.

Table 7 Summary of the Referential & Structural aspects of Alienated Experience at BS-2

Structural Aspects Referential Aspects	External Horizon		
	Internal Horizon		Diversity of socio-economic backgrounds
	Prior exposure to technology	Peer pressure to use technology	
A cause of Alienation from peers and teachers	<p>“...there was a clear gap between us [me and other students] in terms of technical knowledge. I mean, at times, you do not feel part of a certain group if you are the only person who struggles with the use of technology, while others are kind of experts.” (BS2-16)</p>	<p>“...the initial few days were quite difficult in the sense that I could see other students using software, websites, and other Internet-based tools quite comfortably to complete their assignments...I often felt I should have opted for a different university, maybe in my city...as I did not know how to use these tools.” (BS2-03)</p>	<p>“...coming from a rural area, I had not seen or used the software or tools I was required to use for assignments ... this was something beyond my control ... I began to feel that, to use technology during my MBA studies, I would always be dependent on someone else ... it surely demotivated me, and I felt a little alienated from other students...” (BS2-21)</p>

4.5. Learning Orientations and Experience of learning technology: exploring a *plausible* connection

The research findings of this study identify the variation in *meaning* and *structure* the students associated with their experience of learning technology. It also establishes that the use of technology for academic purposes forms an important aspect of these students' relationship with their MBA studies. During the data analysis, I observed an interesting connection between the students' learning orientations and the different ways in which they used learning technology during their studies. The idea of *Learning Orientations* was presented by Taylor (1981, 1983) as a useful construct for understanding the *relationship* between students and all aspects of their course of study. According to her, learning orientations can be defined as all those *attitudes and aims* which express the students' individual relationship with a course of study and the university. They represent the *collection of purposes* that can orientate students towards adopting a particular approach to learning during their studies.

In this section, I will first discuss the characteristics of the different types of learning orientations presented by Taylor (1981, 1983) to evaluate if they have a *plausible* connection with the three categories of description found in this study. Taylor (1983), while conducting a study of exploring students' orientation to learning at Surrey University, identified four distinct types. These are:

- *Academic Orientation*, where the students' goals involved the academic side of university life.
- *Vocational Orientation*, where the students' goal was to get a job after university.
- *Personal Orientation*, where the students' goals were concerned with their personal development.
- *Social Orientation*, where the students' goals focused on the social side of university life.

Each of these orientations is divided into two sub-types that distinguish between students' *intrinsic* and *extrinsic* interest in their course. Intrinsic interests are related to students' direct interest in the course contents, while extrinsic interests mean that

students are studying the course as a *means to an end*. She further found that the concerns students had were connected to the type of orientation they had. These orientations and their concerns helped make sense of the amount of effort the students put into different aspects of the course and university life. For the students in this study, this aspect of their course of study was the use of learning technology. This means there can be an association between the type of learning orientation these students exhibited and how they experienced learning technology.

Orientation, unlike the concept of motivation, does not assume any psychological trait on the part of the student. Beaty et al. (2005)⁵ further clarify that orientations represent the *quality of the relationship* between student and the course, rather than a quality inherent in the student. It forms a personal context for individual students' learning and therefore, may change over time. Similarly, students' orientation to learning can often be a complex mix of two or more of the types explained above. According to Beaty et al. (2005), if students show signs of having multiple orientations, the characteristics of all orientation types will affect the students' relationship with their course of study. For example, in this study, students with an engaged experience of technology exhibited a combination of academic and vocational learning orientations; therefore, their descriptions of experience contain evidence of concerns associated with both orientation types.

Based on the evidence found in the students' descriptions of experience and the explanation of the idea of learning orientations presented above, I have proposed a plausible mapping of the three categories of description onto different learning orientations (figure 11). This mapping highlights how the students' experience of learning technology could be associated with different types of learning orientations and corresponding extrinsic or intrinsic interests.

⁵ Taylor nee Beaty i.e., 'Liz Beaty' and 'Elizabeth Taylor' refer to the same author.

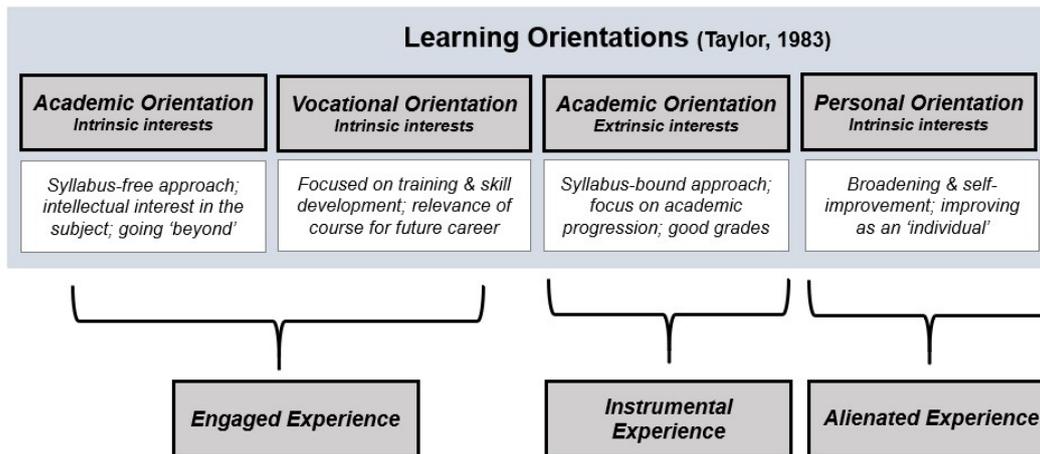


Figure 11 Association between categories of description and learning orientations

An explanation for the mapping is provided in the sub-sections that follow.

4.5.1. Academic & Vocational orientations in students' Engaged experience of learning technology

Students who described an engaged experience of learning technology described their use of technology to access a broader range of learning resources, enhance their subject-specific understanding and also improve their career prospects. These students can be said to exhibit both *academic* and *vocational* orientations to learning, with intrinsic interests.

Intrinsic Academic Orientation

Academic orientation with intrinsic interest is characterised by students who are primarily interested in studying a particular course for its own sake (Beatty et al., 2005), i.e., they are *intellectually interested* in the subject and explore the contents of a subject beyond the defined syllabus. In this study, the students describing an engaged experience of learning technology also described exploring the available digital technologies beyond the scope of their coursework to pursue their intellectual interests. They accessed a broader range of learning resources to develop a more comprehensive understanding of the subject or some specific topics. For example, one of the students said:

...at times ... to further explore a topic studied during the lecture ... I use the Internet and other resources such as the university's digital library to access research papers ... it helps me to understand the topic in a variety of dimensions... (BS1-13)

Beatty et al. (2005) further explain that students with an intrinsic academic orientation are appreciative of those aspects of their university life that *fire up their enthusiasm* (p.78) to follow their own intellectual interests. In this study, students describing an engaged experience frequently referred to contextual factors such as the tech-savviness of their learning environment, the encouragement of teachers, infrastructural support that facilitated their overall aims and interest in doing an MBA degree.

Intrinsic Vocational Orientation

Students having a *vocational learning orientation* with intrinsic interest understand the relevance of their course of study to their chosen career path (Taylor, 1983). They have carefully opted for a particular degree and always seek opportunities for professional skills development. In this study, students describing an engaged experience of learning technology discussed their use of digital tools to explore better and relevant career prospects. As one of the students said:

I am studying HR, I wanted to get an internship in that area as well ... and then think of possible employment opportunities ... technology has helped me secure a better and relevant internship opportunity ... I am now focusing on developing my professional skills and doing some online courses, so that I can get the job I want ... in the future. (BS1-11)

These students described using technology to develop their skills and pursue their specialisation interests so that they can get a job in their chosen career domain. According to their descriptions of experience, most of these students realised and appreciated that their MBA degree was important to pursue their aspired career path.

4.5.2. Academic orientation in students' Instrumental experience of learning technology

The students describing an instrumental experience of learning technology exhibited an *academic orientation* with extrinsic interest. According to their descriptions of experience, they preferred to use technology only as a means for completing their coursework and getting good grades. Students were primarily using technology to meet the requirements of the institution or their teachers.

Extrinsic Academic Orientation

Students with an extrinsic academic learning orientation are primarily interested in *progression* through the educational system and are often regarded as *syllabus-bound* (Beaty et al., 2005). They are focused on passing their courses and getting their degree. For example, in this study, one of the students said:

...I use these tools to complete my work on time and get good grades ... I feel that is the main purpose of coming to university ... to get a degree on time, without any issues ... and if technology can help me with that goal ... I will definitely use it... (BS1-19)

According to the above excerpt, the main concern for the student is to get onto the next step up the academic ladder. The previous sections have elaborated on how students describing an instrumental experience used learning technology as and when required for their coursework. According to their descriptions, the main use of learning technology for them was to complete academic activities (e.g. assignments or projects), secure good grades, participate in online chat groups to discuss academic issues and ensure they meet the requirements of their teachers regarding the use of technology during studies. Therefore, they exhibited an academic orientation to learning, but with extrinsic interests.

4.5.3. Personal orientation in students' Alienated experience of learning technology

Students describing an alienated experience of learning technology shared how they gradually transitioned to a more engaged or instrumental experience. This transition appears to be underpinned by a *personal orientation* to learning, with intrinsic interest. The focus of such descriptions of experience was on self-development and overall improvement as an individual. These students described that circumstances and contextual factors induce such interests, that push them to experience learning technology in a certain way.

Intrinsic Personal Orientation

Personal learning orientation with intrinsic interest is associated with the *broadening effect* of education (Beaty et al., 2005). University study is seen as a means for change, where new challenges and ideas can be used for self-improvement. As

stated above, in this study, some of the students described their experience of transitioning out of their isolation phase by using technology to develop their skills and change as an individual. For example, one of the students said:

...I have used video tutorials on YouTube to improve my English ... I know it is going to help me in the future as well... (BS2-12)

Similarly, another student explained this point in the following way:

...the Internet has provided me with numerous opportunities ... I think it is due to tools like Facebook, WhatsApp, and Skype that I have managed to develop the confidence to talk with other students and even my teachers... (BS1-14)

In this type of learning orientation, the students see their degree as a *vehicle for change* and personal development (Taylor, 1983), which is also evident in the above excerpts. The main reason for mapping the transitional dimension of this category with intrinsic interests is that the students are not trying to improve themselves to test their own capabilities or prove themselves to others, which are the characteristics exhibited by students with an extrinsic personal orientation to learning. Instead, the students in this study describe their study as purely something of personal significance and therefore use technology for self-improvement.

Among the students' descriptions of experience, there was no evidence of them exhibiting characteristics of a social orientation to learning. The implications of this association between the categories of description and the idea of learning orientations will be discussed in the next chapter.

Summary of the chapter

This chapter has presented the findings and data analysis of this study, using relevant examples and quotes from the interview transcripts to discuss and elaborate on the arguments. The first section continued the discussion from the third chapter around the application of the *referential/ structural* framework in this study. It discussed the specific questions which were used to interrogate the data sets to discern the components present within students' descriptions of experience.

The second section presented the three categories of descriptions found in this study, i.e. *engaged experience*, *instrumental experience*, and *alienated experience*. These categories highlight the different ways in which MBA students described experiencing learning technology during their studies. The students' descriptions of an *engaged experience* of learning technology were more focused and mostly comprised of their initiatives and experimentation with various types of digital technologies. In the second category, the students described an *instrumental experience* in which technology was being used as a means to complete their academic work, meet the requirements of their teachers and secure better grades. In the third category, the students described their feelings of initial *alienation* from their peers and teachers due to the presence of technology. Most of these students came from less developed areas of the country and had little or no prior exposure to technology. This category also comprised of a *transitional dimension* in which the students described how the use of technology, facilitated them to transition towards a more engaged or instrumental experience, after adjusting with the learning environment.

The next section(s) presented the data analysis from both the business schools separately. This was done to ensure that the contextual factors present in both the schools are clearly highlighted and explained. It also helped to highlight the differences within and across the business schools present in the same country. In BS-1, most of the students comprehensively described their experience of learning technology. Although there were variations in the *meaning* and *structure* of the experience described by the students, there was a consensus that the overall learning environment at the business school was quite tech-savvy and the university was providing them with a relatively developed technological infrastructure. According to their descriptions, these students were more aware of the latest digital technologies. They were mostly using both the institutional systems (e.g. LMS) and less formal tools like Facebook, WhatsApp, at the same time for their academic work.

In BS-2, most of the students described using technology *as and when required* for completing their academic work. In this dataset, there was evidence for the presence of only two categories, i.e. *instrumental* and *alienated* experience of learning

technology. According to the descriptions, the students were more concerned about using technology to *follow* their teachers' instructions and meet the course requirements. Most of these students have also described how their socio-economic backgrounds and prior exposures to technology influence their experience of technology during MBA studies. Furthermore, the students have also discussed the infrastructural challenges present at their university, particularly related to the absence of formal institutional systems like LMS, or unavailability of the internet at the campus, etc.

The final section in this chapter presents an evaluation of a plausible (logical) connection between the categories of description and the idea of *Learning Orientations* presented by Taylor (1981). Learning orientations are all those attitudes and aims that express the student's relationship with a course of study and the university. This section *explores* if there are any specific orientations to learning that predispose the students towards adopting a particular way of experiencing learning technology.

A tabulated summary of the findings, clearly highlighting the *referential* and *structural* aspects for each category of description has also been provided after each corresponding section.

5 DISCUSSION

Chapter 5: Discussion

The previous chapter reported the findings of this study by explaining the three categories of description and their associated referential and structural aspects. This chapter will focus on discussing these findings in light of relevant literature to assess the contribution they make to the existing body of knowledge. Before continuing, it would be useful to reiterate the research question of this study:

What are the different ways in which MBA students in Pakistan experience learning technology within their studies?

The primary aim was to identify the *variation* in the descriptions of experience provided by 45 MBA students about their use of learning technology during studies, in two of Pakistan's leading business schools. The use of *phenomenography* has facilitated in identifying this *variation* and also revealing the *contextual factors* within which these students' descriptions of experience were situated.

5.1. Discussion of the categories of description

The study found three different ways in which MBA students in these business schools described their experience of learning technology, i.e. *engaged experience*, *instrumental experience*, and *alienated experience*. The significance of this study lies in how it provides insights into the experience of these students within the context of a less developed country, where the learning environment is predominantly instructor-led. According to Henderson et al. (2017, p. 1577) "... students' use of digital technologies and what works best for them are being shaped by the university contexts, within which students are situated". This makes it more important for researchers to explore how students navigate through the complexities of having varied skills, experience, and interests around the use of technology.

The latest strand of research on the students' use of technology in education has focused more on highlighting the *backgrounds* and *dispositions* that influence how they

interact with technology during studies (for example, Czerniewicz & Brown, 2018; Henderson et al., 2017). In this study as well, the students not only described the different ways in which they experienced learning technology but also highlighted the contextual factors and complexities (of the learning environment) within which this experience was situated. For example, some of the students described the influence of their less privileged socio-economic backgrounds and varying levels of prior technological exposure on how they experienced technology during their MBA studies. Therefore, all the components in each of the category of descriptions have been discerned and explained with respect to the *context* in which this students' experience was situated.

In the first category of description, the students describe an *engaged experience* of learning technology in which they explore and experiment with various types of digital tools and platforms available to them. The second category is about students' *instrumental experience* of learning technology. They describe using technology as a *means to pursue specific aims* – in this case doing their coursework, getting good grades, and completing their MBA degrees. The third category is an important finding of this study as it highlights students' *alienated experience* of learning technology. The students describe that the inability to use learning technology in an *acceptable* and *expected* way developed feelings of isolation and alienation from their peers and teachers. According to the students' descriptions, they struggled to become part of the overall learning environment and the social groups within it. These students have described a strong interplay of contextual factors during this initial phase of isolation and how this influenced their experience of learning technology.

Two of these categories of description, i.e., *engaged experience* and *instrumental experience* link closely to the established phenomenographic concepts of the *Deep and Surface* level approaches, introduced earlier in Chapter *Two*. These concepts were first presented in the seminal work of Marton and Säljö (1976) and were further developed and substantiated in studies of Ramsden (1981), Entwistle and Ramsden (1983) and Biggs (1987). In this study, students who described an engaged experience of learning technology adopted a *deep level* approach that involved some critical thinking around

the use of technology. Their descriptions of experience contain evidence of conscious attempts to examine the rationale behind the use of technology in their MBA education and its subsequent influence on their learning approaches. These students also made an effort to relate their use of learning technology during their MBA studies to their previous knowledge and expertise. Similarly, in the second category, the students who describe an instrumental experience of learning technology adopted a *surface level* approach, in which they use technology *as and when* required for their academic activities. According to their descriptions of experience, these students prefer to use selective digital tools (as required by the course or recommended by their teachers) without attempting to establish any connection with the intended outcome.

The third category, around the alienated experience of learning technology, offers a *transitional dimension*, in which the students describe how they transition from an initial phase of isolation within a tech-savvy learning environment to having a more engaged or instrumental experience of technology. Furthermore, in this category, the students also discuss the influence of their prior exposure to technology, socio-economic and cultural backgrounds on this transition. This is the power of phenomenography that it explores and presents different ways in which a group of people experience the same reality (in this case, learning technology).

One of the important aspects that emerge from the findings of this study is the students' simultaneous use of both formal and informal types of technology in their academic work. The prior studies in this research domain, mostly based in the educational contexts of developed countries, highlight a *systematic transition* in which students have gradually shifted from using institutional systems like LMS to more informal digital tools such as social media platforms, for their academic work. Some of these studies present a comparative analysis between the educational potential of formal and informal digital tools, as the students in these settings have begun to see social media and other such tools as an *alternative infrastructure* to their institutional offerings. In this study, however, I did not find evidence of any gradual or systematic shift from formal to informal digital technologies within the students' descriptions of experience. Furthermore, there was no contention or friction regarding the choice of a

particular tool during the studies. The students in both the business schools described using both formal and informal technology, at the same time, to complete their academic work. These findings suggest that in HEIs where technological shifts have not been gradual, students tend to lose the distinction between informal and formal technologies. And, as they are actively navigating through various technological options available to them for the intended educational purposes.

In this study, a common aspect that spans across all the three categories of description is the students' increasing use of informal digital tools, particularly the Social Networking Sites (SNS) and smartphone applications. Although as Manca and Ranieri (2016) note that research into the educational use of social media has tried to achieve a more nuanced and broader spectrum of understanding, the academic debates in this domain remain inconclusive (see Section 2.2). The findings of this study highlight that even though the acceptability of social media platforms and smartphone applications for academic purposes appeared to in an *embryonic stage* in Pakistani universities, these students described adopting a rather liberal approach in using them during their studies. As social media and institutional platforms were available at the same time for these students, they already knew the potential to collaborate through social media to some extent.

Within the students' descriptions of experience, an important element was the use of social media platforms and smartphone applications for *connectivity*. The students described using such digital tools to work *with*, and *across* any differences (either structural or otherwise) they had within themselves. According to them, the increasing use of social media and other smartphone applications *widens their capacity* to connect and work together in such digital spaces.

Therefore, these students described using online chat groups, social media pages and other applications to develop multiple *informal peer groups* or networks to support each other during their studies. I label these technology-mediated networks *informal* because they were formed as a result of student-led initiatives, with teachers or the institution having no role or input in them. The scope of these networks varied from

small peer groups within the same class, to larger networks within the same department, and a wider learning community access to these students via social media platforms. The formation of these networks corresponds to what Jones et al. (2010) state that the generation of learners entering universities comprises a *collection of minorities* that tend to interact with technology in different ways.

The association of the categories of description found in this study and the concepts of *deep and surface level* approaches, as discussed earlier, also links with the prior phenomenographic works around the *cultural variations* in conceptions of learning, particularly the *paradox of the Asian Learner* (Marton & Booth, 1997, p. 39). The argument relating the different ways in which students' experience learning technology and the approach taken by them does not aim to confirm or reject the assumption that *deep is good and surface is bad* (Haggis, 2003; Howie & Bagnall, 2013). For example, in the relevant literature, a surface approach is treated as being characterised by rote learning, while a deep approach is equated with understanding and critical thinking. This interpretation of the concepts seems to be an oversimplification of the original distinction presented by Marton and Säljö (1976). Exploring the cultural variations in conceptions of learning, Marton and Booth (1997) raised an important question, i.e., if memorisation as a form of learning is associated with surface approaches and a way of poorer learning, then why do Asian learners (particularly, the Chinese students), who spend a good deal of time in activities that appear to be aimed at pure memorisation, do so well in competition with their western contemporaries?

To understand this issue, studies were conducted to examine how Chinese students conceptualise learning (for example, Marton et al., 1992; Marton et al., 1997). These studies found that for Chinese learners, a distinction has to be made between two qualitatively different ways of seeing memorisation. On the one hand, memorisation with the intention to understand and on the other hand, mechanical memorisation which is characterised by rote learning. For example, a Chinese learner taking a deep approach is indeed trying to memorise, but at the same time, the intention is to gain understanding. This brings us back to the importance of *contextual*

factors in predisposing students towards a particular approach, as highlighted by Biggs (1999). Marton et al. (1997) argue that although a surface approach may be associated with rote learning in some contexts, it cannot be characterised by this form of learning. Howie and Bagnall (2013) also critiqued that the majority of research studies have usually interpreted the words *deep* and *surface* in terms of their easily recognisable meanings. However, there is little acknowledgement that these words can have different meanings in different contexts.

In this study as well, the association of the deep or surface level approaches with the students' experience of learning technology does not suggest if one particular way of experiencing technology is *generally* better than the other or is *universally desirable*. For example, students who described an *instrumental* experience of technology adopted a surface level approach but were still able to achieve their intended academic outcomes, such as completing assignments and projects, meeting teachers' requirements and getting good grades. The findings of this study align more with the argument that conceptions of a given phenomenon can have different meanings in a different context; therefore, the descriptions of experience should be analysed with respect to the context in which they are situated.

Each of these three categories of descriptions will now be discussed in detail in the following sub-sections, elaborating the important aspects highlighted above.

5.1.1. Engaged Experience

In this category, the students described an engaged experience of learning technology, in which they actively explored and experimented with various types of digital tools and online platforms. According to their descriptions of experience, these students adopted a *deep level approach* (Marton & Säljö, 1976), that involved critical thinking about their use of technology. The focus of their experience was to explore this phenomenon *beyond the main point* by consciously attempting to examine the rationale behind the use of technology within their MBA studies. According to Biggs (1999), students who take a deep level approach interact *actively* with a given

phenomenon. They attempt to understand the larger picture within a phenomenon while trying to ascertain how various elements relate to one another.

Similarly, according to Biggs and Tang (2011), in a deep level approach, students often try to establish a *connection* between their existing knowledge and exposure and the new ideas with which they are interacting. In this study too, the students describing an engaged experience of technology often related their prior exposure to technology while studying in elite schools and colleges to their present-day experience of technology during MBA studies. These students described their familiarity with social networking platforms such as Facebook, websites like YouTube and Google, applications including WhatsApp and Skype, even before the start of their MBA studies. Hence, they were comfortable with using both formal institutional systems and the latest informal digital tools such as social media platforms and smartphone applications in tandem, for their academic work (see section 4.2.1).

Taking a deep level approach to the use of technology, these students described that the use of this blend of formal and informal type of technologies helped them to develop a more *comprehensive understanding* of a subject or some specific topic. One of the students said:

...by using diverse types of technology, I feel I am no longer restricted to textbooks only. I can read articles, watch YouTube videos, search for additional resources on the Internet ... it helps me to explore a topic from a variety of dimensions... **(BS1-02)**

This description resonates with some of the recent studies conducted in more developed contexts, which found that the most frequent use of technology by students was for accessing information from a variety of learning sources to develop their understanding. However, in most of these studies, the students exhibited a preference for institutional systems (e.g. LMS) over other informal tools. For example, in a recent study by Selwyn (2016), the students saw LMS as the *central place* for accessing learning resources and preferred it over any other informal platform, such as Facebook. Similarly, in two recent doctoral studies that adopted a phenomenographic research approach (Cutajar, 2017; Nguyen, 2017) to explore students' experience of networked learning, they also found that students preferred institutional systems over

other mediums to access learning materials. In this study, however, the students did not describe any *specific preference* or choice of tool/ medium/ platform for their academic work.

Recent research around the use of technology in education has seen a growing interest in exploring the implications of students' use of social media platforms in their studies. Some of these studies present social media platforms as an *alternative or parallel infrastructure* to institutional offerings (Thomsen et al., 2016) or *proxies* (Wang et al., 2012) for learning management systems. According to the central premise of the Wang et al. (2012) study, students either try to avoid using LMS or only use it if they have to because "...Facebook not only replaces Moodle for some activities ... [it] actually eliminates the use of Moodle..." (p.100). However, most of these studies are based on students' experience of technology in developed countries. Most of these students have seen a systematic transition (Henderson et al., 2017; Margaryan et al., 2011; Thomsen et al., 2016) from formal institutional systems to informal digital tools, such as Facebook, Skype, etc., as learning platforms such as LMS were prevalent before social media and smartphone applications became ubiquitous. The findings of my study distinguish themselves from the existing literature as they present insights from students' experience of technology when they are *simultaneously* exposed to both formal and informal digital tools for their academic work. According to their descriptions of experience, they see informal digital technologies like social media as *complementary platforms* and not as a replacement for their institutional systems, unless they are not provided with any institutional learning management system (for example, BS-2).

Within the students' engaged experience of technology, networking with other students, teachers, and the wider learning community (outside the university) emerged as a vital element (see section 4.3.1). They described how social media platforms, such as Facebook and Twitter, and smartphone applications, such as WhatsApp, Skype, and FaceTime, allowed them to be more connected with other participants in their learning environment and beyond it. This enhanced connectivity (particularly through social media platforms) provided the students with

opportunities to establish *informal peer networks* within a larger knowledge-sharing community. Students used these informal networks to develop a space for cooperation and collaboration that extended their existing space of learning beyond the classroom. As Prescott, Wilson, et al. (2013), while arguing in favour of educational use of social media, stated that the use of social networking sites *enhanced* the students' learning experience, as they were able to continue their academic discussions even outside the classroom. This relates to how one of the students in this study, described their experience of learning technology:

...by using these Facebook pages and other online chat groups, I have gradually developed the confidence that I can always get the help I need, even outside the classroom and from people other than my class fellows and teachers... **(BS1-08)**

The significance of the above description is that there was a growing realisation among these students that active use of technology was allowing them to support their studies *beyond* the boundaries of the classroom and with help from people *other* than their course instructors. According to the students' descriptions of experience, the ease and flexibility of contacting each other provided them with the opportunity to bridge the communication gap, otherwise present in the traditional learning environments of Pakistani HEIs.

Some of the students with more vocational preferences described utilising their technology-mediated networks (particularly on social media) to explore better career opportunities. For example, some students were using platforms like LinkedIn and Facebook to develop professional contacts within the jobs market and also with alumni members working in the industry. This aspect of using modern communication technologies, such as instant messaging, social networking, and video conferencing for learning has emerged as a common theme in some of the recent studies on students' use of digital technologies. For example, Cutajar (2017) described it as *learning in connectivity with others*, while Nguyen (2017) termed it as *autonomous peer learning*.

The phenomenographic analysis also highlights the *contextual factors* within which the students' experience of learning technology was situated. Students who

described an engaged experience of learning technology stated that despite studying in a relatively traditional learning environment, where there is a general preference for face-to-face instruction, their teachers supported and encouraged them to explore and experiment with the range of digital tools available to them. This freedom to use both formal and informal types of technology allowed them to develop a more self-directed learning approach. According to Biggs (1999), certain teaching factors can predispose a student towards a deep approach to learning, such as the creation of a *positive atmosphere*. The teachers allowed their students to make mistakes and encouraged them to experiment without fear of any penalty. Therefore, the students did not feel under pressure within the learning environment and focused on pursuing their own particular interests.

The overall learning environment at BS-1 was quite tech-savvy as the students were encouraged to explore and use diverse types of digital technologies during their studies. This business school had a more developed technological infrastructure than BS-2 as it provided its students with access to various institutional systems (e.g. LMS, CMS), e-libraries, digital databases, etc (see section 1.6). On the other hand, students at BS-2, while describing their experience of learning technology, often highlighted the technology-related infrastructural challenges in their business school. These students provided a relatively general description of their experience of learning technology, with some of them simply naming the tools they were using. Therefore, the evidence for students describing an engaged experience of learning technology was only found at BS-1.

5.1.2. Instrumental Experience

The students describing an instrumental experience of learning technology within their studies adopted a *surface level* approach (Marton & Säljö, 1976). According to their descriptions of experience they preferred to “*skate along the surface*” (Marton & Säljö, 1984, p. 44) when it came to the use of technology, without attempting to establish any connection with the intended outcome. Biggs and Tang (2011) further explain that students who take a surface level approach accept new ideas uncritically

and prefer to receive information passively as blocks of *unconnected* and *isolated* ideas. The findings of my study show that students who described an instrumental experience were only using learning technology *as a means to pursue a specific aim*, which in this case was to meet the course requirements, secure good grades and complete their MBA degrees (see section 4.2.2). This links with the conceptual ideas shared above and what Biggs (1999) suggests about the concept of a surface level approach, where the intention is simply to get the task out of the way with a minimum of trouble while appearing to meet the course requirements.

The students describing an *instrumental* experience of the technology described having a basic level of prior exposure to technology, i.e. they were aware of the latest digital tools, including social media platforms, but had seldom used them for educational purposes. Hence, their understanding of the use of learning technology during MBA studies was not quite clear. Although most of these students described using a variety of digital tools and online platforms *as and when required* in their studies, they did not go into the details of the significance of technology-use for their studies. According to their descriptions, their use of learning technology was more like a *monotonous chore* (Marton & Säljö, 1984), often extrinsically motivated by the requirements of a course or at the direction of a teacher. As Biggs and Tang (2011) argue, students who take a surface level approach usually only study to get a qualification, they are not interested in the structural components of the course. For example, in this study, one of the students said:

I have been using computers for many years now, so I can use any type of tool or software to complete my assignments or projects ... the main aim to is complete the work on time and according to the requirements of the course and the teacher... (BS2-15)

The crux of the students' description of an *instrumental* experience of technology was to use any type of technology as long as it helped them to meet the course requirements. The above description is quite similar to what Lublin (2003) states about surface level learners, i.e. there are *external incentives* that motivate such students to interact with their learning materials, such as getting a specific grade, passing the course, or acquiring a qualification. Therefore, the students adopting such an approach usually do not show much interest in engaging with a given phenomenon.

In the relevant literature, students' use of technology only to satisfy academic requirements is a common phenomenon. Czerniewicz and Brown (2013), in their study based in a South African educational context, found that students usually linked their use of technology with the *requirement* to use technology during their course, and which mostly revolved around the course contents. Similarly, Denovan and Macaskill (2013) described such use of technology as *academic-focused*, where the students' use of technology is restricted to the completion of prescribed academic work and *dutifully performing well*. In a more recent study, Henderson et al. (2017) referred to this phenomenon as the use of technology for activities *necessary to do university*. Although more recent studies have started to evaluate the usefulness of various digital technologies being used by students, there is still a visible thread that highlights students' gradual transition from formal systems to informal tools such as social media platforms. However, in my study, those students who described an *instrumental* experience were again using both formal and informal digital tools simultaneously, but with a clear purpose, i.e. completing their coursework and securing good grades.

In this category of descriptions as well, *connectivity with others* emerged as an important element; however, the scope was much narrower. The students described using various digital tools (mostly social media and smartphone applications) to develop *informal peer networks* among themselves. Unlike the peer networks described by students in the category of engaged experience, these groups were more focused on a specific purpose and usually comprised students from the same module or semester. The groups were being used for coordination during group projects and assignments, sharing learning materials, conducting online study sessions (mostly before exams), and at times simply using chat groups to disseminate information about class schedules, assessment deadlines and forwarding messages from teachers and the university (see section 4.3.3). In an earlier doctoral study (conducted in the Vietnamese context), Nguyen (2017) also found a similar conception where the students collaborated on various academic tasks, using technology-mediated peer networks created by them using the institutional LMS. In this study, however, these

networks were more reliant on informal digital tools, such as Facebook, WhatsApp, and Skype.

The technology-mediated networks developed by the students in both business schools were not restricted to student-student communication. The students also described using the latest tools to communicate with their teachers, as this reduced some of the existing *invisible layers* (BS1-08) present within traditional communication mediums. The students explained that it had become easier for them to get guidance and help from their teachers in a timely way, which earlier involved delay, formality, and hesitation. This again links with the idea of students and teachers adopting a rather liberal approach towards the use of informal digital tools, in Pakistani universities. The existing literature in this domain (mostly based in developed countries) comprises of polarised views about the use of social media platform for student-teacher communication. For example, studies in support of such interaction (for example, Bosch, 2009; Prescott, Stodart, et al., 2013) state that use of social media makes both the students and teachers *more approachable* for each other. On the other hand, studies which consider this type of communication inappropriate, for example, Imlawi et al. (2015), argue that teacher's credibility may be at stake, possibly due to the content of their online profiles.

Despite this ongoing debate in the literature, the students in this study mostly described the encouragement and support they received from their teachers about using any type of digital technology that can assist them in studies. The findings suggest that, in these business schools, scepticism about the educational use of informal digital tools is relatively less as compared to the developed countries. For example, one of the students at BS-1 shared an instance when a teacher asked the students to post their questions to an online chat group during a lecture to assist those who might feel too shy to participate in class discussions, as there is a degree of reflective anonymity within such communication. However, during the study, I observed that both students and teachers at these business schools had not considered the *ethical dimensions* associated with the use of informal digital tools. Some of the students did describe their discomfort in sharing contact details in online chat groups;

they did not explicitly discuss any ethical issues around the use of less formal digital platforms.

With reference to a *surface level* approach to learning, Biggs and Tang (2011) state that learners sometimes adopt this approach due to the *anxiety* and *pressures* present in their learning environments. If put under pressure in situations, learners will likely be oriented towards adopting surface level strategies merely to meet the minimum requirements of a course. According to them, such circumstances often push students to experience a phenomenon in a certain way, for example, anxiety over getting their degree or an extensive workload forces the students to treat various components of their course as a series of unrelated ideas.

In this study, the students describing an *instrumental* experience have also shared how factors present within the learning environment influenced their experience of technology during MBA studies. For example, students at BS-1 appreciated the tech-savvy learning environment in their business school as it encouraged them to use a blend of digital tools to complete their academic work. Meanwhile, students at BS-2 frequently expressed their concerns about the infrastructural issues, absence of formal LMS, variation in teaching approaches and undue institutional and peer pressures to use technology in a certain way. Therefore, it is important to understand the contextual factors present within the learning environment that influence students' experience of technology and may predispose them towards adopting a particular approach.

5.1.3. Alienated Experience

An important feature of the study is students' alienated experience, as it provides an additional way of looking at how students within a traditional learning environment experience learning technology during their studies. In this category, the students described how their experience of technology initially *alienated* them from their learning environment and other participants. The idea of alienation in a learning environment is discussed from a variety of angles in the literature. Mann (2001) introduced this notion of *experiencing alienation* in a learning environment and defined

it as the “*estrangement or alienation of the learner from what in higher education we might assume they should be involved in, namely, the subject and process of study itself*” (p.8). Therefore, this represents an experience someone may have of education so that they feel unable to engage or contribute in ways which are meaningful and productive. This description of alienation is particularly relevant for this study, as some students – particularly those coming from rural backgrounds and enrolled under the government’s outreach scholarship programme – described how the exposure to various types of digital technologies during their university education initially *unsettled* them, and they began to feel isolated (see section 4.2.3).

There is extensive literature that explores the first-year experience of students as they transition into university education (for example, Briggs et al., 2012; McInnis, 2001; Pitkethly & Prosser, 2010). These studies have mostly examined the complex liaison needed for students to settle into university life and succeed as higher education learners. Within this strand of research, there are then studies which specifically explore how first-year students interact and use technology within their studies (Cooke et al., 2012; Kennedy et al., 2008; Thinyane, 2010). For example, Abdous (2019) has discussed how Nigerian university students, mostly accustomed to face-to-face teaching, handle their anxiety of using technology in university education. He points out that when students transition into a university environment, they are likely to feel anxious about their *ability to succeed* in what may be an unfamiliar learning environment for them.

In this study, students describing an alienated experience of learning technology shared that they had little or no prior exposure to technology, and most of them had only heard about digital tools like social media platforms and smartphone applications. The sudden exposure to technology during their MBA studies and then the expectation of using it in a certain manner caused some level of anxiety for them. For example, one of the students said:

...I had heard about most of the software and digital tools we were asked to use in the first semester ... but this university life was a different world altogether for me ... it suddenly became challenging for me to adjust to the environment... **(BS2-10)**

Such experiences of students during the initial phase of their university education developed feelings of isolation and alienation from their peers, teachers, and the overall university environment.

The students describing an alienated experience also described the influence of their socio-economic backgrounds and prior educational experiences of studying in less elite schools and colleges on their experience of technology during MBA studies. Their descriptions of experience reveal that these students also adopt a *surface level* approach to the use of technology; however, the factors disposing them towards this approach were different from the students describing an instrumental experience of technology. This aspect of the findings links closely with the argument of Kember and Gow (1989) who presented evidence to show how “*contextual and environmental variables influence students to use surface level strategies for particular learning tasks*” (p.270). Biggs (1999) refers to these contextual factors as *genuine inabilities* that predispose students towards adopting a surface level approach.

An important element that emerged from the students’ description of an alienated experience of learning technology was the *conformance pressure* exerted on them as they struggled to use technology in a manner considered normal in their learning environment. According to the students, they were expected to exhibit the same academic performance as any other student in their class, which resulted in them developing feelings of isolation from their peers, teachers, and the overall learning environment. According to Reynolds and Trehan (2003), groups seen as representing *minority views* succumb to pressures to conform or are marginalised. The way differences can transform into hierarchies, often provides the basis for exclusion. In this study, as well, the students described that their universities did not have any mechanism of providing formal training or guidance to students struggling with the use of learning technology. The factors which exerted conformance pressure on students have been discussed in the section on *structural aspects* of alienated experience (see sections 4.3.6. & 4.4.4).

This category of descriptions also highlights a *transitional dimension* in which the students described how they gradually began to cope with the various pressures being exerted on them. According to the students' descriptions, they developed their technological skills to come out of their initial phase of isolation and transition to having a more engaged or instrumental experience of technology. One of the students said:

...I have used various types of technology to come out of that isolation phase ... I have learnt how to use Moodle, Microsoft products and have even joined Facebook and WhatsApp groups ... I have used whatever options I had to adjust to my university environment... (BS1-14)

Some of these students described how they began to experiment with technology, particularly the Internet, to search and download a range of digital learning resources (e.g. online course, video lectures, etc.). Such experimentation not only helped them in professional skill development but also improved their subject-specific understanding. Similarly, some students described that during the phase of isolation, they became concerned about their academic performance and the failure to complete the coursework. These students preferred to learn only those digital tools that could help them complete their academic tasks or were mandated by the teachers. According to the students' descriptions, these initiatives of developing their technical know-how enabled them to reduce the impact of the pressure(s) exerted on them by the institution, teachers, and peers. This aspect is similar to the findings of a previous study by Woodley and Meredith (2012), who suggest that the latest technologies can be used to support students in their transition to a university environment.

Within the students' descriptions of an *alienated* experience of learning technology, a frequently described challenge was the difficulty in communicating with other students and teachers. A lack of awareness about the latest digital tools made it difficult for these students to join and use official chat groups or departmental pages on SNS. Some of these students described instances where they struggled to set up appointments with their teachers, who preferred to communicate *only* via email. This aspect of the findings is similar to the argument put forward by Mann (2005) that experience of alienation in a learning environment can sometimes be due to a *failure*

of communication between teachers and learners, and learners and learners. In this study, however, some of the students facing such issues also shared how they took various initiatives to address the situation. As one of the students explained:

I remember there were five of us facing similar issues about adjusting to the extensive use of technology at our university ... amongst the various alternatives, we decided to work together in an informal way to help each other out in this situation ... we installed WhatsApp on our phones and created a group, where we shared various resources to train each other on this tool ... and some other software being used in the coursework ... this group provided a basic platform for us to develop our technological skills ... while studying for the MBA degree. (BS1-18)

According to the above excerpt, the students developed technology-mediated *informal peer networks* to improve their technological skills, with some peer support. These peer groups helped the students overcome their issues around the use of technology at their own pace and comfort. These *informal peer networks* differ from the ones described in the engaged and instrumental category as these groups usually only included students from rural backgrounds or those enrolled under the outreach programme.

The literature in this domain also suggests that the formation of subgroups within a large group is a legitimate and constructive means of working *with and across* differences (Hodgson & Reynolds, 2005). More recent studies like that of Dalsgaard (2016) have discussed the use of social media platforms, particularly Facebook, to create digital spaces for students, where their formal and informal groups can develop and coexist. In this study as well, according to the students' descriptions, these technology-mediated peer groups allowed them to work with and across their differences in socio-economic backgrounds, prior exposure to technology and know-how about latest digital tools. However, some of the female students did share their concerns about participating in chat groups and social media pages with other male students.

While discussing the sociocultural challenges in their descriptions of experience, some of the female students described that due to various religious and cultural issues in Pakistan, they often felt reluctant to share their contact details in the online chat groups, particularly on SNS. These restrictions made it difficult for them to join these groups and therefore remain unaware of important messages, announcements and

other academic discussions being posted on the groups. To work *with* such differences, some of these students described creating *all-female* chat groups on WhatsApp and Facebook, administered by the girl representative (GR) of the class. According to one of the students:

...it was a serious issue for me, as I did not want to share my number with other male students ... other female students were facing the same problem as well ... so we created a WhatsApp group only for female students, where we could discuss various issues around our academic work, without feeling any kind of pressure or hesitation... (BS2-11)

In this category of descriptions, although the students have described their initiatives of using a variety of digital technologies to overcome some of the challenges present in their learning environments, such issues again highlight the *digital divide* present in Pakistan. However, in recent years, with the rapid increase in the availability of digital technologies, the focus of discussions have moved from issues of access to technology to the *ability of learners* to use it for desired purposes. For example, McIntyre (2014), while acknowledging the issues around social inequalities argues that “ *as digital technology use continues to become ever more ubiquitous, the definition of digital divide will increasingly shift from the have and have-nots to cans and the can-nots*” (p.92).

The next section revisits the discussion around the plausible connection, presented in the last chapter, between the categories of description found in this study and the concept of learning orientations. It discusses if this logical association can be extended to include the concept of approaches to learning (deep or surface), i.e. if the learning orientations exhibited by the students predispose them towards adopting a particular approach of experiencing learning technology during their studies.

5.2. Learning Orientations, Experience of learning technology & Approaches to Learning: extending the *plausible connection*

In the previous chapter, the plausible connection between the categories of description found in this study and the idea of students’ *learning orientations* (Taylor, 1981) was presented. In this chapter, it was discussed how the students’ different ways

of experiencing learning technology relate to the established phenomenographic concepts of *Deep and Surface* level approaches. This raises an important question if the learning orientations exhibited by the students *predispose* them towards adopting a particular approach (deep or surface) of experiencing learning technology during their studies? This section discusses the possibility of extending this plausible connection to include the concept of approaches to learning.

Taylor's (1983) explanation of how learning orientations impact the amount of effort students put into different aspects of their course of study seems to relate to the idea of factors that predispose a student towards a particular approach to learning. This relationship was briefly discussed in a preliminary study report that explored students' approaches to studying social science and technology foundation courses at the Open University UK (Morgan et al., 1980). However, there has been no further substantial evidence about it in subsequent publications.

Looking at the categories of descriptions and their logical association with different learning orientations and the corresponding interests (see Section 4.5), and keeping in view the discussion in previous sections around the association of *deep* and *surface level* approaches to students' experience of learning technology, I have revised and extended the figure presented in the last chapter to explain these plausible connections. The figure (figure 12), on the following page, highlights a *possible* association between the idea of learning orientations, approaches to learning and the use of learning technology.

For example, in this study, the students describing an *engaged experience* of learning technology mostly exhibited an *academic learning orientation* with *intrinsic* interests (i.e. having an intellectual interest in the subject). They also adopted a *deep level* approach that involved some level of critical thinking regarding the choice and use of technology. According to Biggs and Tang (2011), intrinsic interests often steer students towards adopting a deep level approach to learning in which they focus on finding underlying meanings in the content. Similarly, students describing an *instrumental experience* exhibited an academic orientation with extrinsic interests. Some of these characteristics also relate with what Biggs and Tang (2011) state about

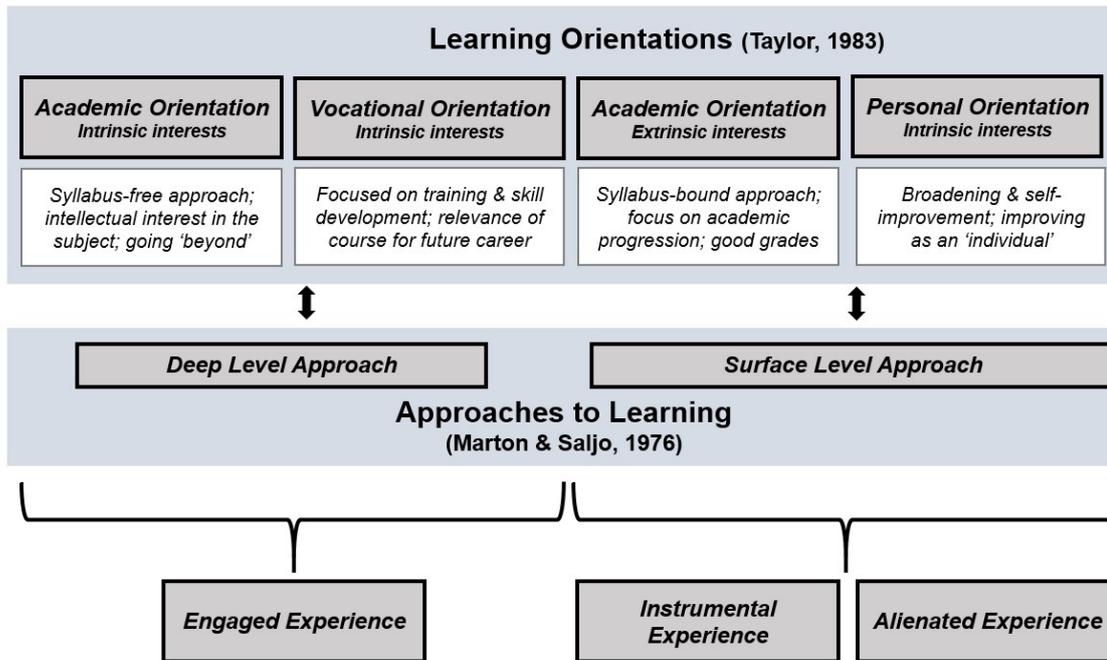


Figure 12 Association between categories of description, learning orientations & learning approaches

students adopting a surface level approach to learning and having extrinsic interests such as getting minimum pass marks, or a specific grade to complete their degree.

The findings of my study argue that it is important to understand such associations (as highlighted above) and the differences within them to comprehensively examine phenomenon such as the students' use of learning technology. Taylor et al. (1983) explain the *dangers* of not taking into account these differences and assuming that all students take a similar approach to their study. They explain their argument through the example of the UK's Open University, where helpfulness ratings of various teaching devices are evaluated through statistical tests, with the assumption that all students are concerned with exactly the same things. It is also assumed that students share the same concerns as their course instructors and tutors. The findings of their study, however, suggest otherwise, as students have different learning orientations and therefore frame the phenomenon in terms of their own concerns. A student, oriented towards *personal development*, evaluated a teaching device in terms of its support for personal growth. In contrast, a *vocationally oriented* student assessed if the device would boost their career prospects or not.

In this study, as well, the findings highlight the importance of understanding the *variation* in students' experience of learning technology within the same learning environment. For example, students in the same business school, enrolled in the same course of study (i.e., MBA) exhibited characteristics of academic orientation but with varying interests. Students with *intrinsic* interests took the initiative to explore and experiment with the available digital tools to further develop their subject-specific understanding. On the other hand, students with *extrinsic* interests used technological artefacts only as a *means* to complete their coursework and get good grades. In her study of learning orientations, Taylor (1983) argues that many lecturers *remain unaware* of the different orientations held by their students. They generally do not understand that students with different orientations seek different outcomes from their course of study. They are not merely more or less interested in a course; they actually have different aims and expectations regarding how the course will affect them and their lives.

Although the idea of learning orientations was presented in the 1980s, it is still a very useful construct for exploring a variety of phenomena, both in Pakistani and other educational contexts. Beaty et al. (2005) strongly advocate that it is not only important to understand the concept behind learning orientations but also to explore their implications for various phenomena. In their study, Taylor et al. (1983) discuss students' learning orientations and their different needs from the system, both within an open university and a conventional university. It helps to understand the different aims and expectations the students have with regard to their course of study. In this study, as well, the association between learning orientations and the different ways in which students experience learning technology provides a distinct basis of analysis, which should be explored further. In a recent evaluation of the higher education sector of Pakistan, Iqbal et al. (2019), reaffirmed that a teacher-centred approach is widely prevalent within the universities. This approach focuses on the uni-directional transmission of information and an assumption about the homogeneity of the students' understanding of various aspects of their courses. For example, in this study,

the students described how their teachers often expected all of them to use technology in the same manner. According to a student:

...at times I feel there is an undisclosed assumption that all students must use technology in the same way ... my lack of prior knowledge of digital tools is often not accounted for ... and I am expected to show the same academic performance as my peers... (BS2-03)

There was an *undisclosed assumption* that all students must uniformly use technology; therefore, the variation in students' experience of technology is often not accounted for by the teachers. This makes it more important to explore further and research such phenomenon and their associated dimensions.

This section further explored the plausible association of the three categories of description, the idea of learning orientations and the concepts of deep and surface level approaches. This discussion, along with some relevant excerpts from the students' descriptions of experience, offers a *basic understanding* of the implications students' learning orientations may have on their experience of learning technology. It could be important for the academic staff in these business schools to understand the diversity in aims, purposes and expectations that these students might have in their studies, as it can form the basis for understanding *how* their students adopt a particular approach towards various academic activities, including the use of technology.

Summary of the chapter

This chapter has discussed the research findings in light of the relevant literature to assess their contribution to the existing body of knowledge. In the first section, I have broadly discussed three categories of description and the important aspects that emerged from them. It highlighted how two of these categories closely link to established phenomenographic concepts of *deep and surface level* approaches to learning presented by Marton and Säljö (1976). It has discussed how students in Pakistani educational context described simultaneously using both formal and informal digital tools for their academic activities, unlike those in the developed

countries who have seen a systematic transition from institutional systems, such as LMS, to informal tools like the social media platforms.

The sub-sections further elaborate these points for each of the three categories of description. At first, the students' descriptions of an *engaged* experience of learning technology and how it links with the concept of a *deep level approach* is discussed. These students described critically examining the types of digital tools available to them. It highlighted how the students were using a blend of tools to seek support and guidance beyond the boundaries of the classroom – a phenomenon not common in Pakistani universities. The initiative of developing technology-mediated *informal networks* was also discussed to show how students were using them to connect with a wider learning community outside their university, and also as a medium to cope *with* and *across* student differences in their class.

The second sub-section discussed the students' descriptions of an *instrumental* experience of learning technology and how this links with the concept of *surface level approach*. According to their descriptions, these students *skated along the surface* (Marton & Säljö, 1984) and used technology only as a means for completing their course-related activities and getting good grades. In this category as well, students described using *informal peer networks*, but with a narrower scope and focus. These technology-mediated networks were being used for academic communication and coordination during group projects and assignments, or at times to simply disseminate information about class schedules, assessment deadlines and sharing messages from teachers and the university.

The third sub-section discussed some students' *alienated* experience of learning technology and how contextual factors such as socio-economic background, prior exposure to technology, and infrastructural challenges influenced this experience. The section highlighted how this category offered a *transitional dimension*, in which the students described their transition from an initial phase of isolation within a tech-savvy learning environment to a more engaged or instrumental experience of technology. It also discussed how these students described *conformance pressure* being

exerted on them as they struggled to use technology in a manner considered normal within their learning environment. Despite the variation in their socio-economic, cultural, and technological backgrounds, these students were expected to exhibit the same academic performance as any other student in their class.

The final section revisits the discussion around the plausible connection, presented in the last chapter, between the categories of description found in this study and the concept of learning orientations (see Section 4.5). This section consolidates the discussion by elaborating on the importance of understanding that students may have different aims, purposes, and expectations with regard to various aspects of their course of study. This study has highlighted the variation in one of these aspects, i.e. the experience of learning technology. This section discusses if the learning orientations exhibited by the students predispose them towards adopting a particular approach (deep or surface) of experiencing learning technology during their studies. This discussion could be useful for the academic staff in these business schools to understand how their students adopt particular approaches to their educational activities.

6 CONCLUSIONS

Chapter 6: Conclusions

6.1. Revisiting the thesis structure

Before writing this chapter on the conclusion and contributions of this study, it is useful to revisit the structure of the thesis and understand how this chapter connects with it. Furthermore, it also allows me to conduct a brief review of the research journey to assess better the outcomes that have been achieved.

In Chapter *One*, I presented some background information and an overview of this study. I discussed some of the personal and professional factors that developed my research interest in this area and motivated me to choose this topic. The chapter also highlighted how the use and role of technology in higher education, within a relatively less developed and under-explored educational context of Pakistan, is changing due to various initiatives at both governmental and institutional levels. These aspects made it meaningful to dig deeper into the lived experiences of one of the most important stakeholder groups in this scenario – the students. Therefore, the study focused on exploring students' experience of technology in their studies at two of the leading business schools in Pakistan. The final part of the chapter presented a brief contextual background of these two business schools.

Considering these points, I conducted a review of the relevant literature in this domain and presented it in Chapter *Two*. I mainly focused on examining the published research that discusses the expanding role of technology in higher education, particularly how students interact with it. I specifically explored studies that adopted a qualitative research approach to present an in-depth analysis of students' understanding and experience of learning technology during their university education. During the literature review, I observed that a clear majority of these studies were based in developed countries and presented examples relevant to those educational contexts. At times, some of these studies did not fully describe the impact

of contextual factors on the research findings. Furthermore, I found that the relevant literature around the use of technology in Pakistan's higher education sector was quite limited and narrow-focused. A majority of these studies used quantitative analysis to present a generalised overview of issues around technology adoption and implementation in Pakistani universities. The research gaps identified through this review of literature helped me to define the focus and scope of my study and further reaffirmed my decision to locate it within an under-explored educational context of Pakistan.

In Chapter *Three*, I discussed the Research Methodology for this study. I evaluated some other research methodologies within the interpretive research paradigm to develop my arguments in favour of *Phenomenography* as an appropriate and useful research approach for this study. Phenomenographic research interests lie in studying the variation (at a collective level) in peoples' experience of a certain aspect(s) of their world. The chapter provided a detailed explanation of the theoretical and analytical frameworks being used in the study, the overall research design and the details of the steps taken during data collection and analysis.

Chapter *Four* presented the Data Analysis and Findings of this study. It identified three categories of description that highlight the different ways in which students described their experience of learning technology. The analytical framework of *structured awareness* (Marton & Booth, 1997) was used to analyse the *referential* and *structural* aspects of the students' experience. In the final section, I present an evaluation of a plausible (logical) connection between the categories of description found in this study and the idea of *Learning Orientations* presented by Taylor (1981). It *explores* if there are any specific orientations to learning that predispose the students towards adopting a particular way of experiencing learning technology.

In Chapter *Five*, I discussed these research findings in light of relevant literature to assess the contribution it makes to the existing body of knowledge. It highlighted how two of the categories, i.e. engaged and instrumental experience, link closely to the established phenomenographic concepts of *deep and surface level* approach to

learning (Marton & Säljö, 1976). The third category, around the alienated experience of learning technology, offered a *transitional* dimension, in which the students described how their socio-economic and cultural backgrounds influenced their experience of learning technology. Based on these discussion points, I extended my evaluation of the *logical connection* between students' experience of learning technology and their learning orientations (discussed in the previous chapter) to assess if this *plausible* association predispose these students towards adopting a particular approach (deep or surface) to using learning technology during their studies.

In Chapter *Six - Conclusions*, I will first present a summary of the findings to highlight the research gaps my study has attempted to fill. This recap has helped me to identify the research contributions of this study, its implications for various stakeholders, and some of its limitations. Keeping these aspects in mind, I propose some directions for future research. The last section of the chapter is my reflections on how my doctoral study research journey has affected me as a student, teacher, and researcher.

6.2. Research Contributions

This study has explored the variation in students' experience of learning technology during their studies within an under-explored educational context of Pakistan. The data comprised descriptions of experience provided by 45 MBA students enrolled in two of the leading business schools of Pakistan.

A phenomenographic research approach was used to explore and highlight the variation in students' experience of learning technology both in terms of its *meaning* and *structure*. The three categories of description found in this study, i.e., *engaged experience*, *instrumental experience*, and *alienated experience* highlight the different ways in which these MBA students experienced learning technology during their studies. The use of the *referential/structural* framework for analysis helped examine how the

students arrived at a particular understanding and contributed to the awareness of previously unknown aspects of a phenomenon.

The contributions of this study fall into two broad areas. First, the research on students' use of technology in education, and second, students' use of technology in the Pakistani educational context. These research contributions will be discussed in the next two sub-sections.

6.2.1. Research on students' use of technology in education

This study is located within the literature on university students' use of technology in their studies. As highlighted in the literature review (see Section 2.1), the extant literature in this domain has mostly focused on examining the perspective of students based in developed countries, where issues like infrastructural development, socio-economic disparities, and digital divide are relatively less prominent. The findings of this study advance this discussion by presenting insights from the students' experience of learning technology within an educational context, where technological shifts have not been gradual. These findings highlight that in such contexts, the students tend to lose the distinction between formal and informal technologies and actively navigate through the technological options available to them for their intended educational purposes.

The existing literature in this domain, particularly the studies which examine the phenomenon of students' use of technology in developed countries, highlight that institutional systems like the LMS were more prevalent before social media and other informal digital tools became relatively mainstream. Therefore, we see a gradual shift in research studies that highlight the benefits of using institutional LMS and VLEs (for example, Escobar-Rodriguez & Monge-Lozano, 2012; Kennedy, 2009) for improving student engagement and academic performance to those which explore the educational potential of informal digital tools, particularly the social media platforms (Bryant, 2017; Dalsgaard, 2016; Lambić, 2016). The findings of this study distinguish themselves from the published literature in this domain, as there was no evidence of a *systematic transition* of students from formal to informal digital technologies during

their academic work. These students described being *simultaneously exposed* to both *formal systems* provided to them by their institutions such as LMS, and other *informal digital tools* they *opted* to use themselves, such as social media platforms or smartphone applications, for completing their academic tasks.

Despite a rapid increase in research that explores the educational potential of informal digital tools, such as Facebook, Twitter, YouTube, or Skype, most of these studies initially adopted a somewhat sceptical approach. In some of these studies (see, for example, Deng & Tavares, 2013; Fewkes & McCabe, 2012), the authors presented a comparative analysis between institutional systems and the informal digital tools to raise concerns about potential *disconnects* between the use of institutional and non-institutional systems. For example, Thomsen et al. (2016), in their study around students' use of technology in a European university, suggested that by using Facebook and other informal tools, the students were developing "...*alternative or parallel infrastructures to the institutional offerings...*" (p.93), which results in the creation of a different *socio-technical environment* as compared to their teachers.

The findings of my study, however, suggest otherwise – the students described adopting a relatively *liberal approach* about the academic utility of informal digital tools, particularly the latest smartphone applications and Social Networking Sites (SNS) like Facebook. According to the data analysis, the students described this blend of formal and informal digital tools as something that *widens the scope* of their experience of learning technology. For example, they can access a broader range of learning resources or connect with their peers through technology-mediated networks, and even explore better and more relevant career opportunities. According to the students' descriptions of experience, they have not evaluated if one form of technology is better than the other or positioned them as alternatives.

The findings also contribute to the discussion about the existence of a *possible Net Generation of university students* (see Section 2.1.2). Although there have been prior studies that provide empirical evidence to counter such claims, the findings of my study further re-affirm the stance of researchers like Ellis and Goodyear (2010), Jones

et al. (2010) and Selwyn (2008) by providing evidence from the Pakistani educational context. The three categories of description found in this study highlight that students of similar age-groups (and generation) experience learning technology in different ways, despite being present in the same learning environment and even the same classroom. Therefore, as Ellis and Goodyear (2010) stated that it is dangerous to define a new generation of students only in relation to their lifelong exposure to digital technologies and any claim in this regard should be based on evidence rather than speculation.

In this study, I also discussed a *plausible*, logical connection between the students' *experience of learning technology*, their *learning orientations* (Taylor, 1981), and the choice to adopt a *deep or surface* level approach (Marton & Säljö, 1976). This discussion offers a basic understanding of how students' learning orientations and related interests (intrinsic/extrinsic) to the course of study may predispose them towards adopting a particular approach, subsequently influencing the way they use learning technology within their studies. Given that the findings of this study have highlighted how students in both business schools described learning technology as an important component of their relationship with their course of study, it could be revealing to explore further if learning orientations influence their use of technology or not.

6.2.2. Research on students' use of technology in the Pakistani educational context

The most significant contribution of this study in this domain of literature is that it brings forward the *students' voice* about the use of technology, which is, for the most part, missing in the prior literature on Pakistan's higher education sector. The existing research in this domain is quite limited, i.e., it mainly focuses on exploring broader issues such as the challenges of implementing e-learning systems, infrastructural problems, and examining the perceptions of students and teachers about technology adoption (see Section 2.3). These studies have mostly used quantitative techniques to draw statistical inferences and present generalised results without discussing any major contextual factors. This is the first phenomenographic study conducted within

the educational context of Pakistan that explores the *students' experience* of learning technology during their university studies.

A key research gap in the existing literature on Pakistan's higher education, as stated earlier, is the lack of discussion around contextual factors and how they influence the phenomenon of using technology in Pakistani universities. For example, Farid et al. (2015) concluded that there are "...many students in Pakistan not capable of supporting their studies with the latest tools" (p.167); however, the authors do not discuss any contextual factors to explain how they were able to draw such a conclusion. Some of these studies give the impression that students, in general, do not have access to the latest digital technologies and therefore lack an appropriate level of technical understanding.

In this study, however, I found a significant variation in this regard. Although the students in both the business schools associated different meanings to their experience of learning technology, the majority of them described and, at times, demonstrated how they interacted with a range of digital tools during their studies. According to the students' descriptions of experience, there was variation in their prior exposures to technology and other contextual factors such as their previous educational experiences and socio-economic backgrounds. Therefore, as a researcher, it became more important for me to discuss and highlight these findings with reference to the *context* in which they were situated and avoid abstraction and generalisation.

This study also contributes to the existing research on the *use of technology in business education* in Pakistan. The prior studies (for example, Ellahi et al., 2017; Iqbal et al., 2017; Islam et al., 2018) mostly highlight the views of students, teachers, and management of business schools about the *impact* of technological advancements on business education (see Section 2.3.2). The findings of this study not only present insights from MBA students' experience of learning technology but also discern and highlight certain *structural aspects* of this experience, e.g., the changing format of MBA

education in Pakistan and the increased integration of technology within the course designs.

One of the significant contributions of this study is that the findings also reveal the flip side of the story as well. The students' description of an alienated experience of learning technology offered a *transitional* dimension. In this category, the students (mostly from materially disadvantaged backgrounds) described the interplay of various contextual factors as they transitioned from an initial phase of isolation to having a more engaged or instrumental experience of technology. Most of these students described being enrolled under the *outreach programme*, having little or no prior exposure to technology. Within their descriptions of experience, there is an element of *consistent struggle* during the first few semesters when they are trying to adjust into a new learning environment, connect with peers and teachers and eventually become part of the larger social group within their university. This transitional dimension further illuminates the distinction between the more desirable and less desirable ways of experiencing learning technology, as described by the students.

The findings of the study also highlight the influence of teachers and their teaching approaches on students' experience of learning technology. The position and role of teachers in Pakistani universities are highly esteemed. However, this often encourages teachers to see themselves as *authority figures* who can strongly influence all aspects of their students' learning - including the use of technology. According to the students' descriptions, some of them struggled to deal with the *variation* in teaching approaches and, at times, the *pre-conceived expectations* of their teachers regarding the use of technology. Such findings offer new insights to the teachers at these business schools to think about their students' experience of learning technology in ways they might not have considered before. They also provide an opportunity for these teachers to reflect on the use and role of learning technology in their teaching approaches.

As stated earlier, an important aspect that emerged from the findings of this study was that the role and use of technology within this under-explored educational context of Pakistan appeared to be *undergoing* a change. During interviews and follow-up meetings with the faculty and management of these institutions, there was less *scepticism* about using technology in education, particularly the informal digital tools such as social media platforms and smartphone applications. Within the students' descriptions, there was an understanding that the use of both formal and informal digital tools in academic work was providing them with an opportunity to seek help and support *beyond* the boundaries of their classrooms and from people *other* than their teachers – a phenomenon not very common in Pakistani universities.

This section illustrated how using a phenomenographic research approach can offer insights that contribute to a better understanding of a given phenomenon.

6.3. Implications of the study

In this study, phenomenography has been used to highlight the different ways in which MBA students in two Pakistani business schools experience learning technology in their studies. These findings offer *new insights* about a phenomenon for people to reflect upon and make *considered judgements* on the relevance of the categories of description either with their context or a different one. As stated earlier, the categories of description presented in this study provide an opportunity to both the business schools to examine how their students experience a range of digital technologies during their studies.

One important aspect that emerged from the findings was that some of the students, particularly in BS-2, described not being able to comprehend the *connection* between their academic work and the use of technology. They were using a variety of tools for their assignments or projects either to meet the course requirements or because their teachers had instructed them to do so. The findings of this study can be used as a point of departure for initiating an institutional effort to understand and clarify the role of technology within the MBA curriculum and corresponding course

designs. There should be a connection between the choice of a particular tool and its utility in a specific academic activity, such as an assignment or a research project. This might make it easier for students to have a clearer understanding of the use of technology in their studies.

The findings of this study can be used by the academic staff in these business schools to help their students reflect on their experiences, and further, explore the *self-study opportunities* provided through the use of latest digital tools. They could also guide their students to develop a more precise understanding of the help and support available to them beyond the classrooms, in the form of online platforms. These digital platforms provide access to a *broader range* of learning resources and *24/7 connectivity* to the students with their peers, teachers, and the wider learning community. According to the students' descriptions, having simultaneous exposure to both institutional and non-institutional (e.g. Facebook, WhatsApp, Skype, etc.) systems enabled them to develop *technology-mediated informal peer networks*. These networks allowed the students to work *with* and *across* their differences related to socio-economic backgrounds or prior exposures to technology during early education. The academic staff in these business schools can utilise such findings to explore how institutional support can be provided to such student-led initiatives.

In this study, the students at both the business schools described an extensive reliance on informal digital tools, particularly the social media platforms and smartphone applications. These students also described how the support and response of the teachers (and at times, the management) towards the use of such digital tools significantly varied. The teachers and administration of both the business schools can use the findings of this study to evaluate the extent to which informal tools could be used for educational purposes and the kind of institutional support which could be extended to the students. The staff and students can work together to evaluate the educational potential of such digital tools, particularly the social media platforms, from a more academic rather than a social perspective.

The students also described how they were using different online tools and websites to explore better internship and employment opportunities, as the improving technological infrastructure in the country (e.g. better Internet coverage and speed) was proving beneficial for them. Similarly, according to the students' descriptions, the opportunities for professional skill development, such as the provision of free online courses and certification exams, allowed them to become *more aware of and better prepared for* the jobs market, particularly in the final year of their studies. Furthermore, online career portals like LinkedIn helped the students to build up professional networks and connections with potential employers while still at university. Such findings could be used by staff in the Career Development Offices at both business schools to evaluate how their students could use the latest digital tools or online portals (during or after completing their studies) to explore better career prospects, establish professional contacts, and develop their skills.

With regard to the role and use of technology within teaching approaches, the students in both business schools described a serious lack of consistency. They described the variation in the approaches taken by their teachers, with some encouraging them to use a variety of digital tools and others restricting them to textbooks and class notes. Such aspects of the findings can be used by faculty members in these business schools to review their teaching approaches and bring some consistency in them, particularly regarding the use and role of technology in their pedagogical practices.

From an institutional perspective, the *outreach scholarship programme* is an important initiative launched by the Pakistani government to provide talented yet financially challenged students from rural areas of the country with a chance to study at leading institutions on full scholarships. It is also important to point out that during a follow-up discussion with the faculty at one of the business schools, some of them were not aware of the exact number of MBA students enrolled under the outreach programme – raising the question of whether the teachers understand how their students use learning technology in their studies, given the diversity within the student population? The findings of this study, particularly around the students'

alienated experience of technology and how they transition through the experience of technology, could be a good starting point for both institutions to understand the underlying issues and concerns of these students. The referential and structural aspects within the students' experience of technology, mainly the components of the *internal horizons*, (see Sections 4.3 & 4.4) could facilitate the business schools to redesign their training & orientation programmes for the outreach students.

Similarly, the findings also offer an opportunity for these business schools to evaluate the effectiveness of their initiatives and investments around the development and up-gradation of their technological infrastructure and the facilities provided to the students. Universities in Pakistan are working under the government's Higher Education Commission (HEC) to develop the technological facilities being offered to the on-campus students (e.g. free laptops, provision of high-speed internet, upgraded computer labs, etc.)⁶. However, in this study, some of the students did raise concerns about the issues of access and availability of IT systems within the university. In particular, the management of BS-2 can use the findings of this study to prioritise certain initiatives, such as the deployment of a functional learning management system, ensuring student access to digital libraries and other learning resources, upgrading the computer labs and the internet facilities at the campus.

The use of phenomenography as a research approach in this study has facilitated in generating new insights about the students' use of learning technology within an under-explored educational context of Pakistan. As stated earlier, these findings present an opportunity for the readers to make considered judgments on their relevance to their context and take on these new insights as they see appropriate to their own situation. The administration of both business schools has already asked me to prepare a comprehensive report for them around the main findings of this study, its implications, and some actionable recommendations. I will be presenting this report to them after the completion of my doctoral studies.

⁶ Details about the initiatives of Pakistan's Higher Education Commission for the university students can be found at: <https://hec.gov.pk/english/services/students/Pages/default.aspx>

6.4. Limitations of the study

In this chapter, while reflecting upon the key findings, research contributions, and implications of my study, I am also aware of certain limitations present in it. Some of these limitations relate to the research context of my research, while others are associated with certain aspects that emerged during the data collection and analysis. Although I am explaining these points under the heading of limitations, I feel most relate to aspects that can be further explored in a future research study, possibly by using another research approach.

The findings of the study highlight the different ways in which MBA students experience learning technology during their studies. The data comprised of students' descriptions of experience collected from two of the leading business schools in Pakistan. Hence, a possible limitation of this study is that the findings are context-specific, i.e., focusing on the students' descriptions of experience in these two business schools only. Pakistan is a country with diverse socio-economic, cultural, and demographic realities (see Section 1.5). Therefore, there is a possibility that MBA students in other business schools of the country might experience learning technology differently, with both the referential and structural aspects varying significantly from the ones found in this study. However, the phenomenographic research approach adopted in this study has generated insights about students' experience of learning technology in this specific context, which provides a new language and way of observing equivalent scenarios.

From a methodological point of view, phenomenography does not claim to illuminate all aspects present within the experience of a phenomenon. Some of the students described the challenges they faced while using technology during their studies, due to social, cultural, economic, or religious factors in Pakistan. Similarly, some female students highlighted certain gender-specific issues present within their experience of learning technology in a Pakistani business school. Although the phenomenographic data analysis helped understand some of these contextual factors, it was not possible to explicitly discuss and interpret these sociocultural dimensions.

Therefore, in this study, I have not made claims for these dimensions of students' experience of learning technology in their MBA studies. The findings present a *collective perspective* of the research participants and do not consider individual aspects of the students' descriptions of experience.

Before the data collection, I approached both business schools with a request to interview their MBA students. I was not aware that both schools were running *outreach scholarship programmes* (OSP), and some of their MBA students were coming from relatively less developed rural areas of Pakistan. It was thanks to the voluntary nature of interviewee selection that I had the opportunity to interact with some of these OSP students. These students described details of their socio-economic and cultural backgrounds and how this influenced their use of technology. This brought a new dimension into this study; however, it might have been better to create some categories or divisions for the participants, possibly to explore further variation within multiple student groups in the same learning environment.

Finally, this study has focused on exploring the *referential* and *structural* aspects of students' experience of learning technology. The use of analytical frameworks in phenomenography allows researchers to examine how particular understandings are arrived at and contributes to an awareness of previously unknown aspects of a phenomenon. As Åkerlind (2005) notes, the nature of phenomenographic research is descriptive and interpretive, rather than explanatory; hence the focus lies in "*investigating what sort of differences in meaning and understanding occur across individuals rather than to attempt to explain or investigate causes of these differences*" (p.8). Therefore, the categories of description and their logical relationships highlight the distinction between more desirable (or powerful) and less desirable ways of experiencing learning technology; they do not point to any *optimal* solutions. Similarly, I also discuss a *plausible*, logical connection between students' ways of experiencing learning technology, their learning orientations, and the subsequent approaches they adopt. The purpose of examining such aspects in this study was that some of these points could prove useful in informing future research studies aiming to explore actionable

and practical ways of enhancing students' experience of learning technology in Pakistan.

Despite these limitations, the phenomenographic research approach has been useful in examining the relatively under-explored context of Pakistani business schools. More importantly, it has highlighted the somewhat *unheard voice* of students studying in relatively less tech-savvy and more instructor-led learning environments. The next section discusses some aspects that could be explored further in future research studies, possibly through a different research focus or different research methodologies.

6.5. Future research directions

It is important to note that some of the aspects discussed in this section were not considered until the data collection and analysis. It was during the analysis that I began to think about certain questions that fell beyond the scope of a phenomenographic study and which could be explored in a future study. In this study, the use of phenomenography as a research approach has helped in presenting insights from an under-explored educational context of Pakistan. This approach could be used to conduct similar studies around the students' experience of learning technology in other developing countries. This could help to understand the similarities or differences in students' experience of this phenomenon in other similar contexts.

Considering the limitations discussed in the preceding section, future research could further explore the referential and structural aspects present in each of the three categories of description. Particularly, the structural aspect discussed elements present in the internal and external horizons of students' experience, e.g., their prior exposure to technology, socio-economic backgrounds, adjusting with the changing format of MBA studies, etc. These aspects provide a point of departure for subsequent research that might focus on each of these elements to explore practical ways of encouraging the students to experience learning technology more desirably. For

example, a future research study could use the *Developmental Phenomenography* approach developed by Bowden (2005). In this methodology, the research outcomes are not an end in themselves but are a means of solving a problem or addressing an issue.

In this study, some of the students enrolled under the outreach scholarship programme often described contextual factors pertinent to their socio-economic backgrounds and prior exposures to technology. They explain how such factors influence their present-day experience of learning technology during their MBA studies. Some of these students described an alienated experience of learning technology in which they initially felt isolated from their peers, teachers, and the overall environment, as they were unable to use technology in a way *expected* of them. Within their descriptions, the students have shared how they gradually transitioned towards a more engaged or instrumental experience. Such findings could be useful for future research studies that aim to further explore this *transitional dimension* present within the experience of learning technology of students coming from materially disadvantaged backgrounds. A more focused future research direction in this domain could be to explore *the underlying issues and concerns of students enrolled under these outreach programmes* concerning the use of technology, and how these programmes can be redesigned to incorporate any technology-related training and courses in them. It could be interesting to explore in the light of this study's findings *how many (if any) OSP students drop out because of the difficulties they face with no prior exposure to technology.*

The emerging role and use of social media platforms and smartphone applications was an important aspect of the data analysis and my observations during the fieldwork. In recent years, the use of social media in education has become an important strand of research, with researchers exploring the benefits and downsides of using SNS such as Facebook, Twitter, etc. as educational tools. Therefore, it could be useful to explore *how social media are being perceived, understood, and used as educational tools* in the context of a developing country. Furthermore, the students also described the increasing use of social media (e.g., Facebook) and other informal digital

tools for student-teacher communication. Apart from the effectiveness of such communication mediums, there is a growing debate in the literature around their ethical aspects. By considering the complexities of available ethical frameworks, future research could analyse the ethical issues around student-teacher communication via social media platforms and the corresponding productive educational possibilities they offer.

Similarly, the findings of this study are snapshots that reflect the descriptions of students at a specific time; as Åkerlind (2005) states, phenomenographic data represent a snapshot of the ways of experiencing the phenomenon by a particular group of people at a particular time and in response to a particular situation. It is possible that their experience may develop and change over time, and this, too could be researched. A future phenomenographic study could be designed to examine *the evolving or developing ways of experiencing learning technology*. The results of such research could have substantial implications for improving the quality of teaching and learning.

Finally, I have discussed a plausible association between the concept of students' learning orientations Taylor (1981), their experience of technology and the subsequent approach (deep or surface) adopted by them. It would be interesting to explore in more depth if the learning orientations of students influence their understanding about the use of technology during studies and if this predisposes them towards adopting a particular approach when interacting with learning technology.

6.6. Reflections on the research journey

In the introductory chapter, I described the background, motivation, and rationale for conducting this research study. Some of those points emerged from the review of relevant literature, while others were related to my own interests in exploring the learners' experience of technology. I have taught in Pakistani universities for a few years and have often observed the students interact with learning technology in different ways. As a teacher, I could see these differences but

was not sure how to conceptualise them. The available literature on Pakistan's higher education sector had its limitations and did not offer much help. For example, the students' perspective and voice on issues around the use of technology in education, for the most part, appeared to be missing. Therefore, for me, this research study was an attempt to bring forward the somewhat unheard voice of Pakistani students.

While spending considerable time on the campuses of these business schools and listening to both students and faculty, I observed that the learning environments in Pakistani universities are not as traditional and instructor-led as the literature portrays them, or when I was studying in them. There was a better understanding of the role and use of technology in education, at both individual and institutional levels. Although there were variations in the students' descriptions of their experience of learning technology, some common features included the frequent use of digital learning resources, having personal computing gadgets and devices, 24/7 connectivity with other students and teachers, extensive use of social media platforms, and a more informed approach to career planning. Educational settings in Pakistan have traditionally been instructor-led, i.e., the teacher is regarded as the central authoritative figure within the environment. However, as per the findings of this study and my observations during the fieldwork, there is a growing realisation among students that technology can be used to seek help beyond the classroom boundaries and from people other than their teachers.

I will be returning to Pakistan after completing my doctoral studies to work at a university. I feel this research journey and the findings have provided me with an opportunity to become more aware and more conscious of my students' experience of technology. As I look back on this research journey of around four years, I feel it has acted as a *transitional phase* for me. I came from that learning environment, and now I am going back to it, the only difference is this research study and the personal transition it has entailed. As a teacher, I will be able to adopt a more research-informed teaching approach that attempts to address students' issues with and concerns about the use of technology.

6.7. Use of learning technology: in and after COVID-19

It was while writing this chapter that the coronavirus (COVID-19) pandemic broke out and significantly impacted our lives. As lockdowns became the *new normal*, the crisis forced us to change the way we interact with each other. The educational sector has also been badly affected by the situation. The closure of educational institutions and the emergency shift to online teaching and learning is being considered as one of the vital steps for containing the further spread of the virus.

In Pakistan, the situation is no different. The Higher Education Commission (HEC) ordered all universities to conduct their academic activities through online learning platforms, without assessing if the universities had the required technological infrastructure for such an emergency transition. This directive was met with stiff resistance from both students and teachers, as it once again brought into the limelight the digital divide and disparities in socio-economic backgrounds present in the country. Teachers and other academic staff in the universities cited their reservations about the lack of training on the latest digital tools. At the same time, students (particularly those living in remote/ rural areas) were more concerned about the unavailability of the required technological support (e.g., Internet connection, mobile signals, etc.). Therefore, by assessing such ground realities, HEC Pakistan reversed its decision and closed all universities in the country. It asked the universities, particularly those that were not ready for this emergency transition to overcome their technological, technical, or spatial limitations and carefully plan, train and equip themselves for a prolonged period of online teaching and learning (Gabol, 2020).

As the universities in Pakistan explore their options for relaunching their academic activities by incorporating various types of learning technology, the following aspects of this study's findings could be considered as actionable recommendations:

- The students described using both formal and informal types of technology together for their academic activities. For those universities with an underdeveloped technological infrastructure, it might be too resource-intensive at this time to deploy formal institutional systems such as LMS. In this study, students in both business schools were using WhatsApp and Facebook groups to share learning resources, academic discussions, project coordination, etc. At this point, the institutions could encourage the students to use the digital technologies with which they are already familiar, rather than pushing them to use newly deployed, unfamiliar systems that might require intensive user training, etc.
- One of the vital aspects of online teaching and learning is *connectivity*. In this study, the students described the formation of technology-mediated informal peer networks/ groups. The students used these groups for communication, coordination, and collaboration during academic activities. Some of the students described using these groups to remain updated about the educational activities going on in class, e.g., assessment deadlines, lecture materials, important messages from teachers, etc. The institutions could coordinate with the class representatives (CR) managing these online groups to use them as the preferred mode of communication.
- Similarly, some of the students described the concept of *Skype Study*, in which a group of students conducted online study sessions before the exams. It could be useful to extend the scope of such initiatives.
- The students in both business schools shared their concerns about the variation in teaching approaches concerning the use of technology. This crisis has provided an opportunity to provide much-needed training to teachers on various types of learning technology, particularly the latest digital tools, such as Microsoft Teams, Skype, and social media platforms.

Given the current situation, one cannot help but wonder how the landscape of Pakistan's higher education sector will change once this crisis dissipates. Although it might be unwise to make predictions at the moment, and the lens through which the situation is being analysed is somewhat misted up, these recommendations can assist

future evaluations that will occur once life returns to normal. As Dennis (2020) rightly says, "...COVID-19 has created a new world order requiring a shift in perspective and necessitating thinking in different ways" (para.23).

Summary and Concluding Remarks

This chapter has presented the conclusions of this study and highlighted its research contributions. The chapter has conducted a brief review of my research journey to assess the outcomes, implications, and limitations of this study. This study has explored the variation in MBA students' experience of learning technology within their studies. The study was located in the context of two Pakistani business schools. With the extensive technological advances over the years, research studies in this area (based in the educational context of developed countries) are witnessing a gradual shift from exploring the benefits of formal (institutional) systems to less formal digital tools, like social media platforms and smartphone applications. The findings of my study do not find evidence of such a systematic transition, as the students described being simultaneously exposed to formal institutional systems like LMS and other informal tools like Facebook, WhatsApp, Skype, etc. In this study, the students' *experience of technology* represented their experience of both formal systems provided to them by their institutions, as well as informal tools of their own choice. It was this blend of digital technologies that shaped their experience of technology and created learning opportunities for them.

In this study, I did not intend to rank digital tools in terms of their effectiveness for student learning or to find optimal solutions to experiencing learning technology. The research aim of the study was to explore how MBA students experience learning technology within a learning environment that is relatively less tech-savvy as compared to developed countries and is still mostly instructor-led. Using a phenomenographic research approach, I identified three categories of description, *engaged*, *instrumental*, and *alienated*, that highlight the different ways in which the students described their experience of technology. The use of the analytical framework of *structured awareness* facilitated discerning the referential and structural

aspects of the students' experience to examine how particular understandings are arrived at and uncover the relatively unknown aspects of a phenomenon. In this study, the framework also helped me to highlight the *contextual factors* within which this experience was situated.

Before writing this final section, I was browsing through the latest news around the COVID-19 crisis and the innovative ways in which the developed countries are trying to restore normality in all spheres of life, including the educational sector. In Pakistan, educational institutions remain closed as the technological infrastructure, social inequalities, disproportionate access to education, and, most importantly, the mindset is not yet ready to accept online teaching and learning. This made me wonder if my research study can serve as a *little drop in the mighty ocean* of the higher education landscape of Pakistan.

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Appendices

Appendix 1A - Participant Information Sheet(s) in English



Participant information sheet

I am a researcher/Ph.D. student at Lancaster University UK, and I would like to invite you to take part in a research study analysing students' experiences of using Learning Technology in Management Education. Please take the time to read the following information carefully before you decide whether or not you wish to take part.

What is the study about?

The study aims at exploring students' experiences of learning technology in Management Education. The study is based in a Pakistani context to understand how business students are using technology in a relatively less developed part of the world.

Why have I been invited?

I have approached you because I am interested in exploring the lived experiences of business students about using learning technologies within their classrooms.

I would be very grateful if you would agree to take part in this study.

What will I be asked to do if I take part?

If you decide to take part, it will involve up to 60 minutes' interview, describing your experience of using learning technology within your studies. You will be asked questions such as *What does the use of learning technology mean to you?* And *how do you use learning technology within your education?* With your permission, the interview will be recorded.

Please feel free to ask any questions that you may have about the study or your participation in it.

What are the possible benefits of taking part?

If you take part in this study, it will help in understanding students' perceptions about the use of technology in management education. Through your help, this study can assist in bringing forward the voice of one of the primary stakeholders in the phenomenon of using technology for educational purposes, i.e., the learner.

Do I have to take part?

No. It is entirely up to you to decide whether or not you take part. Your participation is voluntary. If you choose not to take part in this study, this will not affect your studies and the way you are assessed on any of your courses.

What if I change my mind?

If you change your mind before or during the interview, you are free to withdraw at any time. After the interview is completed, if you want to withdraw, please let me know within two weeks, so that I will extract any ideas or information you contributed to the study and destroy them. However, after two weeks, it will be difficult and often impossible to take out data from one specific participant when this has already been anonymised or pooled together with other people's data.

What are the possible disadvantages and risks of taking part?

There are no major disadvantages of taking part; however, taking part will mean investing around 60 minutes of your time for the interview.

Will my data be identifiable?

After the interview and until the submission of my thesis, only I, the researcher conducting this study, and my supervisors will have access to the ideas you share with me. After thesis submission, fully anonymized data will be deposited to Lancaster University's institutional repository, which will then

provide access through appropriate data licenses. I will keep all personal information about you (e.g., your name and any other information that can identify you) confidential and will not share with others.

How will we use the information you have shared with me, and what will happen to the results of the research study?

I will use the information you have shared with me only in the following ways:

- I will use it for research purposes only. This will include my Ph.D. thesis and other publications, for example, journal articles. I may also present the results of my study at academic conferences.
- When writing up the findings from this study, I would like to reproduce some of the views and ideas you shared with me. I will only use anonymised quotes (e.g., from my interview with you) so that although I will use your exact words, you cannot be identified in our publications.

How will my data be stored?

Your data will be stored in encrypted files (that is no-one other than me, the researcher will be able to access them) and on password-protected computers. I will store hard copies of any data securely in locked cabinets in my office. I will keep data that can identify you separately from non-personal information (e.g., your views on a specific topic). In accordance with University guidelines, I will keep the data securely for a minimum of ten years.

The data will be deposited to the Lancaster University institutional repository, which can be made available to future researchers, with an appropriate data license. The university has its mechanisms for keeping the data secure. I will exclude all personal data from archiving.

Who has reviewed the project?

This study has been reviewed and approved by the Faculty of Arts and Social Sciences and Lancaster Management School's Research Ethics Committee.

What if I have a question or concern?

If you have any queries or if you are unhappy with anything that happens concerning your participation in the study, please contact myself or my supervisors.

Ahmad Timsal
Department of Leadership and Management
Charles Carter Building, Lancaster University
Lancaster, LA1 4YX

Thank you for considering your participation in this project.

Appendix 1B - Participant Information Sheet(s) in Urdu



تحقیقی پراجیکٹ کا عنوان: مینجمنٹ کی تعلیم میں لرننگ ٹیکنالوجی کے استعمال کے حوالے سے طالب علموں کے تجربات میں ”یکے میں معیاری فرق کی تجزیاتی تحقیق“
(PHENOMENOGRAPHIC ANALYSIS OF STUDENTS' EXPERIENCES WITH USING
LEARNING TECHNOLOGY IN MANAGEMENT EDUCATION)

سٹڈی کے شرکاء کیلئے معلوماتی شیٹ

میں رکا سٹریونیورسٹی انگلستان میں پی ایچ ڈی کا طالب علم/ریسرچر ہوں اور میں ریسرچ سٹڈی بعنوان ”مینجمنٹ کی تعلیم میں لرننگ ٹیکنالوجی کے استعمال کے حوالے سے طالب علموں کے تجربات میں یکے میں معیاری فرق کی تجزیاتی تحقیق“ میں آپ کو شرکت کی دعوت دینا چاہتا ہوں۔
مندرجہ ذیل معلومات کو جہ سے پڑھنے کیلئے ذرا توقف کیجئے یا غور کیلئے ذرا وقت دیجئے تاکہ آپ یہ فیصلہ کر سکیں کہ آپ اس میں شریک ہونا چاہتے ہیں یا نہیں؟

یہ سٹڈی کس بارے میں ہے؟

یہ سٹڈی دراصل مینجمنٹ کی تعلیم میں لرننگ ٹیکنالوجی کے استعمال سے متعلق طالب علموں کے تجربات کو جاننے کی سٹڈی ہے۔ یہ سٹڈی پاکستانی سیاق و سباق یا تناظر میں یہ سمجھنے کی کوشش ہے کہ دنیا کے نسبتاً کم ترقی یافتہ حصے میں بزنس کے طالب علم ٹیکنالوجی کا استعمال کیسے کر رہے ہیں؟

آپ کو اس سٹڈی میں شریک کرنے کا سبب؟

میں آپ تک اس لئے پہنچا ہوں کہ میں بزنس کے طالب علموں کے حقیقی تجربات کو سمجھنے میں دلچسپی رکھتا ہوں جو اپنے کلاس روم میں لرننگ ٹیکنالوجی کا استعمال کرتے ہیں۔
میں آپ کا بہت ممنون ہوں گا اگر آپ اس سٹڈی میں شرکت پر آمادہ ہو جائیں۔

اس سٹڈی میں شرکت کے بعد آپ سے کیا پوچھا جائیگا؟

اگر آپ نے اس سٹڈی میں شرکت کا فیصلہ کیا تو کم و بیش 60 منٹ کا ایک انٹرویو ہوگا جس میں آپ اپنی تعلیم کے دوران لرننگ ٹیکنالوجی کے استعمال کے تجربات بیان کریں گے۔
آپ سے اس طرح کے سوالات کئے جائیں گے کہ لرننگ ٹیکنالوجی کے استعمال سے آپ کی امیدیں لیتے ہیں؟ آپ اپنی تعلیم کے دوران لرننگ ٹیکنالوجی کیسے استعمال کرتے ہیں؟
آپ کی اجازت سے یہ انٹرویو ریکارڈ بھی کیا جائیگا۔

براہ کرم اس حوالے سے آپ کے ذہن میں کچھ سوالات ہیں تو پوچھئے۔

اس سٹڈی میں شریک ہونے کے کیا فوائد یا اثرات ہو سکتے ہیں؟

اگر آپ اس سٹڈی میں شریک ہوتے ہیں تو یہ مینجمنٹ ایجوکیشن میں لرننگ ٹیکنالوجی کے استعمال سے متعلق طالب علموں کے تصورات کو سمجھنے میں مددگار ہوگی۔ آپ کی مدد سے یہ سٹڈی تعلیمی مقاصد کیلئے ٹیکنالوجی کے استعمال کے بنیادی ذمہ دار یعنی طالب علم کی آواز یا نقطہ نظر کو سامنے لائے گی۔

کیا آپ کو اس میں ضرور شریک ہونا ہے؟

نہیں، اس کا مکمل انحصار آپ پر ہے آپ کو خود فیصلہ کرنا ہے کہ آپ اس میں شریک ہونگے یا نہیں۔ آپ کی شرکت رضا کارانہ ہے اگر آپ اس سٹڈی میں شریک نہیں ہونا چاہیں گے تو اس کا کوئی منفی اثر آپ کی پڑھائی یا آپ کے کورسز کی جانچ پر نہیں ہوگا۔

اگر آپ اپنا ارادہ بدل دیں تو؟

اگر آپ انٹرویو سے پہلے یا اس کے دوران اپنا ارادہ بدل دیتے ہیں تو آپ آزاد ہیں کہ اس سے علیحدہ ہو جائیں اور اگر انٹرویو مکمل ہونے کے بعد آپ اس سے الگ ہونا چاہتے ہیں تو مجھے دو ہفتے کے اندر مطلع کیجئے تاکہ میں معلومات کے اس حصے کو جو آپ نے فراہم کیا اپنی سٹڈی سے خارج کر سکوں یا ضائع کر سکوں تاہم دو ہفتے گزرنے کے بعد یہ مشکل ہو جائیگا بلکہ تقریباً ممکن کہ کسی خاص شریک کا ڈیٹا معلومات کے اس پول میں سے نکال دیا جائے جہاں وہ شناخت کے بغیر رکھ دیا گیا ہوگا۔

اس سٹڈی میں شرکت کرنے میں کوئی نقصانات بھی ہیں؟

اس میں شرکت کرتے ہوئے کوئی بڑا نقصان نہیں تاہم آپ کو شریک ہونے کے بعد انٹرویو کیلئے اپنے وقت میں سے 60 منٹ دینے ہوں گے۔

کیا آپ کی معلومات کی شناخت کی جاسکے گی؟

آپ کے انٹرویو کے بعد سے لیکر میرے تھیسس جمع کرانے تک آپ کی فراہم کردہ معلومات تک میری یا میرے گھرانے کی رسائی ہوگی البتہ تھیسس جمع کرانے کے بعد شناخت کے بغیر تمام معلومات انکا سٹریٹیجی کے شعبہ جاتی ذخیرے میں جمع کرا دی جائیں گی جو ایک مناسب ڈیٹا لائنس کے بغیر کسی کو ہاں تک رسائی نہیں دے گا۔ میں آپ سے متعلق تمام تر شخصی معلومات (جیسے آپ کا نام ایسی معلومات جو آپ کی پہچان میں مددگار ہو) کو محفوظ رکھوں گا اور کسی کو اس میں شریک نہیں کروں گا۔

آپ کی فراہم کردہ معلومات کو کیسے استعمال کیا جائے گا اور ریسرچ سٹڈی کے نتائج کے بعد کیا ہوگا؟

آپ کی فراہم کردہ معلومات کو میں مندرجہ ذیل انداز میں استعمال کروں گا۔

1- میں اسے تحقیقی مقصد کیلئے ہی استعمال کروں گا جس کا مطلب میرا اپنی ایچ ڈی کا مقالہ اور دیگر مطبوعات ہیں جیسے کسی تحقیقی جریدے کیلئے مقالات، میں علمی کانفرنسوں میں بھی ان نتائج کو پیش کروں گا۔

2- جب میں اس سٹڈی کے نتائج کے بارے میں کھوں گا تو میں ان تصورات اور خیالات کو بھی بیان کروں گا جو آپ میرے علم میں لائے ہو گئے، میں صرف شناخت کے بغیر حوالے دوں گا (جیسے آپ سے میرا انٹرویو) تا کہ میں آپ کے پورے الفاظ استعمال کروں گا مگر میری مطبوعات میں آپ کی پہچان نہیں ہو سکے گی۔

معلومات کو کیسے محفوظ کیا جائے گا؟

آپ کا تمام ڈیٹا Encrypted فائلوں میں محفوظ ہوگا (گویا ریسرچر کے علاوہ کوئی بھی ان فائلوں تک رسائی حاصل نہیں کر سکتے گا) اور ایسے کمپیوٹروں میں محفوظ ہوگا جس کی حفاظت مخصوص پاس ورڈ کیلئے میں ایسی معلومات کی دستاویزات کو اپنے دفتر کی منتقلی درازوں میں محفوظ رکھوں گا میں ان معلومات کو ذاتی معلومات سے جدا کر کے رکھوں گا۔ (جیسے کسی خاص موضوع پر آپ کا نقطہ نظر) یونیورسٹی کے رہنما اصولوں کے مطابق اس ڈیٹا کو کم از کم 10 سال تک محفوظ رکھا جائے گا۔ یہ معلومات انکا سٹریٹیجی کے شعبہ جاتی ذخیرے میں رکھی جائیں گی جو مناسب ڈیٹا لائنس کے ساتھ ہی مستعمل کے ریسرچر کی دسترس میں آئے گی۔ یونیورسٹی کے اپنے پاس بھی اس ڈیٹا کو محفوظ کرنے کے وسائل اور طریقے کار ہیں۔ میں شخصی معلومات کو نکال دوں گا جب آپ کے ڈیٹا کو آرکائیو کیا جا رہا ہوگا۔

اس تحقیقی پراجیکٹ کا جائزہ کس نے لیا ہے؟

انکا سٹریٹجیٹک سکول کی ریسرچ اٹھلکس کمیٹی اور ڈیٹا آف آرٹس اینڈ سوشل سائنسز نے اس سٹڈی کا جائزہ لیا اور اسے منظور کیا۔

اگر آپ کے تحفظات یا سوالات ہوں تو کیا کرنا چاہیے؟

اگر آپ کے پاس سوالات ہوں یا اس سٹڈی میں شریک ہونے کے بعد کچھ چیزیں آپ کو ناخوش کریں تو براہ کرم مجھ سے یا میرے سپروائزر سے رابطہ کریں۔

سپروائزر

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اگر آپ کے کچھ تحفظات ہیں یا ایسی شکایات ہیں جو آپ کسی ایسے شخص کے علم میں لانا چاہتے ہیں جو اس ریسرچ میں براہ راست شریک نہ ہو تو پھر آپ ان سے رابطہ کر سکتے ہیں۔ پروفیسر کلیرے ریچ

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اس پراجیکٹ میں اپنی شمولیت کے بارے میں غور کرنے کا شکریہ

Appendix 2B - Sample Consent Forms in Urdu



رضامندی/آمادگی کے اظہار کا فارم

تحقیقی پراجیکٹ کا عنوان: مینجمنٹ کی تعلیم میں لرننگ ٹیکنالوجی کے استعمال کے حوالے سے طالب علموں کے تجربات میں "سینے میں معیاری فرق کی تجزیاتی تحقیق"
(PHENOMENOGRAPHIC ANALYSIS OF STUDENTS' EXPERIENCES WITH USING LEARNING TECHNOLOGY IN MANAGEMENT EDUCATION)

ریسرچر کا نام: احمد تسمال

ای میل ایڈریس: a.timsal@lancaster.ac.uk

براہ کرم ہر خانے پر نشان لگائیے

<input type="checkbox"/>	1- میں تصدیق کرتا ہوں کہ میں نے اس سٹڈی سے متعلق معلوماتی شیٹ کو پڑھا اور سمجھ لیا ہے۔ مجھے موقع دیا گیا ہے کہ میں ان معلومات پر غور کروں، سوالات کروں اور تسلی بخش جواب پاؤں۔
<input type="checkbox"/>	2- میں جانتا ہوں کہ اس سٹڈی میں میری شرکت رضا کارانہ بنیاد پر ہے اور میں اس سٹڈی میں شرکت کے دو ہفتے کے اندر یہ حق رکھتا ہوں کہ میں کوئی وجہ بتائے بغیر اس سے علیحدہ ہو جاؤں۔ اگر میں دو ہفتے کے اندر اس سے علیحدہ ہوا تو میری فراہم کردہ معلومات بھی اس سٹڈی میں سے ہٹا دی جائیں گی۔
<input type="checkbox"/>	3- میں یہ بھی جانتا ہوں کہ میری فراہم کردہ معلومات آئندہ رپورٹوں، علمی مضامین، مطبوعات یا ریسرچ کے خطاب میں استعمال کی جائیں گی مگر میرے بارے میں شخصی معلومات شامل نہیں ہوں گی اور نہ ہی میری پہچان کرائی جائے گی۔
<input type="checkbox"/>	4- میں یہ بھی جانتا ہوں کہ مکمل طور پر شناخت کے بغیر یہ معلومات ایسا سٹریٹیجیوں کے شعبہ جاتی ذخیرے میں رکھی جائیں گی جس پر مستقبل کا کوئی ریسرچر مناسب ڈیٹا لائنس لے کر رسائی حاصل کر سکے گا۔
<input type="checkbox"/>	5- میں یہ بھی جانتا ہوں کہ ایسے انٹرویو کی آڈیو ریکارڈنگ ہوگی اور انہیں تحریری شکل بھی دی جائے گی۔
<input type="checkbox"/>	6- میں سمجھتا ہوں کہ میری معلومات محفوظ رہیں گی اور ان کو Encrypted Device کے ذریعے محفوظ رکھا جائے گا۔
<input type="checkbox"/>	7- میں سمجھتا ہوں کہ یونیورسٹی کے رہنما اصولوں کے مطابق اس سٹڈی کی تکمیل کے کم از کم 10 برس بعد تک ان معلومات کو محفوظ رکھا جائے گا۔
<input type="checkbox"/>	8- میں اس سٹڈی میں شمولیت کیلئے تیار ہوں۔

دستخط

تاریخ

شرکت کرنے والے کا نام

میں تصدیق کرتا ہوں کہ اس سٹڈی میں شرکت کرنے والے کو موقع دیا گیا کہ وہ اس سٹڈی کے بارے میں سوالات کر سکے، اور جو سوالات اُس نے کئے ان کا درست جواب میں نے اپنی بہترین صلاحیت کے مطابق دیا۔ میں اس بات کی بھی تصدیق کرتا ہوں کہ ایسی رضامندی حاصل کرنے کیلئے کسی پر دباؤ نہیں ڈالا گیا اور یہ رضامندی آزادی سے رضا کارانہ بنیادوں پر دی گئی۔

ریسرچر کے دستخط/رضامندی حاصل کرنے والے شخص کے دستخط

تاریخ: دن/مہینہ/سال

اس فارم کی کاپی سٹڈی میں شرکت کرنے والے کو دی جائے گی جبکہ اور تکمیل ایسا سٹریٹیجیوں کے ریسرچر کے پاس ہوگی۔

Appendix 3 - Sample Summary Sheet for Data Analysis

SUMMARY SHEET FOR BS1-02				
Sr.No.	Broad Theme / Code	WHAT was the purpose of using technology?	HOW was it being used?	Relevant Software / Tools being used
1	Access to Additional Materials & Information	Search engines for learning materials, downloading materials in variety of formats (images, videos etc.)	<ul style="list-style-type: none"> Provides in-depth knowledge, helps in getting a comprehensive picture about concepts, adds strength to work Better learning through visual aids 	Google
		Downloading articles, book chapters to be used in assignments and projects.		Jstore, BookFi, LibGen, WRDS, Lexis etc.
		Accessing lecture videos of Foreign Professors on different topics of Management	Understanding different concepts, option of playing back unlimited times	YouTube
		Access to lecture notes, assignment submissions		LMS
2	Basic Academic Work (Documents, Presentations and Spreadsheets)	Documents, Presentations and Spreadsheets for assignments and projects		MS Office
3	Staying Updated (General)	Use social media and other websites (e.g. news alerts) to have updated knowledge about business world. Helpful in academic work	Teachers encourage use of internet to find additional and updated information about course contents	
4	Cooperation	Reading Blogs to get ideas about other people's opinions and views		
5	Coordination & Communication	<ul style="list-style-type: none"> Emails with supervisors and other teachers, Social Media for friends and other students Mobile Internet (3G/4G) widely available now, so communication has become cost-effective and easy now 	<ul style="list-style-type: none"> Government provided 3G Internet Devices 	
6	Administrative Tasks (Automation)	Generating fee vouchers, viewing grades and attendance records, semester-wise results, course enrollments	Automation helped as a female student - difficult to stand outside offices with other male students for submitting manual forms	CMS
7	Improving English language skills	<ul style="list-style-type: none"> Online Courses on Writing, Speaking (especially Pronunciation) Online Dictionaries, Translation Websites Mobile Apps available and popular 	<ul style="list-style-type: none"> Curriculum in English, so at times its difficult to understand some concepts Synonyms for difficult words in articles, book chapters etc. 	Google Translate, Oxford Online Dictionary
8	Using Personal Devices Regularly	<ul style="list-style-type: none"> Laptop used for all major academic activities Smartphones for communication, using Apps, emails, text and calls etc. 	<ul style="list-style-type: none"> Government provides laptops, which are smart and easy to carry. Don't prefer to use Chat Groups as uncomfortable with 'mixed-gender' groups 	
9	Prior Exposure to Technology	<ul style="list-style-type: none"> Not allowed to use laptop or smartphone by family during school or college. 	<ul style="list-style-type: none"> Had to start using them owing to the requirements of the MBA Curriculum i.e. nature of assignments and projects. Got assistance from other students, limited guidance by teachers as they expect students getting enrolled in MBA to know all these basic tools 	
10	Infrastructure Issues	Electricity Issues, so prefer to use mobile phones and laptops. Cannot use computer labs		
11	Gender-Specific Issues	<ul style="list-style-type: none"> Not allowed to stay on campus till late evenings, so prefer to do work using digital resources and online support. 		
12	Saving Costs (and Effort)	<ul style="list-style-type: none"> Access to digital resources saves printing costs and storage requirements. Difficult to organise and store hard copy materials Travel costs to different public libraries saved 		

Appendix 4 - Data Analysis: Backend Coding

Manual effort for coding the transcripts

	<p>details with us. With LMS, I can see the grades for a particular assignment or a quiz and even the average marks for that (...) so that I am just aware of my standing in the class. Then this depends upon the teachers (...) some teachers share detailed feedback and marks on the LMS whereas some just upload the final mark and do not share any comments etc. Overall, LMS is easier to use when it comes to seeing the grades. However, the final grades and semester results like the GPA and CGPA are uploaded on CMS and obviously, we have to follow that difficult process to access and download our results.</p> <p>Again, (...) as I, said things are much better this way, for example earlier our results used to get pinned up on the notice boards and the entire world would get to see my grades and then comment on it. Now, at least they are uploaded <u>somewhere</u> and we can only access them through our own accounts.</p>		<p>Timsal, Ahmad Dependence on teachers' approach & style</p> <p>Timsal, Ahmad Use of LMS</p>
<p>TA:</p>	<p>In the start, you mentioned something about communication and collaboration and about using smartphones regularly. So during your studies, what has been your experience of using technology for communicating and collaborating?</p>		
<p>BS1-05:</p>	<p>To be very honest, I will share a very personal incident with you (...) in the initial days of university, I was quite happy and comfortable in using applications like 'WhatsApp' and 'Viber' etc. In addition, because we had this class-group on 'WhatsApp' where all the important things related to the class, courses, announcements etc. were shared so I had to use it. However, with the passage of time, I felt there was so much noise, distraction due to that group (...) there were so many messages being sent, so much news and information being shared and they used to talk to each other all the time, irrespective of days or night! I mean that if there are 50-60 people in a chat group (...) you can well imagine the chaotic scenario. All the time some agenda was being discussed and debated. I somehow felt quite disturbed due to that constant distraction. Therefore, after the first semester I decide to 'mute' the group so that I do not get constant notifications. I think because I am kind of an introvert and I do not like talking to people and making</p>		<p>Timsal, Ahmad Online chat group...distraction?</p>

<p>BS1-22:</p>	<p>technology for (...) during your studies? #00:00:31-9#</p> <p>Exactly (...) I actively take part in many business idea and policy-designing competitions organised by the Government of Pakistan, especially the Ministry of Planning and Development. These competitions are other than the regular academic work that we (...) as students have to do in the university. Therefore, until now (...) I have participated in at least four such competitions. When you are assigned the task of designing a policy (...) at the macro level (...) and for the government, you need to have sufficient amount of data and other relevant information with you. You cannot design a policy without having proper knowledge. Obviously, these days the biggest source of information is 'Internet'. So, (...) technological tools or rather 'innovations' as I call them such as 'Google', 'Wikipedia' etc. and other famous websites - even the Government of Pakistan now has official websites, with ample of data available on them like details of national level policies, working papers, minutes of meetings etc. These are very important for me (...) as I use these websites to collect data for my competitions and other projects. For example, recently I participated in a competition for which I had to design an educational policy. The question was (...) how we could improve the educational quality the country. As a starting point, (...) it was important for me to know the current statistics about the education sector of Pakistan. Therefore, technology helped me in collecting this kind of data (...) like what is the literacy rate. What is the school enrolment rate? Where we are lacking and what are the common issues, challenges etc. Therefore, (...) this was very helpful for me to design a policy write-up for the competition and to recommend the areas where the government needs to focus (...) and needs to improve certain things for the overall betterment of the education system. Therefore, this was all very helpful for me. Other than this (...) there was another event (...) where I had to deliver a speech on poverty related issues in Pakistan (...) so again 'Google' was very helpful for me (...) as it allowed me to search for several useful websites and even videos about this topic. The best part of internet for me is that you not only find a lot of information about any topic (...) but these days you also find this information in a wide variety of formats (...) for example, text, images, videos etc. You can opt to consult from a format that is most suitable for you. #00:01:53-1#</p>		<p>Timsal, Ahmad Google and Wikipedia ...</p> <p>Timsal, Ahmad Access to a wider set of digital resources using the internet</p>
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Coding using QDA software - NVIVO

Nodes			
Name	Files	References	Created On
Student_Profile		12	13 16/01/2018 13:21
USE- Academic Tasks (Plagiarism)		6	9 16/01/2018 13:22
Surface Level Approach		4	9 16/01/2018 13:23
Nature of Tasks (MBA)		12	20 16/01/2018 13:24
USE- Academic Tasks (Word,Excel etc.)		6	7 16/01/2018 13:25
USE- LMS		8	10 16/01/2018 13:26
ISSUES- Infrastructure		4	4 16/01/2018 13:29
Automation		4	7 16/01/2018 13:30
Time Management & Organisation		7	10 16/01/2018 13:31
USE- LMS (Feedback)		1	1 16/01/2018 13:48
USE- LMS (Materials, Notes)		4	4 16/01/2018 13:48
USE- LMS (Communication)		5	6 16/01/2018 13:49
USE- LMS (Discussion)		2	2 16/01/2018 13:49
Collaboration		9	14 16/01/2018 13:50
Communication		12	29 16/01/2018 13:50
Social Media		7	11 16/01/2018 13:51
HOW - Preferred Choice		13	26 16/01/2018 13:52
HOW -Laptop		13	20 16/01/2018 13:53
HOW - Smartphone		13	32 16/01/2018 13:55

<Files\NUST Business School\NB-01> - 5 3 references coded [4.68% Coverage]

Reference 1 - 1.33% Coverage

Absolutely. See, everybody will not be available at all times, right. And given that we are now doing our master's degree, most of us are also working part-time or sometimes full-time as well

Reference 2 - 1.55% Coverage

So, we usually face issues in meeting each other, even for project collaborations. So, what we do is , we usually share voice messages through WhatsApp and Facebook messenger instead of typing long messages for each other.

Reference 3 - 1.80% Coverage

We are talking about our projects, classroom activities, discussing topics, there is progress reporting on some tasks, there is prompt action on certain things, there is proper updating each other on various issues, so this really helps us, particularly me.

<Files\NUST Business School\NB-03> - 5 1 reference coded [1.69% Coverage]

Reference 1 - 1.69% Coverage

For example, these days we are working on our final year project that involves group work, so we need to communicate with each other even for very simple and basic tasks. It is like we need to involve each other in each step. So, technology usage is a must for me in almost anything that I do these days.

Appendix 5 - Sample Data Consolidation table for analysis

Sr.No.	Preliminary Category of Descriptions	Details	Transcripts #
1.	Access to Learning Materials	Recommended and additional material, Videos, Visual Aids – help in clearing concepts.	BS1-01, BS1-06
2.	Communication & Connectivity	Student to student communication via chat groups – better and quicker, formal communication with teachers via email,	BS1-01, BS-02, BS-05, BS1-09
3.	Prior Exposure to Technology.	Not allowed by family to use smartphones, limited understanding about use of technology when starting the university – took help from other students, 'expectation' to have basic IT knowledge	BS1-01, BS-12, BS-15, BS-19, BS-20, BS-21
4.	Basic Academic Work	Assignments and Projects, Automation of tasks (Course Enrolments, Fee Payments etc.)	BS-08, BS-12, BS1-14
5.	Contingency Factors	Electricity Issues – so prefer to use mobile rather than laptops, Gender-Specific Issues (late sittings)	BS-09, BS-19
6.	Self- Development	Learning English Language through online tutorials and video lectures – necessary for survival.	BS-21, BS-22, BS1-7, BS-16

Connectivity

Socio-cultural?

Key Word

Infrastructure

Improve Language