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# **Lecturers' Engagement with Digital Pedagogy in a Polytechnic in Singapore**

Boon Seong Woo

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## Abstract

This study is located at a polytechnic within the higher education sector in Singapore. As a young nation state, Singapore's transformation from a mud-flat swamp to a metropolis can be attributed to its intensive and purposeful investments in education and technology. As Singapore celebrated her golden jubilee and reflected on her achievements in 2015, she has also laid the foundation for her progress and prosperity in the Asian Century by embarking on three future-oriented initiatives which continue to emphasise the importance of education and technology. Recent education reforms such as the SkillsFuture initiative and Singapore's aspiration towards building a Smart Nation have placed polytechnics at the centre of the action. To support these national initiatives, polytechnic lecturers have to increase the online learning components in their courses, deploy more micro-learning modules and learn to use learning analytics platforms.

As one who has worked within the higher education sector for the past 20 years – as a lecturer, technology service provider, educational developer – I have witnessed the unquestioning optimism of education leaders in the apparent transformative power of technologies. Technology implementations within Singapore's higher education context is appealing as it is related to the notions of progress, development, and the preparation of her citizens for an imagined technology-rich future. However, taking such a perspective will obscure the complex interactions between the technological and the social, political and cultural contexts, and introduce certain silences into any discussion involving education and technology.

My study aims to explore and interrogate the silenced and the hidden realities in the subterranean world of digital pedagogy: how various discourses shape the identity and the practices of the lecturers in the polytechnic; how changes being made at the macro-level of the system affect the doing and being of lecturers in the polytechnic. I will achieve this aim by addressing the following research questions:

- How are lecturers constructed as they engage in the technology imperative?
- In what ways are lecturers affected as they engage in the technology imperative?
- How are pedagogical practices enacted in the online space?

I review the literature to highlight the dominant discourses that promote the use and integration of technology in higher education with the aim of unravelling the power relations between different actors and how their agendas may re-constitute the identities and re-define the work of lecturers. I take an anti-essentialist methodological stance as I do not seek to find one universal truth, but I seek to understand how multiple meanings are produced and how such productions interact with issues relating to power and privilege. Through the use of semi-structured interviews with 8 lecturers, I seek to unpack the immediate and everyday practices where neoliberalism is installed and realised in professional work and lives. I draw from Foucault's concepts of power, governmentality and discipline in my analysis and ask how the generated data relate to patterns of power. By analysing the interviews through this approach, I am able to examine how the power that is invested in social practices (both discursive and non-discursive) and through a process of discursive formation affects the production of knowledge and subject positions.

My findings reveal that lecturers are differently constructed by the dominant discourses of technology use in education. Some have come to own the discourse and see themselves as agents of change in these reforms. Others are more tentative and have expressed some forms of resistance. The production of ambivalent subjectivities can also be observed as neoliberal policies worked through the hard disciplines of measurement and visibility and the softer entreaties of self-management and self-improvement. This results in lecturers having to pay a high price of academic labour and occupational stress. I have also discovered that diverse forms of pedagogical practices were carried out when lecturers moved their courses online. These varied outcomes were caused by a confluence of different contexts and mechanisms.

This study offers a unique insight into how national and institutional policies developed by a highly technocratic and pragmatic state have come to govern the rationalities and practices of lecturers in one institution. I conclude by reviewing the ethical aim of my study and propose how higher education needs to engage with critical pedagogy. I aim to identify spaces within my professional work context where alternatives to the pragmatic and the rational may be imagined, discussed and enacted.

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## **1. Introduction**

### **1.1 Genesis of My Research**

My interest in the use of information and communications technology (ICT) for teaching and learning was first sparked by the birth of the World Wide Web in 1993. As a new teacher then, I was involved in running the computer lab and creating web pages for the school. After my teaching stint, I spent a few years working for a service provider of ICT solutions to the schools. It was an exciting time as I lived through the dot-com boom and the dot-com bust. In those years of providing various ICT solutions to schools, I have witnessed the optimism of school leaders in the apparent transformative power of ICT. I returned to teaching at the polytechnic level and have been involved in the polytechnic education sector for the past 17 years.

Polytechnic education in Singapore is for the post-secondary stage and is distinct from education offered in universities. Polytechnic education is under the purview of the Minister for Education (Higher Education & Skills), although it is more similar to the further education sector in the United Kingdom. Skill-based courses such as engineering, design and information technology are offered, and students attain a diploma at the end of their three-year course. Polytechnic education forms a large part of Singapore's higher education sector, with close to 50% of each cohort of students who have completed their secondary school education being enrolled in the five polytechnics.

After spending 11 years as a lecturer, I have spent the last six years with the educational development unit in the same polytechnic. The educational development unit oversees a wide range of programmes encompassing curriculum design, teaching and learning, and assessment. At the educational development unit, I manage a small team of colleagues who are responsible for conducting regular seminars and workshops and providing follow-up support for lecturers who intend to implement various modes of online learning. My unit is also responsible for monitoring and reporting on the implementation status of online learning by providing quarterly updates to the senior management team of the polytechnic. Senior management has stipulated quantitative figures to be reported (e.g. usage statistics of the learning management system, the number of subjects with varying degrees and components of online teaching and learning). However, my department is

more interested in supporting and enhancing the quality of the online teaching practices of the lecturers.

As part of the Ministry of Education's Polytechnic Quality Assurance Framework (PQAF), the polytechnic has undergone a second cycle of review that focuses on teaching and learning and strategic planning in the third quarter of 2014. One of the recommendations of the external review panel is for the polytechnic's ICT implementation priority in teaching and learning to be reviewed so as to reap the benefits of ICT. The polytechnic's response to the review panel's recommendation is to set targets for online learning for all courses. The targets set by management require lecturers to increase the proportion of online learning from 20% to 40% in their courses in three years, from 2015 to 2017. The rationale given to the lecturers was based on the need to provide flexible learning opportunities for students, and the need to equip them with 21st century skills. Having been a lecturer for some years before I joined the educational development unit, I can empathise with lecturers who have to support this initiative. Among the community of lecturers, there are some who will be able to respond to the mandate. There are also some who will struggle to meet the targets, and some who need more time to make sense of the rationale and its implications on their teaching practices.

While my polytechnic embarks on the above-mentioned initiative, there are also other nation-wide initiatives that impact lecturers in this area. One such initiative is the PolyMall project, where representatives from all five polytechnics in Singapore are working to procure a common learning management platform that will be shared by all polytechnics. PolyMall hosts a range of courses: (1) sample courses for prospective students of the polytechnics; (2) common courses (e.g. foundational engineering mathematics) identified by all polytechnics and deemed suitable to be shared; and (3) continuing education courses for working adults. After more than a year of hard work by the project team in which I was a member, the green light was given for it to be launched as a trial so that inputs from users and usage patterns may be gathered before the official launch. At one of the first meetings after the trial launch, members were discussing about the various statistics that we can draw from the system – What has been the access rates? How many online modules can be rolled out in the following year? How can we drive up the adoption rates? This is a familiar and unproblematic phenomenon in Singapore since we are situated within a culture that values numbers and charts, progress and advancement.

I remember during that particular meeting, this practice of challenging oneself to do more and challenging each other to achieve better outcomes began to trouble me as I tried to make sense of the immense stress levels and work intensification that polytechnic lecturers have to face in recent years. I did not yet possess Foucault's vocabulary of discipline and self-responsibilisation, and I was still unfamiliar with neoliberalism's capacity to shape academic subjectivity of accountability and performance, but I made a mental note to myself that my attempt to "make the familiar strange" in my thesis could form a line of inquiry to this phenomenon.

I have been heavily involved in the above initiatives during the past three years. I am concerned about the pace at which certain decisions are made, and how those decisions have already crafted not just the journey, but the destination has already been set, with little room for negotiation or discussion of alternative approaches and ends. As one who works in the educational development unit, I am certain that these ICT-related imperatives will affect the day-to-day work of lecturers in the polytechnic. Through this study I hope to explore how the identities of lecturers are constructed by various ICT imperatives and discourses, and to investigate the ways in which their pedagogical practices are carried out in the digital age.

## **1.2 Context of My Research**

At the end of an interview that was conducted for this study, one participant asked, "Am I saying anything politically sensitive here?" This is an expression of the apolitical climate in which most Singaporeans prefer to operate. Chan (1975) has described Singapore as a depoliticised administrative state, where politics have been replaced by rational and scientific modes of public administration, and 'where a bureaucratic, technocratic and rationalised approach to government has apparently eliminated politics and democracy, leaving behind a depoliticised citizenry to enjoy the comforts and security of a stable and wealthy consumerist nation' (Tan, 2012, p. 87). Singapore's transformation from a mud-flat swamp to a metropolis in 50 years is often presented as an economic miracle. To ensure its survival after the forced separation and unanticipated independence from Malaysia in 1965, the Singapore government's pragmatic approach towards governing became 'the structuring centre of reasoning and rationalization of the policies by which Singapore has been governed since independence' (Chua, 1995, p. 48). Over the years, the pragmatism has been imbibed by all as a 'national identity [based on] purposive

rational action, one of means-end calculation, one of technology of science' (Chan & Evers, 1973, p. 317). This form of thinking has pervaded 'the consciousness of the population and has come to serve as the conceptual boundaries within which Singaporeans think through significant portions of their daily life' (Chua, 1995, p. 68). Chua (1995) argues that the government led by the ruling People's Action Party (PAP) since Singapore's independence in 1965 has disseminated the rhetoric of pragmatism in the public sphere and has institutionalised it throughout its administrative, planning and policy-making functions. Through its dogged description of itself as pragmatic over the years, the Singapore state is actually disguising its ideological work and political nature through an assertion of the absence of ideology and politics. This work links the rhetoric of pragmatism with the notion of Singapore's impressive and yet fragile success and future prospects to its ability to attract global capital. To attract global capital requires the maintenance of a stable political system dominated by an experienced, meritocratic and technocratic PAP government (Tan, 2012) – this 'combination of ideological and pragmatic manoeuvring over the decades has resulted in the historic dominance of government by the PAP in partnership with global capital whose interests have been advanced without much reservation' (p. 69).

Liow (2011) observes that the ideology of pragmatism 'coincide fittingly with those espoused by the neoliberal political rationality because both are about creating an optimal environment for capitalism to flourish' (p. 251). Naruse and Gui (2016) argue that the challenges of Singapore's early nation-formation already anticipated its neoliberalisation. Broadly speaking, neoliberalism can be characterised as a mode of economic and political rationality that is based on the application of the logic and rules of the market through privatisation, deregulation, and the withdrawal of the state from many areas of social provision (Olssen, 2016; Morley, 2018). Since the coordinates of neoliberalism are economic, both individuals and state become projects of management that serve economic ends rather than political ones (Brown, 2015). Neoliberalism became prominent in the 1980s under the Reagan administration in the United States and Thatcher's Conservative government in the United Kingdom and expanded its global influence through international organisations such as the World Trade Organisation and the World Bank (Harvey, 2005; Gonick, 2015). Although neoliberalism's influence has expanded, it is disunified and non-identical across space and over time as it intersects with extant cultures and political traditions (Brown, 2015).

In Singapore's case, the implementation of neoliberal reforms by the PAP did not lead to a complete abandonment of the developmental state model because the PAP wanted to preserve the essence of the existing structures so as to consolidate and maintain its position of power. Hence, the interdependent relationship between the state and capital within the economic climate of neoliberalism has led to 'a refashioning of the developmental state' (Robison et al., 2005, p. 181). Liow (2011) labels this as the 'neoliberal-developmental state' (p. 250) where the ideology of pragmatism (accompanied by state coercion) has incorporated neoliberal political rationality to shape governable subjects by promoting the desirability of economic growth and material prosperity. Instead of pulling back, the state has refashioned and altered institutions to create the neoliberal subject. Foucault's concept of governmentality (1991) comprising the technologies for governing and technologies of the self will be used (in Chapter 2) to examine the creation of the neoliberal citizen, and more specifically, the neoliberal academic in the polytechnic.

### **1.3 Research Aims and Questions**

Recent educational reforms in Singapore such as the SkillsFuture initiative and the increased use of ICT in education have been premised upon the need to be competitive in the context of globalisation. These education reforms work together by unifying the discourse of skills, competencies and improvements to shift the meaning and purpose of education and reshape the subjectivities of academics. Indeed, neoliberalism has forged a closer link between education and the economy (Bailey, 2015), leading to the economisation of education in multiple forms. The results of the economisation of education are not merely structural and relational; they are also ethical and discursive (Ball, 2016) – 'these are not simply changes in the way we do things or get things done... they also change who we are, how we think about what we do, how we relate to one another, how we decide what is important and what is acceptable, what is tolerable' (p. 1050).

The pace and reach of technology integration in higher education in Singapore will continue to be increased and expanded to ensure that Singapore's position in the global knowledge economy will be enhanced. This will impact more and more on lecturers in the polytechnic sector in the next 5 to 10 years. Furthermore, the three national initiatives that I will explicate in Chapter 2 (the SkillsFuture Movement, the Smart Nation Initiative and the Committee on the Future Economy) will hasten the pace and the intensity of the technologisation of education, which will directly impact the daily work of the lecturers. It is therefore important to consider and locate the ways in which these discourses and the accompanying practices find expression in the context of the classroom. Hope (2015) argues that discourses play an important role in enculturation, encouraging individuals to behave in a prescribed manner, whilst reproducing the means of control through ongoing replication, whereby certain standards of behaviour become hegemonically accepted as naturally the ones that should be adhered to in society. Building on Bijker's (2010) reminder that the use of technology is an inherently political issue, Selwyn (2012b) advises educators and researchers to develop a fuller sense of how and why technologies are being used in educational settings by recognising issues of power, control, conflict and resistance.

In a highly technocratic society such as Singapore, many studies of the use of technology in education are dominated by the technical-instrumental approach adopted by researchers from the learning sciences. From my understanding and knowledge, there is scant research related to the 'analysis of the politics, the economics, the cultures and the ethics of digital technology in education' (Selwyn & Facer, 2013, p. 1). While the grand narrative of technological enhancement will "naturally" support Singapore's aspiration towards achieving the global city status, I will endeavor in this study to look into the subterranean world of teaching and learning with technology that seldom come to the surface. I aim to explore how lecturers are responding to the need to move their courses to the digital arena, and whether the move to the digital arena has reconstituted their identity and work as lecturers. By tracing the discursive forces, I hope to examine the ways in which the subjectivities of lecturers are constructed and how pedagogical practices are enacted.

To achieve the above objectives, I aim to address the following research questions in my study:

- How are lecturers constructed as they engage in the technology imperative?
- In what ways are lecturers affected as they engage in the technology imperative?
- How are pedagogical practices enacted in the online space?

Figure 1 shows how the genesis of the research questions is informed by the national initiatives that are premised upon the need to be competitive in the context of globalisation (Chapter 2) and the review of dominant discourses related to the technologisation of education (Chapter 3).

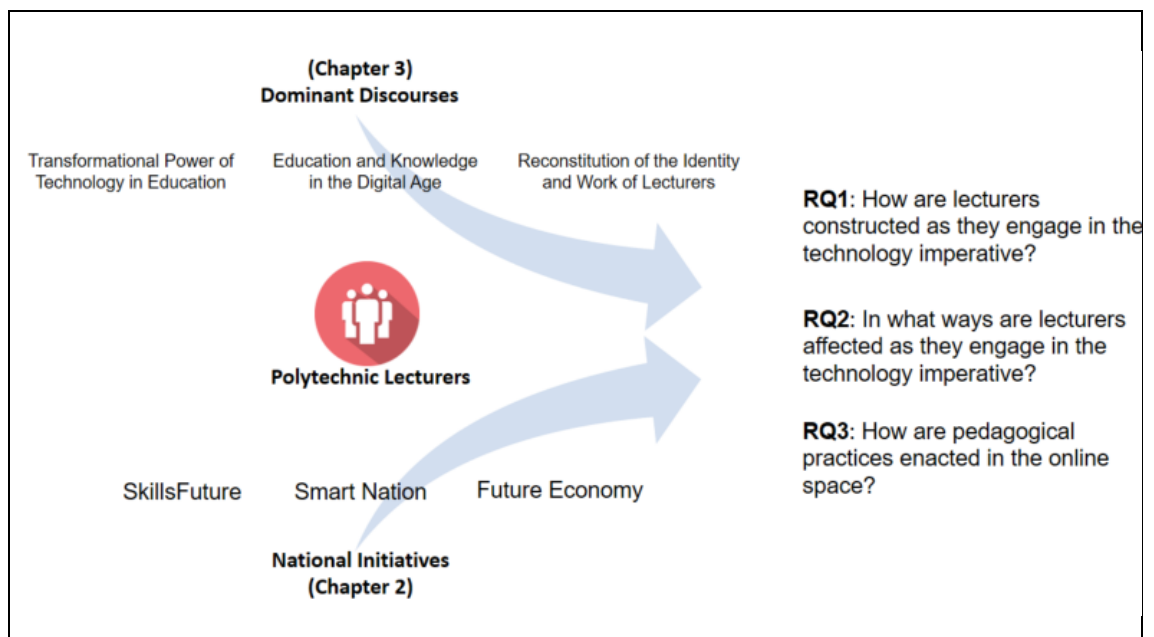


Figure 1: The Genesis of the Research Questions

## 1.4 Overview of the Methodology

Chua (1995) notes how pragmatism ‘admits only ‘concrete’ evidence of a statistical type’ (p. 70) and Tan (2012) observes that pragmatists tend to dismiss soft, qualitative evidence, principled arguments and concerns about the intangible as inadmissible in inquiry or debate. Numbers and quantifiable measures are indeed highly valued in the environment in which I operate. The reports that I have to write about training utilisation and training effectiveness are often peppered with numbers and charts – perhaps senior management finds them useful because they indicate very succinctly whether targets are achieved or not; or perhaps senior management do not have the time to sift through a detailed report to seek to understand our work which appears to them to be unproblematic. Numbers may be useful for answering questions such as “What?” and “How many?” but they may not be useful for answering questions such as “Why?” and “How did it work?” and the more important questions related to power relations and constitution of subjectivities. I have taken Gobby’s (2013) cue that neoliberal reforms can be unpacked and understood by examining the everyday practices where neoliberalism is installed and realised, such as the utterances and practices of individuals. I have used the semi-structured interviews as the primary data generation method and I locate this study within the postmodern research paradigm. This means that instead of taking an analytic approach that assumes a knowable world based on an essentialist theoretical framework, my analytic approach is critical in its orientation. Since I view reality as fluid and constantly in flux, I do not seek to find one universal truth, but I seek to understand how meaning is produced and how such productions interact with issues relating to power and privilege. I draw upon Foucault’s concepts of power, governmentality and discipline in my analysis and ask how power is invested in social practices and how the process of discursive formation affects the production of knowledge and subject positions. I will also acknowledge that my biography will privilege certain knowledge and interests, and my subjectivity will determine certain observational and interpretive choices that are made in the research. Walshaw’s (2007) view of the researcher’s role in the research process resonates with me: ‘the researchers’ own knowledge, along with the research landscape, is continually shifting which makes it all the more important to say that the researcher is a key player, and hardly an innocent bystander, in the production of educational knowledge’ (p. 152).



### **1.5 Significance of the Study**

Technology implementations within higher education in the Singapore context is appealing as it is related to ‘the notions of progress, development, and the preparation of young people for an imagined technology-rich future’ (Thomas, 2017, p. 45). In a highly technocratic society like Singapore, instrumental knowledge is highly valued. This is based on the ‘technologically determinist’ perspective that ‘social progress is driven by technological innovation, which in turn follows an “inevitable” course’ (Smith, 1994, p. 38). However, technology should not be seen to operate on a causal model because ‘it does not have straightforward ‘impact’ in some simple, mechanical way on the practices that it encounters’ (Oliver, 2011, p. 381). Taking this perspective will ‘obscure the many non-technological factors at play in the educational use of technology – thereby introducing a number of silences into any discussion of education and technology’ (Selwyn, 2012a, p. 83). The study of the use of education technologies needs to account for the complex interactions between the technological and the social, economic, political and cultural contexts. Instead of conducting another research study that just focuses on the “effectiveness” of a particular tool or a particular teaching approach to add to the plethora of studies that report on how well a particular tool or teaching approach is working, I would like to focus on some important aspects of teaching in the digital age that seldom come to the surface. I know they are hidden and often not visible in the subterranean world: how various discourses shape the identity and practices of lecturers. This is therefore an endeavor in ‘thinking otherwise’ (Ball, 1995, p. 268). I am not seeking to uncover a universal truth that can be generalised, but the knowledge outcome of this journey is likely to be partial and contingent. But as Richardson (1994) proffered: ‘Having a partial, local, historical knowledge is still knowing’ (p. 518). I hope to gain a deeper understanding of why people respond to reforms differently by looking closely at the specific historical and sociocultural conditions of the polytechnic classroom as lecturers respond to increased technology implementations within the higher education sector in Singapore.

## **1.6 Structure of the Thesis**

The thesis is divided into six chapters. This first chapter outlines the rationale of the inquiry, the research questions and the research approach and methodology. It also provides an overview of the different chapters of the thesis.

The second chapter provides the background and the context in which this study is situated. It begins by providing information on Singapore's historical, social and educational development in the first 50 years of nationhood. This is followed by a brief summary of Singapore's plans for the future as explicated in the three national initiatives that are focused on enhancing Singapore's competitiveness in the context of globalisation. Foucault's concept of governmentality will be used to problematise the progress discourse and to illuminate how various rationalities, technologies and practices are employed to shape entrepreneurial subjects.

The third chapter reviews the dominant discourses surrounding the use of ICT in various educational contexts. Instead of conducting a literature review on how different ICT tools work in different classroom contexts, I focus my review on studies that have considered the wider historical, social, political and economic contexts within which ICT is located and used. I examine the optimism over the transformative power of technology in higher education and investigates whether knowledge and information in the digital age have been elided, and how higher education has changed as a result. I will also examine the extent to which the identity and work of lecturers in higher education have been reconstituted as a result of the increased use of ICT and the flexible provisioning of education.

In the fourth chapter, I will elucidate the research methodology that I have adopted in this study. I will discuss three pairs of issues: ontological and epistemological issues, ethical and macro-political issues, and practical and micro-political issues. Through the discussion of these interacting issues, my postmodern research positionality will be established. The implications of my postmodern research positionality on validity, reflexivity and subjectivity will be presented. I will also describe how the data was generated and explain my analytic approach.

In the fifth chapter, I will use Foucauldian concepts such as governmentality, discipline and surveillance to trace the discursive forces identified in the generated data and present the findings and discussion to address the three research questions.

In the sixth chapter, I conclude the thesis by using the discussion of the findings to address the research questions. The limitations of the thesis and possibilities for future research will be discussed. I will also propose some implications of my research on my professional practice. Finally, I reflect on my research journey and my development as a researcher.

## **2. Singapore's Progress in the Past, and the Plans for the Future**

This study is situated in Singapore, a young nation state which has been transformed from a mud-flat swamp to a metropolis in 50 years through intensive and purposeful investments in education and technology. Often touted as an economic miracle, Singapore's success is part of the Asian Century narrative, where Asia's share of global domestic product (GDP) is expected to double to 52% by 2050 (Kohli et al., 2011). When Singapore celebrated her golden jubilee in 2015, she had achieved much on the world stage. Singapore's success in global education rankings has regularly garnered almost routine applause for the country's stellar performances in international tests, such as the Organisation for Economic Co-operation and Development (OECD's) Program for International Student Assessment (PISA) tests where Singapore has emerged top (Ministry of Education, 2014). In the annual Global Competitiveness Report which is seen as the most comprehensive assessment of 140 economies, compiled by the World Economic Forum (WEF), Singapore is ranked the second most competitive economy behind Switzerland (Chia, 2015). According to London-based education and career consultancy Quacquarelli Symonds (QS), the National University of Singapore (NUS) has kept the top spot in an annual ranking of Asian universities that include Peking University and Tsinghua University from China, and the Universities of Hong Kong and Tokyo. As Singapore celebrated her achievements and success in the first 50 years, she has also laid the foundation for her continuing prosperity in the Asian Century by embarking on three future-oriented initiatives which continue to emphasise the importance of education and technology. Since education and technology inhabit a large part of the social world of lecturers, these initiatives will directly impact on the work and everyday lives of lecturers in the polytechnics. I hope that this background will give the reader some contextual information that will be relevant to my research study.

## **2.1 Singapore's First 50 years – From Mud-flat Swamp to a Metropolis in One Generation**

Apart from a semi-historical document known as the Malay Annals (Brown, 1952), some records from early Chinese traders and European colonial seafarers, there is very limited documentation of the early history of Singapore until it became a colony of the English East India Company (EEIC) in 1819 (Abshire, 2011). The founding of Modern Singapore is primarily associated with Sir Stamford Raffles – a British statesman who advocated free trade at the Singapore port. With Singapore conveniently located in the middle of the commercial route between China, India and Europe, the population grew due to enhanced commercial opportunities. Most immigrants came from China, India and the Malay Archipelago. Singapore became a British Crown colony after the British government took direct control of administering Singapore in 1867. Trade and population continued to grow under the administration of the British government. In 1871, Singapore had a population of 97,111 of which almost 54,600 were Chinese, 26,000 were Malay, 11,600 were Indian, and only 1946 were European. By 1931, the total population had grown to 557,745, of which there were 418,600 Chinese, 65,000 Malays, 50,800 Indians, and 8,100 Europeans (Trocki, 2006). The colonial government practised non-interference towards Singapore's multiracial population, and this policy was extended to education and schooling as well. Even as the population grew, the colonial government adopted a *laissez-faire* attitude towards the provision of education where the education system was developed for a migrant plural society in which each migrant community took care of its own education (Ho & Ge, 2011). While support was given to vernacular Malay education, the colonial government regarded the Chinese and Indians as transient workers and felt little responsibility for their education. The Chinese schools in Singapore were funded by philanthropists, and the language of instruction was in the various Chinese dialects. The Tamil schools were mostly staffed by teachers from India, and the curriculum and administration of the schools were aligned with those in India. English schooling and education was limited, with a few English schools mainly established by missionaries. The colonial government's objective for English schooling and education was narrowly focused on the supply of candidates for the subordinate appointments under the colonial government and for clerical and other appointments in mercantile houses (Straits Settlements, 1895). In the eyes of the colonial government, access to English needed to be managed in close tandem with the administrative needs of the colony.

The relative peace and prosperity of Singapore was broken during World War 2, when Singapore fell with dramatic speed after Japan began an assault on the Malay Peninsula and Singapore in 1941. Following the British surrender of Singapore on 15 February 1942, the Japanese occupation of Singapore took place from 1942 to 1945. After the war, the Singapore to which the British returned was not the same Singapore that they had left. There was an understanding on both Singaporean and British sides that they could not return to the pre-war situation because the people's trust in British control and protection had been compromised and the people were prepared to consider a different future (Abshire, 2011). Although still a British colony, it gained self-governing status in 1959.

Singapore's dream of merging with Malaysia was briefly realised in 1963 but failed because of deep and irreconcilable political and economic differences related to issues of race and citizenship. Hence, Singapore is a relatively young nation state that has become a sovereign state only in 1965 after the failed merger with Malaysia. Due to its colonial legacy, Singapore's formal institutions of representative government was set up based on the Westminster system of parliamentary government. As a small island state with no economic hinterlands and very few natural resources, it was difficult to imagine how it would survive. Singapore's phenomenal transformation has been captured in founding Prime Minister Lee Kuan Yew's memoir *From Third World to First: the Singapore Story* (2000). Its remarkable transformation and success have attracted the attention of many countries, and delegates from Russia to Rwanda have visited Singapore to understand how she has turned herself from a regional trading post to an international business capital (Naruse & Gui, 2016).

A key strategy in ensuring that Singapore thrives as an international business capital was the government's language policy based on instrumental rationality. To be integrated into the burgeoning international economy, the government needed to mobilise the country via a rationality that would ignore race, religion and entrenched histories (Wee, 2000). The government recognised that the colonial government's *laissez-faire* education system that was bifurcated along ethnic and linguistic lines (e.g. where those of Chinese ethnicity attended Chinese language schools) would divide a fragile and a culturally and linguistically pluralistic nation state in its infancy. The government made a determined effort to promote racial and national unity by enculturating progressive and homogeneous attitudes. To achieve this, the government merged the separate education systems into

one national system. It also adopted a bilingual language policy where English was to be the medium of instruction in all schools, and the other three official mother tongues, Chinese, Malay, and Tamil, were to be taught as second languages. The government also chose English to be the official language in Singapore in 1965. The role of English as an official language was based on the twin ideologies of ‘pragmatism’ and ‘neutrality’ (Ho & Alsagoff, 1998). To ensure Singapore’s survival and success in the global marketplace, English was thought to be pragmatic for Singapore because it provided access to Western scientific, technological, and economic information. To promote unity and inter-ethnic communication amongst the different races, English was perceived to be a “neutral” language with no affiliation to any racial groups in Singaporean society. As a result of this policy, ‘what was a native tongue of the colonial master also became indigenised as a national language of Singapore’ (Koh, 2004, p. 337). The use of English as a national language has certainly equipped Singaporeans with the necessary linguistic capital for communicating and making connections in the multiple centres of global capitalism in the West. This has contributed to her development and success in the first 50 years. Via the “neutral” English language, the political dream of social cohesiveness, of a sense of belonging, of a sense of nationhood, of the building of a people regardless of race and religion appears to be realised (Goh & Tan, 2007). Phillipson (2008) contests against the projection of English as neutral, as if it is an inert tool that serves all equally well. Constant and Cao (2018) make the same point: ‘Language is generally taken for granted, since many do not deeply understand how it works to produce and (re)write within the material and ideological legacies of colonialism and imperialism’ (p. 106). In Singapore’s case, the government had to tread a delicate balance between the endorsement of the English language and the maintenance of other ethnic languages. Wee (2009) cites the problematic relationship between English and Mandarin (ethnic Chinese language) for the English-speaking Chinese Singaporean where the ‘well-educated Chinese Singaporeans speak English within their social groups and the derogatory concept of ‘cheena’ is sometimes used to depict a ‘quintessential Chineseness’ which is frowned upon’ (p. 17). This demonstrates how the English language functions in the new imperialism, where it is packaged ‘in a mantle of the apolitical’ (Mattelart, 2005, p. 62), but it works to produce subjectivities, puts them in relation, and orders them. The complex project of the construction and destruction of linguistic ideologies in the formulation of a regulated Singaporean identity is one of many state-led projects that will be enumerated in this chapter.

## **2.2 The Twin-Engines of Singapore's Economic Growth – Education and Technology**

In the early days of nation building, the government had the unenviable task of ensuring the political and economic survival of the small city-state. Political turmoil in neighbouring Indonesia has undermined the fledgling nation's traditional role as an entrepot trading post for the region, and the 1968 British announcement of troop withdrawal from Singapore left thousands of workers without a job and as much as a fifth of the economy at risk of coming to a halt. To compete as a viable economic entity, the government recognised that Singapore had to be less dependent on entrepot trade and the provision of services to the British military bases and began to embark on an export-oriented industrialisation strategy. Singapore's industrialisation programme began with factories producing basic goods such as garments, textiles, toys and wood products. The government wooed foreign investors willing to develop its export-oriented industries (Ng, 2017). To support the export-oriented industrialisation strategy, an education system was conceived to focus on the development of a literate and technically trained workforce (Goh & Gopinathan, 2008). Aside from the paramount goal of creating a national system through the standardisation of the curriculum, the economic focus of the education system in the first phase of the industrial period (1960s to mid-1970s) had been to expand educational opportunities to the population at large and to initiate technical education (Ho & Ge, 2011). Due to increased competition from other Southeast Asian countries in low-skilled and labour-intensive industries, further economic restructuring was required. This restructuring in the 1970s and 1980s focused on higher value-added and technology-intensive industries that required an expansion of technological education and training through a transnational approach to technology transfer. Tan and Gosling (2016) observed that while Singapore desired to be free from foreign influence in re-shaping her destiny after independence, she did not hesitate to leverage the technical expertise from among the most technologically advanced nations of that time. The ability and the agility of the state to successfully manage supply and demand of education and skills was and continues to be deemed as Singapore's major competitive advantage (Goh & Gopinathan, 2008).



Education has always been a major area of investment in Singapore. The largesse of this investment is evidenced by a 40% increase in expenditure, from S\$7.5 billion in fiscal year (FY) 2007 to S\$10.5 billion in FY 2012. This amounts to 3.1% of its GDP, more than other OECD countries (Ministry of Education, 2013). This calculated and focused investment in education coupled with an export-oriented industrialisation policy have been pivotal to the economic growth of Singapore. According to the Monetary Authority of Singapore, Singapore's nominal GDP per capita was around US\$500 in 1965, at the same level as Mexico and South Africa. In 2015, Singapore's GDP per capita was about US\$56,000, which was comparable to Germany and the United States. Therefore, an informed analysis of Singapore's global city aspirations and economic imperatives cannot sidestep the symbiotic relationship between its education and the economy (Koh & Chong, 2014).

Apart from heavy investment in education and training, Singapore's transformation can also be attributed to the use of ICT as a strategic lever of her development strategy and policy. Indeed, the proactive seizing of opportunities brought about by emerging technologies has enabled Singapore to achieve outstanding economic performance since her independence in 1965 (Vu, 2013). Singapore saw the potential of ICT in accelerating her economic development as early as the late 1970s. Since the 1980s, Singapore has formulated and implemented a series of national ICT master plans to develop ICT capital, increase ICT awareness and literacy of the populace and businesses (Koh & Lee, 2008). Master plans for ICT in Education were developed in parallel with the national ICT master plans (Infocomm Media Development Authority, 2018). The first Master plan for ICT in Education (1997–2002) laid a strong foundation through the provision of basic ICT infrastructure and in equipping teachers with a basic level of ICT competency. The second Master plan for ICT in Education (2003–2008) built on this foundation to strive for an effective and pervasive use of ICT in education by, for example, strengthening the integration of ICT into the curriculum, establishing baseline ICT standards for students and seeding innovative use of ICT among schools. The third Master plan for ICT in Education (2009–2014) represented a continuum of the vision of the first and second Master plans, which was to enrich and transform the learning environments of the students and equip them with the critical competencies and dispositions to succeed in a knowledge economy.

## 2.3 Singapore's Vision for the Next 50 years

As Singapore took stock of her achievements in the first 50 years, plans were already conceived for the next phase of her economic development. To achieve the vision of being a global city, three national initiatives that involved multiple government ministries and agencies were embarked upon. From these national initiatives, it is observed that education and technology will continue to play a pivotal role in the national and economic development of Singapore in the next 50 years. The three initiatives are: (1) The SkillsFuture Movement; (2) The Smart Nation Initiative; (3) The Committee on the Future Economy. A brief overview of each of these initiatives is set out below. I will also describe the direct and indirect impact of these initiatives on lecturers within the polytechnic sector.

### 2.3.1 The SkillsFuture Movement

The Council for Skills, Innovation and Productivity (CSIP) was initiated in November 5, 2014 to develop an integrated system of education, training and career progression, promote industry support for individual career advancement based on skills, and foster a culture of lifelong learning.

The Council proposed four thrusts to drive this national effort:

- (i) Help individuals to make well-informed choices in education, training and careers.  
The Council will guide the development of a full system of guidance to help individuals make choices in education, training and their careers, starting from educational counselling in schools and extending throughout a person's working life. It will foster collaboration between the Government, industry, and institutions, to provide individuals with exposure to a wide range of occupations and industries from a young age.
- (ii) Develop an integrated, high quality system of education and training that responds to constantly evolving industry needs. The Council will review education and training to ensure that a broad-based education for the young is complemented with a full range of continuous learning options, including opportunities to develop new specialisations.
- (iii) Promote employer recognition and career development based on skills and mastery.  
The Council will work with employers to design and implement a career development framework for individuals. Panels led by employers, and supported

by unions and government agencies, will be appointed in each sector to develop this framework.

- (iv) Foster a culture that supports and celebrates lifelong learning. This will involve a long-term effort to respect every job for its skills, and value the achievements of individuals who attain mastery in their respective fields. It will also promote the habit of learning throughout life.

One of the implications of the SkillsFuture Movement was the introduction of more skills-based modular courses at the polytechnics and universities. This was announced by the Ministry of Education (MOE) in February 2015. In January 2016, it was also announced that the Minister for Education (Higher Education and Skills) would be helming the SkillsFuture Movement, following a restructuring that involved the Ministry of Manpower (MOM), Ministry of Education (MOE) and the Singapore Workforce Development Agency (WDA). This new organisational structure will achieve a greater inter-operability among the vocational, academic and adult training qualification systems. This will provide a consistent way in which credentials can be recognised under different qualification frameworks for the purposes of academic and career advancement. Colleagues from the five polytechnics have been reviewing the curriculum of all courses to ensure that it is aligned to the needs of the industry. Furthermore, intensive efforts have been spent on modularising courses and delivering them online. Since universities are also under the purview of the Minister for Education (Higher Education and Skills), they have also been co-opted into this initiative. MOE announced in May 2016 that a few programmes combining work and degree studies were being piloted by the universities. While the details were being worked out, the Minister announced that it would be a different kind of university programme where businesses do not just offer internships, but are invited to shape the curriculum (Davie, 2016). Universities have also been urged to create shorter, bite-sized programmes and to leverage on online learning so that adult learners may acquire new knowledge and skills in a more accessible and flexible manner.

### **2.3.2 The Smart Nation Initiative (SNI)**

The Smart Nation Initiative was launched by Prime Minister Lee Hsien Loong on November 24, 2014. The Prime Minister envisaged the Smart Nation to be:

A nation where people live meaningful and fulfilled lives, enabled seamlessly by technology, offering exciting opportunities for all. We should see it in our daily living where networks of sensors and smart devices enable us to live sustainably and comfortably. We should see it in our communities where technology will enable more people to connect to one another more easily and intensely. We should see it in our future where we can create possibilities for ourselves beyond what we imagined possible (Prime Minister's Office, 2014a, para. 6).

Following the launch of the Smart Nation Initiative, a couple of polytechnics announced that they were working with industry partners to create a smart campus platform that could respond quickly and efficiently to the needs of staff and students, and to improve the experience of working and studying at the polytechnic. At the launch of its Smart Campus initiative, one of the polytechnics in Singapore shared about the flipped classroom pedagogical model (Bergmann & Sams, 2012) where the typical sequence of a lesson followed by homework is reversed. With such an approach, the lecturer would create video-based learning packages so that students could view them before attending class. It was claimed that this approach would enable lecturers to go in-depth during the face-to-face sessions and tap on learning analytics services and tools to customise their teaching plans and provide personalised support for students. At my polytechnic, various ICT services for teaching and learning have been piloted during the past two years. One such initiative is related to the use of learning analytics. Learning analytics is the measurement, collection, analysis and reporting of data about learners and their contexts, for the purposes of understanding and optimising learning (Society for Learning Analytics Research, 2011). Administrators envision that all kinds of data can be gathered and transformed into actionable information to enable data-driven educational decision making at all levels.

### 2.3.3 The Committee on the Future Economy (CFE)

In the light of global trends such as the changing economic landscape, disruptive technologies and demographic shifts, the Committee on the Future Economy (CFE) was set up in Oct 1, 2015 to develop economic strategies to position the Singapore economy to be a vibrant and resilient economy with sustainable growth. The CFE will address five areas crucial to Singapore's future economic development:

- (i) Future growth industries and markets. Identify and design growth strategies for priority clusters in Singapore, and to enable companies to seize opportunities in the global marketplace.
- (ii) Corporate capabilities and innovation. Recommend strategies to enable companies and industry clusters to develop innovative capacities and use technology as well as new business models and partnerships to create value.
- (iii) Jobs and skills. Assess the impact of demographics and technology on the labour force, and recommend strategies to create and re-design jobs, and to equip Singaporeans with the skillsets needed for the future.
- (iv) Urban development and infrastructure. Recommend strategies to enhance Singapore's infrastructure and develop sustainable urban spaces, so as to create an outstanding living environment for all and to reinforce economic advantage.
- (v) Connectivity. Study connectivity and flows in the future global economy and recommend how Singapore can continue to be a hub that brings value to Asia and the world.

Each of the above areas is chaired by a subcommittee. The Minister for Education (Higher Education and Skills) is appointed to be the co-chair of the Committee on the Future Economy's (CFE) Subcommittee on Future Jobs and Skills. Once again, this signals the importance of a close relationship between the state, education institutions and the labour market.

## 2.4 Problematising the Progress Discourse

It is undeniable that the success of Singapore – a small nation, having achieved so much in such a short time – is the envy of many nations. The story of a little island separated from its hinterland and saddled with the challenges of mass housing, high unemployment and an uncertain future is often told to visiting foreign diplomats and tourists alike:

Regardless of storyteller, the Singapore success story has always unfolded in a consistent manner. It begins with the “moment of anguish”, a painful self-realization of an unformed nation, the existential fear for one’s self, followed by the Herculean effort to overcome all the odds, and finally, the achievement of success (Chong, 2010, p. 1).

As Singapore reflects on her birth pangs and achievements in the first 50 years of nationhood, and looks forward to maintaining her economic position in the Asian Century, I would like to highlight an observation made about how the re-telling of the Singapore story – whether it be at the time of reflection during the monumental event such as the golden jubilee, or at times of episodic challenges such as the 1997 Asian financial crisis, the September 11 terrorist attacks in 2001, and the SARS outbreak in 2003 – is framed within a straightforward linear narrative of progress through cyclical acts of meeting challenges and duly overcoming them. Chong (2010) claims that various publications, together with the state-friendly agents of knowledge production such as the local press, lends an evolutionary logic to Singapore, thus allowing her to be imagined as dynamic, forward-looking and achievement-oriented.

As Singapore embarked on the three future-oriented initiatives, I view these national initiatives as a clarion call for Singaporeans to play their roles and look forward to greater successes. In this section, I intend to problematise the historical account that is built on a vision that is seemingly inevitable and progressive. I am interested in the power relations that ignite Singapore’s success and especially in the role that higher education plays in brokering it. I will use the concept of governmentality offered by Foucault (1991) to dismantle and disrupt the rationalities that are informing and perpetuating certain practices in Singapore.

Foucault coined the concept of "governmentality" as a "guideline" for the historical analysis embracing a period starting from Ancient Greece through to modern neoliberalism (Foucault, 1997a). Foucault distinguished between governmentality and sovereign power – governing is associated with “freedom,” which was not necessary for sovereign power. Foucault also used governmentality in a wider sense in his lectures at the Collège de France from 1970 to 1984, where he defined governmentality as “the art of government,” which could be applied to a wide range of governing strategies. By semantically linking ‘governing’ ("gouverner") and ‘mentality’ ("mentalité") into the neologism ‘governmentality’, Foucault highlighted the interconnection between the exercise of government (practices) and the mentalities (rationalities) that underpin these practices.

In *Governmentality: Power and Rule in Modern Society*, the concept of government as diverse power techniques is elaborated as follows:

Government is any more or less calculated and rational activity, undertaken by a multiplicity of authorities and agencies, employing a variety of techniques and forms of knowledge, that seeks to shape conduct by working through the desires, aspirations, interests and beliefs of various actors, for definite but shifting ends and with a diverse set of relatively unpredictable consequences, effects and outcomes (Dean, 2010, p.18).

The framework of governmentality and its elaboration by Dean (2010) as ‘analytics of government’ provide the interpretative tools to investigate regimes of government and their processes of assembling, contesting and transforming along four independent but related dimensions:

- 1) Characteristic forms of visibility, ways of seeing and perceiving;
- 2) Distinctive ways of thinking and questioning, relying on definite vocabularies and procedures for the production of truth;
- 3) Specific ways of acting, intervening and directing, and relying upon definite mechanisms, techniques and technologies;
- 4) Characteristic ways of forming subjects, selves, actors and agents.

The first dimension concerns the forms of visibility necessary to the operation of particular regimes. The analyst may ask what the field of visibility is that characterises a particular regime of government. For example, an organisation chart, a management flow chart, or a set of graphs and tables may inform who and what is to be governed, how relations of authority are constituted and what problems are to be solved. The second dimension concerns the forms of knowledge that arise from and inform the activity of governing. The analyst may ask what forms of thought and knowledge are applied in a particular regime of government, and examines how certain rationalities are used to transform practices, and how the practice of governing gives rise to certain forms of truth. The third dimension concerns the technical aspects of government. The analyst will investigate the form of governmentality through studying the means, instruments, tactics and technologies that are deployed to establish rule and authority. The final dimension addresses the forms of identity and specific practices that government tries to shape. The analyst will ask what forms of person and identity are presupposed by various practices of government, and what kinds of transformation these practices seek to achieve. The analyst will also be interested to study the types of statuses, attributes and orientations that are accorded to those who exercise authority and those who are governed.

The promise of economic prosperity and a high standard of living remain the single most powerful ideological tool employed by the People's Action Party (PAP) – the ruling government with an overwhelming majority in parliament since Singapore's independence. Its considerable success in delivering material goods has garnered tremendous support from the people. The PAP leadership therefore has based much of its legitimacy on this factor, so much so that all of its policies are seen to prioritise economic development over other concerns (Velayutham, 2007). This legitimacy is often repeated by the government. For example, during the 2015 National Day Rally, the Prime Minister reminded Singaporeans how far they have come: 'We were a poor third world country; people lived in cramped and squalid slums, no modern sanitation, no utilities, but we built HDB flats to house all of us and made Singapore a first world metropolis and our beautiful home' (Prime Minister's Office, 2015, para. 6). In the next section, I will carry out an analysis of governmentality on the three national initiatives using the four dimensions proposed by Dean (2010).



### 2.4.1 Fields of Visibility

Where does education figure in the economic progression scheme as expressed in the three national initiatives? For a start, we can map out the position and role of the Minister of Education (Higher Education and Skills) in all three initiatives. He is helming the SkillsFuture initiatives (SFI). He is also a member of the ministerial committee that is overseeing the Smart Nation and Digital Government Office (SNDGO). Last but not least, he is also the co-chair of the Committee on the Future Economy's (CFE) Subcommittee on Future Jobs and Skills. His position and role in these initiatives are emblematic of how education will continue to be a key driver in the growth of various industries and enterprises. This also means that the education sector will increasingly be acted upon by various government rationalities and technologies and will increasingly come under the gaze and regulation of MOE policy makers who are helming and championing the three national initiatives.

Another field of visibility is the Skills Framework that is being co-created by employers, industry associations, unions and educational institutions for the Singapore workforce. The Skills Framework provides key information related to each sector, and the associated employment/career pathways, occupations/job roles, as well as existing and emerging skills required for specific occupations/job roles. The Skills Framework aims to create a common skills language for individuals, employers and education and training providers. This further helps to facilitate skills recognition and support the design of training programmes for skills and career development. From the government's point of view, the Skills Framework renders visible the competencies and career pathways for each sector, which may have circulated covertly in the practices of the industry and the training providers (Hodge & Harris, 2012). Such knowledge and pathways of skill development explicated by the Skills Framework provides the government a way of monitoring and regulating the number of people and the types of skills that are required by the labour market. Furthermore, the Skills Framework has the capacity to render every individual in every sector more visible. This can be done through keeping records of each individual's prior learning pathways and skills certification.

### 2.4.2 Rationalities

In this section, I aim to review the forms of thought and rationalities that are employed to produce certain forms of truth, and the ways in which these rationalities are transforming certain practices. Firstly, ‘Kiasu’-ism – the fear of losing out. Kiasu is a term used in a local Chinese dialect, but it is being used and understood pervasively across multi-cultural Singapore and has been appropriated into the main languages that are spoken. This term has even been added officially in the Oxford Dictionaries Online in 2011. This mentality has been called ‘a national fixation’ (Ho et al., 1998, p. 359) that has been woven into Singapore’s cultural fabric. This trait has been brought to life by a cartoon character Mr. Kiasu (Lau, 1994). In many ways, Mr. Kiasu is very similar to Mr. Bean, a caricature brought to life by the British comedian Rowan Atkinson. Singaporeans of all ages and from all walks of life are able to identify with the antics of Mr. Bean, and most are able to laugh at themselves possessing such a trait. Although kiasu-ism can be viewed as a humorous trait, its manifestation in the education arena is no laughing matter. There are many parents who plan meticulously how they would get their children into the premiere schools in Singapore. They would move their homes closer to their school of choice, usually at great financial cost, and put in hundreds of hours of volunteer work at the school just to have their child put on the waiting list. Once the child is in school, they would enroll the child for tuition classes (equivalent of cram schools in East Asian countries such as Japan, South Korea and Taiwan) to ensure that their child excels academically in all subjects. It is a well-known fact that after-class tuition centres are doing very well because they cater not only to those who are under-achieving but also those who are faring well in schools are being enrolled by their parents.

This fear of losing out runs parallel with both national and individual anxieties about survival and the pursuit of the good life in a highly competitive and resource-scarce country (Tan, 2008). This trait was celebrated by the Prime Minister during the 2015 National Day Rally:

*We started off with no hinterland and a weak economy... Our workers were unskilled and anxious about their future, but we determined to make the world our hinterland... The Government, the employers and the Unions, we worked together, Business Environment Risk Intelligence (BERI) every year ranked us number 1 in the world. And with that workforce, we made PSA [sea port] and Changi [airport], the best in the world*

(Prime Minister’s Office, 2015, para. 5).

In a highly competitive and performance-oriented system, Singaporeans are subjected to many forms of external measurement (e.g. PISA Ranking, QS University Ranking, BERI Ranking) which provide report cards of their performances. Fearing that they will be left behind, Singaporeans push themselves to the limit and shape themselves to be self-regulating and self-disciplining subjects – ‘their relentless learning and practice for more productivity and better achievement (and for not becoming ‘losers’) can render them victims to the demand for continuous work and improvement’ (Lee, 2017, p. 148). Han (2015) characterises such neoliberal subjects of self-management and self-positivity as those who voluntarily exploit themselves until they are burned out.

Secondly, the aspiration to upgrade. This mentality is related to the fear of losing out and is ingrained in all Singaporeans at a young age. This upgrade mentality is very pervasive in the material lives of Singaporeans. Today, about 82% of Singaporeans live in flats built by the Housing and Development Board (HDB). In 2010, HDB won the UN-Habitat Scroll of Honour for “providing one of Asia's and the world's greenest, cleanest and most socially conscious housing programmes” (HDB, 2010, para. 1). Despite living in high-quality flats, many Singaporeans aspire to upgrade. Families living in a 4-bedroom public housing flat would aspire to upgrade and move into a 5-bedroom flat. Others would aspire to move from the public housing estate to a private condominium which is deemed to be more prestigious. In fact, the “Singapore Dream” is encapsulated in the attainment of the 5Cs – car, condominium, credit card, cash and club membership (Sim, 2006). Borrowing from the characteristics of the Marcusean one-dimensional man, Tan (2008) perceives the majority of Singaporean to be one-dimensional people who are alienated from their true needs and blinded by the opulence of the consumer society, and have ‘lost sight of the conditions of work—high stress levels, long hours, unequal wage structure, obsession with productivity, and so on—that they have consented to, just so they can afford the lifestyles that they have adopted or that they aspire to achieve’ (p. 8). Here we can see how governmentality is being exercised on the population with a new emphasis on the economy (Miller, 2008) by working through the “Singapore Dream” and the associated perpetual desire for upgrading.

The upgrade mentality is also very pervasive in the academic and work lives of Singaporeans. Individuals who have gained a diploma in the polytechnic will aspire to further their studies in an undergraduate programme. Those who are already employed in the labour market know and are prepared that at some point in their working life, they will need to return to the classroom and participate in the many skills upgrading programme offered by the government. Since the launch of the three initiatives, government speeches are peppered with the call for everyone to continually upgrade their skills. For example, during a speech at the Switzerland-Singapore Business Forum in 2016, Deputy Prime Minister (DPM) Tharman Shanmugaratnam urged all workers to continually upgrade their skills to remain relevant in the landscape of rapidly changing technology. DPM Shanmugaratnam also launched the MySkillsFuture website in October 2017 to help Singaporeans plan for their training and career needs. The website provides information about skills and training for those who are as young as 11 years old and seeks to encourage them to think about learning and upgrading as a lifelong process.

Liow (2011) perceives that the setting up of various agencies such as the Workforce Development Agency (WDA) and Workforce Singapore (WSG) has officially moved the upgrading discourse from merely being an appendage of an economic strategy (upgrading skills of worker to be more suited to a new type of economy), to an economic (and political) strategy in itself – that of creating neoliberal subjects who can engage in self-care and self-regulation: ‘The idea is that should a structural change in the economy come about in the future, there is no need to exhort workers to “upgrade” or “reinvent” themselves’ (p. 257). The neoliberal subject is reshaped as financialised human capital that is engaged in a perpetual project of self-investment – ‘Human capital’s constant and ubiquitous aim, whether studying, interning, working, planning retirement, or reinventing itself in a new life, is to entrepreneurialize its endeavors, appreciate its value, and increase its rating or ranking’ (Brown, 2015, p. 36). I will elaborate more about subject formation in Section 2.4.4.

### 2.4.3 Technologies

The annual National Day Rally is the government's powerful instrument for establishing rule and authority. Since 1966, the National Day Rally is an annual address that the Prime Minister of Singapore delivers to the entire nation on the second Sunday after the country's National Day. Pedagogic instruments such as the National Day Rally has been harnessed 'to inculcate the Singaporean public on how to instrumentalise themselves to becoming economically productive and creative citizens whilst adhering to prescribed sociopolitical norms' (Lee, 2014, p. 722). As a motivational and agenda-setting exercise, the annual speech gives the Prime Minister an opportunity to take stock of Singapore's position, and propose Singapore's plans for the next few years. Its predictable format begins with a reminder of national vulnerability, an assertion of achievements and challenges, followed by the rallying call to Singaporeans to forge ahead as one united and resilient people. The Prime Minister makes a distinct effort to recognise ordinary Singaporeans who have done extraordinary things. He invites them to the rally so that he can point them out to everyone on national television as role models. This is a tactical move to connect with the audience on a very personal level. The rally speech is the technocratic government's most effective opportunity to present a human face to the people (Tan, 2007). The economy and education are always on the agenda of the National Day Rally. The following speech excerpts highlight how certain subject positions are designated for Singaporean students and workers:

*Singapore must always give our people full opportunities to achieve their potential. Our pioneers showed that we can do anything, provided we set our minds to it. And we must build on their legacy and continue to give every Singaporean the confidence to shoot for the stars. **Education is an important part** of this and that is why every year, I speak on different aspects of education and this year, I will focus on ITE (Institute of Technical Education) and Poly(technic) students. Our ITEs and Polys are world-class. Foreign visitors are amazed by the facilities, better than many universities. Investors are impressed by the quality of the graduates – well-trained, can-do, productive.*

(Prime Minister's Office, 2014b, Para. 12)

*The next thing we must do to continue being special, is to keep on improving our education, not just in schools, but also life-long learning because **education enables our people to be self-reliant**, because our workers and students must stay ahead of globalisation and technology.*

(Prime Minister's Office, 2015, Para. 31)

*A strong economy, therefore, needs capabilities. You need the entrepreneurs, but you also need a skilled workforce and if we give our workforce skills, we will enable them to hold better jobs, earn better pay. And that is why **SkillsFuture** is crucial. We are preparing our students well for the new economy, equipping them with relevant skills which are in demand... Take Sarah Salim, she graduated from Nanyang Technological University (NTU) with a degree in Visual Design. She started a publishing firm doing graphic design. Now she works with GovTech@Hive and she is applying her design skills to produce data visualisations on data.gov.sg, which is where you can find all the government information. Here is something she is working on. I will show you just one example, just for fun... You need a lot of skill and hard work. So, to produce a chart like this, you need graphic designers like Sarah, contributing to our **Smart Nation**.... For those people who are already working, to help them, we are offering courses to upgrade their skills mastery...*

(Prime Minister's Office, 2016, Para. 32-33)

For most citizens, an adherence and commitment to the prescribed model of economic output and productivity have proven to be socioeconomically rewarding, with many Singaporeans experiencing excellent formal education and a high standard of living. As a result, 'most people have generally behaved the way required of them, becoming artefacts of governmental technologies of control... substantial numbers have indeed imbibed state-created menus for personhood' (Hing, 2003, p. 117). However, economic growth and its developmental concomitance have also diverted Singaporeans away from most other facets of life in Singapore, including the social, cultural and especially the political (Lee, 2014).

The second technology is the use of National Campaigns and Movements to drive the policies that are announced at the National Day Rallies. Over the past five decades, the Singapore government has organised many campaigns to address a wide range of issues. For example, the *Keep Singapore Clean* campaign in 1968 was one of Singapore's first national campaigns as an independent nation. The campaign was aimed at making Singapore the cleanest and greenest city in the region by addressing the problem of inconsiderate littering and unlicensed hawking of food. The campaign reached out to every stratum of society and sought to instill in Singaporeans the importance of keeping public places clean. In those formative years, the government believed that improved environmental conditions would not only enhance the quality of life for Singaporeans and cultivate national pride, but also attract foreign investors and tourists to Singapore. Each campaign usually followed a three-stage implementation process (Lim, 2013). First, a

social problem would be identified by the government before a nation-wide campaign was instituted to rectify the problem. Second, the campaign together with its rationale and goals were usually announced and shared at a public event. Third, public awareness would be raised through a series of media campaigns. At the same time, a system of incentives and disincentives would be introduced to persuade Singaporean to adopt the attitude and behaviour advocated by the campaign.

Various government ministries and agencies are currently engaged in driving the three national initiatives. At the inception of the SkillsFuture national initiative, the SkillsFuture Credit scheme was also launched. This is another technology that is devised to shape rationalities and behaviours. Figure 2 shows a screen grab from the SkillsFuture Credit website. The SkillsFuture Credit scheme aims to encourage all Singaporeans aged 25 and beyond to take ownership of their skills development and lifelong learning by providing each citizen with a credit of S\$500 for continuing education. It was reported that more than 126,000 Singaporeans have used the credits in its first year.

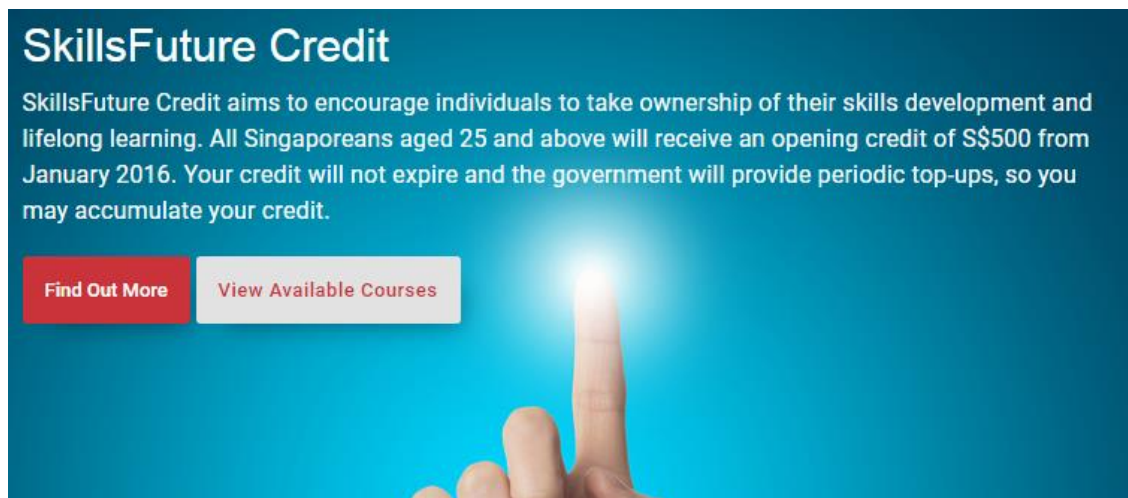


Figure 2: The SkillsFuture Credit website (<http://www.skillsfuture.sg/credit>)

#### **2.4.4 Subject Formation**

How do people become the persons that they are and behave in the way that they do? Foucault investigated the ways in which power is exercised through structural processes and historical practices such as examination and normalisation and found that these technologies of power exert an individualising and normalising effect on people, constituting them as certain kinds of subjects, such as ‘criminal’ or ‘mad’. For Foucault, then, power ‘categorises the individual, marks him by his own individuality, attaches him to his own identity... It is a form of power that makes individuals subjects’ (Foucault, 1982, p. 781). His later works on government evidenced a theoretical shift related to his conception of power and its relation to the subject. He introduced the emergence of the art of government and governmental reason. In the previous conceptualisation, power was conceived to be sovereign and outside of the self. However, power has now shifted from the sovereign or external structures to self-disciplinary practices.

According to Walshaw (2007), the ‘primary means by which behaviours are regulated and made productive within the population is through policies, and policy texts are sites where subject positions are created and where meaningful experience is constituted’ (p. 45). Indeed, when one examines a policy text, it constructs and promotes some subject positions and disregards others. It is through policy texts that social issues are explicated, and future interests are highlighted. Through their official statements, agendas are set, priorities are enforced, some topics of knowledge are prioritised whereas others are disregarded.

Through various discursive rationalities and practices encased in national policies such as SkillsFuture, the Singaporean worker (and lifelong learner) has been constructed to be one who is flexible, productive and resilient. As one may observe from the National Day rally excerpts, the Singapore government is always emphasising the values of flexibility, adaptability, and resilience in its formulation of a good and strong workforce ethos during the nation’s formative years as an industrialising country. These values were constituted through the founding ideologies of meritocracy and pragmatism that ‘sought to socialise Singaporeans into disciplined, hardworking, productive, efficient and docile worker-consumer subjects’ (Tan, 2012, p. 84). These work values were further sedimented by the national rhetoric that promotes Singapore as a small island-state with only its people as the vital natural resource (Cheng, 2016). Bailey (2013) argues that resilience fits well



with a neo-liberal form of government which seeks to work ‘at a distance’, and through the responsible and enterprising conduct of individuals. Resilience ‘encourages the idea of active citizenship, whereby people, rather than relying on the state, take responsibility for their own social and economic well-being’ (Joseph, 2013, p. 42). Resilience requires citizens to take responsibility for themselves, to deal with risk and precarity as the state withdraws some of its responsibility for ensuring our livelihood and progress.

The SkillsFuture initiative is therefore a site where subjectivity and conduct are potentially shaped, where ‘diverse techniques and heterogeneous means, mechanisms and instruments through which governing is accomplished’ (Dean, 2010, p. 269). It is a ‘technology of the self’, producing individuals who ‘effect, by their own means or with the help of others, a certain number of operations on their own bodies and souls, thoughts, conduct and way of being, so as to transform themselves in order to attain a certain state of happiness, purity, wisdom, perfection or immortality’ (Foucault 1988, p. 18). The SkillsFuture initiative constructs the resilient citizen as follows:

*SkillsFuture is a national movement to provide Singaporeans with the opportunities to develop their fullest potential throughout life, regardless of their starting points. Through this movement, the skills, passion and contributions of every individual will drive Singapore's next phase of development towards an advanced economy and inclusive society. With the help of the Future Economy Council, education and training providers, employers, unions – you can own a better future with skills mastery and lifelong learning. Your skills. Your asset. Your future.*

(SkillsFuture Website)

The lifelong learning discourse embedded in the SkillsFuture initiative can be seen as a powerful technology which coordinates self-government with the imperatives of the government. Edwards (2003) views lifelong learning as part of a range of techniques for governing, and a way in which conduct is conducted and subjectivity mobilised and ordered. He adds that lifelong learning can ‘play an influential role in catering for active selves and subjecting them to practices that attempt to instill flexibility and enterprise as desirable and desired ways of being’ (p. 61).

Figure 3 shows how a SkillsFuture Roadshow publicity poster designates the subject as a lifelong learner in particular ways – that the future is in the hands of the subject, that the subject’s career development depends on the responsabilised subject’s desire to be equipped with the right skills so as to stay relevant in the job market. I posit that the ambitions embedded in the SkillsFuture initiative through various schemes and promotions have become a kind of common sense. It is progressively cumulative and percolates in the social consciousness of people; it ‘becomes incorporated into the language, affects people’s sense of identity, modifies their perceptions, alters the constant dialogue between perception and action and ends up constituting a course of action, almost an unchallenged set of principles’ (Torres, 2011, p. 182). Through this common sense, the ambitions of government will be realised and materialised in the aspirations and actions of the people (Bansel, 2015).



Figure 3: A SkillsFuture roadshow publicity poster

The individualisation of success and failure (Liow, 2011) is clearly implied in the above poster (Your future is what you make it to be) and conveys the following: “The government is here to help you if you want to help yourself. Beyond that, the government is not to be blamed should you fail to find employment. The onus is on you to make yourself as attractive to the employer as you can, and a way to do this is to be a part of the SkillsFuture movement”.

## 2.5 Implications of the Three Initiatives on Polytechnic Education

Having reviewed Singapore's progress in the last 50 years, and the future plans which are encoded in the three national initiatives, I concur with Hing (2003) that besides the building of physical infrastructures to make it a metropolis, 'a crucial element in strategizing for the knowledge-based economy is the building of a parallel system of rule and regulation for reordering the social world' (p. 104). Figure 4 summarises what I perceive to be some direct and indirect ways in which lecturers will be impacted by a confluence of the three initiatives. Firstly, the curriculum will need to be more aligned to the needs of the industry. This has already started with the appointment of sector coordinators among the five polytechnics. For example, one polytechnic may be the sector coordinator for the aerospace engineering and information and communications technology sector, while another could be the sector coordinator for the retail and healthcare sector. The sector coordinators will play a central role in driving industry engagement and coordinating the implementation of SkillsFuture initiatives for their respective sectors, particularly among the polytechnics. To be more responsive to the ever-changing needs of the economy, polytechnic courses have to be designed to promote flexible provisioning and modularisation. The next step would be to make these modular courses inter-operable and "stackable" towards some certification or credentials. The "natural" mode of delivery that supports flexible provisioning and modularisation is to offer courses online. Lecturers will also need to be familiar with "smart" tools such as learning analytics to enhance the efficiency and effectiveness of their courses.

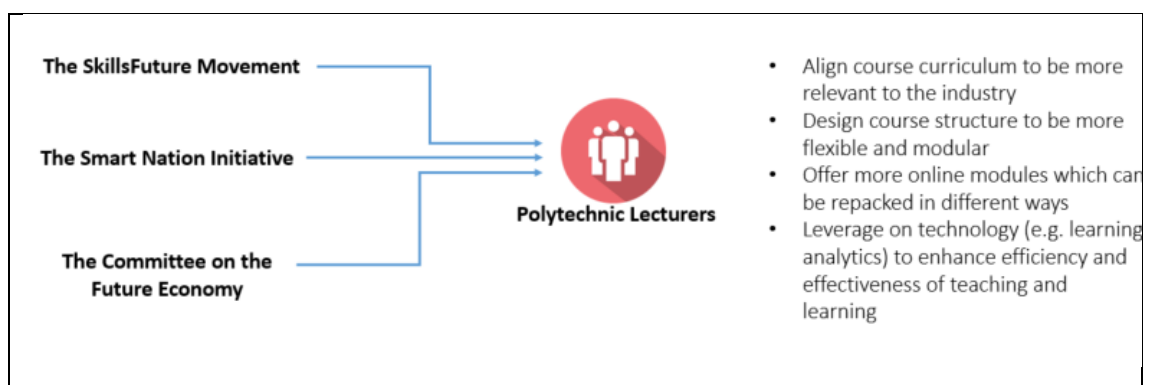


Figure 4: The Three National Initiatives' Impact on Lecturers

As I have mentioned in the previous section, the position and role of the Minister of Education (Higher Education and Skills) in all three initiatives are emblematic of how education will continue to be a key driver in the growth of various industries and enterprises. Although the education sector has always been a site where government rationalities and technologies are exercised, this will become more intense for lecturers in the higher education sector in the next decade. In a speech made to industry partners in July 2017, he shared that technology will change the way we learn because people are learning more from videos and materials on the Internet. This means that schools, polytechnics and universities will increasingly do less in knowledge dissemination but more in offering experiences. The Minister of Education (Higher Education and Skills) called upon the industry to work with educational institutions to provide students with the exposure to the industry and learn about how organisations work. He also urged industry partners to ‘get into the business of teaching’ (Ong, 2017). It is clear from his speech that the idea of education and knowledge, the place of learning and the role of lecturers will be re-constituted through these initiatives, and this is what I intend to review and investigate in the next chapter.

### 3. Dominant Discourses of Technology in Higher Education

#### 3.1 Introduction

In this chapter, dominant discourses that are related to the use and integration of technology in higher education will be discussed and interrogated with the aim of unravelling the power relations between different actors and how their agendas may affect the work of lecturers and re-constitute their identities. A discourse is a ‘network of practices that systematically form the objects of which they speak’ (Foucault, 1972, p. 49). It comprises discursive practices – what people say or theorise, and material practices – what people do (Usher & Johnston, 1988). These interlinked practices interact to provide a coherent way of representing and positioning people, things and ideas. It is important to recognise that discourse is not the same as language – although language is implicated in any study of discourses – it is ‘not merely a means of representing the world, but [also] of signifying the world, constituting and constructing the world in meaning’ (Fairclough, 1992, p. 64). Hence, discourses ‘do not just describe things; they do things’ (Potter & Wetherell, 1987, p. 6).

Discourses are regulated by a set of rules and procedures which lead to the distribution and circulation of certain utterances and statements. Some statements are circulated widely, and others have limited circulation. For Foucault, this set of structures and rules would constitute a discourse, and it is these structures and rules that Foucault is most interested in. Foucault’s focus on discourse is in the way that it is regulated: ‘in every society the production of discourse is at once controlled, selected, organised and redistributed by a certain number of procedures whose role is to ward off its powers and dangers, to gain mastery over its chance events, to evade its ponderous, formidable materiality’ (Foucault, 1981, p. 52). In *The Order of Discourse*, Foucault describes the procedures by which discourses are produced and constrained. The first set of procedures consists of three external exclusions: taboo; the distinction between the mad and the sane; and the distinction between true and false. In addition to these external exclusions on the production of discourse, Foucault also asserts that there are four internal procedures of exclusion and these are: commentary; the author; disciplines; and the rarefaction of the speaking subject (who can speak authoritatively). I will make reference to these procedures and illustrate them with examples relating to how certain discourses about the use of ICT in education are being produced or constrained.

A discourse is said to be dominant when the texts and practices it comprises draw on one another in well-established ways to construct convergent and coherent descriptions and explanations of people and ideas. A dominant discourse provides a clear language ‘for talking about a topic and... a particular kind of knowledge about a topic’ (duGay, 1996, p. 43). These dominant discourses not only produce particular kinds of knowledge but also establish various institutionalised mechanisms that form the basis for determining which statements count as true or false. Foucault refers to these mechanisms as “regimes of truth”:

Each society has its regime of truth, its ‘general politics’ of truth: that is, the type of discourse which it accepts and makes function as true; the mechanisms and instances which enable one to distinguish true and false statements, the means by which each is sanctioned; and the techniques and procedures accorded value in the acquisition of truth; the status of those who are charged with saying what counts as true (Foucault, 1980a, p. 131).

Indeed, power relations are ‘established, implemented, and consolidated through discourse and the meanings it creates’ (Hardy & Maguire, 2016, p. 84). In this chapter, I attend to ‘power plays that try to install some version of reality by disqualifying others’ (MacLure, 2003, p. 12). I see the dominant discourse of technology-enhanced education as an instrument and effect of power. Instead of seeing power as possessed by certain actors and being exercised on others, I perceive power as a web of relations that enables and constrains all actors in different ways:

Power must be analyzed as something which circulates, or rather something which only functions in the form of a chain. It is never localized here or there, never in anybody’s hands, never appropriated as a commodity or piece of wealth. Power is employed and exercised through a net-like organization. And not only do individuals circulate between its threads; they are always in the position of simultaneously undergoing and exercising this power (Foucault, 1980b, p. 98).

Discourses play a central role in enculturation, encouraging individuals to think and behave in a prescribed manner, whilst reproducing the means of control through acceptance and the ongoing replication of normalising values (Hope, 2015). MacLure (2003) observed that ‘the real world with real teachers in real schools is a violently

contested discursive milieu, invested with power, privilege and point of view' (p. 8). In this chapter, I will review the following dominant discourses surrounding the use of technology for teaching and learning:

- Transformative Power of Technology in Education – Modernity's discourse on progress and transformation has energised the integration of technology into every aspect of our lives. Education in the modern academy is increasingly being digitised. I would like to ask who has the power to speak, how is it carried out and for what purpose and for whose benefit are these discourses produced and circulated.
- Education and Knowledge in the Digital Age – Under the logic of neoliberalism, social goods such as education are repackaged in various ways to extend and disseminate the values of the education markets. I would like to identify how knowledge is replaced by information, and how education is reshaped as the learning of skills that are required for the economy.
- Reconstitution of Lecturer's Identity and Work – The wave of technology implementation in education underpinned by neoliberal values has eroded the autonomy that is closely related to the academic identities of educators in higher education. I would like to examine how this rationality has fashioned responsible subjects who willingly assume additional responsibilities and cooperate with the demands of efficiency-driven management regimes.

Dominant discourses are not completely deterministic and totalising because there is always scope for resistance. Foucault sees a discourse as not only a point through which power circulates but also 'a point of resistance and a starting point for an opposing strategy' (1978, p.101). Although the discourses relating to the use of technology for teaching and learning are dominated by largely market-oriented, functionalist and instrumental worldviews, which may even be hegemonically accepted as the ones that should be adhered to in society, they are never completely cohesive – they are 'partial, often crosscut by inconsistencies and contradiction, and almost always contested to some degree' (Hardy & Phillips, 2004, p. 304). My purpose is to challenge the dominance of such purely instrumental views and to examine more closely the contradictory power relations and effects of such discourses on the key stakeholders in education – the teachers and students.

### 3.2 Transformative Power of Technology in Higher Education

Modern Singapore cannot be imagined without the technological infrastructure that supports it. In the background and context provided in the previous chapter, I have documented how education and technology are critical in helping Singapore achieve a high profile and status in the global prestige economy. Keeping pace with technology in every sector has become second nature in a country that fears losing its position on the global stage. Within the Singapore education landscape in recent years, government leaders and ministers from the Ministry of Education often draw upon this “transformative” discourse to challenge teachers to integrate technology in their classrooms, as exemplified by the following speech excerpts:

Senior Minister of State (MOE): *It is apt that this conference focuses our attention on transforming education through technology integration, and the need for collaboration amongst educators around the world. Technology has the power to dramatically transform both learning and teaching practices, while bridging classroom learning with the real world.*

(Fu, 2010, para. 2)

Minister for Education (MOE): *Building on the good work done, mp3 [master plan 3] focused on enriching and transforming the learning experiences of our students with ICT. Our aim is simple. It is to equip our students with the critical competencies and dispositions to succeed in a knowledge economy.*

(Heng, 2014, para. 6)

If one were to trace how technology has been presented in an often optimistic and progressive manner, one has to agree with the wry observation made by Laurillard (2008): ‘education is on the brink of being transformed through learning technologies; however, it has been on that brink for some decades now’ (p. 1). The enthusiasm over the use of technology in the classroom is not a new phenomenon that has just been observed in the past thirty years. Cuban’s (1986) catalogue of education technologies from the early twentieth century illustrated that the constant search for efficient classroom instruction merely underscores the generally optimistic ways in which technological changes are imagined to be “transformative”. One example is that of B.F. Skinner introducing the teaching machine in a video clip that shows a class of students working independently on their teaching machines. Skinner confidently declared ‘Each student is using a teaching machine – a device that creates vastly improved conditions for effective study’ (Skinner, 1954). Almost 60 years after Skinner’s optimistic declaration, technology’s potential to transform education continues to be heralded.



Education policy makers around the world have identified and developed ICT strategies to transform the way education is offered and to achieve better outcomes. International organisations such as the OECD has identified ICT as one of four ‘innovation pumps’ in education (OECD, 2004). Cifuentes (2016) reviewed the OECD progress reports related to education and found that when ICT is mentioned by international organisations, some of the common expressions used to describe it were: “truly revolutionary”, ‘unprecedented possibilities’, ‘immense potential for economic change’, ‘revolutionize possibilities for learning’, or ‘profound implications for education’ (p. 287). In the United Kingdom, Comrie (2011) reported that the HEFCE strategy for eLearning (2009 revised) was put in place to reap benefits, such as (1) efficiency (so that existing processes can be carried out in a more cost-effective, time-effective, or scalable manner); (2) enhancement (by improving existing processes and the outcomes); (3) transformation (facilitate radical change in existing processes or introducing new processes). Within the Singapore education landscape, the Ministry of Education (MOE) has built on the previous three ICT master plans and developed the fourth master plan with the goal of putting ‘Quality Learning in the Hands of Every Learner - Empowered with Technology’ (MOE, 2016).

If one were to study how technology is positioned by international organisations such as the OECD or government ministries such as the MOE, the potential to transform, revolutionise and empower is often extolled. Selwyn and Facer (2013) noted that many studies in the field of education technology have continued to focus on the “what ifs” and “best case” examples of education technology despite a long history of eagerly anticipated but largely unrealised technological transformation. Rudd (2013) examined findings of large ICT in education studies such as the ImpaCT and ImpaCT2 in the United Kingdom and found that hyperbolic claims were often camouflaged by the use of spurious evidence and ‘positive findings are also overstated in subsequent reporting and presentation to wider audiences’ (p. 158) in line with the broader political agenda of modernisation.

I will now examine this discourse of transformation by postulating that this discourse could have been established by the exclusionary techniques (procedures for classifying, distributing and ordering discourses) that were proposed by Foucault (1970). Firstly, **commentary** (i.e. writing or talking about a discourse) in the form of repetition and reiteration at major MOE events over the years could be a means of shaping the identity of technology, and ‘anointing’ it with transformational power. Commentary may not just be limited to text, but is often combined with visual imagery. Journalism and popular press in search for news often keep the discourse in circulation. Two examples are illustrated in Figure 5, where one is a screen grab from a television documentary, and the other is a screen grab from an online news article. Both examples highlight that technology is an indispensable component for learning in the new age.

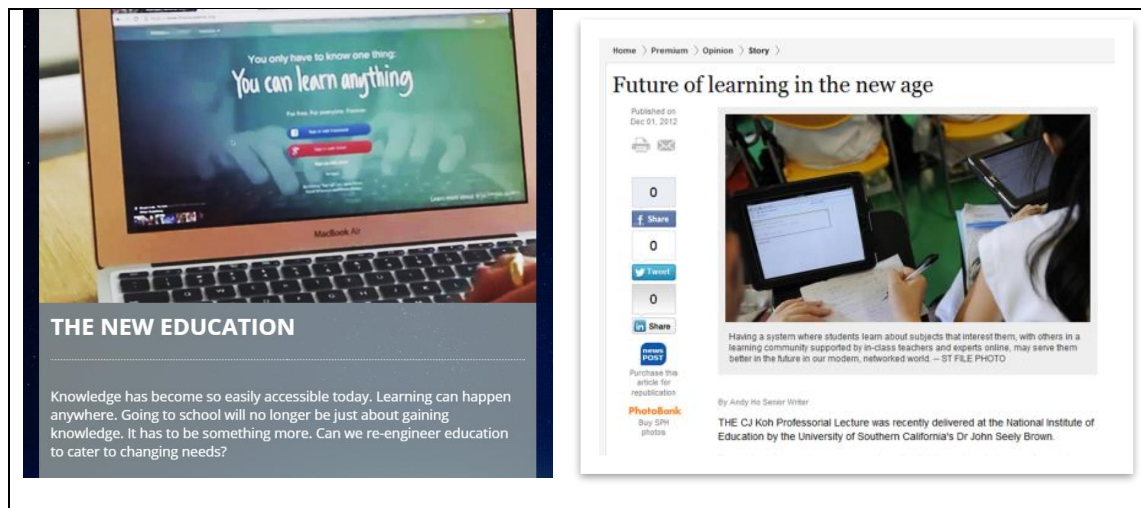


Figure 5: Commentary through text and visual imagery

Secondly, the **rarefaction** of the speaking subject, which places a limit on who can speak authoritatively on a particular discourse. In the excerpts presented at the beginning of this section, the speeches were given by the Minister of Education. Ministers are public officers with a very high status and so their speeches and the discourses and ideas contained within them will also be accorded a very important status. Foucault also spoke of verbal rituals. I relate the speeches given at milestone events (e.g. gathering of school principals) as a form of ritual, and this has a way of enhancing the value of discourse.

Thirdly, the **disciplinary boundary** can work to limit (or expand) a discourse by prescribing what can be counted as knowledge within a particular discipline or subject. For example, the Minister of Education in 2014 was giving a speech at the 4th International Conference for Teaching and Learning with Technology, jointly organised by the Ministry of Education and the Singapore Academy of Principals. The delegates comprised mostly policy makers and senior school administrators and managers from 23 countries, with teachers using technology in the classroom comprising a small minority. Such events are also frequently sponsored by private businesses in the field of education technologies. These companies often build on the discourse and repeat it (a form of commentary as proposed by Foucault) in their talks, white papers and marketing materials. Selwyn and Facer (2014) observed that the discipline of education technology is dominated by academic work that is framed within the ‘learning sciences’ rather than the social sciences, with its thoughts influenced firmly by post-Vygotskian theories of learning. Hence, the learning sciences could form a boundary within the field of education technology to disqualify other forms of knowledge from making contributions to the field.

From the above discussion of the discourse relating to education technology, I agree with Selwyn and Facer (2013) that the use of ICT in education needs to be understood in political terms involving conflict and struggle over the distribution of power. Research in this field needs to raise questions about how new educational practices are being negotiated through the introduction and use of new technologies, and who benefits from such new settlements. I am of the position that education technology will affect teachers and students the most, but I am also aware that various public and private actors in the education arena play a role in the ordering and circulation of discourse. I will continue to interrogate the power relations in this field related to ‘the “macro” elements of the social structure of society such as global economics, labour markets, and political and cultural institutions and the “micro” level of the individual’ (Selwyn & Facer, 2013, p. 5) – how classroom practices are carried out by the teachers and students.

Before technology enters the classroom setting with the purported aim of enhancing pedagogic practices, the use of technology has long been influenced by a variety of stakeholders with diverse agendas. Firstly, state policies are formulated and implemented to achieve specific objectives as well as to address wider contemporary societal issues such as ‘global economic concerns of national competitiveness, the up-skilling of workforces, performative logic of the labour market, the dynamics of global capitalism and the intensification of the economic function of knowledge’ (Selwyn, 2011, p. 66). The assertion about the symbolic value of technology coincides with the socio-anthropological views about the purported function of technology as a mythic symbol of economic optimism and of power for politicians, policy makers, education leaders and businesses (Robertson 2003). Similarly, Rudd (2013) posits that new technologies are often presented as a symbolic representation of progressive change, and largely portrayed as ahistorical and apolitical, and a necessary modernising and democratising tool. Hence, we can see that investment in education technology by many countries including Singapore is an endeavour to achieve a high status in the global prestige economy, and it is the economic rather than pedagogic significance of technology that continues to drive and shape its use and implementation in the classroom.

Secondly, in the education technology field, education technology corporations such as Apple, Cisco and Microsoft have also been key drivers and influencers for many years since technology adoption and integration in schools will have a direct impact on their profit margins. Manes and Andrews’ (1993) book on Bill Gates, founder and co-chairman of Microsoft reported that Gates was the most powerful person in the computer industry and the youngest self-made billionaire in history. Under the "Microsoft Everywhere" rallying cry, Gates wanted to expand his company's worldwide dominance to office equipment, communications, and home entertainment. Over the years, Microsoft’s vision of the future was realised in its conceptualisation and implementation of the “office of the future” and the “home of the future”. In 2006, Microsoft partnered with a school in Philadelphia and realised its dream of the “school of the future”. It is no surprise that teachers in the school relied heavily on Microsoft products for teaching and learning (Hertzier, 2012). It is also no surprise that after more than 20 years, Bill Gates is still considered by Forbes to be the richest man in the world (Dolan, 2015).

Facer (2014) warns that the building of ‘schools for the future’ is not an innocent building project – but that ‘it is a project concerned with creating new economic and social identities, with reconfiguring the relationships between education and the workplace’ (p.122). The example is given that just as the industrial revolution transformed the home and created the school in order to provide a disciplined workforce for the new factories and offices, the digital revolution could also reshape how social relations are enacted. In Singapore, the Classroom of the Future (COTF) is a collaborative initiative by the Infocomm Development Authority of Singapore (IDA), Microsoft Singapore and MOE schools, with the objective of demonstrating the possibilities of key technologies and solutions for teaching and learning. The physical set up showcases technology propositions on the use of touch-screen tables and interactive walls for teaching and learning in the near future. Since all the technologies are sponsored by Microsoft Singapore, teachers will need to subscribe to the proprietary standards and use the proprietary software. The standard technology platforms described above may lead to standard education experiences, limiting and constraining the ways in which educators plan and design their lessons.

Standard platforms can also be observed in the recent rise of Massive Open Online Courses (MOOCs) learning platforms. Since such platforms are owned and developed by revenue-seeking technology and corporate start-ups, only well-funded elite universities can afford to use or buy their services, further enhancing the status of these universities. Given their influence, MOOCs may promulgate particular interests, and particular expressions of knowledge over other interests or other expressions of knowledge (Ebben & Murphy, 2014). Rhoads, Berdan and Toven-Lindsey (2013) call for a greater scrutiny of ‘an Internet-based knowledge system in which certain disciplines and fields of inquiry become [more dominant while other disciplines and fields become] further marginalized by their lack of adherence to this form of knowing’ (p. 92). This seems to be the case when I scanned the Coursera MOOCs. Specialisations such as data science, digital marketing and cloud computing were more prominent. This may indicate that socially relevant and applied knowledge has become more important in the new knowledge economy. In other words, MOOCs may become a tool for promulgating the relatively narrow goals of academic capitalism, privileging the disciplines that serve the dominant economic order.

So far, we have seen that the aspiration towards the global prestige economy may drive policy makers and education leaders to increase the use of ICT in education, and the huge investments by education technology companies is driven by the potential of commercial returns. Although these entities have their own agendas and they are governed by their own rules, they are not autonomous because they mutually condition each other through discursive practices across multiple institutions (Shutkin, 1998):

Government policies define curricular objectives... philanthropic institutions define expertise... journals define the concerns of a teacherly audience, legitimate research, and effective pedagogies. Professional organizations lobby policy makers, prepare research documents, and encourage the formation of a supportive community through annual meetings and conferences (p. 211).

This is a depiction of Ball's (2009) 'restless capital' which is always 'seeking new opportunities for profit, new possibilities for commodification (p. 134). Hence, in the burgeoning education technology marketplace, publishers, writers, researchers, event organisers and consultants create new opportunities to position themselves in the "profit and loss" marketplace by convincing both policymakers and practitioners alike of the transformational power of technology (Nutt, 2010). Rudd (2013) observes that it is a common practice for various stakeholders in the education technology field to engage in cross promotion (citing the case of Becta and Ofsted in 2009), often overstating the presumed positive effects of using ICT. While positive findings are often foregrounded by technology drivers as a 'high profile way of keeping 'on message'' (Selwyn, 2011, p. 66), other evidence tends to be overlooked. Evidence such as 'setup times, the impact of failing technology, ineffective teaching with technology, pupil distraction from task, downtime, cost of upgrades and refurbishment' (Rudd, 2013, p. 159) tended to be disregarded as issues that would be resolved over time.

Having discussed some political forces that have ushered technology into the classroom, I will now enumerate some 'state-of-the-actual' (Selwyn, 2008) studies to understand the lived experiences and practices of teachers and students who are using technology in the classroom.

Heitink et al. (2016) reported in their study that most teachers used technology because they were deemed to be more attractive for students, and they indirectly assumed that technology's ability to make teaching attractive contributes to its effectiveness for student learning. In Johnson's (2012) study, not only did the academics perceive limited value in new technologies, many viewed technologically rich instruction as detrimental to student learning. Many reported that students view course management software, presentation software, and the Internet as substitutes for learning. Even when some of them used technology in the classroom, it was for reasons that were not related to pedagogy. For example, some academics viewed students' prior socialisation to technology as problematic and used technology to hold the students' attention. The following excerpt exemplifies such a use:

You can't expect to keep kids' attention by standing there talking to them any longer. It just doesn't work. You have to keep bombarding them with visual material even it's only peripherally related (p. 136).

Academics in Johnson's (2012) study also spoke about the use of technology as an ornamental prop to legitimise the image of the institution to be on the "cutting edge" of technology. They also believed that the administrators' motivation to employ more education technologies was to increase economies of scale so that more students could be taught by fewer professors, resulting in increased workload for the academics. Those who tried to use technology on sound pedagogical principles have found the workload to be excessive.

Johnson's study demonstrated a great gulf between the characterisations and ideals of what technology can do for higher education as advanced by its advocates and the meaning that the academics assigned to technology as they used it in the classroom. This repeated jarring between the homogenised and idealised versions of technology's potential prompted by national school technology agendas and the reality of classroom implementation should not come as a surprise (Selwyn, 2011), especially if technology 'has not been introduced into school systems primarily for educational reasons, then it cannot be expected to have ended up being used in educationally effective ways' (p. 59).

Hannon's (2013) study attended to what Selwyn (2007) called the 'nontechnological issues' (p. 93) of ICT. These issues could be either social or organisational, and the study was approached through an enquiry into the technology-embedded practices of learning by studying its activities, and the connections between social and material entities. Hannon's study was located at the nexus where institutional e-learning strategies, procedures, technologies, discourses and teaching staff converged. It was found that much time and effort is required to negotiate competing technology demands (represented by learning technologists appointed to support faculty in achieving the business goals of learning content sharing) and pedagogy demands (represented by faculty's requirement for autonomy and control and ensuring that context and meaning are not lost when the learning content is packaged and modularised). In the end, much compromises and reconfigurations were made to the preexisting practices of the learning technologists and the faculty, rendering poor outcomes for the project, much less achieving the ideal goals of enhanced engagement, interaction and collaboration.

These studies demonstrate the problems associated with discourses which appear to be prescriptive and decontextualised, such as techniques and tool-kits about how digital teaching and learning can be conducted. Generalised prescriptions cannot be simply applied onto practice because concretisation and context are imperatives in practice. Every classroom has its own unique context, and teachers and students have to negotiate complex relations in particular situations within a given classroom context.

### **3.3 Education and Knowledge in the Digital Age**

Another dominant discourse that pervades any discussion about ICT and higher education is related to the information revolution, which is characterised by the rapid advancements in technological innovation and the global proliferation and application of ICT in everyday life. Although information and knowledge may have some commonalities and are used interchangeably in our daily parlance, we need to be more critical about their nature when they are used in the educational context. With the rise of online learning brought about by the information revolution, the possibilities of speed and access are extolled, but the distinction between information and knowledge has been blurred.



The growing digitisation of society is transforming both the nature of knowledge and the social processes associated with its transmission (Lyotard, 1984). The nature of knowledge is such that if it is to fit into the technological frame and become operational, it must be translated into quantities of information. The quantification of knowledge into information has led to the adoption of a “granular” approach (Wiley, 2001) to learning structured around “learning objects” (small portions of study that includes some information and activity that are directed at certain stated learning objectives). This would ensure that once such learning materials had been developed, it could be re-used in different contexts, thus removing the need for duplicated efforts by different teachers. Dividing the subject material into discrete and independent “chunks” of learning would create the opportunity to enhance efficiency and facilitate reusability. Modules and courses could be created by combining and organising a series of learning objects. While convenient and cost-effective, this may promote a “pick-and-mix” approach to education (Ennew & Fernandez-Young, 2006) and students may eventually ‘tick-box their way through pre-packed instructional materials’ (Butson, 2003, p. 667). This is already happening in the MOOCs arena. Ebben and Murphy (2014) highlight the narrow view of knowledge employed in some MOOCs that view knowledge as a product to be transmitted to anyone with an internet connection and a computer – as if knowledge were a package to be delivered. Education on certain MOOCs appears to exemplify the banking system of education (Freire, 1970), where the teacher is akin to a depositor of knowledge and the students are receivers of knowledge. Oppression in society is seen by Freire to be maintained by such a system:

It is not surprising that the banking concept of education regards men as adaptable, manageable beings. The more students work at storing the deposits entrusted to them, the less they develop the critical consciousness which would result from their intervention in the world as transformers of that world. The more completely they accept the passive role imposed on them, the more they tend simply to adapt to the world as it is and to the fragmented view of reality deposited in them (p. 54).

The current trend towards the codification and commodification of knowledge is being driven by a combination of economic and technological forces. Roberts (2001) warns that this trend, if left unchecked, could lead to the development of a codified knowledge economy where the primary economic activity is the processing of information. In such an economy, 'the natural creative force of human kind would be in danger of being undermined by the twin forces of economic and technological rationality' (p. 113). Many online learning management systems are designed such that content and learning activities are structured neatly in advance. Unlike traditional face-to-face classrooms, it is impossible to engage with students in an open and unstructured manner. In other words, the open-endedness of education and knowledge construction is being expelled. Through such strongly structured online learning environments, 'experiences such as 'groping in the dark' or 'being left in uncertainty' cannot (and are not allowed to) have a place any more in the learning process' (Lambier & Ramaekers, 2006, p. 560).

Brabazon (2012) warns against the assumption that more media creates greater meaning and that information availability is synonymous with knowledge creation. She presents a paradox – that in our current online environment that is pervaded by an information glut, there is a real lack of information literacy. She observes that students can be easily satisfied with the information that is returned to them by search engines such as Google. Because of the ease of use that fosters a culture of satisfaction among the students, they do not consider other choices that they could have made. However, she contends that this culture of satisfaction goes against the goal of education; 'The goal of education is not to satisfy, but to challenge, confuse, irritate and unsettle, to agitate truths we have accepted in our lives' (p. 4). Attick (2014) asks: 'What is a good education? Why is a good education important? Is education the key to a good life, and what does that even mean? Is a consumerist-careerist notion of education, where completing the most efficient, quickest, and cheapest education possible so as to land a job in the global economy, really all that's left to education today?' (p. 7). If indeed education has been reduced to the efficient consumption of fragmented information packages solely to prepare students for the labour market, then this will have serious negative ramifications on students' development of higher order, critical thinking skills and more importantly, their readiness to engage and contribute as citizens.

As education is digitised in the information age, knowledge has been replaced by skills and learning. Biesta (2005) argues that the concept of learning has risen and the concept of education has declined, and that teaching has ‘become redefined as supporting or facilitating learning, just as education is now often described as the provision of learning opportunities or learning experiences’ (p. 55). This ‘learnification’ phenomenon (Biesta, 2010) is now focused on the process of learning and the learner:

Speaking of a learner, rather than a pupil or student (or in other contexts, a scholar or apprentice), is to imply that this person’s role and significance is no longer defined in terms of an institutional and broader cultural context. In their place, the term “learner” elevates a single activity or function—namely of learning—and underscores the importance of its optimization. A similar result is obtained for the teacher, who is either “rendered obsolete” or whose function is otherwise subsumed to the process of learning and the function of the learner. The teacher becomes an enabler, facilitator, or figurative midwife to a learning process (Friesen, 2013, p. 33).

Moltó Egea (2014) contends that education and learning are two very different concepts that have been conflated in the current technology imperative discourse. He argues that learning is what people do as individuals. On the other hand, the concept of education generally denotes learning that takes place within a certain setting with a specific set of relationships, roles and responsibilities. Furthermore, learning is a process that is focused primarily on the content. On the other hand, in any educational context, what is learned and why it is learned are important questions to be examined and interrogated by all who are involved in any education context. The result of emphasising learning constitutes a technical framework that produces students as an ‘entity’ to be filled with knowledge, skills or competencies. This has led to education being recast as ‘pertaining to individuals rather than to represent a set of relations and social dimensions... reality is constrained as a matter of productivity, efficiency and profitability’ (p. 277). Olaniran and Agnello (2008) warn against losing education under the label of learning with learning connoting ‘keeping up with changing technologies in dynamic political economies versus education as preparation for citizenship, along with self-and social-development’ (p. 70).

This re-definition characterises education as an economic transaction in which the learner is the customer with certain needs and the teacher is positioned as a service provider. Morley (2003) describes the emergence of a new generation of consumer-students, who increasingly see themselves as ‘purchasers of an expensive product’ (p. 129) to the effect that ‘the intellectuality of the higher education contract seems to have been eclipsed by attention to service level agreements’ (p. 131). Over time, the institution’s mode of operation will be that of a business entity, with its focus on optimisation and efficiency. “Speedy Pedagogy” (Hartman & Darab, 2012) underlined by a neoliberal rationality that requires flexibility in delivery, pace, and location has assumed that it is possible to compress learning into shorter timeframes. However, this time compression necessitates ‘the delivery of intellectual content in short chunks that often allows only for the teaching of concepts rather than encouraging an ability to range widely, reflect upon the material, interrogate its underlying assumptions, and look for applications to other areas of knowledge’ (p. 56). This seems to be where some higher education institutions are heading – the realisation of Noble’s ‘digital diploma mills’ (1998) and Ritzer’s ‘McUniversities’ (1998). Education has become ‘a product one buys, rather than a process one enters’ (Morley, 2003, p. 9). In this regard, market-oriented concerns such as individualisation, customised pathways, just-in-time learning programmes are already visible on many public and private e-learning portals. Taken as part of the knowledge economy rhetoric and practice, Patrick (2013) sees that ‘it is not just knowledge within higher education that is reduced to utilitarian value... the student as a person is commodified within the system’ (p. 42). Evans and Smith (2011) note that the rise of neoliberalism has reconfigured the traditional distance education from a public good, serving those who were geographically or socially distanced from education to a (quasi-)private enterprise that is oriented to serve market needs. The re-casting of teachers as commodity producers and students as consumers will cause previously integrated relationships between teachers and students to become disaggregated with each party invested with distinct and opposing interests. Such consumerist mechanisms ‘may be seen as a device to reform academic values and pedagogic relationships to comply with market frameworks’ (Naidoo & Jamieson, 2005, p. 271). All these measures may reconstitute the identity and the work of academics in higher education, which is what I will discuss in the next section.

### 3.4 Reconstitution of the Identity and Work of Lecturers

The traditional identities and practices of teachers may be challenged by discourses relating to educational change (Cifuentes, 2016). Recent education reforms such as the use of technology to support the flexible provision of education will inevitably shape and mould the identity and work of teachers. *Flexible Pedagogies: New Pedagogical Ideas* is a study funded by the Higher Education Academy (HEA) in 2013. It considers the purposes and outcomes of Higher Education in an era of increasing flexibility informed and facilitated by technological changes, globalisation of the sector, rising participation and changing employer expectations. In it, Ryan and Tilbury (2013) propose that flexibility should be considered as an attribute not just of students (whom they identify as learners), but also of educators! Davies (2005) has argued that for academics to survive in neoliberal regimes so as to keep their jobs, they have to be ‘necessarily flexible, multiskilled, mobile, able to respond to new demands and new situations’ (p. 9). In the same vein, Moltó Egea (2014) contends that the neoliberal subject of education has to adapt constantly to new situations, and continuously acquire new competencies: ‘a precarious subject when directed toward obtaining meaning, direction and purpose, but one who must also be trained to perform effectively and to maintain a proactive attitude towards his/her own personal destiny’ (p. 279). Edwards (2008) observes that when flexibility and innovation are positioned as measures of success, organisational technologies (such as the exercise of power) and technologies of the self (the fashioning of subjectivity) become aligned with technologies of success (motivation and enterprise). As a result, the personally desirable (greater self-fulfillment through performing excellently and being recognised as such) is being shaped by the organisationally desirable (more productivity, flexible working, increased efficiency and maximisation of outputs). In this way, the self-fashioning and self-regulating subjects are stimulated to regard self-investment strategies such as maximisation of capacities and dispositions as both necessary and desirable.

Davies (2005) explains how the two technologies of the self constitute a successful subject within the neoliberal spaces of higher education. The first is the assumption of individual responsibility for survival, where survival becomes a purely individual project. Entrepreneurial academic subjects are encouraged to compete with each other for economic entities such as funding opportunities and travel grants. In conditions of labour intensification and rising competitiveness for fewer job opportunities, the desire to survive is instilled in ways that drive them to maximise both their individual potential and competitive advantage. The second technology is surveillance through the use of reporting mechanisms. The development of these mechanisms is costly as they consume scarce financial resources and require an increase in academic labour. Workload changes meet little resistance because the shift is gradual and seemingly inevitable.

The massification and internationalisation of higher education have transformed the university from a universal welfare entitlement to a consumer driven system (Harris, 2005). Corporate image and identity are increasingly important as universities sell themselves and their brands which intensifies competition among institutions. In the current education marketplace landscape that is increasingly leveraging on technology, academics need to negotiate and construct academic identities in line with corporate identity. Yang (2005) notes that ‘once professors professed, now according to critics, they are merely professionals, entrepreneurs, careerists, and opportunists, as in the corporate world’ (p. 36). Ebben and Murphy (2014) suggest that the subtle, but significant shift in the ways in which faculty are labelled in the MOOC discourse – where the title professor is rarely used, and the term instructor or facilitator is frequently invoked - may imply a diminished importance of perceived knowledge, autonomy and status on the part of the professor. Ball (2012) observes that what used to be a clear demarcation between public and private higher education, is now thoroughly blurred. Higher education is increasingly entangled in partnerships, linkages and networks with commercial entities, creating ‘discursive capillaries through which the sensibilities and dispositions of enterprise, competition and profit flow and the ontology of neoliberalism is generalised’ (p. 24).

In *The Uberfication of the University*, Hall (2016) troubles the rationalities and practices of the sharing economy that is being translated from commercial enterprises such as Uber and AirBnB to institutions such as the university. In the near future, professors and lecturers may face the same fate as taxi drivers because they need to be entrepreneurial and sell their cheap and easy-to-access courses so as to compete in the “alternative” education market shaped by the rationalities and practices of the sharing economy. As a result, professors and lecturers may experience all the problems of de-professionalisation and be subjected to forms of precarity such as short-term or zero hours contracts. They are also increasingly susceptible to continuous performance monitoring by networked surveillance technologies that such an economy is built upon. Brabazon (2016) observes that with the proliferation of social media, the service orientation of a university never clocks off. Since education is being seen as a product that is being bought and consumed, academic staff are treated like shop assistants who must serve the students’ interests. Students in her online class use multiple platforms (email, learning management system and social media) to ask the same question in the hope of getting a quick response. She feels hounded and at the same time resentful that ‘instead of reading a study guide, attending the lecture or visiting an institutional learning management system, all of which take hundreds of hours in preparation from staff, they continually find that the easiest option is to contact me, rather than selecting the most appropriate means’ (p. 5). This callous behaviour is configured by the dependency culture that discourages learning and impedes the cultivation of independent critical thinkers.

Bladergroen et al. (2012) reported that educators’ discourses in the use of ICT were dominated by the perception of disempowerment. This disempowerment was evident in their struggle to verbalise the challenges that were experienced in the integration of ICT in the teaching context. Kanuka and Rourke (2008) have found that when academics have to implement online learning, they have expressed the process as being problematic for academic freedom and associated to some extent with deprofessionalisation of teaching as a scholarly activity. In particular, they have voiced their concerns about the increased presence of software corporations and publishing companies who worked together to develop e-content for their courses.

Most online learning systems require teachers to plan their lessons in a structured and orderly manner. Students' "learning" is expressed in actions such as logging in, clicking on links, downloading files and accessing materials. Teaching and learning have been:

monopolised by the ideal of the information-based society, namely availability. More than ever before the substantial value of knowledge (its content) and the way it is acquired tend to be devaluated in favour of its (re)presentability and utility... If it's there, it's all right. (Lambier and Ramaekers, 2006, p.547).

My colleagues and I can relate to "if it's there, it's all right" when we were offering online courses. Our primary concern then was related to the availability of the online teaching materials – Have we uploaded the materials? Are students able to access them? If it's there, it's all right! Furthermore, when our courses had to go online, our efforts were primarily focused on ensuring that the presentation of the content (form) looks good, with little time spent on ensuring that the substance is not lost in a computer-mediated environment.

Smith and Jeffery (2013) argue that 'much academic labour has always been hidden and unrecognized, the introduction of online teaching practices substantially increases invisible work' (p.376). Online teaching entails an inevitable extension of working time as well as an intensification of what is expected of educators within a space of work without boundaries. Brabazon (2016) related the hidden academic labour involved in her experience of teaching online courses and recounted the deep impact of the heavy workload on her family and friends: 'Every day – including Christmas and what is termed 'annual leave' – I (desperately) tried to keep up with student queries' (p. 5). In examining the lived experience of online educators, De Gagne and Walters (2010) found that online teaching is time-consuming and labour-intensive. Their participants' response included 'it does require a lot more time for me to be personable, to interact with them through different visual cues, different sounds, pictures, and ways of presenting the material and that is very labor intensive', 'online teachers are allocated the same teaching responsibilities as face to face but I would think the work load is two to three to one', 'you feel like you need to constantly check in with your students in a 24/7 format.' (p. 360). This labour-intensive aspect of the lecturers' work related to designing and facilitating online teaching will be investigated in my study.



### **3.5 Summary**

I have reviewed the dominant discourses of the use of technology in higher education in this chapter. These dominant discourses are pervasive in the Singapore educational landscape. While the grand narrative of technological enhancement will “naturally” support Singapore’s aspiration towards achieving the global city status, I will endeavor in this study to look into the subterranean world of teaching and learning with technology that seldom come to the surface. I aim to explore how lecturers are responding to the need to move their courses to the digital arena, and whether the move to the digital arena has reconstituted their identity and work as lecturers. In the next chapter, I will describe the research methodology that I have adopted and elaborate on the research stance that I have taken to aid me in examining the ways in which the subjectivities of lecturers are constructed and how pedagogical practices are enacted as they engage with digital pedagogies in the polytechnic.

## 4. Research Methodology

### 4.1 Introduction

In this chapter, I will outline the research approach that I have taken, the decisions that I have made and the dilemmas that I have faced throughout the research process. I recognise that research methodology involves more than conforming to a set of unambiguous methodological rules and manoeuvres (Carr, 1983), and that it is more than a ‘technology’ comprising a set of methods, skills and procedures applied to a defined research problem (Usher, 1996). I agree that when research is reduced to a set of cold and clinical methods and attitudes, the complexity of the social world will also be closed down (Lather, 2006). While research methods prescribe systematic means by which research is accomplished, research methodology denotes the study of, or an analysis of the way in which the methods are selected and applied based on certain assumptions (Dunne, Pryor & Yates, 2005). This includes the stance that I take as a researcher, the orientation I take towards the research participants and the data that are generated, interpreted and reported in the study. Figure 6 shows how epistemological and ontological issues, ethical and macro-political issues, practical and micro-political issues are implicated as one considers methodology as a space where these different issues intersect and affect each other. I will discuss my approach in navigating these inter-related issues in the following sections.

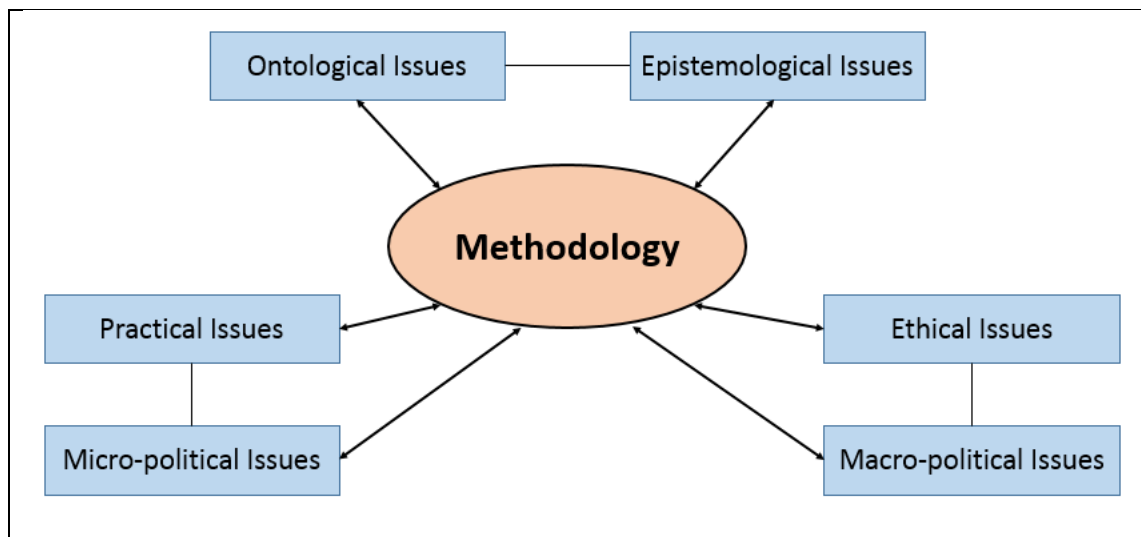


Figure 6: A diagram (adapted from Pryor, 2010) to show how the six issues are implicated in one's methodology

## 4.2 Ontological and Epistemological Positioning

Ontology is about the nature of the world, or what reality is there that can be known (Guba & Lincoln, 1989). It is concerned with ‘what kind of world we are investigating, with the nature of existence and the structure of reality’ (Crotty, 2003, p. 10). On the other hand, epistemology is concerned with different kinds of knowledge claims (Usher, 1996). Ontological and epistemological questions are related since claims about what exists in the world will be related to claims about how the world may be known. Since the eighteenth century in Europe – a period termed the Enlightenment – research and knowledge production have been dictated by the ‘discourse of science’ (Usher, 1996, p. 11) where it is asserted and accepted that true objective knowledge about certain aspects of the world can be obtained by following a set of scientific principles and methods. René Descartes proposed that the absolute and certain truth can be sought by identifying a solid basis for knowledge. By claiming the unity of science and that only knowledge produced by science can be true, Descartes rejects contingency, mathematizes science, privileges individual reason as a source of justification and establishes essentialism and the distinction between the mind and body. He also instituted foundationalism, the idea that indisputable knowledge must be constructed from the bottom up to ensure its truth all the way down (St. Pierre, 2012). To ensure the integrity of the research outcomes in such an endeavour, the researcher needs to be objective, distanced and value-neutral. In taking this approach towards research, the researcher takes the position of the ‘ideal universal knower’ (Usher, 1996, p. 12). This position can be taken up by any other researchers who are objective, distanced and value-neutral, who are similarly trained not to contaminate the data with their personal interests and histories. If one were to accept this research approach, then one would be committing to the assumptions and claims of positivist/empiricist epistemology where knowledge claims are achieved by following a set of logical rules which are independent of the world and its social practices. The aim of this endeavour is to identify a universal truth rather than a set of knowledge claims that is more contingent on the historical and social context. The natural science ideal has over time become attractive to many scholars because there is a ‘logical simplicity to the natural science paradigm, and the natural sciences’ impressive material results speak for themselves’ (Flyvbjerg, 2001, p. 26) because they have produced explanations and predictions that are based on a cumulative base of context-independent knowledge.

The dominance of positivist/empiricist epistemology has had several consequences. Firstly, in the social sciences and in social research a pre-eminent place has been accorded to the production of true objective knowledge based on a strict adherence to a set of scientific methods – ‘From what appears or is presented as data, facts, the unequivocal imprints of ‘reality’, it is possible to acquire a reasonably adequate basis for empirically grounded conclusions and, as a next step, for generalisations and theory building’ (Alvesson & Sköldberg, 2009, p. 1). Secondly, there has been an adoption of the language and methods of the natural sciences in social and educational research (Usher, 1996). The use of scientific principles and the application of logical determinism with an emphasis on order, causality and linearity became the norm (Grbich, 2004). Furthermore, there is a kind of “metric mania” (Lather, 2012) that disqualifies what cannot be easily counted and quantified in a way that elevates the status and forms the boundaries of science.

The critical question for social scientists, as articulated by Flyvbjerg (2001) is: ‘Can the study of humans and society be scientific in the same manner as the study of natural objects? Can we speak of a unified science, or should natural-science inquiry and social-science inquiry be viewed as two basically different activities?’ (p. 25). The problem with social and educational research based on a positivist/empiricist epistemology with its emphasis on the natural sciences as the model is that its ontological assumptions that the nature of the social world is orderly and hence predictable and generalisable are highly problematic. While some aspects of the world are stable and orderly, Law (2004) argues that there are other aspects of the world that are ‘complex, diffuse and messy... changes like a kaleidoscope’ (p. 2) and asks how existing methods based on the assumption that the world is orderly and deterministic can be used to study the realities of the world which are textured differently.

Flyvbjerg (2001) unpacks the concept of scientific theory based on Dreyfus’ (1986) characterisation of theory as (1) explicit, (2) universal, and (3) abstract. A theory has to be expressed clearly so that it can be understood by any reasoning person without relying on an individual’s interpretation or intuition. Secondly, a theory has to be universal so that it can be applied in all situations and all times. Thirdly, a theory has to be abstract in that it must not make reference to any concrete examples. Furthermore, a theory must be (4) discrete, constituted only of context-independent elements, and makes no reference to any human interests, or institutions. A theory must also be (5) systematic – in that context-

independent elements (properties, factors) are related to each other by rules or laws. Finally, a theory must be (6) complete and predictive. These ideal theory characteristics are deemed by Dreyfus to be attainable in varying degrees in the natural and physical sciences but can never be fully realised in the social sciences due to the central importance of context inherent in everyday human activity and social life. Flyvbjerg (2001) posits that the background contexts in the social world are not stable physical facts such as mass and speed; they are constituted of patterns of behaviour that ‘change without the researcher being able to state in advance which aspects one should hold constant in order for predictions to continue to operate’ (p. 45).

Flyvbjerg (2001) goes on to revive the "intellectual virtues" of episteme, techne, and phronesis in Aristotle's *Ethics*. Episteme is most closely characterised by the modern scientific ideal as practised in the natural sciences based on analytical rationality. It is concerned with universals and the production of stable knowledge over time and space. Techne appears today as technique; it denotes practical knowledge (often associated with crafts people or artists) that is applied in concrete and context-dependent situations. Phronesis is the intellectual activity most relevant to praxis. Sometimes translated as “prudence”, it is concerned with the analysis of values and judgments. For Aristotle, the most important task of social and political inquiries was to develop society's value-rationality vis-à-vis its scientific and technical rationality. Since Aristotle's time, the importance of value-rationality has receded into the background, and scientific and technical rationalities have become dominant and pervade the thinking of all inquirers after the Enlightenment. This ideal ‘has come close to being the only legitimate view of what constitutes genuine science, such that even intellectual activities like social science, which are not and probably never can be scientific in this sense, have found themselves compelled to strive for and legitimate themselves in terms of this Enlightenment ideal’ (Flyvbjerg, 2001, p. 55). Law (2004) makes the following impassioned plea to social researchers:

What we're dealing with here is not, of course, just method. It is not just a set of techniques. It is not just a philosophy of method, a methodology... It is also, and most fundamentally, about a way of being. It is about what kinds of social science we want to practise. And then, and as a part of this, it is about the kinds of people that we want to be, and about how we should live (p. 11).

Critiques of the modern era of science where reason and progress were privileged and where the knowledge foundations were believed to be gained through reason began to emerge at the turn of the 20th century. It was posited that although reality might be knowable, it was more complex than had been previously thought. Even the dominant assumptions of the natural sciences based on order, predictability and the universality of knowledge have been challenged by Poincare's failure to find order in the solar system, Einstein's law of relativity and Heisenberg's uncertainty principle in quantum mechanics (Grbich, 2004).

Furthermore, every ontology and epistemology is culturally specific, historically located and value-laden. Harding (1991) claims that 'all scientific knowledge is always, in every respect, socially situated. Neither knowers nor the knowledge they produce are or could be impartial, disinterested, value neutral, Archimedean' (p. 11). A set of scientific principles and methods 'is not an abstract set of logical rules, 'made in heaven' and universal in their applicability, but a way of working specific to particular research paradigms and to particular disciplinary pursuits, and which has evolved historically with the growth of the natural sciences and of Western philosophy' (Usher, 1996, p. 14). Indeed, all knowledge claims have a social dimension since these claims are made and justified by knowledge producers with certain values and agendas. Scholars are also enculturated in specific environments involving other scholars, and it is through the process of participation in the rules and practices of a community of scholars that their knowledge claims can be accepted. In Foucault's (1977) study and observation of the history of reason, he observes wryly that reason was born in an altogether 'reasonable' fashion – 'from chance; devotion to truth and the precision of scientific methods arose from the passion of scholars, their reciprocal hatred, their fanatical and unending discussions, and their spirit of competition – the personal conflicts that slowly forged the weapons of reason' (p. 142). Hence, such scientific research endeavours are not just a matter of rationality and logic, they are also as much a matter of power and politics, resulting in a preference and enactment of one kind of reality rather than another kind (Law, 2004).

A major critique of the positivist/empiricist epistemology is the postmodern movement. While the periodisation is always problematic, the roots of postmodernism can be traced back to a time after World War 2, when a spirit of uncertainty, scepticism and pluralism began to spread in the Western World (Mirchandani, 2005). Postmodernism questions the apparent secure and certain foundations of knowledge and understanding – ‘the quest for ‘God’s eye view’, a disembodied and disembedded timeless perspective that can know the world by transcending it is no longer readily accepted’ (Usher, 1996, p. 25). Lyotard (1984) contests the production of universal truths through the use of metanarratives and succinctly defines postmodernism as ‘incredulity towards metanarratives’ (p. xxiv). The belief that ‘reason and its ‘science’ – philosophy – can provide an objective, reliable, and universal foundation of knowledge; that knowledge acquired from the right use of reason will be ‘true’ (Flax, 1990, p. 41) is no longer tenable. What has taken place through the postmodern project is a loss of certainty in what is known and in ways of knowing. Knowledge is perspectival, gained through a multiplicity of viewpoints, values and local meanings (Brinkman & Kvale, 2015). What we now have is not an alternative and more secure foundation but an awareness of the complexity and the socio-historical contingency of the practices through which knowledge is constructed about ourselves and the world. The whole social science enterprise has been rearranged by the postmodernists – ‘they offer indeterminacy rather than determinism, diversity rather than unity, difference rather than synthesis, complexity rather than simplification... [they] look to the unique rather than to the general, to intertextual relations rather than causality, and to the unrepeatable rather than the re-occurring, the habitual, or the routine’ (Rosenau, 1991, p. 8). Instead of producing generalisable knowledge that is ‘universal and valid for all places and times, for all humankind from eternity to eternity’, the emphasis has now shifted to ‘the heterogeneity and contextuality of knowledge, with a shift from generalization to contextualization’ (Brinkman & Kvale, 2015, p. 295). With the breakdown of universal meta-narratives, postmodernism has turned towards ‘mini-narratives’, which are ‘explanations for small-scale situations located within particular contexts where no pretensions of abstract theory, universality or generalizability are involved’ (Grbich, 2012, p. 112).

My research interest in this study is focused on understanding how lecturers in a polytechnic in Singapore are constructed, and how their work is affected as they engage and respond to the technology imperative. In terms of research positionality, I am adopting a postmodernist stance and I will be responding to my research questions by studying individual mini-narratives. I perceive every mini-narrative to be ‘an equally valid element of a larger narrative from which “reality” is constructed’ (Hukkinen, Roe, & Rochlin, 1990, p. 312). Each mini-narrative has the potential to vivify ‘the day-to-day, moment-to-moment practices through which the subject of policy is constituted and regulated and foregrounds the daily politics of performatively engaging with the framing, definition, complexity, ambition and heterogeneity of policy problems and their proposed solutions’ (Bansel, 2015, p. 10). I consider the interview to be an appropriate method for capturing the mini-narratives that will enable me to understand the day-to-day practices of lecturers at my polytechnic. The ethical and macro-political issues and practical and micro-political issues relating to my use of the interview will be discussed in the next two sections.

### **4.3 Ethical and Macro-political Issues**

Christensen (2015) argues that all human relationships invoke an ethical stance, but the research interview demands a certain ethical awareness ‘because the object of the research is a human being, and, second, because the research interview may look like a symmetrical dialogue, which it is not’ (p. 75). Brinkmann and Kvale (2015) see the research encounter to be saturated with moral and ethical issues because ‘human interaction in the interview affects the interviewees, and the knowledge produced by the interview inquiry affects our understanding of the human condition’ (p. 83). In this section, I will discuss how I have negotiated the dilemmas of conducting insider research at my polytechnic.

#### **4.3.1 My Position at the Polytechnic**

Due to the varied roles and managerial appointments that I hold in my professional work context, I realise the problematics associated with the several shifting identities that could be presented to the interviewees. Much as I try to emphasise and foreground my identity as a research student in the context of this research endeavour, I recognise that my other identities – an ex-colleague working in the same faculty, an educational developer, an assistant director tasked with the implementation of online learning at the polytechnic –



cannot be erased totally. To most, they recognise me as an educational developer – one who designs and facilitates professional development programmes. Due to my managerial function in overseeing and supporting the implementation of online learning, colleagues also recognise that I have these roles and responsibilities in addition to my educational developer role. With my increasing engagement in supporting the emerging implementation of online learning at the polytechnic, I was recently asked during a briefing for staff (in a rather accusing manner) whether I was involved in setting polytechnic-wide targets for online learning. I had to explain that targets are deliberated and set by policy makers within the polytechnic. Once those targets are set, lecturers may engage the educational development unit for support. Rowland (2007) sees educational developers who conduct research within their own institutions as walking the tightrope in a delicate balancing act – on the one hand as promoters of academic values, and on the other hand, as “foot soldiers” (p. 11) of the administration and representatives of the institution. This episode highlighted the tension that my multiple identities would present to me as I entered the research field.

#### **4.3.2 Beyond Adherence to the “Standard” Ethical Principles**

The following ethical principles were adhered to throughout the research process in my conduct of the interview and my relationship with the participants – from my initial contact with them to the post-interview interactions with them: (1) Consent – I secured informed consent for the interview by describing the purpose of the research at the beginning of the interview, and how the data that I would gather will be used. All eight participants agreed to take part by signing their names on the consent form (see Appendix A). (2) Confidentiality – I discussed this issue with each lecturer making it clear that confidentiality would be kept unless they gave permission for me to discuss any data with other lecturers and educational developers. (3) Anonymity – I assured all participants that any information that were offered will be anonymised. (4) Confirmation of accounts – I decided to show all participants the transcripts of the recorded interviews so that they have an opportunity to make changes or remove portions of texts after they have read the transcripts.

While the above principles may have addressed the requirements of most research ethics committees, Ellis (2007) advocates for relational ethics – a form of ethics closely related to the ethics of care: ‘Relational ethics requires researchers to act from our hearts and minds, to acknowledge our interpersonal bonds to others, and initiate and maintain conversations’ (p. 4). Macfarlane (2010) challenges all researchers to question and examine this demonstration of emotional performativity through documenting ethical issues in the methodology section of a thesis that shows that ‘they “care” about the impact of their research on others, whether they genuinely do so or not’ (p. 21). Having been involved in several qualitative research studies in my professional work and personal studies, I can appreciate the call for researchers to live the research ethics rather than to reduce the complexities of ethical research to a set of static principles that I tick off on a checklist. I recognise that a heightened sense of vigilance will be required of me as I relate and interact with my research participants based on Macfarlane’s (2010) proposed virtues – courage, respect, resoluteness, sincerity and humility – virtues which have guided me to act reasonably as I respond to the day-to-day challenges of my research journey.

Even though the key principles of consent, confidentiality and anonymity were followed, I realise there is an indirect dilemma around informed consent that could have ripple effects on other principles such as confidentiality and anonymity (Humphrey, 2013). For example, the participants may share stories about their colleagues and supervisors, and some of these stories may expose failings in the polytechnic or certain managerial practices. In the following excerpt, it is obvious that the participant is not getting sufficient support for the implementation of online learning:

*... nobody wants to give you time, seriously! Why didn't you do it – that's it! And sometimes we do it because it is better for ourselves ... In the end who cares how much detail you go through ... Nobody gives you a bit more .... reward, incentive ... It's like – you better do it!*

Would all the actors have consented for the above tale to be circulated, albeit in an anonymised form? If stories such as the above are publicised in ways which are unexpected or unwelcome, I am cognisant that the trust the teller of the tale had explicitly invested in me can be shattered.

### **4.3.3 The Dilemma of Conducting Insider Research**

Insider research may be conceived as research conducted by people who are already members of the organisation or community they are seeking to investigate as a result of education, employment or social networks (Kanuha, 2000; Coghlan & Brannick, 2005). The advantages of conducting research as an insider were documented by Taylor (2011) – deeper levels of understanding afforded by prior knowledge; knowing the native language of the field participants; closer and more regular contact with the field which makes access to and selection of research participants easier and better informed; quicker establishment of rapport and trust between researcher and participants; and more open and readily accessible lines of communication between researchers and participants due to the researcher's continuing contact with the field. In fact, Labaree (2002) proposes that the insider position is 'the key to delving into the hidden crevices of the organisation' (p. 98). The shared understanding of the polytechnic and its history and activities has given me rich insights that include 'the corpses, the heroes, the skeletons, the failures/successes, the behaviours and attitudes of individuals within the organisation/group' (Edwards, 1999, p. 4/14).

This is where the positivist researcher may argue that the data can be contaminated due to my proximity to the participants, my knowledge and understanding of the context in which the participants work and operate. Wilkinson and Kitzinger (2013) reviewed several strategies that insider researchers adopt as they enter the field. One strategy is to minimise their experience and make no attempt to use or represent it in the research. This approach fits neatly into the traditional logical positivist research paradigm which aim is to achieve the unified objective truth. Such researchers strive to minimise participant "reactivity" and maximise the distance between the researcher and the participant so as to exclude the personal histories and emotional experiences of the researcher and the researched entirely from the research. Patton (2002) argues that achieving absolute objectivity and value-free science is impossible in practice and argues that 'distance does not guarantee objectivity, it merely guarantees distance' (p.575). Drake (2010) also argues that researcher neutrality is often not desirable and is always unachievable. Many studies have posited the self or identity of the researcher as a major contributing factor in both the development of the research question and throughout the research process.

Due to the research paradigm that I have adopted, I was “up front” about my interests and my agenda. Instead of erasing my identity and suppressing my interest and shared experience with the participants, I utilised and incorporated my identity and insider experience in my engagement with the participants. I utilised my past experience as a lecturer, and my current interaction with lecturers with whom I have been supporting throughout the research process. The participants were recruited based on my knowledge of them and past interactions with them. Hence, I was able to invite participants with different profiles and experiences to participate in this study. During the interview, I was also able to utilise my understanding of the organisation to either rephrase a question or probe further in a certain direction. Having a shared experience and language can be advantageous when participants make reference to beliefs and practices which may be unique to the polytechnic. The following transcript excerpt is one such example:

*If I don't set that tone, or have some form of response, then they find that hey this lecturer is not responsive, then you know that you gonna get it [laughs].*

The participant was sharing about how student expectations needed to be set regarding the speed of response from the lecturer in an online learning environment. The participant mentioned that a lecturer is “gonna get it”. This is a reference to the practice of students giving feedback not just to the lecturer but the course manager when they are not getting the “service” they expect – in this case, the “service” is the expectation of a speedy response from the lecturer. In this instance, an outsider who is not familiar with the polytechnic practices and “lingo” will struggle to make sense of what the participant is saying. On the other hand, my personal knowledge of the participant and the organisational culture in which we operate have generated ‘a different kind of response – potentially a more detailed one’ (Taylor, 2011, p. 13).

Researchers should however be aware that insider research is not flawless, nor should one presume that as an insider, one necessarily offers an absolute or correct way of seeing and/or reading the culture under investigation – the ‘deconstructive logics of postmodernism and poststructuralism have for decades now warned against privileging knowledge that is constructed within dichotomous rubrics such as insider/outsider’ (Taylor, 2011, p. 6). Many scholars have also warned that as a researcher, and indeed as a cultural participant, one can never assume totality in their position as either an insider or as an outsider, given that the boundaries of such positions are always permeable, and

the insider/outsider dichotomy is not ultimately sustainable (Merton, 1972). Depending on the similarities of experience or community that we share with our research participants, we are always insiders and outsiders. I concur with O'Connor (2004) that neither outsidership nor insidership should be seen as an absolute positionality and this "hybrid insider/outsider position" (Paechter, 2013) warranted further critical reflection in my study. Indeed, insider/outsider status can shift moment-by-moment across the course of an interview (Wilkinson & Kitzinger, 2013). Such convoluted entanglements (Humphrey, 2013) will eventually be articulated in this study.

## **4.4 Practical and Micro-political Issues**

### **4.4.1 The Interview**

Since the social reality that I want to study is the lecturers' subjectivity and pedagogical practices which are shaped by national and institutional policies, I have decided to interview the lecturers in a face-to-face setting as this two-way interaction enables views and experiences to be articulated through a naturalistic exchange of opinion and shared dialogue. In my case, I would have the advantage of sharing the same background and context as the interviewees. This enabled me to probe for clarity and understanding during the interview.

Researchers who are aligned with the positivistic views of objective reality in pursuit of "the truth" will take a formulaic and technical approach in conducting the interview. They perceive interview data as a resource (Seale, 1998) that requires skilful extraction, and turn the interview into 'a search-and-discovery mission, with the interviewer intent on detecting what is already there within more or less cooperative respondents... excavating information as efficiently as possible, without contaminating it' (Gubrium & Holstein, 2012, p. 32). They see interview subjects as 'passive vessels of answers for experimental questions ... who, under ideal conditions, serve up authentic reports' (Holstein & Gubrium, 1997, p. 116–117). This view of the interview and the approach in conducting such an interview is problematic because the social process of the interview, analysis and knowledge production are not acknowledged. Rapley (2001) argues that no single practice will gain 'better data' than the other practices because any 'data' obtained during the interview are highly dependent on and emerge from the specific local interactional context which is produced in and through the talk between the researcher and the

participant. Instead of the data-mining conception of interviewing, I have adopted the traveller conception from anthropology and a postmodern constructive understanding that involves a conversational approach to social research (Brinkmann & Kvale, 2015). I have devised an interview schedule (see Appendix B) as a guide to address the key topics and issues, but I did not adhere strictly to the list and sequence of questions due to the conversational and situational nature of interviews.

From a postmodern epistemological perspective, the search for “the truth” has been replaced by the search to understand multiple, localised and contextual truths (Power, 2004). Data and “facts” that are generated during the interview are not taken to be a simple mirror of reality “out there” but as constructions that are always socially mediated and interpreted. Usher (1996) asserts that data are not detachable from theory – ‘facts do not ‘speak for themselves’, they do not lie around waiting to be discovered – phenomena of all kinds are interpreted by ‘scientists’ through their paradigmatic frameworks’ (p.17). Furthermore, it is important to highlight that the interpretation does not take place in a neutral, apolitical, ideology-free space (Alvesson & Sköldberg, 2009). Depending on the paradigm, approach and interests of the researcher, certain interpretations are brought out while others may be suppressed. Since my interest is in the discursive construction of the social and the self, language (in the context of the interview) is therefore not viewed as a neutral carrier of facts or information, but as a form of social action (performative).

#### **4.4.2 Power Relations Between the Interviewer and the Interview Participants**

The interview can be seen as a type of talk that is produced in a specific interaction between the researcher and the participant. Hence, the researcher is a central and active participant in the interaction. The researcher as the instrument has been widely acknowledged (Rubin & Rubin, 2005; Pezalla, Pettigrew & Miller-Day, 2012). Because the researcher is the instrument in the semi-structured interview, unique researcher attributes such as prior experiences, research interests and interview styles have the potential to influence the data that are generated in the interview process. Furthermore, the researcher is ‘the “big interpreter,” who maintains an exclusive privilege to interpret and report what the interviewee really meant’ (Brinkmann & Kvale, 2015, p. 38).

In the present study, the researcher/interviewer holds power over the research participants at various stages of the research. In the planning stage of the research, I have in mind a list of colleagues whom I have worked with in the past, and whom I think would consent to take part in this study. I am familiar with their work in relation to online learning – more so than they are familiar with my research. During the interview, the power inequality continued since the interview schedule and agenda were set by me. I am cognisant that as the researcher, I am a powerful instrument because I have control of the topic and flow of the discussion, I set the pace of the interview, I guide the talk with questions and decide which particular parts of the interviewee's response to follow-up (Rapley, 2001). After the engagement at the interview, I continue to exercise power by transcribing, analysing, interpreting, reporting and representing. I exercise power because I determine whose voice is heard and I determine the authenticity of what is said, recorded, analysed and ultimately written (Drake, 2010). What is considered noteworthy to be recorded, analysed and ultimately written will require the theoretical inputs from the researcher (Dunne, Pryor & Yates, 2005). For example, the researcher may permit the reader to hear the voice of the participant, including the paralinguistic cues, lapses, pauses, stops and starts. The decisions relating to transcription will be discussed in the next section.

#### **4.4.3 Transcription**

In the transcription process, many decisions are made. Because it is impossible to record all the features of talk and interaction from the interview recordings, all transcripts are selective in one way or another (Davidson, 2009). Selectivity needs to be acknowledged and explained in relation to the goals of a study. As Ochs (1979) observes, 'A more useful transcript is a more selective one' (p. 44) as extraneous information makes a transcript difficult to read and might even obscure the research purpose. For this reason, I do not treat transcripts as data that are given in an unmediated fashion, in the way assumed by foundationalism.

I have decided to personally transcribe the interview recordings. Although the process was very laborious – it took me at least 10 hours to transcribe one hour of interview recording, I have benefitted from my prolonged engagement with the material because some analytical insights have emerged during the transcription process.

To ‘look beyond, between, and underneath the participant’s words, to understand the social space in which the participant is located and in which the interview took place’ (Power, 2004, p. 860), the following decisions were made regarding the transcription:

- Both the interviewer and the interviewee’s talk were included. Since both the researcher and the participant are central in producing the interview, Rapley (2001) recommends that some degree of the interactional details of the speakers should be included in the transcript. This has helped me to listen to understand, not just during the interview but beyond the interview process, and continued throughout the analytical process.
- Silence and pauses were included because it has been recognised that what is not said ‘may be as revealing as what is said, particularly since what is left out ordinarily far exceeds what is put in’ (Poland & Pederson, 1998, p. 293). Mazzei (2003) argues that ‘what is not spoken, not discussed, not answered... is where the very fat and rich information is yet to be known and understood’ (p. 358). Silence, which Mazzei identifies as a transgressive type of data, requires researchers to listen differently and to begin to recognise the richness that can be found in our own and other’s silences, in ‘the hidden, the covert, the inarticulate: the gaps within/outside the observable’ (p. 358).
- O’Connell, Kowal and Ageneau (2005) perceive the primary interjection as a basic, psychologically primitive unit of emotional and unreflective expression. They posit that interjection appears to provide the very best segmental means not only to report emotion discursively, but also to express emotion at the moment it is experienced. Since part of my research interest relates to the emotional engagement of lecturers in online learning, I have included such emotional and unreflective expressions in the transcript so that I could attend to them in the analysis phase.
- Singlish has been defined as a colloquial form of the English spoken by Singaporeans. It is characterised by a mixture of local multicultural expressions, code mixing, discourse particles, reduplication and direct translation from a local tongue (Chng, 2003). Since Singlish is the glue that binds Singaporeans together and it is used widely by Singaporeans in informal interactions, I have decided to include it



without editing in my transcript. An example of how Singlish is used can be found in the following excerpt. The participant is sharing how he managed student participation in the online environment (\*lah is often used at the end of a phrase for emphasis):

*We try our best to call out to the guys in the background – not sure whether they are there in the first case – we try to call them out – sometimes we can and sometimes we can't lah\*.*

A sample of a full transcript from an interview with one of the interviewees is included in Appendix C. It demonstrates how the above decision points were applied in the transcript.

#### **4.5 Implications of Taking a Postmodernist Stance in this Study**

Researchers who adhere to positivism will apply rigorous 'scientific' rules to create 'a one-to-one correspondence between what 'reality' is and how it is represented in research so that the representation is untainted by researcher bias or the ambiguity of language' (Scheurich, 1997, p. 29). Positivist ontology and epistemology have been inherited from the Enlightenment movement that promotes the idea that there are some rational explanations and some general principles which guarantee progress in the development of knowledge (Alvesson & Sköldberg, 2009). On the other hand, the postmodern approach to research has been described as a 'crisis of confidence in the narratives of truth, science and progress that epitomized Modernity' (Burman, 1992, p. 98). Postmodern researchers contest the capacity of language to depict and mirror an external reality, and consider language to be 'ambivalent, evasive, metaphorical and constitutive, rather than unequivocal, literal and depictive' (Alvesson & Sköldberg, 2009, p. 183). Postmodernists are therefore skeptical about the concept of absolute truth since it is achieved based on unreliable knowledge claims that come solely from language. Since there is no one absolute truth, individual interpretation is critical as we make our own subjective meanings of our experiences. This also means that many readings of the text are possible, and the original writing may change meanings over different readers, times and cultures (Grbich, 2012).

I align myself with the postmodernist view that it is not possible to entirely represent any aspect of reality, understand subjectivities of individuals fully, make truth claims and gain universal essential knowledge. I will respond to St. Pierre and Roulston's (2006) question: 'How does a postmodern subject, who lives within various and conflicting subject positions, know, and how can that knowledge be valid?' (p. 677) by discussing three inter-related implications of taking a postmodernist stance in this study – validity, subjectivity and reflexivity – in the next three sections.

#### **4.5.1 Validity**

In the process of conducting research, researchers will make many different inferences and knowledge claims. When researchers talk about the validity of research, they are referring to the quality of the conclusions made in addressing the substantive issues of their studies. Validity answers the question: 'Are these findings sufficiently authentic (isomorphic to some reality, trustworthy, related to the way others construct their social worlds) that I may trust myself in acting on their implications?' (Lincoln, Lynham & Guba, 2011, p. 120). Depending on the positionality of the researcher, validity can mean different things. To achieve validity, the positivist researcher aims to collect data that are "true" measures of reality and employ techniques such as systematicity, audit trails and triangulation. The postmodernist researcher's focus has shifted from an emphasis on the accuracy of measurement of the defined area (for a quantitative researcher) or a demonstration of the attainment of the truth of the identified phenomenon (for a qualitative researcher) to a recognition that validity shifts because it is dependent on local rules and descriptions of goodness and accuracy (St. Pierre, 2012).

Various postmodern formulations of validity have been proposed. Richardson (1997) proposed a form of validity, termed crystalline validity. Based on the crystal metaphor, Richardson described how crystals have 'an infinite variety of shapes, substances, transmutations, multidimensionalities, and angles of approach ... provid[ing] us with a deepened, complex, thoroughly partial, understanding of the topic' (p. 92). Lather (1993) reformulates and positions validity as 'a space of constructed visibility of the practices of methodology' (p. 674), enabling research to scrutinise its own methods and the process of making meaning. This practice of making visible and scrutinising one's method is aligned to the craftsmanship quality of validity posited by Brinkmann and Kvale (2015), where the postmodern researcher engages in a continual process of validation throughout

the entire research process. For example, during the theorising stage at the beginning of the research, the researcher will conduct validation by examining the soundness of the theoretical presuppositions in which the study is based, and on the logic of the derivations from the selected theories to the research questions of the study. During the designing stage, the adequacy of the design and methods will be used to validate the knowledge production. This validation continues through to the data generation and analysis stages, and the final reporting stage. While I endeavoured to follow this process, I have also incorporated the pragmatic approach to validation. Those who take a pragmatic approach to validation advocate for justification of knowledge claims to be replaced by application, which is the extent to which the knowledge claims are effective in instigating change. For example, Taylor (1985) argues for a validity that improves the practices under consideration. This implies that validity is as much a moral and political issue as it is an issue related to knowledge claims. Flyvbjerg (2001) resurrected the Aristotelian notion of *phronesis* (which I discussed in Section 4.2) to develop a framework for phronetic social science. By employing case studies and narratives and focusing on values, the phronetic approach aims to contribute to ‘the ongoing social dialogue and praxis in a society, rather than to generate ultimate, unequivocally verified knowledge’ (p. 139). A valid qualitative account would, from this pragmatic phronetic perspective, be one that contributed fruitfully to the public discussion about values and goals in a society. Smith (2006) warns researchers against engaging in “relatively straightforward” research by using methods which ensures validity if they were strictly adhered to, because such endeavours will distract the researcher from the cultivation of values and judgement. According to Brinkmann and Kvale (2015), the pragmatic approach implies that “truth” is whatever assists us to take actions that produce the desired results, and values and ethics are engaged to determine the desired results, moving the emphasis in social research ‘from primarily mapping the social world with respect to *what is* to changing the focus to *what could be*’ (p. 293). In such an endeavour, the relationship between power and truth in social research is brought to the foreground.

#### **4.5.2 Subjectivity**

The traditional research concept of the individual ‘subject’ is one who is stable and autonomous. This one-dimensional subject possesses a set of fixed attributes whose experiences can be reckoned as authentic “truths”, and who is able to reflect rationally on its own experiences and speak for itself (Lather, 2000). This concept of the stable and coherent subject has been criticised as an invention of the Enlightenment movement (Alvesson & Sköldberg, 2009). In place of the stable and coherent subject, the postmodernist researcher has replaced it with a subject who is decentered, layered, unstable, fluid, fragmented – ‘a subject that is made of many selves’ (Grbich, 2012, p. 115). Since there is not a universal authentic self to be revealed through personal narratives in the context of the interview, I heed Brinkman and Kvale’s (2015) advice that interviewee subjectivity is not so much revealed as constructed during the interview. This means that when I interacted with my participants, and when I analysed their accounts, I did not expect a cohesively told story, but rather, stories that are divergent and complex. I notice how some participants’ responses may appear contradictory, but since subjectivity is ‘multi-layered and uncertain, shaped by the varieties of experiences and intersections of discourses and storylines’ (Ryan, 2008, p. 218), I understand that they are making sense of their experience by drawing from diverse discourses that are in flux. It could also be a reflection of the contradictions that the participants need to negotiate in the world in which they inhabit (Brinkman & Kvale, 2015).

Since the knowledge produced in a research interview is constituted by the interaction and in the specific situation created between the interviewer and the interviewee, the research interview will inevitably be polyphonic — replete with many voices of the interviewer, the interviewee and the simultaneous discourses that are drawn from available discursive repertoires (Tinggaard, 2009). To conduct ethical and unexploitative research, Lather (1991) argues that researchers should also reflect on their own subjectivity and write themselves back into research. Pillow (2003) describes how the researcher should ‘focus on how does who I am, who I have been, who I think I am, and how I feel affect data collection and analysis’ (p. 176). I will discuss in the next section how reflexivity would assist me in this evaluative task.

### 4.5.3 Reflexivity

For qualitative researchers, reflexivity facilitates insights into the context, relationships and power dynamics that are embedded in any research setting (Wilkinson, 1988). Unlike the “objective” researcher who assumes that he or she exists outside the phenomena under inquiry and suppresses researcher subjectivity, postmodern researchers recognise that their backgrounds and experiences can influence the choice of the research problems and the interaction with those whom they engage in the research process. In fact, the personal is recognised as a strength and a resource to be exploited so that the quality of analysis can be enriched (Finlay, 2002). Grbich (2004) likens reflexivity to the process of looking and re-looking at oneself, and states that this process is essential in understanding the self and identifying the discourses which have shaped the lenses through which the researcher views the world and the participants in the study. The postmodern researcher will need to take a critical and reflexive stance on the self as researcher, ‘through internal dialogue and constant (and intensive) scrutiny of “what I know” and “how I know it”’ (Hertz, 1997, p. viii) in the development of knowledge claims. Calas and Smircich (1992) speak of a reflexivity that constantly assesses the relationship between “knowledge” and “the ways of doing knowledge”. This will require serious attention to be paid to the way different kinds of linguistic, social, political and theoretical elements are woven together in the process of knowledge production (Alvesson & Skoldberg, 2009). Research in a reflexive mode starts from a sceptical approach to what appears at a superficial glance as unproblematic replicas of the way reality functions, while at the same time maintaining the belief that the study of suitable excerpts from this reality can provide an important basis for the generation of knowledge that opens up rather than closes and furnishes opportunities for understanding rather than establishing “truths”.

Lincoln, Lynham and Guba (2011) perceive reflexivity to be ‘a conscious experiencing of the self as both inquirer and respondent, as researcher and learner, as the one coming to know the self within the processes of research itself’ (p. 124). Reflexivity forces researchers to confront not only with their choice of research problem and with those with whom they engage in the research process, but also with their selves and with the multiple identities that represent the fluid self in the research setting. Reinharz (1997) posits that the many selves we bring into the research space fall into three categories: research-based selves, brought selves (the selves that historically, socially, and personally create our standpoints), and situationally created selves. As each of those selves came into play in

the research space at different times, I needed to be sensitive to how these different selves articulate themselves during the process and give them each a distinctive voice.

Wilkinson's (1988) identification of three distinct but interrelated forms of reflexivity – personal, functional and disciplinary – has also helped me to articulate how these different forms of reflexivities were exercised. For example, I have highlighted my personal motivations, interests and attitudes that were imported into the research and have reflected on how these have impacted each stage of the research. I recognise that bringing the personal dimension to my research has informed and enriched my research. Wilkinson's (1988) second category, 'functional reflexivity', relates to one's role and identity as a researcher and the effects this might have on the research process. For example, it has helped me to attend to the varied identities I have (ex-colleague, educational developer, assistant director tasked with the implementation of online learning at the polytechnic) and interrogate whether these identities and statuses have influenced the research interactions and outcomes. Wilkinson's (1988) third variant, 'disciplinary reflexivity', requires that I critically examine the place and function of my research study within broader debates about social theory and method. Instead of conducting conventional research that leads to conventional findings, I have found that this political dimension of reflexivity has been most enlivening for me as a researcher. For example, in taking the phronetic approach to knowledge claims in my research, I am able to contest the unproblematic and sanitised approach and provoke dialogue to some extent.

#### **4.6 Data Generation and Sampling**

I have explained in Section 4.4.1 my rationale for using the interview as my data generation method and the stance that I would take towards the generated data. The interview as a 'conversation' was adopted for my study as it enhanced a naturalistic exchange of opinion and shared dialogue. In my case, I had the advantage of sharing some similar background with the interviewees. This has enabled me to probe for clarity and understanding during the interview. According to Patton (2002), the number of participants is sufficient when both the breadth and depth of data is judged by the researcher to be adequate, given the practical constraints of funding, logistics and time. In this regard, I have decided that interview data from eight lecturers would be sufficient for my study. A related sampling issue is to consider whether the participants have the

appropriate knowledge about the context of ICT use within the polytechnic, and prior experience in using ICT for teaching and learning in the past two years.

Based on the two considerations above, I decided to invite 10 lecturers to take part in the study because I expected that some lecturers may be hesitant to participate. I know these lecturers through the various professional development and informal support sessions that the educational development unit has organised. I believe that I have an open and collegial relationship with these colleagues that has been built not just during the formal sessions but through informal chats when we meet each other along the many corridors within the polytechnic. An information sheet (see Appendix D) was sent to them so that they are fully aware of what this study is all about. A mutually convenient time was agreed upon for the interview, which was held in a small meeting room at the polytechnic. One lecturer declined to take part. Another agreed but we found it challenging to find a suitable time to meet. I met her during one of the informal teas that we hold occasionally. She remembered that she had an appointment to keep and promised to call me to arrange but she never did. I have considered contacting her but relented from doing so because I did not want to pressure her, thinking that she may actually feel ambivalent about the interview. In the end, I interviewed eight lecturers, and I believe it produced a sufficient set of generative data for my study.

The following is some brief background information related to each participant. Pseudonyms were given to each participant so as to uphold participant confidentiality:

- Anthony is a Singaporean-Chinese who has been teaching at the polytechnic for more than 15 years. He is comfortable with using various tools and platforms, and would even explore tools beyond the standard suite of tools which are provided by the polytechnic.
- Beth is a Singaporean-Chinese who has been teaching at the polytechnic for almost 16 years. She started to develop blended learning 10 years ago. She was one of the first lecturers who was tasked by her school management to develop online teaching materials for a large cohort of students.

- Clara has been teaching at the polytechnic for almost 11 years. She is an immigrant from East Asia whose first language is not English. Prior to joining the polytechnic, she was teaching in an overseas college for 4 years. She started to set up online learning courses when she was teaching at the overseas college.
- Deng is a Malaysian-Chinese who has moved to Singapore to live and work. He has been teaching at the polytechnic for almost 5 years. Prior to joining the polytechnic, he was teaching in another institution for 2 years. Due to his background and experience in the ICT sector, he is very proficient in the use of digital tools and platforms.
- Edward is a Singaporean-Chinese who has been teaching at the polytechnic for 6 years; 3 as a part-time adjunct lecturer. In the past year, he had to convert a course into a fully-online course.
- Feng is a Singaporean-Chinese who has been teaching at the polytechnic for 21 years. She claims not to be a ‘digital’ person. Nevertheless, she has prepared herself to move her classes online almost 4-5 years ago.
- Glenn is a North American who has moved to Singapore to live and work. He has been teaching at the polytechnic for almost 20 years. The course which he offers is one of the first in his school to be offered online.
- Hanizah is a Singaporean-Malay who has been teaching at the polytechnic for 2.5 years, and another year in another institution. She is the only participant who related her own online learning experience during her university days.



## 4.7 The Analytic Approach

The process of analysis should not be seen as a distinct stage of research that one engages in at the end of the research process. It is a reflexive and cyclical activity that should be seen as part of the research design and of the data collection process (Coffey & Atkinson, 1996). According to Marvasti (2003), most qualitative sociologists would perceive the research process of data collection, analysis, and writing as interrelated parts that do not occur in clearly distinct and progressive stages. The different phases of data collection, data analysis and writing often proceed concurrently and inform each other.

Any analytical approach and strategies adopted during the research process can be helpful, but they are not neutral; they ‘come from somewhere at some time... our methodological strategies derive from value positions and contain deeply held assumptions’ (Charmaz, 2017, p. 4). As I have discussed in this chapter, positivists would view interview data as a resource with the potential to give them access to ‘facts’ about the world. Since I take the position of a postmodern constructionist, I view interview data as the outcome of a process of mutual construction, and the context of time, place, cultures and societies were taken into consideration during analysis.

As I am investigating my polytechnic and the practices within it through the lens of Foucaudian concepts, I needed an analytic framework that takes into consideration concepts such as power, discourse and subjectivity. Foucault was well-known for his reluctance to articulate a definitive analytical method (Powers, 2013), and many scholars appear to have adopted a ‘Foucauldianistic’ reticence to declare their methods to avoid being charged with being prescriptive (Graham, 2011). Given the variety and complexity of the social world, Coffey and Atkinson (1996) declare that the reductive approach of imposing a single methodological framework to boil the data down to a single interpretation can be distressing because such approaches ‘reflect mentalities that cannot cope with the uncertainties and ambiguities of social research’ (p.15). While analysis is not about adhering strictly to one single approach or a set of techniques, it should nevertheless be comprehensive and systematic.

I have surveyed several systematic qualitative analysis strategies: the six phases proposed by Braun and Clarke (2006), the five stages developed by Bloomberg and Volpe (2008) and the five stages delineated by Magnusson and Marecek (2015). Since these analytical strategies deal with interview material in a systematic fashion, they overlap in many areas. For example, all of them would advise starting the analysis with a detailed reading of the material so that it could be made familiar to the researcher. At some points in the analysis process, themes might be constructed to categorise similar or repeating ideas in the materials. The final stage of these strategies involves the synthesis and selection of themes, and an analysis that will make an argument in relation to one's research questions. I have appropriated the above sets of strategies for my own use, following Magnusson and Marecek's (2015) procedure a little closer than those of Braun and Clarke (2006) and Bloomberg and Volpe (2008) because they support the following underpinning principles that I have selected to guide my analysis:

- Flexibility – Analysis is not about adhering to any one correct approach or set of right techniques. Coffey and Atkinson (1996) encourage researchers to use different analytic strategies to explore different facets of the data and construct different versions of the social world. Flexibility is a remedy for 'methodolating' – 'a slavish attachment and devotion to method' (Janesick, 1994, p. 215) which may hinder the exercise of one's creativity in research.
- Creativity – Sandelowski (1993) advocated for creativity and artfulness in qualitative research. Creativity can be exercised in qualitative research through novel methodological designs to address the research questions, flexibility within the inquiry process and imaginative ways of organising, presenting and analysing data (Whittemore, Chase & Mandle, 2001).
- Reflexivity – During the analysis, I must be sensitive to the complex relationship between the processes of knowledge production and the various contexts of such processes, as well as the involvement of the researcher and knowledge producer (Alvesson & Skoldberg, 2009).

One crucial point I wish to make is related to the issue of whether I have used the inductive or deductive approach. An inductive approach is driven by what is in the data. What this means is that the codes and themes derive from the content of the data themselves. This is the 'bottom up' approach where what is 'mapped' by the researcher during analysis closely matches the content of the data. On the other hand, a deductive approach to data

coding and analysis is a ‘top down’ approach. The codes and themes generated by the researcher may be derived from theories and concepts that the researcher brings to the data. Clarke (2005) opines that researchers ‘cannot help but come to almost any research project already ‘knowing’ in some ways, already inflected, already affected, already ‘infected’’ (p. 12). I agree with Braun and Clarke (2012) that in reality, it is impossible to be purely inductive, as researchers always bring something to the data when they analyse it. They went on to explain the difference between the inductive and deductive analytic approach. Inductive analysis is often experiential in its orientation and essentialist in its theoretical framework, assuming a knowable world and ‘giving voice’ to experiences and meanings of that world, as reported in the data. Deductive analysis is often critical in its orientation and constructionist in its theoretical framework, investigating how the world is put together (i.e., constructed) and the ideas and assumptions that inform the data gathered. However, they warned that these correspondences are not a given because the quality of qualitative research depends on the consistency and coherence of the overall framework and analysis. Again, reflexivity is crucial because the approach merges with the foundations of inquiry; they are driven by ‘what the inquirer wants to know and how the inquirer interprets what the data are telling her or him according to subscribed theoretical frameworks, subjective perspectives, ontological and epistemological positions, and intuitive field understandings’ (Srivastava & Hopwood, 2009, p. 77).

Since I am interested in the rationalities, practices and subjectivities that are embedded and intertwined in the discourses related to ICT use within the polytechnic, I have also familiarised myself with some of the principles of discourse analytical work by posing four questions proposed by Parker (2005) to the text that was generated during the interview:

- Why is the text interesting?
- What do we know of the material out of which it was constructed?
- What are the effects of different readings of the text?
- How does the text relate to patterns of power?

Figure 7 provides an overview of the analytic approach that I have undertaken in this study. The five steps ensure that some form of systematicity is maintained in the analysis phase. Where possible and relevant, the four questions relating to discourse and power were used to interrogate the text. The whole endeavour is guided by value-rationality, where I interrogate the relationships of knowledge and power, and aim to instigate change in my social world.

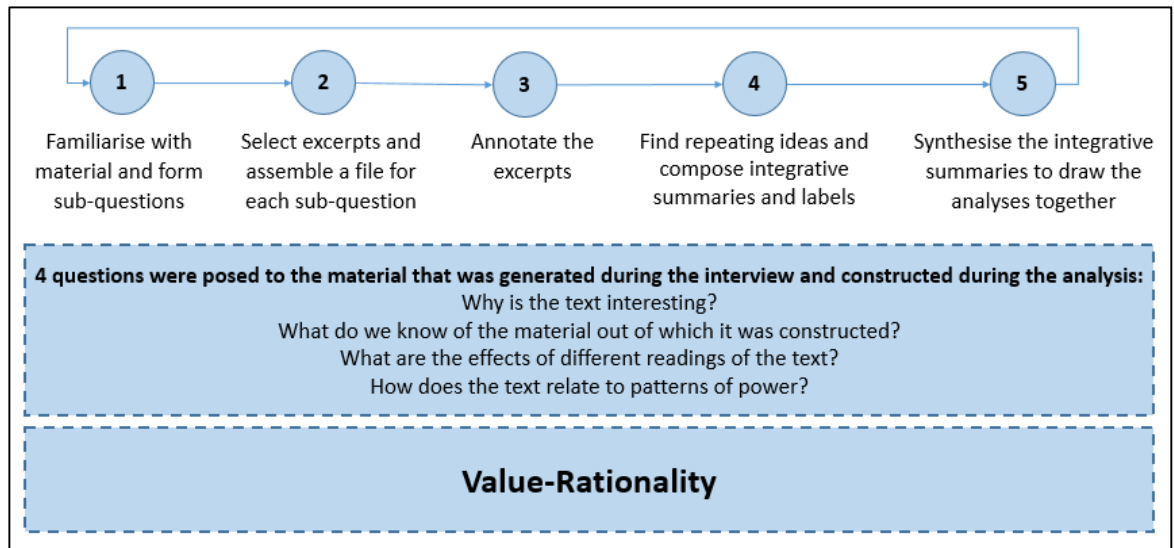


Figure 7: Overview of my analytic approach

## 4.8 Summary

In this chapter, I have used the six issues relating to the epistemological/ ontological, ethical/ macro-political, and practical/ micro-political to frame the discussion of my research methodology. Since I see the social world as complex and multi-layered, I take a postmodern stance towards the data that I would generate and analyse. I also realise that power pervades my research endeavour, from the genesis of my research questions and the examination of dominant discourses, to the present deliberation of how I would interact with participants, analyse data and make knowledge claims. I accept that the knowledge claims which I make will be multi-perspectival and contextual. This research process also gave me the opportunity to be provoked by some measure of uncertainty. I am guided by Mercieca and Mercieca's (2013) view that uncertainty is not a lack of knowledge, but that such sensations and frustrations could be used for problematisation and theorisation. Finally, I will be guided by value-rationality as I take the phronetic approach to research, and I hope that insights gained from my research will help me to instigate change in the social world which I inhabit.

## **5. Power Capillaries in the Digital Higher Education Institution and Classroom**

### **5.1 Introduction**

I have explicated in the introductory chapter that the polytechnic sector in Singapore is increasingly being digitised. For example, in response to MOE's Polytechnic Quality Assurance Framework review, the polytechnic has set targets for online learning for all courses. These targets require lecturers to increase the proportion of online learning in their courses in three years, from 2015 to 2017. The rationale given to the lecturers was based on the need to provide flexible learning opportunities for students, and the need to equip them with 21st century skills. While my polytechnic embarks on the above-mentioned initiative, there are also other nation-wide initiatives that will have further impacts on lecturers' work. One such initiative is the PolyMall project, where representatives from all five polytechnics in Singapore are working to procure a common learning management platform that will be shared by all polytechnics. Online courses offered by all polytechnics will be hosted on PolyMall. Inevitably, lecturers from all polytechnics will be assigned to design and deliver some online courses. I have been heavily engaged in both of the above initiatives in the past three years. I am concerned about the pace at which certain decisions are made through external imposition by the state, and management systems within the polytechnic 'which have excluded academics from meaningful and effective participation in running the institutions' (Olssen, 2016, p. 142). As one who works in the educational development unit, I am certain that these technology-related imperatives will affect the day-to-day work of the lecturers who have direct contact with the students. Through this study I hope to unravel the rationalities and practices inherent in the technology discourses and investigate the ways in which lecturer subjectivities are constructed and pedagogical practices in the digital classroom are enacted as a result of recent initiatives.

In this chapter, I will present the findings and discussion in an order that is aligned to my research questions:

1. How are lecturers constructed as they engage in the technology imperative?
2. In what ways are lecturers affected as they engage in the technology imperative?
3. How are pedagogical practices enacted in the online space?

## **5.2 How are Lecturers Constructed as they Engage in the Technology Imperative?**

Foucault's perspective on subjectivity and subjectification has become a widely applied framework for understanding subject formation in relation to the neoliberal mode of government (Raaper, 2016). According to Foucault, neoliberal governmentality entails the development and use of technologies for governing the population, and the deployment of the techniques of the self. By following a Foucauldian theorisation, the researcher has to:

take into account the points where the technologies of domination of individuals over one another have recourse to processes by which the individual acts upon himself. And conversely, he has to take into account the points where the techniques of the self are integrated into structures of coercion and domination. The contact point, where the individuals are driven by others is tied to the way they conduct themselves, is what we can call, I think, government. Governing people, in the broad meaning of the word, governing people is not a way to force people to do what the governor wants; it is always a versatile equilibrium, with complementarity and conflicts between techniques which assure coercion and processes through which the self is constructed or modified by himself (Foucault, 1993, pp. 203–204).

The duality of power relations and subject formation is reflected in and also reinforced by the techniques of domination and the techniques of the self. In the following sections, I will discuss how these techniques present themselves in different ways.

### **5.2.1 Incultation**

One way of achieving equilibrium in the flux of power relations is for subjects to come to own a discourse. Incultation (Fairclough, 2001) is a concept that is used to explain the way in which people have come to own certain discourses, and the way in which they would position themselves inside such discourses, and begin to act and think and talk in terms of the new discourses that they see themselves in. For instance, 'Taylorism' as a production and management system depended upon changes in the ways of being and the identities of workers (Raaper, 2016). Similarly, in the discourse relating to the use of ICT in higher education, many lecturers have internalised the discourse, and see themselves as agents of change in such implementations. The following is Deng's response to the

increased use of ICT for teaching and learning. It exemplifies how a subject has come to think and talk about a discourse. It also demonstrates how a subject can become a discursive terminal or outlet in a complex chain and articulated network of economic, political and cultural interests (Lazzarato, 2009):

*Deng: Yes – both ways – one is like the next step for educators. Secondly is that ... because the first thing that comes to mind is effectiveness and efficiency... but in the end it is all tied back to... it is logical if we want to move forward.*

Moving forward and moving upward – Singapore’s success can often be traced to its progressivist conception of society, history and technology. Techno-utopias conjured by national initiatives such as the Smart Nation are undergirded by an unbridled modernism and futurist optimism, an envisioned future where ‘present day societal ills are machined away by means of technological prowess’ (Thomas, 2017, p. 50).

Hanizah expressed a positive attitude towards supporting an online course. From her response, it appeared that she had imbibed the dominant discourse of the digital native (vis-à-vis the digital immigrant), where it is purported that younger people are more familiar and competent in the use of technology because they have grown up with technology (Prensky 2001):

*Hanizah: OK! I was very positive about it, I’m OK. I enjoy taking on the challenge of looking for something to innovate the teaching ... Maybe it’s age (laugh), I grew up with computers.*

Even though the digital native rhetoric has been critiqued (Bennett et al., 2008; Smith et al., 2013) because of its conception of youths as a homogenous group and its simplistic view of Internet access as the only relevant factor in shaping outcomes amongst youths, this common-sense understanding has become deeply entrenched and has become taken for granted (Morrissey, 2015).

Anthony perceived that the younger colleagues would be able to learn the new tools easily:

*Anthony: So, I guess there’s a learning curve, but really it depends on the person ... Similarly, for online tools, like erm ... most people ... most young staff .... they’d be familiar with Google Docs, they would have used it once in a while .... I think these are tools that are not difficult to pick up, and probably have experience in these things already.*

Edward also alluded to the digital native discourse as he identified himself as an “old horse” who was finding a tenuous position to stand in the modern, digital academy.

Edward expressed some degree of ambivalence – using technology could be exciting because students can be better engaged, but learning to use new technology could be daunting for “old horses” like him:

*I guess it is exciting ... because you are using a technology that I guess the students are familiar ... the students may be very much more comfortable with it than we are ... we all old horses ... asking the old horses to run as fast or trying to pick up any new technology is always quite ... daunting ...*

Subjectivity is the result of an endless process of construction of identities and it should be conceived as a site of struggle and resistance (Ball & Olmedo, 2013). Although Edward also owned the discourse to some extent, having expressed that students are much more comfortable with technology (attributed to the common sense inculcated by the dominant discourse of the digital native), he showed some resistance towards any “blanket” policy that required everyone to use technology in the classroom regardless of the context and the nature of the discipline:

*Edward: So, I think it's very dangerous to have a very broad sweeping kind of policy ... to say that everybody must do this because ... because it is very different ... the various disciplines, the various diplomas ... all you know ... very different kind of ways of teaching you see. So, for [the faculty of] design it may be a bit more challenging for some subjects.*

Forms of resistance can be traced by focusing on the use of the passive voice. By applying a passive voice (‘it’s very dangerous to have...’), management is pictured as something hidden that functions without concrete agents but is ultimately responsible for the change. Deng also made use of the passive voice (‘when people give you the number 20-30%’) when he alluded to the targets set by management without referring to any specific agents being responsible:

*Deng: First of all, I see things slightly different from others. That when people give you the number 20-30% it's more like a quantifying metric that people try to hit and try to manage.*

Deng was critical of the managerialist approach to setting targets, not that they were difficult to achieve, but that management was primarily interested in the quantitative targets without considering other factors such as classroom contexts and support systems. In the climate of performativity, ‘results are prioritised over processes, numbers over experiences, procedures over ideas, productivity over creativity’ (Ball & Olmedo, 2013,



p. 91). Deng could be voicing his concerns about how metrification could lead to a degradation of academic quality and pedagogy.

### 5.2.2 Self-disciplined and Responsibilised

According to Davies (2006), the neoliberal form of government is characterised by the concept of ‘responsibilisation’ which requires ‘the individual to accept responsibility for self but to shed any responsibility for others – except to participate in acts of surveillance control’. Furthermore, neoliberalism ‘heightens individuality and competitiveness’ (p. 436), and seeks to shape each person as an economic unit of use in a market economy.

As one who has been identified to develop the first online course for her faculty, Beth recognised the risks involved in such an endeavor. Her subjectivity had been shaped to be disciplined as she was solely responsible for delivering the results for her school:

*Beth: I think a lot of determination (laughs), I need a lot of determination and discipline. Because it is pretty much self-driven... I have to do a lot of planning, because at that time, when I was doing it all alone...*

Beth committed herself to the project by training her thinking – by not thinking too much!

*Beth: And I was like, if I think too much, I think I won't take on the job, and I won't move on. So to me, it's no going back, just go all the way (laughs)...*

From the following excerpt, it can be observed that academic subjectivity has been “responsibilised” by a system of accountability and performance within the polytechnic:

*Interviewer: How did you feel when you were told that you had to support a fully online course?*

*Anthony: My scenario is a little bit different... I kind of volunteered (whispers)...*

*Interviewer: And why did you volunteer?*

*Anthony: Yah - I'm asking myself the question now [laughs]... I'm shooting myself in the leg lah! [laughs] I mean we had hard times lah ... trying to get the thing up...*

From the above excerpt, it appeared that Anthony was trying to make sense of the contradictory positions and experiences that he was in. For a fully online course, the invisible workload may not be recognised and lecturers may have to bear the risks of accounting for poor student learning experience or performance. Smith and Jeffery (2013) argue that everyone in the current higher education space knows what it means to compete successfully, and competition is deemed both necessary and unavoidable. This common sense vision for competition and survival in the adoption of online teaching has led

academics to see refusal to participate in online teaching initiatives not to be an option. Apart from survival, one's academic identity could also be enhanced and valorised in the digital academy if one is seen to be engaged in innovative ICT practices.

Although Anthony came across as one who was quite experienced and competent in using technology, he revealed that he had encountered many challenges and had not been able to achieve some of the goals that he intended to attain in the online learning environment. In the following excerpt, Anthony's responsibilised subjectivity held himself to be accountable for the lack of success in certain aspects of the online course:

*Anthony: The discussion is still the same, I want to bring certain thing out of the students, and I'm still bringing the certain thing out of the students. It's just that to... how to get them to, to ... how to buy them in... that is the part that is very... er... I just haven't been able to do that too well yet [laughs].*

In sharing her experience in using different ICT tools in the classroom, Feng compared herself with another colleague and deemed herself to be less skillful:

*Feng: I'm still short of time to be perfect ... I wish I'm more skillful like (another colleague) – she's so resourceful and she's got so many types to share with us and it comes easy to her but for me – No!*

Anthony and Feng demonstrated how subjects exercise power upon themselves through various technologies of the self, which are technologies and practices that:

permit individuals to effect, by their own means, a certain number of operations on their own bodies, their own souls, their own thoughts, their own conduct, and this in a manner so as to transform themselves, modify themselves, and to attain a certain state of perfection, happiness, purity, supernatural power, and so on (Foucault, 1993, p. 203)

Technologies of the self exercise self-appraisals through which we can evaluate, act upon, and police ourselves 'so that the police, guards and the doctors do not have to' (Cruikshank, 1996, p. 234). Ball (2016) posits that in regimes of performativity, individuals must keep up and strive to achieve new and ever increasing targets: 'We take responsibility for working hard, faster and better as part of our sense of personal worth and in relation to the worth of others' (p. 1054). They must even confess and confront their weaknesses and undertake appropriate and value-enhancing professional development.

The following excerpt is interesting as I observed how policy implementation shapes the subjectivities of the lecturer. Feng seemed to be in an ambivalent position – having to deal with the contradictory position between the expectation (“you better do it”) from management and her emergent belief (“it is better for ourselves”) can be an unsettling:

*Feng: And sometimes we do it because it is better for ourselves ... In the end who cares how much detail you go through ... Nobody gives you a bit more .... reward, incentive ... It's like – you better do it.*

Feng's response showed how neoliberal government works through a dialectical form of power relations that is both harsh and supportive, energised simultaneously by the hard disciplines of measurement and visibility, and the softer entreaties of self-management and self-improvement (Ball, 2016). This simultaneity, together with the inevitable ambivalence it produces, constitutes the ‘necessary condition that secures the amenability of the subject’ (Davies & Bansel, 2010, p.16).

The self-disciplined and responsabilised subject may also account for the performance of others. One can account for others by participating in acts of surveillance and comparison. From the interview with Edward, he had made comparisons between himself and others whom he deemed less responsible than him. In the following excerpt, he alluded to how some lecturers could be doing the minimum by posting their materials online without thinking further about how they could better engage students in the online environment:

*Edward: - I mean of course you can have lecturers who are \*bo-chap (local colloquial for don't care) – you know – he says my job is just to deliver the knowledge – I just put it up there – you want to access it, you want to learn or not it is your problem right? But I think that I'm not those sort of lecturer – so in that sense, that's why the additional labour comes into the picture.*

Beth, the first lecturer to implement online learning in her school, also seemed to demonstrate some form of competitive comparison as she mentioned about some colleagues who were negative about online teaching and learning:

*Beth: Lecturers' mindset also have to change... because some lectures are just negative about it... I mean they don't believe that it's going to help their students...*

The processes of standardisation and auditing have strengthened hierarchies, promoted competition and produced an academic subject whose aim ‘is not to maximise human potential, but to gain advantage over others’ (Aarseth, 2017, p. 3).

### 5.2.3 Productive and Entrepreneurial

The self-managing and autonomous subject is productive and entrepreneurial. This subject is one that ‘understands itself as rational and autonomous and is able to transform itself to meet the ever-changing demands of a flexible economy and endure the insecurity of rapidly shifting social structures and relations’ (Gonick, 2015, p 65). In the following excerpts, the lecturers engaged willingly to take up the institutional ambitions as one’s own, ‘whose morality is intimately muddled with that of the entrepreneurial institution whose project is a pragmatic one of survival within the terms of government’ (Davies & Bansel, 2010, p. 9). Although Deng had acknowledged that designing an online course required a lot of time, he felt that having engaged in implementing an online course has helped to make him a better practitioner:

*Deng: ... it actually takes more time to prepare well, a lot of time to be honest. And because of the online technology or may be the way we can distribute our content easily – it definitely changes the way I teach – definitely it changes. **In fact, it makes me a much better practitioner** because it gives me chance to pause and reflect because I need to be sure that whatever content before I push out I double check, or I confirm it cover all angles...*

When asked whether he would expend as much time and effort on a second online course compared to the first, Edward said that he would do the same, implying that no short cuts would be taken. In fact, needing to work hard to ensure the quality of the second module matches the first is seen to be desirable – “keeps you on your toes”!

*Edward: Yah – I’ll choose the same ... because the concerns are still the same, now you are doing for another different subject – so it’s still the same, I guess.... Which is **good in a certain sense – keeps you on your toes**, and shows your level of concern for the job and, for the task at hand ...*

While there was no need to use a new ICT platform every semester, Hanizah positioned herself as one who was not satisfied with using the same set of tools. She challenged herself to look for a new platform and learn it, even though she acknowledged that this can be time-consuming:

*Hanizah: **I don’t fear, I don’t use one platform all the time.** That means if the next semester I have to teach a new module, I’ll be looking out for a new platform. I like to find something different ... I enjoy although it is very time-consuming at the beginning.*

Indeed, in such a performativity climate, ‘experience is nothing, productivity is everything’ (Ball, 2012, p. 19). Based on positioning herself as a digital native, Hanizah continued to demonstrate her entrepreneurial self by trying out new tools and platforms. She was willing to invest (her own) time to produce more; to try to do better. Here I see how neoliberal rationality had disseminated the market model to all domains and activities, and configured all individuals exhaustively as ‘market actors, always, only and everywhere as homo-economicus’ (Brown, 2015, p. 31), who engage in strategic self-investment projects to enhance one’s present and future value. In the social-cultural context of a highly aspirational Singapore, discontent with oneself seems to be built into the DNA of the populace. Indeed, it has been articulated and sanctioned by the Prime Minister during the 2016 National Day Rally: ‘But what I would like to have is that we be blessed with a ‘divine discontent’ – always not quite satisfied with what we have, always driven to do better’ (Prime Minister’s Office, 2016, Part 2, Para 2). I posit that a subject with such a deficit rationality will always be in a state of becoming. In the context of supporting national initiatives such as the technologisation of education, the price of work intensification and anxiety may be paid by lecturers, and this is what I will discuss in the next section.

### **5.3 In What Ways are Lecturers Affected as they Engage in the Technology Imperative?**

#### **5.3.1 Flexibility at a Cost, Paid by the Lecturers**

One of the benefits of the technology imperative is the flexibilisation of course delivery. By offering online classes, students no longer need to travel to the campus for classes, and they can engage in the online class at a time of their convenience. While this benefit is often extolled, I will provide some insights in response to the question that was posed by Burge, Gibson and Gibson (2011): ‘flexible learning is a canonical concept, much discussed and valued as an inherently “good” goal, but just how challenging is it on the rough terrains of practice?’ (p. 5).

**Firstly, time is required at the beginning of the implementation when lecturers had to learn to use the tools, or to create digital content such as a recorded lecture.** Feng, who claimed that she is not a “digital” person, was glad that she started to pick up the skills before the major technology implementation at the polytechnic: ‘So I’m quite glad I’m not caught in a nasty surprise like ... you know ... now that I feel it’s pressurising and I’m short of time to do it ... I’m still short of time to be perfect ...’ Edward felt that more time is required for a lecturer to be skilled in using the learning management system: ‘where if it’s the first time you are using it then the interface all these you have to learn the interface, you have to learn how to use it right? So that’s a bit challenging at first, and I don’t think just by doing once or twice, you can get the hang of it – you have to do a few times ...’

Some faculties require lecturers to record their lectures. This can be either in the form of a live-recording when the class is attending the lecture session, or in the form of a pre-recording when the lecture is recorded without the presence of students. Lecture recording can be a controversial initiative in some countries such as the United Kingdom, where the University and College Union (UCU) have objected to such initiatives as another form of surveillance. Furthermore, questions about pedagogic value have not been answered and issues related to additional workload and time pressures have not been addressed. Deng opined that lecture recording in the pre-recording mode required a significant time investment. Anthony also shared his time-consuming experience of adding voice-over to his lectures.

*Deng: In order to speak in front of a camera, I think you need to have at least 100 hours of preparation before you deliver that 10 minutes of speech – this is what I believe. You can see those well-crafted online MOOC courses, the content itself, some of them – you can tell that they have been repeated don’t know how many times then they can nicely speak up ...*

*Anthony: I personally like to write my script before I voice-over it ... because impromptu was a little bit ... err ... uncertain lah, because you do not know what can happen. So, I like to write my script first. Then when I review my script, I realise ... no I shouldn’t phrase it this way ... you know it’s like in a long line then you realise that – hey by the time I finish the line, you probably won’t remember what’s the first part of the sentence. ... so, I gotta restructure my sentences sometimes ... so a lot of ... this kind of work lah ... goes on ... and so that takes up quite a lot of time.*

Students are likely to benefit when extra time and effort are invested by the lecturers to prepare good quality online learning materials. However, not all lecturers are prepared to invest extra time to do so. Amongst the participants, it was apparent that most of them invested their own time outside of their teaching hours to pick up the requisite skills and to create online content such as the recorded lectures. Glenn alluded to the time-consuming nature of ‘the behind-the-scenes work’ that is related to offering online courses. Anthony spoke of staff who are resistant to offering online courses because they do not have the skills and time needed to learn those skills, and that time may not be given or accounted for. Deng expressed wryly that he does not mind investing the time, ‘but provided there is time given to you – that is a different story.’ Feng was open and direct in revealing that no time was given to her to re-design her course for the online context:

*Feng: to convert any subject in a small e-way ... 30%, 50%, blended, whatever ... actually takes a lot of thinking through and formatting it ... it's ... nobody wants to give you time, seriously! Why didn't you do it – that's it!*

When time was given to some lecturers to redesign their courses, they resented the accountability regime that required them to report on how their time was spent. Such reporting mechanisms inadvertently added to the academic labour, as in the following case:

*Beth: The negative side... sometimes could be quite frustrated... because I have to report to the manager... and at times I find that I'm so busy and I still had to report, and the report could be quite long... because it's almost alternate weeks kind of thing.*

**Secondly, time and effort are also required during the period when the online classes are offered.** Feng's online lesson required everyone in her class to make a contribution or create a digital artefact. When the online lesson was over, she would print out each student's contribution so that she could get a sense of each student's progress. The unintended consequence of this mode of engagement was that her workload had increased. Feng also expressed that the time-saving rationality of ‘create once – used again and again’ does not work out for the way that she has engaged the students in her online class:

*Feng: Online - you have to read what they say, you have to analyse ... then you mark grade. So I don't think time is an advantage ... No, I don't think so – preparation need more time, listening to them need more time, analysing their thoughts need more time, concluding their grades also need more time – because you can't gauge them so you need them to*

*write ... you need them to produce some artefact ... then you can really analyse. So it's really not time-saving at all ... seriously not.*

Beth also shared about the time-consuming nature of delivering online courses, but this was not acknowledged by management and therefore not accounted as part of her teaching hours. She revealed the practice of how time is allocated for classes in her faculty. In the beginning, with lectures being digitised and made available online, lecturers no longer need to conduct face-to-face lectures. At that time, the “lecture hour” (which is a measure of teacherly work) was still accrued to the lecturer’s total teaching hour. More recently, that hour was no longer counted because they were not considered to be teaching. As a result, they were “loaded with teaching”:

*Beth: We have to spend a lot of time (laughs) getting the materials up and ... but facilitating online discussion may be overwhelming whether it's a small group or big group, one or two classes, it will take up your time unless it is factored into the teaching hour. For us at \_\_\_\_ School, though we have taken out the lecture hour, at a later stage it was not counted as a teaching hour, so we were loaded with teaching, so it doesn't (laughs) help us in any way.*

### **5.3.2 Higher Price of Anxiety and Stress, also Paid by the Lecturers**

From my study, it appears that the source of anxiety and stress for some lecturers came from the mode of online engagement. Lecturers felt that the online engagement is very fluid and pervasive. The traditional classroom engagement is time-bound whereas online classroom engagement is not. Edward made such a distinction between the engagement in a traditional classroom and an online learning classroom and felt some measure of anxiety when he was conducting an online course. The “always on” online course engenders a nagging feeling of uncertainty.

*Edward: ... you know like - for example, if it's a traditional classroom class – it starts at noon and ends at 3 – it starts ... and then it ends ... But in the online learning context – I think you are constantly worried about the class ... beyond ... or your thought are on it you know... So, although you may save some time in actually being physically in class – but I think your mind is always ... you know ... a certain percentage of it is engaged in trying to think how you can make the online class better, whether the students have gone in to do the class or not ... You are constantly thinking about it ... worrying about it ... you are engaged ... I mean not a lot but you know it's at the back of your mind...*



Anthony shared the same sentiments about the fluidity of the online class. Since the online class engagement was no longer time-bound, lecturers may be paying the price by putting in more hours of work as work was no longer restricted to the traditional time-tabled classes.

*Anthony: Just that online, there is this flexibility - where it is a little more fluid and dynamic. In a face-to-face class, I've got to get it done in 40 minutes, I gotta stick to schedule, once I'm out of here I can't come back ... because I have another class or you guys have another class, I can't hold you back. Online is that ... after we discussed, the chat is still there ... you go back there - you take a look, you've got any questions, you pose it up there, I'll get back to you. So it's more dynamic that way and it's not really restricted to ... although we have allocated one-hour a week but it's not restricted to that. The student I think also has the flexibility ... I mean they can pose the question in the middle of the night ...*

Depending on the lecturer's skill and familiarity with online interaction dynamics, the de-temporalisation and de-spatialisation of learning afforded by online technologies may enhance the pedagogical intents and approaches of some lecturers and limit those of other lecturers (Pendergast & Kapitzke, 2006). Feng was frustrated with her online teaching experience and preferred the clear temporal and spatial boundaries of the face-to-face classroom:

*Feng: I still like to .... face-to-face ... I finish one lesson, I know we interacted, I know because I have a sense of where you are, what I should do the next time I see you – I mean close a chapter and then move on to something... I don't like to go online and discover that I only see 5... the other 20 are missing ... and then go back and then search for the other 5, whereas the fast one are already somewhere ... you know it's so ... not so unilateral ... I hate that kind of thing to bombard me ...*

The unfamiliarity of the new terrain and the change in communication dynamics – for example, it is not always clear whether the student-author is present or absent in a textual communication or not – can cause the notion of what presence and embodiment mean in digital spaces to be problematic (Bayne, 2005). Savin-Baden (2008) suggests that 'it might be the case that new and diverse forms of communication are emerging that are creating new textual and identity formulations, neither previously located nor understood' (p. 89), and this can be troubling and anxiety-arousing for lecturers.

Teaching in the traditional classroom has promoted certain bodily positions in which teachers take their stand, maintain eye contact and move around the classroom. In this sense, the body gives messages to the other to form or position and this is understood in and also through the body: ‘I sensed it on my skin and saw it on their faces’ (Estola & Elbaz-Luwisch, 2003, p. 710). Some lecturers felt that the highly-attuned bodily senses are no longer available in the virtual learning environment:

*Feng: You know in class – you can have 10 persons bombarding you and you can have a sense of how you want to help... but in virtual, you have to look at what this person say and what that person say...*

*Anthony: Yah – I wouldn’t be able to get the immediate feedback that I need, to ... a lot of time, in the physical environment, it’s like, in a split second you decide to do something different ... I notice something wrong ... or I can sense that the guy is drifting away ... or if the class is clueless about what I’m talking about ... Probably you can still do it in the virtual environment to a certain extent ... it may not be as effective... - I guess engaging is a totally different ... thing, online and face to face. I guess, in the physical setting, you can sit down on the spot, you can address issues on the spot even right after class... You sit somebody down, talk about difficulties... Er ... So I can ... I feel I can really respond on the spot to the student immediately and ... try to solve the issue on the spot. In the virtual sitting, I think that part is difficult to do lah... And er... I just feel that half the time I am guessing what the student is feeling really ...*

In the virtual online environment, some teachers may no longer have the embodied ‘sense’ and the certainty that they are engaging with students in a supportive and empathetic manner. Bolldén (2016) observes that teachers are embodying themselves online in various ways: typing themselves into being or creating podcasts. When one types oneself into being, the ‘texts in a sense become bodies’ (Sundén, 2002, p. 29). This appears to be what Feng was attempting to do:

*Feng: I think if you are doing face-to-face ... you have power with your voice, with your message. But if it is in the virtual world ... er ... to me .... I will make it as face-to-face as possible. Especially for the first few days – like say first day or so – so that they must know that I’m there ... it’s a meaningful presence ... I’ll still say Hi ... I still talk ... If the OLIVE [LMS] is very slow, I’ll whatsapp them. Sometimes they say - I can’t log in – I just say, OK go email, I’ll give you this. It’s really 3 ways you know – email, OLIVE [LMS] and whatsapp you know – and sometimes phone call even you know ... It’s like ... It’s as much as face-to-face ...*

Bolldén (2016) observes that teachers keep themselves present in online environments by expressing ‘meaningless messages’ (p. 10). By writing messages such as “I’m here” or “I’m now reading ...”, the lecturers are signalling their presence and also expressing their invisible doings; that they are reading the messages. These messages may be perceived as meaningless in terms of subject matter, but they are a crucial means for lecturers to express their invisible doings such as being present online and reading student messages. Through these messages, Feng typed her “meaningful presence” into being and sustains an embodied presence to some extent. However, this endeavor to maintain a meaningful presence through the typing of “meaningless messages” appeared to add to the labour of engaging students in the online class.

## **5.4 How are Pedagogical Practices Enacted in the Online Space?**

From my empirical data, varied pedagogical practices were carried out as lecturers used ICT tools to engage students in the online space. Some lecturers who have invested time and effort to redesign their online courses managed to extend some teaching and learning possibilities which were not possible in the traditional classroom. On the other hand, there were also lecturers who transferred their teaching practice from the (familiar) face-to-face classroom to the (unfamiliar) online learning environment. Regardless of whether ICT tools have enhanced or constrained existing teaching practices, there was also evidence to suggest that existing learning cultures in the classroom may foster or impede the lecturers’ aspirational plans for the use of ICT in the classroom.

### **5.4.1 Extension of Teaching and Learning Possibilities**

While the design and deployment of video-based lectures could be time-consuming and labour-intensive, a few lecturers felt that the availability of these materials could benefit their students:

*Anthony: Doing is definitely not efficient and not fast, but the delivery itself ... I think ... the benefit ... what I think is ... the student is not restricted by the lecture hour, so they can read, they can sit down there, review over and over and over again the same materials until he gets the point ...*

*Edward: But I guess on the part of the students, it is easy – because they can choose as and when they want to access the information ... if they want to move at a faster pace, they can ... if they are slow learners, they can take it a bit slower and repeat and repeat and repeat before they move on ...*

Apart from making learning materials available for students to access at their own time and pace, some lecturers reported that they also managed to achieve some level of success in using interactive tools such as discussion forums to foster deeper forms of online interaction and collaboration:

*Feng: So nowadays I will try to ... try to facilitate discussion skills ... because I think that is where they could tap on each other's brains... sometimes their discussion is very short – “we finish” - then they want to go off ... But actually for groups that are successful, they share a lot more deeper, they conclude meetings better ...*

*Deng: the question we should probe is that ... how frequent they visit this, or how many times they come back, and each time when they come back are they getting something new or they are not.*

Given the inherent challenges in teaching and learning complex systems and invisible processes in science, engineering and design, educators in these fields have used various multimedia tools to represent the structures and functions of these complex systems and processes so as to enable and enhance student understanding (Bobek & Tversky, 2016). Edward and Anthony recognised the limitations of verbal language and the efficacy of using visuals in conveying certain design and scientific concepts:

*Edward: ... you know by just speaking – or face-to-face lecture – the traditional method cannot convey that kind of message. For example, if you have been trying for the past hour to tell them about a certain concept, then just by showing them a video – a picture – within 5 minutes they can grasp the concept, then you can see the sparkle in their eyes – that's one of the highlights ...*

*Anthony: So, I mean... for good or for bad, I do my own illustrations. So, then again, it took a lot of time, because I exactly want to show what I want to show. It took me quite a bit of time to get the illustrations out. Then the next thing that I want to do is animation lah. I mean I had simple animations in PowerPoint, sufficient to illustrate some simple things. But I want to show something more complex...*

Again, Anthony's case exemplified how students may benefit from a visualisation of the parts and configurations of a complex system, but this comes at a price that is paid by the lecturer. Anthony also enumerated how virtual simulation technology could enhance certain aspects of teaching and learning, but this has yet to be exploited because he and his colleagues lacked the time and the skills to develop such interactive learning packages:

*So simulation – I think that's a wonderful thing in the virtual environment which is very hard to do in real life. I can't get everybody in the cockpit, but I can get everybody to fly in a simulator... I can't afford people to make*

*mistakes in the lab. But in the virtual setting, that can happen. And I think for a lot of students, including myself, playing around with parameters actually helps you to learn and understand principles... yah ... I think that's one great thing about the virtual environment ...*

#### **5.4.2 Transfer of Existing Teaching and Learning Practices to the Online Space**

Many participants transferred the ways they taught in the traditional face-to-face class to the online environment. For example, Edward shared that he would not stand at the front of the lecture theatre for the whole session, but that he would walk around the lecture theatre, even to the two corners and the back of the lecture theatre to make sure that his students would pay attention. Participants shared about the discomfort of not being able to see students; not being able to formatively assess them informally in the online environment:

*Anthony: It is as good as running an actual face to face class – only thing is I don't SEE the students ...*

*Edward: What I mean by that is – we are so used to seeing the students face-to-face, sometimes it's quite hard to let go and tell them to go and do this on your own, without monitoring them.*

Although Foucault's work has limited application to the field of education technology, his concept of panopticism in *Discipline and Punish: The Birth of the Prison* (1991) has exerted a strong influence over writings on the social impacts of contemporary surveillance, including the disciplinary role of new technologies and monitoring practices in schools (Hope, 2015). This concept was inspired by Bentham's architectural plan of a prison, which exposed prisoners in backlit cells, situated around the periphery of a building. These cells faced inwards towards a darkened central watchtower. Hence, power is visible in the form of the central watchtower, whilst the inmates are exposed. Foucault (1980b) argues that the panoptical gaze provides institutions with an effective and efficient disciplinary technique:

There is no need for arms, physical violence, material constraints. Just a gaze. An inspecting gaze, a gaze which each individual under its weight will end by interiorising to the point that he is his own overseer, each individual thus exercising this surveillance over, and against, himself. A superb formula: power exercised continuously and for what turns out to be a minimal cost (p. 155).

Anthony and Clara – both experienced lecturers with more than 10 years of teaching experience each – are adept in using surveillance efficiently as a pedagogical strategy in the traditional classroom:

*Anthony: Yah – it's like one look I know that the guy is lost somewhere...*

*Clara: It's the look on the student's face, can see a lot of question marks on their face, then it means that they don't understand, so I have to use another method to explain. But if conducted in the eLecture video, probably we can't sense it.*

Lecturers wanted to maintain a measure of surveillance power when they moved their courses online, and bemoaned that they were unable to track students in the online learning environment some years ago:

*Glenn: Initially we have no way of tracking whether they were doing anything at all... and that was bad design on our part... we did not know whether they were doing them or not doing them, how well they were doing...*

More recently, Hanizah used the tracking features within the new learning management system to ensure that students' presence and activity logs were visible to her. In this case, the student's absence or inactivity was highlighted and made visible to other students in the class:

*Hanizah: One thing that can be done is to kind of give students the sense that you are watching them ... on their online movements, because you can track who is in and who is not. The moment you say: "How come I've not seen Kelvin" and their friends will tell their friends, and obviously seeing your name up there online is not a very good thing, so in a way, I think you can still manage.*

Feng required her students to keep in touch with her through various platforms. In this way, even though students can learn anytime and anywhere (out of the gaze of the teacher), she required her students to log in to these platforms (making themselves visible) and report their progress (making their work visible). Ironically, this had inadvertently added additional workload on her because she had to review students' work for every online session. The following excerpt also revealed that she could only engage in informal formative assessment and gauge the students' learning progress when they produced an artefact. To maintain a measure of surveillance power, Feng seemed to need to work at a frenetic pace:

*Feng: No, I don't think so – preparation need more time, listening to them need more time, analysing their thoughts need more time, concluding their*

*grades also need more time – because you can't gauge them so you need them to write ... you need them to produce some artefact ... then you can really analyse. So it's really not time-saving at all ... seriously not.*

The surveillance power of the lecturer can be disrupted in the online environment. Much to Feng's chagrin, her students did not use the discussion forum that she had set up. Instead, they set up a project chat group on their own without her knowledge. Here, the students could have transferred their interaction preference for personal and secure sharing with their peers, from the face-to-face classrooms to the online learning environment:

*Feng: I have experienced that people are silent – totally silent – so you think they are not working. But they told me, we have a whatsapp group! Then I say how come I'm not in there – we are working very hard on it – so I believe - they are very keen – but, I say I have to be there you know. So, they totally operate without me, and they innocently didn't think that there was anything wrong ...*

An important feature of Foucault's conception of the panopticon is that the gaze is asymmetrical. This means that power is connected with the ability to see. Conversely, submission is connected with being seen: 'in the peripheral ring, one is totally seen, without ever seeing; in the central tower, one sees everything without ever being seen' (Foucault, 1991, p. 201). Landahl (2013) reminds us that Foucault described a guard in a watchtower, but the surveillance of the prison does not apply very well to the classroom because 'the gaze bounces back' (p. 814). In the classroom, the teacher is constantly visible to the students! Borrowing from the terminology of Mathiesen (1997), a classroom is not only a panopticon, where the teacher watches the students, but also a synopticon, a place where the students watch the teacher. I have earlier made reference to the constitution of the academic as a service provider, and the student as a consumer who evaluates the service provider. Such relationships have encouraged students to watch and to evaluate the academic's performance. Many evaluative systems in education institutions have used student evaluations and feedback to determine the academic's tenure, promotion and remuneration. Indeed, the participants in the study alluded to this reality of counter surveillance. Anthony and Deng were aware that their responsiveness to students in the online environment (i.e. getting back to students' queries in an expeditious manner) were somehow being monitored by students:

*Anthony: I mean we try our best to get back as soon as we can. But I think so far, the students have not been complaining our response to them...*

*Deng: If I don't set that tone, or have some form of response, then they find that, Hey, this lecturer is not responsive, then you know that you gonna get it [laughs].*

I would also argue that in the online environment, the teacher's words and actions are made more visible through the features of various media and communication technologies. The teacher's speech and action in a traditional face-to-face lecture can be quite ephemeral because they are limited to a particular time and place. Students may be disengaged if they are unable to follow the pace that is set by the lecturer. On the other hand, students may find the recorded lecture helpful as it can be accessed and reviewed easily. The recorded lecture's availability has thus heightened the visibility of the teacher. With this technology, the students can continue to surveil the teacher's words and actions outside the time and space of the traditional classroom. As a result, the lecturer may take extra care when posing any materials. Anthony shared that he would spend time preparing a script before he records the voice-over for his video lectures. He would also exercise extra care when he needs to write or pose anything online:

*Anthony: For online, I think er ... I've got to be very careful with what I say, or what I write, what I pose... because they could be easily misinterpreted ... I have to be extra-careful with punctuations ... you know ... to make sure that the commas are in the right places ...*

From the excerpts above, it appeared that Anthony was cognisant of the highly visible nature of the digital content that he was producing. Since the digital content is to be seen, observed and studied by many students, he was aware that any minor blemish may be amplified. As a result, lecturers like him would exercise extra care by ensuring that their online materials are accurate and of good standard and quality. While having quality online learning materials can benefit students, the process of maintaining standards by the lecturers is often hidden from students and unrecognised by administrators, and thus, becomes a source of stress for some lecturers who need to record their lectures or upload their materials online.



### 5.4.3 Classroom Learning Cultures

ICT tools and platforms alone do not enable or constrain teaching and learning practices. The varied outcomes observed in different classroom settings were not due to the ICT tools per se, as the usage of ICT tools for teaching and learning is affected by many other factors such as policy and school leadership, physical infrastructure and technological support, teachers' practices and beliefs, curriculum and assessment, and professional development (Toh & So, 2011; Levin & Schrum, 2012). Certain contexts trigger certain mechanisms which lead to outcome variations (Pawson, Tilley & Tilley, 1997). From my study, there is some evidence that the context of certain learning cultures in the classroom may contribute to the extent to which the use of ICT tools can enhance or constrain online learning. For example, Edward noticed that students were reticent in the online environment, just as they were in the traditional face-to-face classroom:

*Edward: ... but by default, you know our students are quiet ... by default, even if they don't understand, they would just keep quiet ... so it is even harder to draw out questions from them ...*

Edward had even drawn me into his knowledge claim ("you know our students are quiet"), and indeed, I am familiar with the classroom context and learning culture amongst Singaporean students. The first ten years of schooling has shaped them into disciplined subjects. The norm that has been established is that if one is attentive in class, then it is very likely that one will be able to "absorb" the lesson. In such a climate, asking questions may be equated with not being attentive in class. In my experience as a lecturer, it was difficult to draw questions out from students in the face-to-face class. I can therefore understand the challenge that Edward was facing in his online class. Another rationality that shapes the practice of students to not ask questions is the fear of standing out. In Edward's case, even if the students did not understand, they would just keep quiet. From the following excerpt, Deng had set up an online space for students to ask questions. In this space, all questions were visible to all students. However, his students still preferred to ask questions individually, that means addressing the question directly and privately to the lecturer:

*Deng: ... and one more thing I learnt is that usually – they like to ask question individually – even if online right – they can have a space that ask, and everyone have a look but usually prefer to ask individually. That is a common matter I observe – which means that technology couldn't really transform that kind of human natural behavior...*

Deng's students preferred to address their questions directly to him because they may not want their vulnerability (questions indicating a form of weakness) to be exposed to the other students in the online space. Anthony's students were aware that they were being surveilled by their peers in the online discussion forum. In the following excerpt, the student was fearful that his inadequacy may be visible to his peers. This fear of "losing face" in the Asian cultural context is very real and prevalent in the classroom. I posit that this has led to a form of self-censoring which is detrimental to one's learning in a group setting. It is not surprising that the learning is constrained in the online environment, and this is not due to the limitation of the technology but because such learning cultures continue to persist in the online classroom:

*Anthony: I ask the students how come you guys are not posting in the discussion board – I put up some practice questions, how come you are not discussing?*

*[Anthony delineating a student's response]: No lah, I don't want people to see my answer, may be wrong... because you do it on OLIVE, the names are not anonymous... I don't want people to see, scared I'm wrong...*

Another reason why some of the purported transformative possibilities offered by ICT were not realised could be due to the service provider and consumer relationship that is enculturated by the neoliberal academy. In a culture where students are positioned as consumers of a service and lecturers are accountable for students' performance in assessments, Feng's classroom does not seem to benefit from the purported transformative possibilities offered by ICT. In response to students' thinking (that they are consumers of a service) and behaviour (that they will exercise minimum effort in learning), and in a system where lecturers are accountable for students' performance in assessments, Feng had to resort to slicing the content into bite size so that it was more digestible for the students. She even used the metaphor of a bait, which conveyed the idea of luring and enticing students to engage with some activities in the online environment.

*Feng: ... every day is a challenge ... every day the students come in and just want to ... chit-chat ... and then they pass one day ... and then if they don't do well in their assessment, it's our problem again, that kind of thing. So you have really bait them ... everyday you bait them ...*

*Interviewer: Bait is it?*

*Feng: Bite size! So you have to ... every day's content I have to slice it ... this week you get this way, that week you get that ...*

### 5.5 Summary

In this study, I am interested in how the national and institutional policies related to the increasing use of ICT for teaching and learning govern the rationalities and practices of lecturers at my polytechnic. I explore how ‘public policy norms affect everyday behaviour and existential conditions by penetrating the most private realms’ (Coole, 2013, p. 466) of the everyday lives of lecturers by addressing the following research questions (RQs) in this chapter:

- RQ1. How are lecturers constructed as they engage in the technology imperative?
- RQ2. In what ways are lecturers affected as they engage in the technology imperative?
- RQ3. How are pedagogical practices enacted in the online space?

To address RQ1, I have shown that policy ambitions are realised and materialised in multiple and non-unitary ways. Some lecturers have imbibed them; others have resisted them or appropriated them to serve their own beliefs or agendas. In response to RQ2, the data generated in the interviews seem to indicate that some lecturers brought with them what could be called narratives of despair (Fanghanel, 2011), working long hours and bearing the burden of stress and anxiety as they engage in the technology imperative. RQ3 led me to discover that varied pedagogical practices were carried out – some transcended existing teaching and learning practices while others transferred existing teaching and learning practices to the online space. I also discovered that the context of certain learning cultures in the classroom may contribute to the varied pedagogical practices and outcomes. I will provide a further discussion of the findings in the concluding chapter.

## 6. Conclusion

As I write this concluding chapter at the end of a five-year doctoral journey, I have been co-opted into yet another sector-wide Education Technology committee in my professional work. Within my polytechnic, a fund has been set up to encourage lecturers to teach innovatively with ICT. Also, five lecturers have been seconded (i.e. temporarily transferred for a specific project) to the educational development unit so that they can focus on developing online courses without any teaching duties. The polytechnic has also embarked on a major learning analytics project in 2017 and has launched a portal for micro-learning courses (advertised as “the future of learning”) for members of the public who are interested in continuing education and training. These initiatives signal that many aspects of our service to the students and the public will increasingly be digitised. My aim in this study is to illuminate and trouble the rationalities and practices embedded in these digital initiatives, and examine whether these initiatives have reconstituted the identity and work of lecturers in the polytechnic. As lecturers respond to these initiatives, certain contexts trigger certain mechanisms which lead to outcome variations in the use of ICT for teaching and learning. I am not issuing a call to return to Luddism, but I aim to revitalise the ‘rightful concern with the critical investigation of values, history and freedom’ (Said, 2004, p. 14). I hope to initiate a conversation with stakeholders and to provoke others to ask questions and further research in this area.

In this concluding chapter, I will review the extent to which the aims of my study have been achieved by summarising and discussing the findings of my research, and I will propose how my study has contributed to knowledge. I will also discuss the limitations of my research and propose some future research possibilities. I will then consider the research implications on my professional context. Last but not least, I will reflect on my development as a researcher.

## 6.1 Summary and Discussion of Findings

This thesis is inextricably linked to my work within the educational development unit at a polytechnic in Singapore. My professional work gives me the opportunity to traverse between the macro level of educational policies and reforms and the micro level of the day-to-day realities and practices of the lecturers. Ng (2017) acknowledges that when education reforms are evaluated at the macro level, they appear to work in the direction of the system movement. On the other hand, when an education reform is observed ‘from a micro point of view, the situation is a lot messier’ (p. 12). Indeed, there are many layers of realities to the intricacies of education reforms, and my interest and aim is to understand the changes that are not just out there at the macro level, but in the heads and souls (Ball, 2016) of the lecturers at my polytechnic, and how the changes affect the day-to-day work of lecturers and how the classroom pedagogical practices are enacted as a result. This is illustrated in Figure 8.

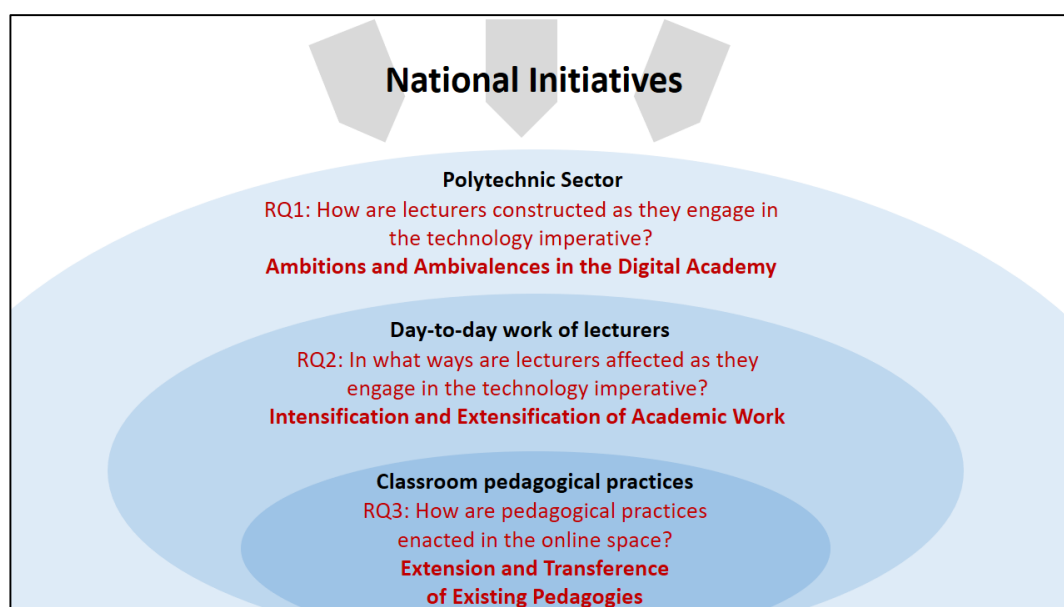


Figure 8: Investigating the many layers of realities

In the following sub-sections, I will summarise and discuss the findings, and propose the contribution to knowledge that I have made in relation to the three research questions:

- RQ1. How are lecturers constructed as they engage in the technology imperative?
  - 6.1.1 Ambitions and ambivalences in the digital academy
- RQ2. In what ways are lecturers affected as they engage in the technology imperative?
  - 6.1.2 Intensification and extensification of academic work
- RQ3. How are pedagogical practices enacted in the online space?
  - 6.1.3 Extension and transference of existing pedagogies

### **6.1.1 Ambitions and Ambivalences in the Digital Academy**

As I operate within the polytechnic context and work closely with lecturers, I was most interested to unravel the circuitous nature of power as it pervades through the discursive practices installed in various ICT imperatives in Singapore's higher education landscape, as it 'reaches into the very grain of individuals, touches their bodies and inserts itself into their action and attitudes, their discourse, learning processes and everyday lives' (Foucault, 1980b, p. 39). Foucault emphasises that power can only be acted on free subjects who have access to varied ways of responding. I will now discuss the diverse practices of freedom exercised by lecturers as they responded to the ICT imperatives. Some have positioned themselves to be aligned to institutional practices, others are more tentative as they negotiated with the ambivalences produced. While practices of freedom that are exercised in the form of overt resistance were not evident, more covert acts of resistance and maneuvering seem to be present.

Several lecturers have come to own the discourse relating to the transformational potential of technology in education and have taken up positions which are aligned to these discourses. The capillary power moves in a way that the self-interest of the lecturer is reconstituted in terms of the interest of the institution, and the self-interest of the institution translates back into the interest of the academic. Here, the ambitions and technologies of government, and the ensemble of practices and actors through which conduct is shaped, are materialised through desires, aspirations, interests and beliefs (Dean, 2010).

The desires and aspirations of the lecturers are demonstrated through a positive attitude ("I don't fear") and an entrepreneurial spirit ("it makes me a much better practitioner"). I must highlight that the subject of policy is never singular, but an interactive weaving together of many subjectivities in relation to multiple and often contradictory discourses and practices through which the subject of policy is governed (Bansel, 2015). In the context of my study, the ambitions of technological progress, the discourses related to 21st century skills and the digital native, the technology adoption strategies adopted by the institution and the pedagogical practices fostered through professional development programmes are all implicated in the subject positions which lecturers assign to themselves.

Other lecturers' narratives also revealed some measure of ambivalence. The production of ambivalence is inevitable due to the simultaneously enabling and disabling nature of neoliberalism (Davies & Bansel, 2010) installed through various technologies and practices in the modern, digital academy. A lecturer who has taught at the polytechnic for 21 years has been candid about her struggles and frustrations with using technology in her classrooms in recent years. Nevertheless, the interests of the polytechnic have been re-constituted as self-interest and survival over a period of time – “we do it because it is better for ourselves”. This rationality resonates with Davies and Bansel's (2010) argument that conformity to institutional policies and reforms could even become normalised and taken for granted, to the point of becoming morally correct and desirable.

Forms of resistance could also be traced from the empirical data. A lecturer who has recently invested much time and emotional energy (“pulling your hair out when certain things don't work...”) to design and deliver an online course successfully has demonstrated some form of resistance towards any “blanket” policy that requires every lecturer to use technology in the classroom regardless of the context and the nature of the discipline. While not resistant to the use of technology in the classroom, a lecturer positioned himself as one whose standards for online courses goes beyond the quantitative targets set by management, and as one who deemed his approach to online learning to be superior to his peers. It appears that neoliberalism has been internalised in a way that his freedom is exercised to be self-responsible, to set high standards for himself and to be competitive. Here I see how technologies of measurement, audit and surveillance could shape lecturers to become self-measuring, self-auditing and self-surveilling subjects. There were cases in my study where competitive and accountable subjects account not only for themselves but also for others (Davies & Bansel, 2010). Neoliberalism has inaugurated the spiral of competition through the processes of standardisation and auditing, and this has produced a different type of academic subject (Raaper, 2016). As a result, complex relationships are built upon competition rather than collegiality. To survive in the neoliberal academy, reform technologies may have shaped academic subjects to be ‘calculable rather than memorable’ (Ball, 2012, p. 17).

### **6.1.2 Intensification and Extensification of Academic Work**

As I noted in the introductory chapter, the genesis of my research was partly formed during a meeting with other education technology stakeholders from the polytechnic sector. I tried to make sense of the self-investment practices (Brown, 2015) of entrepreneurialisation and productivity enhancements that have led to immense stress levels and work intensification amongst polytechnic lecturers in recent years, especially in the context of educational reforms such as the three future-oriented national initiatives that are focused on skills for the future economy, the need for lifelong learning and the increased use of ICT for every sphere of society including education.

The demands imposed on academics within the neoliberal market-oriented climate are well described by Gabriel (2010): ‘I doubt that there are many professions whose members are so relentlessly subjected to measurement, criticism and rejection as academics, exposing them to deep insecurities regarding their worth, their identity and their standing’ (p. 769). The contradictory apparatuses of accountability, competition and productivity have been artificially united by neoliberal thought and practices and they have proved to be more effective in extracting ‘surplus value’ (such as spending more time on work) than any older modalities of power (Gill, 2010). As a result, there has been an intensification of academic work in the higher education sector (Olssen, 2016). For example, Anderson (2006) found that academics often work ‘in excess of 50-60 hours (per week)’, with many working at ‘nights and on weekends’ and reporting levels of ‘exhaustion and burnout’ (p.583). Based on more than 12,000 responses from academics, the Universities and Colleges Union (2016) Workload Survey revealed that academics are working an average of 13.4 hours extra per week. This means that academics are working for free for two extra days per week – the equivalent of a 7-day work week every week (Gill, 2017). Jarvis and Pratt (2006) characterise extensification as the overflowing of work and interrogated ‘the hidden ‘ordinary’ and ‘everyday’ processes that are entailed in dealing with new work practices outside of the workplace’ (p. 332).



For those in the academic profession, the use of time for additional responsibilities is closely tied to the ideology of professionalism and dedication (Densmore, 1987). Hargreaves (1994) argues that intensification may be voluntarily supported by many academics and misrecognised as professionalism. Anderson (2006) found that academics hold a different conception of time characterised by the ‘inseparability’ of work and identity which becomes ‘problematic’ when they ‘attempt to resist the effects of managerialism’ (p. 587). This makes them highly susceptible to regularly taking on extra workload that leads to burnout. The work of lecturers is no longer restricted to classroom engagement. They need to be increasingly adept at student development, industry outreach and online course development. While these new areas of work can be a source of anxiety and insecurity in themselves, they are ‘exacerbated by the feeling of not living up to an ideal image of what it means to be an academic’ (Knights & Clarke, 2014, p. 342).

Currie and Eveline (2011) reported that the introduction of technology-based teaching has blurred the boundaries between work and home. As a result, academics have reported increasing levels of stress, burnout, exhaustion and deteriorating well-being (Kubicek et al., 2014). Amongst the participants in the study, it would be safe to say that most of them invested their own time outside of their teaching hours to pick up the necessary skills and to create online content such as the recorded lectures. One lecturer shared that staff may be resistant to offering online courses because they do not have the skills and the time needed to learn those skills, and that time may not be given or accounted for. Some lecturers were open and direct in revealing that no time was given to re-design their courses for the online context. When time was given to some lecturers to support them in redesigning their courses for the online environment, they resented the accountability regime that required them to report on how their time was spent. Ball (2012) observes that within the rigours and disciplines of productivity and performativity, we are required ‘to spend increasing amounts of our time in making ourselves accountable, reporting on what we do rather than doing it’ (p. 19). More insidiously, they do not simply report our practice: they inform, construct and drive our practice (Ball, 2016). They are productive of not just what can be recognised as good and quality teaching, they are a means of producing anxious subjects and performances (Davies & Bansel, 2010).

### **6.1.3 Extension and Transference of Existing Pedagogies**

Some evidence from my study suggest that the varied pedagogical practices adopted by lecturers could be caused by a confluence of different contexts and mechanisms. Some lecturers invested time to create video-based materials, illustrations and animations because they believed that students would benefit from these materials. Others managed to achieve some success in using certain interactive tools to foster deeper discussions and collaborations. While these lecturers have extended existing teaching and learning practices, others have transferred their existing practices such as surveillance and monitoring of students by using ICT tools. The use of ICT tools may be fostered or inhibited by specific sociocultural conditions such as existing pedagogic practices and cultural beliefs (Ng, 2009). A key contextual factor that could have enabled or constrained the possibilities provided by ICT tools was the learning culture within the classroom. There are elements in the Asian classroom culture that could impede critical thinking and emancipatory learning. Instead of encouraging students to discover knowledge and to exercise critical thinking, Asian teachers tend to opt for the safe choice by focusing their teaching on examination preparation because administrators, parents and even officials who advocate for education reforms are really more concerned about students' examination results (Pham & Renshaw, 2013). Furthermore, the requirement imposed on some lecturers to implement online learning expeditiously without providing sufficient and sustained support has led them to focus on risk management strategies. For example, to meet the quantitative online learning targets set by the polytechnic, some lecturers developed the practice of 'dumping' the least important topics to constitute the online components of a course. I see this as a form of maneuvering and risk mitigation – lecturers may not have the time (or the skills) to convert the selected topics into an online format suitable for online learning. As a result, they strategically select the least important topics (token materials that meet the 20% target for every course) and placed them in the online learning environment. This practice is based on the rationale that students would have learnt the important concepts in the more familiar face-to-face classroom environment. This would mitigate the risk of students failing a course and attributing their failure to the poorly-developed online content or non-engaging online activities. This demonstrates how the compliance and performativity culture could impede reflexivity at all levels of higher education.

My empirical data also revealed that some participants generally felt anxious when their students are not visible to them in the online environment. To ensure that students are engaged in the online courses, several participants have designed learning activities and formative assessment tasks which required students to articulate what they have learnt (e.g. participating in an online forum) or to create a digital artifact (for students to synthesise their learned content in a multimodal format). This has inadvertently increased the workload of some lecturers because for every online lesson, they would need to design a relevant online task and assess the students' learning and engagement through students' production of a digital artifact in response to the learning task. Formative assessment has often been depicted as a technique rather than perceived as a complex social practice that invokes power relations that contributes to student positioning and identity construction (Crossouard, 2012). The requirement for active class participation also reveals the underlying assumption that learning occurs only when students are actively and visibly engaged. MacFarlane (2015) opines that student performativity in the form of visible demonstration of learning needs to be understood in the context of the broader performative turn in society. This can be observed in higher education institutions through practices such as requirements for attendance and for student tasks to be assessed during class contact time. Furthermore, requirements of active participation misrecognise non-oral learning behaviours such as making eye contact, note taking and active listening as 'passive'. Such participative pressures deny students of their right to silence, and turn learning in higher education from a private and personal space into a public performance. Gourlay and Oliver (2018) perceive this strong emphasis on interactivity and observable learning behavior 'has come to stand in policy discourses for the only type of legitimate student engagement, and (more worryingly) has also come to stand as proxy for learning itself' (p. 6). Based on their sociomaterial analysis of students' day-to-day study practices that has revealed the importance of practices such as reading and thinking, they call for the value of unobserved and private study to be reclaimed.

## 6.2 Limitations and Future Research

The first limitation is related to the depth in which identity markers were explored in my study. Age has surfaced quite prominently as an identity marker that operates in a way to classify attributes and traits associated with ICT proficiency for teaching and learning. Although not a primary focus of my research study, I would like to highlight that traces of gendered dimensions of ICT use amongst lecturers were also detected. Digital technology is an aspect of the social world that is purported to be organised fundamentally along gender lines. It has been argued that gender ‘profoundly affect[s] the design, development, diffusion and use of technologies’ (Wajcman, 2004, p. vi). In my study, there is some evidence that ICT competencies are projected as masculine, as demonstrated by two male participants who presented themselves as ICT experts more than the female participants. A male participant expressed confidence in using ICT; but he felt that his team (which comprised of mostly female lecturers) would feel intimidated as they lacked confidence. The other male participant was spending quite a long time discussing the definition of online learning with me. He also appeared to critique the use of targets to drive online learning adoption by lecturers (‘I see things slightly different from others’). Instead of resenting such targets, he felt that the targets formed a threshold on the amount of online learning that lecturers were willing to incorporate into their courses. He demonstrated confidence that he could exceed those targets without compromising on quality.

On the other hand, two female participants appeared to conform to some form of gender hierarchy in the use of ICT. A female participant was one of the first lecturers to be tasked to convert a course to a fully online course. She had little prior experience but she had the support of a development team that comprised two experienced male developers. She was happy for them to lead the project and entrusted them to do all the planning. Another female participant (‘I’m not a digital person – I find this virtual thing very, very abstract’) saw herself as one who is very far away from the outcomes that the polytechnic has stipulated for lecturers. Instead of feeling supported at professional development sessions, she felt ‘quite stupid’ because the trainers (who are perceived to be expert users of ICT) could have come across as impatient with trainees like herself who are “far away”. She was able to engage better in recent professional development sessions because they were less intimidating.

These narratives vivify how ICT use and proficiency is ‘reproduced as masculine culture through the micro-sociological relations of everyday life’ (Clegg, 2001, p. 317) in spaces such as schools and universities. I posit that if this is indeed the case, then female colleagues would have to spend more time and emotional labour to accomplish the ICT targets. The use of ICT amongst female academics within the polytechnic sector in Singapore deserves further research.

Secondly, I was unable to address adequately the salient issues of power relations and sociological structures in the classroom within the scope of this study. If I could expand the scope of my study, I would have included students as they are also very much the subjects of various progressive discourses and ICT practices. The present study provides some insights into the subterranean world of teaching and learning practices in the classroom. For example, one lecturer discovered that her students were not watching the video lectures because they were not given incentives such as assessment points for the pre-class activity. Another lecturer attempted to “bait” students with bite-size content and assessment activities. Here, I see how a narrow focus on assessment and task criteria can foster a highly instrumentalised mode of learning (Torrance, 2007). Due to the heavy emphasis on examination achievement, Asian students are perceived to be highly alert to their teachers’ instructional cues and assessment requirements (Pham & Renshaw, 2013). Students in the Asian classroom are very sensitive to what they perceive as the teachers’ ‘real’ demands. If the teachers’ ‘real’ demands are to cover the curriculum so as to prepare them well for the examination, the students’ attention will be focused on examination preparation and not on any communicative or student-centered learning processes and approaches (with or without the use of ICT) that may be advocated by reformers. Indeed, being ‘attuned to the social practices of the classroom is crucial in students’ engagement – although often this aspect of learning is misrecognised’ (Pryor & Crossouard, 2010, p. 272). Building on the findings of this study, future studies should examine how students have internalised ICT practices and assessment processes, and how their subjectivities are produced within specific cultural and disciplinary contexts.

### 6.3 Implications of My Research

I hope that this study will challenge policy makers, school management, educational developers and lecturers to examine whether the increased use of ICT in the higher education sector is being co-opted by the neoliberal project to further enhance the values of flexibility, productivity and efficiency. As a community, we should re-evaluate the purpose of education and how we can re-invigorate the values associated with critical thought. When I first started my research endeavor, I thought that I was taking a moral high(er) ground in that I was more interested in the quality of implementation of online learning rather than the quantitative targets instituted by the polytechnic. Through the research journey, I realised that my interest and the associated practices that were installed by the educational development unit were as oppressive as the technologies and practices that are invested in quantitative metrics. I am reminded of Cixous' (2000) facetious phrase: 'Hold still, we're going to do your portrait, so that you can begin looking like it right away' (p. 217). Lecturers do not have to hold still for the limitations that the culture of accountability places on them, nor do they have to look like the portrait of the productive and entrepreneurial lecturer that the technology of normalisation is producing.

Davies and Bansel (2010) posit that neoliberal governmentality's most important feature is to dismantle the will to critique. As a result, the very nature of what higher education is and the ways academics understand their work could potentially be refashioned. I am attracted to Foucault's (1997b) invitation to become ethical subjects by engaging in critical thought:

By "thought," I mean what establishes, in a variety of possible forms, the play of true and false, and consequently constitutes the human being as a knowing subject; in other words, it is the basis for accepting or refusing rules, and constitutes human beings as social and juridical subjects; it is what establishes the relation with one self and with others, and constitutes the human being as ethical subject (p. 200).

Here, I will engage with criticality on two fronts: (1) By acknowledging that the work that I do in the educational development unit has been complicit in shaping the subjectivities of lecturers at the polytechnic, and (2) By exploring how critical thinking can be re-invigorated at all levels (in the staff room, in the classroom) of the polytechnic with the aim of instigating change.

- (1) My complicity in the subjectification of lecturers – Lecturers are reshaping and redefining their academic identities in relation to available discourses related to the use of ICT for teaching and learning. By participating in the various professional development programmes offered by my department, they are learning about what is ‘regular’ teaching practice. Lunchtime sharing sessions where exemplary online teaching practices are shared by their peers further establishes a regime of “truth” where certain techniques and practices are accepted, sanctioned and made to function as good and true. Indeed, the programmes and resources offered by my department have served as a means of defining and regulating the rationalities and practices of lecturers. In other words, by normalising certain pedagogical practices, my department has operated as a part of the technology of normalisation. Indeed, when one lecturer reflected that she wished that she could be more skillful like one of the educational developers, it dawned on me that we have been complicit in producing and reproducing what “good” teaching looks like through ‘situated and continuous micro-practices of power, in the most seemingly trivial details of embodied practice’ (Walshaw, 2007, p. 120). This lecturer’s accumulated and unique wisdom as a lecturer for 21 years may be effaced so that a generic academic can be produced. As I am also involved in some professional development programmes across the five polytechnics, I am cognisant that some of these programmes (e.g. sharing online courses on PolyMall) require lecturers to comply to a generic template of best practice and quality. Through the application of uniform technologies of audit and surveillance, the generic lecturer is produced. Through such practices of mimicry, ‘this-place’ is converted into ‘every-other-place’ and ‘this-subject into ‘every-other-subject’ (Davies & Bansel, 2010, p. 14).

- (2) Identifying spaces for critique at the polytechnic – Through neoliberal technologies such as normalisation, we have been conditioned not to see (or speak about) oppressive structures and dynamics in the environment in which we operate. However, through my doctoral learning journey, I recognise that education is an inherently political space, and that the neutral view of education technology with dominant priorities such as efficiency, cost effectiveness and scalability need to be troubled (Bradshaw, 2017). I need to identify spaces within my polytechnic which can be opened up for inquiry and for professional practice to take into consideration culture-related priorities of equity, inclusion and justice. I am attracted to Ellingson's (2011) advice for creativity to be exercised in making the most of one's rich empirical materials to produce written, oral, visual, and multimedia accounts. When we speak out through these accounts and engage in dialogue with policy makers, practitioners and other stakeholders, we have moved 'beyond the important work of knowledge creation and theory building to apply our scholarly resources to benefit people more directly' (p. 606).

Being critical in the Singaporean culture and context is often misunderstood as negativity or opposition. I hope to revive the mode of criticality that 'involves looking beyond surfaces and stereotypes, seeking deeper and fuller understanding of issues and circumstances in order to make visible the hidden structures and systems of domination and inequality that reinforce and increase benefits to some members of society, while reducing and blocking access to benefits for others' (Bradshaw, 2017, p. 9). I hope to invite my colleagues within my sphere of influence to engage in critical thought about the ICT programmes and implementations that we are supporting, and to collectively re-evaluate the purpose of education. Hopefully, more educational developers and lecturers would be invigorated to respond to Brown's (2015) question: 'What kind of world will be made through conceptions and practices of postsecondary education that reduce students to future human capital, citizens to manipulable consumers, and the public to GDP?' (p. 181).



## 6.4 My Development as a Researcher

When I first started my doctoral journey five years ago, I wanted to be certain about where I was going. I thought that once the destination was set, all I needed to do was to apply all the techniques and methods that would be introduced to me during the course of my doctoral journey. Being enculturated in a highly pragmatic society, I was all ready to discover “what works” for educational development in the use of ICT for teaching and learning. I am grateful that I was steered away from taking the easy route – instead of taking the familiar path of closing in on a specific mode of knowledge production in my quest for the answer, I was encouraged to open up to explore possibilities and ask questions. As this was a totally new venture that required me to traverse unfamiliar territories and engage with critical scholarship, I berated myself when I drew a blank with my research on many occasions – Why did I abandon the comfortable familiarity to try something totally foreign? Why did I not just adhere to the easy research route? Nevertheless, I am very grateful to my professors and peers who have encouraged me to persevere in this journey.

As I approach the end of my doctoral journey, I realise that the biggest impact that the thesis will make will be on me. I doubt that there will be any direct and significant impact on my institution in the near future, but I know that I have been changed by this journey. I realise that my stance on educational research has shifted, that educational research should not just engage with the technical but also with the political and sociological. Amin and Thrift’s (2005) four-point agenda for critical scholarship best sums up what I have learnt and the virtues that will guide me in my professional work:

First, a powerful sense of engagement with politics and the political. Second, and following on, a consistent belief that there must be better ways of doing things than are currently found in the world. Third, a necessary orientation to a critique of power and exploitation that both blight people’s current lives and stop better ways of doing things from coming into existence. Fourth, a constant and unremitting critical reflexivity towards our own practices, no one is allowed to claim that they have the one and only answer or the one and only privileged vantage point. Indeed, to make such a claim is to become a part of the problem (p. 221).

Finally, I return to my aim of engaging in phronetic research in this study. I am glad that the journey to develop my value rationality has started in this study, but the journey of learning, doing and being with regards to phronesis is unfinished. I have certainly gained some theoretical knowledge (episteme) and some know-how about research (techne) which I can happily report to my sponsors and apply some of them at my place of work. However, I believe it is my continual engagement with phronesis that will drive and direct the most meaningful changes in my professional practice. I share Schram's (2012) recipe for this on-going endeavour:

Add a sense of praxis, seeking the ability to push for change, leaven it with an appreciation of the inevitable presence of power, and phronetic social science becomes the kind of research that can help people in ongoing political struggle question the relationships of knowledge and power and thereby work to produce change (p. 19).

My study has uncovered many points of tensions: tensions within oneself as one deals with the ambivalences produced by the digital initiatives; tensions amongst colleagues as they respond differently to the technology implementations; tensions between lecturers and management as they contend for resources to support technology implementations at the polytechnic; and tensions between lecturers and students as they make sense of various pedagogical practices in the online space. Although these tensions express certain inherent dilemmas, I posit that they also present much opportunities for prudence and practical judgement – phronesis – to be exercised. For example, the lecturers and management may engage in a collective phronetic negotiation and dialogue, or the lecturers and students may engage in a collective phronetic exploration and conversation with the aim of challenging power and promoting social change.

I trust that my thesis has illuminated and troubled the rationalities and practices of the subterranean world of digital pedagogy, and that it will provoke others to ask questions and pursue research in this area.

## 7. Bibliography

Abshire, J.E. (2011). *The History of Singapore*. Santa Barbara, CA: Greenwood.

Alvesson, M. & Sköldbberg, K. (2009). *Reflexive Methodology: New Vistas for Qualitative Research*. Los Angeles: Sage Publications.

Amin, A. & Thrift, N. (2005). What's left? Just the future. *Antipode*, 37(2), 220-238.

Anderson, G. (2006). Carving out time and space in the managerial university. *Journal of Organisational Change Management*, 19(5), 578–592.

Aarseth, H. (2017). Fear of falling – Fear of fading: The emotional dynamics of positional and personalised individualism. *Sociology*: 1-16. Online First.

Attick, D. (2014). “Education is Dead”: A requiem, of sorts. *Critical Questions in Education*, 5(1), 1- 8.

Bailey, P. L. (2013). The policy dispositif: historical formation and method. *Journal of Education Policy*, 28(6), 807-827.

Bailey, P. L. (2015). Consultants of conduct: new actors, new knowledges and new ‘resilient’ subjectivities in the governing of the teacher. *Journal of Educational Administration and History*, 47(3), 232-250.

Ball, S. J. (1995). Intellectuals or technicians? The urgent role of theory in educational studies. *British Journal of Educational Studies*, 43(3), 255-271.

Ball, S. J. (2009). New voices, New knowledges and the new politics of education research: the gathering of a perfect storm? *European Education Research Journal*, 9(2), 125-137.

Ball, S. J. (2012). Performativity, commodification and commitment: An I-spy guide to the neoliberal university. *British Journal of Educational Studies*, 60(1), 17-28.

Ball, S. J. & Olmedo, A. (2013). Care of the self, resistance and subjectivity under neoliberal governmentalities. *Critical Studies in Education*, 54(1), 85-96

Ball, S. J. (2016). Neoliberal education? Confronting the slouching beast. *Policy Futures in Education*, 14(8), 1046-1059.

Bansel, P. (2015). The subject of policy. *Critical Studies in Education*, 56(1), 5-20.

Bayne, S. (2005). Deceit, desire and control: the identities of learners and teachers in cyberspace. In R. Land and S. Bayne (Eds.), *Education in Cyberspace* (pp. 26 – 42). London: Routledge.

Bennett, S., Maton, K. & Kervin, L. (2008). The ‘digital natives’ debate: A critical review of the evidence. *British Journal of Educational Technology*, 39(5), 775-786.

Bergmann, J. & Sams, A. (2012). *Flip Your Classroom: Reach Every Student in Every Class Every Day*. Washington, DC: International Society for Technology in Education.

Biesta, G. (2005). Against learning. Reclaiming a language for education in an age of learning. *Nordisk Pedagogik*, 25 (1): 54-66.

Biesta, G. (2010). *Good Education in an Age of Measurement: Ethics, Politics, Democracy*. Boulder, CO: Paradigm Publishers.

Bijker, W. (2010). How is technology made? That is the question! *Cambridge Journal of Economics*, 34, 63-76.

Bladergroen, M., Chigona, W., Bytheway, A., Cox, S., Dumas, C. & Van Zyl, I. (2012). Educator discourses on ICT in education: A critical analysis. *International Journal of Education and Development using ICT*, 8(2), 107-119.

Bloomberg, L. D. & Volpe, M. (2008). *Completing Your Qualitative Dissertation. A Roadmap from Beginning to End*. Los Angeles: Sage Publications.

Bobek, E. & Tversky, B. (2016). Creating visual explanations improves learning. *Cognitive Research: Principles and Implications*, 1(1), 27.

Bolldén, K. (2016). Teachers' embodied presence in online teaching practices. *Studies in Continuing Education*, 38(1), 1-15.

Brabazon, T. (2012). Time for a digital detox: From information obesity to digital dieting. *Fast Capitalism*, 9(1). Retrieved from [https://www.uta.edu/huma/agger/fastcapitalism/9\\_1/brabazon9\\_1.html](https://www.uta.edu/huma/agger/fastcapitalism/9_1/brabazon9_1.html)

Brabazon, T. (2016). *Digital Dieting: From Information Obesity to Intellectual Fitness*. London: Routledge.

Bradshaw, A.C. (2017). Critical pedagogy and education technology. In A.D. Benson, R. Joseph & J.L. Moore (Eds.), *Culture, Learning and Technology* (pp. 8 – 27). New York: Routledge.

Braun, V. & Clarke, C. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3, 77-101.

Braun, V. & Clarke, C. (2012). Thematic Analysis (chapter 4). *APA Handbook of Research Methods in Psychology*, 2, 57-71.

Brinkman, S. & Kvale, S. (2015). *InterViews: Learning the Craft of Qualitative Research Interviewing*. Thousand Oaks: Sage Publications.

Brown, C. C. (1952). The Malay Annals. *Journal of the Malayan Branch of the Royal Asiatic Society*, 25-2/3 (159), 5-276.

Brown, W. (2015). *Undoing the Demos: Neoliberalism's Stealth Revolution*. Cambridge: MIT Press.

Burge, E. J., Gibson, C. C. & Gibson, T. (Eds.). (2011). *Flexible Pedagogy, Flexible Practice: Notes from the Trenches of Distance Education*. Edmonton: Athabasca University Press.

Burman, E. (1992). Developmental psychology and the postmodern child. In J. Doherty, E. Graham, & M. Malek (Eds.), *Postmodernism and the Social Sciences* (pp. 95-110). New York: Macmillan.

Butson, R. (2003). Learning objects: weapons of mass instruction. *British Journal of Educational Technology*, 34(5), 667-669.

Calas, M. B. & Smircich, L. (1992). Re-writing gender into organizational theorizing: Directions from feminist perspectives. In M. I. Reed and M. D. Hughes (Eds.), *Rethinking Organization: New Directions in Organization Theory and Analysis* (pp. 227-253). London: Sage.

Carr, W. (1983). Can educational research be scientific? *Journal of Philosophy of Education*, 17(1), 35-43.

Chan, H. C. & Evers, H. D. (1973). Nation-building and national identity in Southeast Asia. *Building States and Nations: Analyses by Region*, 2, 301-19.

Chan, H. C. (1975). Politics in an Administrative State: Where Has the Politics Gone? In S. Meow (Ed.), *Trends in Singapore: Proceedings and Background Paper* (pp. 51-68). Singapore: Singapore University Press.

Charmaz, K. (2017). Special invited paper: Continuities, contradictions, and critical inquiry in grounded theory. *International Journal of Qualitative Methods*, 16, 1-8.

Cheng, Y. E. (2016). Learning in neoliberal times: Private degree students and the politics of value coding in Singapore. *Environment and Planning A*, 48(2), 292-308.

Chia, Y. M. (2015, September 30). Singapore remains world's second-most competitive economy. *The Straits Times*. Retrieved from <http://www.straitstimes.com>

Chng, H.H. (2003). "You see me no up": Is Singlish a problem? *Language Problems and Language Planning*, 27(1), 45-62.

Chong, T. (2010). Introduction: The role of success in Singapore's national identity. In T. Chong (Ed.), *Management of Success: Singapore Revisited* (pp. 1-18). Singapore: Institute of Southeast Asian Studies.

Christensen, G. (2015). Power, ethics and the production of subjectivity in the group interview. *International Journal of Multiple Research Approaches*, 9(1), 73-86.

Chua, B.H. (1995). *Communitarian Ideology and Democracy in Singapore*. London: Routledge.

Cifuentes, G. (2016). Educational governance and innovation: Technology as end and means of government. *Policy Futures in Education*, 14(2), 286-299.

- Cixous, H. (2000). The laugh of the Medusa. In W. Kolmar & F. Bartkowski (Eds.), *Feminist Theory: A Reader* (pp. 212-218). Mountain View, CA: Mayfield Publishing Company.
- Clarke, V. (2005). 'We're all very liberal in our views': Students' talk about lesbian and gay parenting. *Lesbian and Gay Psychology Review*, 6, 2-15.
- Clegg, S. (2001). Theorising the machine: Gender, education and computing. *Gender and Education*, 13 (3), 307-324.
- Coffey, A. & Atkinson, P. (1996). *Making Sense of Qualitative Data: Complementary Research Strategies*. Los Angeles: Sage Publications.
- Coghlan, D. & Brannick, T. (2005). *Doing Action Research in Your Own Organization*, 2nd Edition. London: Sage Publications.
- Constant, T. M. C., & Cao, H. (2018). English, Identity and the Privileging and Marginalizing of Transculturality. In *Criticality, Teacher Identity, and (In) equity in English Language Teaching* (pp. 103-122). Cham: Springer.
- Coole, D. (2013). Agentic capacities and capacious historical materialism: Thinking with new materialisms in the political sciences. *Millennium*, 41(3), 451-469.
- Comrie, A. (2011). Future models of higher education in Scotland. *Campus-Wide Information Systems*, 28(4), 250-257.
- Crossouard, B. (2012). Pupil mortification: digital photography and identity construction in classroom assessment. *British Journal of Sociology of Education*, 33(6), 893-911.
- Crotty, M. (2003). *The Foundations of Social Research: Meaning and Perspectives in the Research Process*. London: Sage Publications.
- Cruikshank, B. (1996). Revolutions within: self-government and self-esteem. In A. Barry, T. Osborne & N. Rose (Eds.), *Foucault and Political reason: Liberalism, Neoliberalism and Rationalities of Government* (pp. 231-251). Chicago: University of Chicago Press.
- Cuban, L. (1986). *Teachers and Machines: The Classroom Use of Technology since 1920*. New York: Teachers College Press.
- Currie, J., & Eveline, J. (2011). E-technology and work/life balance for academics with young children. *Higher Education*, 62(4), 533-550.
- Davidson, C. (2009). Transcription: Imperatives for qualitative research. *International Journal of Qualitative Methods*, 8(2), 35-52.
- Davie, S. (2016, May 16). Universities to launch schemes allowing people to work while studying for degree. *The Straits Times*. Retrieved from <http://www.straitstimes.com>.
- Davies, B. (2005). The (im)possibility of intellectual work in neoliberal regimes. *Discourse: Studies in the Cultural Politics of Education*, 26(1), 1-14.

Davies, B. (2006). Subjectification: The relevance of Butler's analysis for education. *British Journal of Sociology of Education*, 27(4), 425-438.

Davies, B. & Bansel, P. (2010). Governmentality and academic work: Shaping the hearts and minds of academic workers. *Journal of Curriculum Theorizing*, 26(3), 5-20.

Dean, M. (2010). *Governmentality: Power and Rule in Modern Society*. 2nd ed. London: Sage.

Densmore, K. (1987). Professionalism, proletarianization and teacher work. In T. Popkewitz (Ed.), *Critical Studies in Teacher Education* (pp. 130-160). London: Falmer Press.

De Gagne, J. C. & Walters, K. J. (2010). The lived experience of online educators: Hermeneutic phenomenology. *Journal of Online Learning and Teaching*, 6(2), 357-366.

Dolan, K.A. (2015). *Inside The 2015 Forbes Billionaires List: Facts and Figures*. Retrieved from <http://www.forbes.com/sites/kerryadolan/2015/03/02/inside-the-2015-forbes-billionaires-list-facts-and-figures/>

Drake, P. (2010). Grasping at methodological understanding: a cautionary tale from insider research. *International Journal of Research & Method in Education*, 33(1), 85-99.

Dreyfus, H. L. (1986). Why studies of human capacities modeled on ideal natural science can never achieve their goal. In J. Margolis, A.S. Krausz & R. Burian (Eds.), *Rationality, Relativism and the Human Sciences* (pp. 3-22). Dordrecht: Springer.

du Gay, P. (1996). *Consumption and Identity at Work*. London: Sage.

Dunne, M., Pryor, J. & Yates, P. (2005). *Becoming A Researcher: A Research Companion For The Social Sciences: A Companion to the Research Process*. London: McGraw-Hill Education.

Ebben, M. & Murphy, J.S. (2014). Unpacking MOOC scholarly discourse: a review of nascent MOOC scholarship. *Learning, Media and Technology*, 39(3), 328-345.

Edwards, B. (1999). *Inside the whale: Deep insider research*. Paper presented at the meeting of the Australian Association for Research in Education Conference, Melbourne, Australia. Retrieved from <http://publications.aare.edu.au/99pap/edw99006.htm>

Edwards, R. (2003). Ordering subjects: Actor-networks and intellectual technologies in lifelong learning, *Studies in the Education of Adults*, 35(1), 54-67.

Edwards, R. (2008). Actively seeking subjects. Foucault and lifelong learning: Governing the subject. In A. Fejes, & K. Nicoll (Eds.), *Foucault and Lifelong Learning: Governing the Subject* (pp. 21-33). London: Routledge.

Ellingson, L. (2011). Analysis and representation across the continuum. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 595-610). Thousand Oaks, CA: Sage.

- Ellis, C. (2007). Telling secrets, revealing lives: Relational ethics in research with intimate others. *Qualitative Inquiry*, 13(1), 3-29.
- Ennew, C. T. & Fernandez-Young, A. (2006). Weapons of mass instruction? The rhetoric and reality of online learning. *Marketing Intelligence & Planning*, 24(2), 148-157.
- Estola, E. & Elbaz-Luwisch, F. (2003). Teaching bodies at work. *Journal of Curriculum Studies*, 35(6), 697-719.
- Evans, T. & Smith, P. (2011). The fog of flexibility: the riskiness of flexible post-secondary education in Australia. In E. J. Burge, C.C. Gibson & T. Gibson (Eds.), *Flexible Pedagogy, Flexible Practice: Notes from the Trenches of Distance Education* (pp. 231-242). Alberta: Athabasca University Press.
- Facer, K. (2014). What is space for? Towards a politics and a language for the human in education. *Technology, Pedagogy and Education*, 23(1), 121-126.
- Fairclough, N. (1992). *Discourse and Social Change*. Cambridge: Polity Press.
- Fairclough, N. (2001). *The Dialectics of Discourse*. *Textus*, XIV(2), 231-242.
- Fanghanel, J. (2011). *Being an Academic*. London: Routledge.
- Finlay, L. (2002). Negotiating the swamp: the opportunity and challenge of reflexivity in research practice. *Qualitative Research*, 2(2), 209-230.
- Flax, J. (1990). Postmodernism and gender relations in feminist theory. In L.J. Nicholson (Ed.), *Feminism/Postmodernism* (pp. 39 - 62). New York: Routledge.
- Flyvbjerg, B. (2001). *Making Social Science Matter: Why Social Inquiry Fails and How it can Succeed Again*. Cambridge: Cambridge University Press.
- Foucault, M. (1970). *The Order of Discourse: An Archaeology of the Human Sciences*. London: Tavistock.
- Foucault, M. (1972). *The Archaeology of Knowledge*. New York: Harper and Row.
- Foucault, M. (1977). Nietzsche, genealogy, history. In D. F. Bouchard (Ed.), *Language, Counter-Memory, Practice: Selected Essays and Interviews* (pp. 139-164). Oxford: Basil Blackwell.
- Foucault, M. (1978). *The History of Sexuality: An Introduction*. Hammonsworth: Penguin.
- Foucault, M. (1980a). Truth and power. In C. Gordon (Ed.), *Power/knowledge. Selected Interviews & Other Writings by Michel Foucault, 1972-1977* (pp. 109-133). Brighton: Havester.
- Foucault, M. (1980b). *Power/Knowledge: Selected Interviews & Other Writings 1972-1977*. New York: Pantheon.



- Foucault, M. (1981). The order of discourse. In R. Young (Ed.), *Untying the Text: A Poststructuralist Reader* (pp. 48-78). Boston: Routledge & Keegan Paul.
- Foucault, M. (1982). The subject and power. *Critical Inquiry*, 8(4), 777-795.
- Foucault, M. (1988). *Technologies of the Self: A Seminar with Michel Foucault*. Amherst, MA: University of Massachusetts Press.
- Foucault, M. (1991). *Discipline and Punish: The Birth of the Prison*. Harmondsworth: Penguin.
- Foucault, M. (1993). About the beginning of the hermeneutics of the self (transcription of two lectures in Dartmouth on Nov. 17 and 24, 1980). *Political Theory*, 21(2), 198-227.
- Foucault, M. (1997a). Security, territory, and population. In P. Rabinow (Ed.), *Ethics: Subjectivity and Truth* (pp. 67-71). New York: The New Press.
- Foucault, M. (1997b). Preface to the History of Sexuality, Volume 2. In P. Rabinow (Ed.), *Ethics, Subjectivity and Truth* (pp. 199-205). New York: The New Press.
- Freire, P. (1970). *Pedagogy of the Oppressed*. New York: Continuum.
- Friesen, N. (2013). Educational Technology and the “New Language of Learning”: Lineage and Limitations. In N. Selwyn (Ed.), *The Politics of Education and Technology* (pp. 21-38). New York: Palgrave Macmillan.
- Fu, G. (2010). *Speech By Ms Grace Fu, Senior Minister of State, Ministry of National Development and Ministry of Education, at The Microsoft Regional Asia Pacific Innovative Education Forum, on Tuesday, 9 March 2010*. Retrieved from <http://www.moe.gov.sg/media/speeches/2010/03/09/speech-by-ms-grace-fu-at-microsoft-edu-forum.php>
- Gabriel, Y. (2010). Organization studies: A space for ideas, identities and agonies. *Organization Studies*, 31, 757-775.
- Gill, R (2010). Breaking the silence: The hidden injuries of the neoliberal university. In R. Ryan-Flood and R. Gill (Eds.), *Secrecy and Silence in the Research Process: Feminist Reflections* (pp. 228-244). Abingdon: Routledge.
- Gill, R. (2017). Beyond individualism: the psychosocial life of the neoliberal university. In M. Spooner (Ed.), *A Critical Guide to Higher Education & the Politics of Evidence: Resisting Colonialism, Neoliberalism, & Audit Culture*. Regina, Canada: University of Regina Press.
- Gobby, B. (2013). Principal self-government and subjectification: the exercise of principal autonomy in the Western Australian Independent Public Schools programme. *Critical Studies in Education*, 54(3), 273-285.
- Goh, I., & Tan, Y. Y. (2007). Singapore pharmakon. *Social Identities*, 13(3), 393-409.

- Goh, C. B. & Gopinathan, S. (2008). The development of education in Singapore since 1965. In S.K. Lee, C.B. Goh, B. Fredriksen & J.P. Tan (Eds.), *Toward a Better Future: Education and Training for Economic Development in Singapore since 1965* (pp. 12-38). Washington, DC: The World Bank.
- Gonick, M. (2015). Producing neoliberal subjectivities: Literacy, girlhood, and collective biography. *Critical Methodologies*, 15(1), 64-71.
- Gourlay, L. & Oliver, M. (2018). *Student Engagement in the Digital University: Sociomaterial Assemblages*. London: Routledge.
- Graham, L.J. (2011). The product of text and ‘other’ statements: Discourse analysis and the critical use of Foucault. *Educational Philosophy and Theory*, 43(6), 663-674.
- Gubrium, J. F. & Holstein, J. A. (2012). Narrative practice and the transformation of interview subjectivity. In J.F. Gubrium, J.A., Holstein, A.B. Marvasti & K.D. McKinney (Eds.), *The SAGE Handbook of Interview Research: The Complexity of the Craft* (pp. 27-43). London: Sage.
- Grbich, C. (2004). *New Approaches in Social Research*. London: Sage.
- Grbich, C. (2012). *Qualitative Data Analysis: An Introduction*. London: Sage.
- Guba, E.G. and Lincoln, Y.S. (1989). *Fourth Generation Evaluation*. London: Sage.
- Hall, G. (2016). *The Uberfication of the University*. Minnesota: University of Minnesota Press.
- Han, B. C. (2015). *The Burnout Society*. Redwood City, CA: Stanford University Press.
- Hannon, J. (2013). Incommensurate practices: Sociomaterial entanglements of learning technology implementation. *Journal of Computer Assisted Learning*, 29(2), 168-178.
- Harding, S. G. (1991). *Whose science? Whose knowledge?: Thinking from women's lives*. New York: Cornell University Press.
- Hardy, C. & Phillips, N. (2004). Discourse and power. In D. Grant, C. Hardy, C. Osrick, & L. Putnam (Eds.), *The Handbook of Organizational Discourse* (pp. 299-316). London: Sage.
- Hardy, C. & Maguire, S. (2016). Organizing risk: Discourse, power, and “riskification”. *Academy of Management Review*, 41(1), 80-108.
- Hargreaves, A. (1994). *Changing Teachers, Changing Times: Teachers' Work and Culture in the Postmodern Age*. New York: Teachers College Press.
- Harris, S. (2005). Rethinking academic identities in neo-liberal times. *Teaching in Higher Education*, 10(4), 421-433.

Hartman, Y. & Darab, S. (2012). A call for slow scholarship: A case study on the intensification of academic life and its implications for pedagogy. *Review of Education, Pedagogy, and Cultural Studies*, 34(1-2), 49-60.

Harvey, D. (2005). *A Brief History of Neoliberalism*. London: Oxford University Press.

HDB (2010, Oct 4). *HDB receives UN-Habitat Scroll of Honour Award 2010 on World Habitat Day* [Press Release]. <http://www.hdb.gov.sg/cs/infoweb/about-us/achievements-and-accolades/achievements/past-achievements&rendermode=preview> (accessed 23 June 2017).

Heitink, M., Voogt, J., Verplanken, L., van Braak, J. & Fisser, P. (2016). Teachers' professional reasoning about their pedagogical use of technology. *Computers & Education*, 101, 70-83.

Heng, S.K. (2014). *Opening Address by Mr Heng Swee Keat, Minister for Education, at the International Conference of Teaching and Learning with Technology (iCTLT) at the Suntec International Convention and Exhibition Centre, at 9.00am on Wednesday, 9 April 2014*. Retrieved from <http://www.moe.gov.sg/media/speeches/2014/04/09/opening-address-by-mr-heng-swee-keat-at-the-international-conference-of-teaching-and-learning-with-technology.php>

Hertz, R. (1997). *Reflexivity and Voice*. Thousand Oaks, CA: Sage.

Hertzier, L. (2012). *School of the Future: 10 years after concept, School District and Microsoft partnership prepares for new future*. Retrieved from <http://technical.ly/philly/2012/11/12/high-school-of-the-future-microsoft-philadelphia-school-district/>

Hing, A.Y. (2003). Subjectivity and the reinvention of an industrial regime: The case of Singapore. *Economic and Industrial Democracy*, 24(1), 103-127.

Ho, C. L., & Alsagoff, S. L. (1998). English as the common language in multicultural Singapore. In J. Foley (Ed.), *English in New Cultural Contexts: Reflections from Singapore* (pp. 201-217). Singapore: Oxford University Press.

Ho, J. T., Ang, C. E., Loh, J. & Ng, I. (1998). A preliminary study of kiasu behaviour-is it unique to Singapore? *Journal of Managerial Psychology*, 13(5/6), 359-370.

Ho, K. C., & Ge, Y. (2011). Education and human capital management in a world city: The case of Singapore. *Asia Pacific Journal of Education*, 31(3), 263-276.

Hodge, S. & Harris, R. (2012). Discipline, governmentality and 25 years of competency-based training. *Studies in the Education of Adults*, 44(2), 155-170.

Holstein, J. A. & Gubrium, J. F (1997). *The New Language of Qualitative Method*. London: Oxford University Press.

Hope, A. (2015). Foucault's toolbox: critical insights for education and technology researchers. *Learning, Media and Technology*, 40(4), 536-549.

- Hukkinen, J., Roe, E. & Rochlin, G. I. (1990). A salt on the land: A narrative analysis of the controversy over irrigation-related salinity and toxicity in California's San Joaquin Valley. *Policy Sciences*, 23(4), 307-329.
- Humphrey, C. (2013). Dilemmas in doing insider research in professional education. *Qualitative Social Work*, 12(5), 572-586.
- Infocomm Media Development Authority (2018). *Singapore unveils third Masterplan for ICT in Education*. Retrieved from <https://www.imda.gov.sg/infocomm-and-media-news/buzz-central/2008/9/singapore-unveils-third-masterplan-for-ict-in-education>
- Janesick, V.J. (1994). The dance of qualitative research design: Metaphor, methodolatry, and meaning. In N.K. Denzin & Y.S. Lincoln (Eds.). *Handbook of Qualitative Research* (pp. 209–219). Thousand Oaks, CA: Sage.
- Jarvis, H. & Pratt, A. C. (2006). Bringing it all back home: The extensification and ‘overflowing’ of work: The case of San Francisco’s new media households. *Geoforum*, 37(3), 331-339.
- Johnson, D. R. (2012). Technological change and professional control in the professoriate. *Science, Technology, & Human Values*, 38(1), 126-149.
- Joseph, J. (2013). Resilience as embedded neoliberalism: a governmentality approach. *Resilience: International Policies, Practices and Discourses*, 1 (1), 38-52.
- Kanuha, V. K. (2000). ‘Being’ native versus ‘going’ native: Conducting social work research as an insider. *Social Work*, 45, 439–447.
- Kanuka, H. & Rourke, L. (2008). Exploring amplifications and reductions associated with e-learning: conversations with leaders of e-learning programs. *Technology, Pedagogy and Education*, 17(1), 5-15.
- Knights, D. & Clarke, C. A. (2014). It’s a bittersweet symphony, this life: Fragile academic selves and insecure identities at work. *Organization Studies*, 35(3), 335-357.
- Koh, A. (2004). Singapore education in “New Times”: Global/local imperatives. *Discourse: Studies in the Cultural Politics of Education*, 25(3), 335-349.
- Koh, A. & Chong, T. (2014). Education in the global city: the manufacturing of education in Singapore. *Discourse: Studies in the Cultural Politics of Education*, 35(5), 625-636.
- Koh, T. S. & Lee, S. C. (2008). Digital skills and education: Singapore’s ICT master planning for the school sector. In S.K. Lee, C.B. Goh, B. Fredriksen & J.P. Tan (Eds.), *Toward a Better Future: Education and Training for Economic Development in Singapore since 1965* (pp. 167-190). Washington, DC: The World Bank.
- Kohli, H. S., Sharma, A. & Sood, A. (Eds.) (2011). *Asia 2050: Realizing the Asian Century*. India: Sage Publications.

- Kubicek, B., Korunka, C., Paškvan, M., Prem, R. & Gerdenitsch, C. (2014). Changing working conditions at the onset of the twenty-first century: Facts from international datasets. In C. Korunka and P. Hoonakker (Eds.), *The Impact of ICT on Quality of Working Life* (pp. 25-41). Dordrecht: Springer.
- Labaree, R. V. (2002). The risk of 'going observationalist': negotiating the hidden dilemmas of being an insider participant observer. *Qualitative Research*, 2(1), 97-122.
- Lambier, B. & Ramaekers, S. (2006). The limits of blackboard are the limits of my world: On the changing concepts of the university and its students. *E-Learning*, 3, 544-551.
- Landahl, J. (2013). The eye of power(-lessness): on the emergence of the panoptical and synoptical classroom. *History of Education*, 42(6), 803-821
- Lather, P. (1991). Deconstructing/deconstructive inquiry: The politics of knowing and being known. *Educational Theory*, 41(2), 153-170.
- Lather, P. (1993). Fertile obsession: Validity after poststructuralism. *The Sociological Quarterly*, 34(4), 673-693.
- Lather, P. (2000). Against empathy, voice and authenticity. *Women, Gender, and Research*, 4, 16-25.
- Lather, P. (2006). Paradigm proliferation as a good thing to think with: Teaching research in education as a wild profusion. *International Journal of Qualitative Studies in Education*, 19(1), 35-57.
- Lather, P. (2012). The ruins of neo-liberalism and the construction of a new (scientific) subjectivity. *Cultural Studies of Science Education*, 7, 1021-1025.
- Lau, J. (1994). *Mr. Kiasu: Everything also Scared Lose*. Singapore: Comix Factory.
- Laurillard, D. (2008). *Digital Technologies and their Role in Achieving our Ambitions for Education*. University of London, Institute of Education.
- Law, J. (2004). *After Method: Mess in Social Science Research*. London: Routledge.
- Lazzarato, M. (2009). Neoliberalism in action: Inequality, insecurity and the reconstitution of the social. *Theory, Culture & Society*, 26(6), 109-133.
- Lee, K.Y. (2000). *From Third World to First: The Singapore Story: 1965–2000*. New York: HarperCollins.
- Lee, T. (2014) 'Inculcating' creativity: culture as public pedagogy in Singapore. *Discourse: Studies in the Cultural Politics of Education*, 35(5), 718-732.
- Lee, M. (2017). Decoding the neoliberal subjectivity in self-helping adult learners. *International Journal of Lifelong Education*, 36(1/2), 145-163.

- Levin, B. B. & Schrum, L. (2012). *Leading Technology-rich Schools: Award-winning Models for Success*. New York: Teachers College Press.
- Lim, T.S. (2013). *Singapore: a City of Campaigns*. Retrieved from <http://library.ifla.org/137/1/161-seng-en.pdf>.
- Lincoln, Y. S., Lynham, S. A. & Guba, E. G. (2011). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N.K. Denzin & Y.S. Lincoln (Eds.), *The Sage Handbook of Qualitative Research* (pp. 97-128). Los Angeles: Sage Publications.
- Liow, E. D. (2011). The neoliberal-developmental state: Singapore as case study. *Critical Sociology*, 38(2), 241-264.
- Lyotard, J. F. (1984). *The Postmodern Condition: A Report on Knowledge* (Vol. 10). New York: University of Minnesota Press.
- Macfarlane, B. (2010). *Researching with Integrity: The Ethics of Academic Enquiry*. London: Routledge.
- Macfarlane, B. (2015). Student performativity in higher education: converting learning as a private space into a public performance. *Higher Education Research & Development*, 34(2), 338-350.
- MacLure, M. (2003). *Discourse in Educational and Social Research*. London: McGraw-Hill Education.
- Magnusson, E. & Marecek, J. (2015). *Doing Interview-Based Qualitative Research: A Learner's Guide*. Cambridge: Cambridge University Press.
- Manes, S. & Andrews, P. (1993). *Gates: How Microsoft's Mogul Reinvented an Industry –and Made Himself the Richest Man in America*. New York: Simon & Schuster.
- Marvasti, A. (2003). *Qualitative Research in Sociology*. Los Angeles: Sage Publications.
- Mathiesen, T. (1997). The Viewer Society: Michel Foucault's "Panopticon" Revisited. *Theoretical Criminology*, 1(2), 215–34.
- Mattelart, A. (2005). Diversité culturelle et mondialisation [Cultural diversity and globalization]. Paris, France: La Découverte.
- Mazzei, L. A. (2003). Inhabited silences: In pursuit of a muffled subtext. *Qualitative Inquiry*, 9(3), 355-368.
- Mercieca, D. & Mercieca, D. P. (2013). Engagement with research: acknowledging uncertainty in methodology. *International Journal of Research & Method in Education*, 36(3), 228-240.
- Merton, R. K. (1972). Insiders and outsiders: A chapter in the sociology of knowledge. *American Journal of Sociology*, 78(1), 9-47.

Miller, H. T. (2008). Governmentality, pluralism, and deconstruction. *Administrative Theory & Praxis*, 30(3), 363-368.

Ministry of Education (2013). Government expenditure on education. Retrieved from <http://www.moe.gov.sg/media/parliamentary-replies/2013/10/government-expenditure-on-education.php>

Ministry of Education. (2014). Singapore students excel in thinking flexibly and creatively to solve complex and unfamiliar problems, says PISA study. Retrieved from <http://www.moe.gov.sg/media/press/2014/04/singapore-students-excel-in-thinking-flexibility.php>.

Ministry of Education (2016). ICT in Education. Retrieved from <https://ictconnection.moe.edu.sg/masterplan-4/overview>

Mirchandani, R. (2005). Postmodernism and sociology: From the epistemological to the empirical. *Sociological Theory*, 23(1), 86-115.

Moltó Egea, O. (2014). Neoliberalism, education and the integration of ICT in schools. A critical reading. *Technology, Pedagogy and Education*, 23(2), 267-283.

Morley, L. (2003). *Quality and Power in Higher Education*. Buckingham: Open University Press.

Morley, L. (2018). Gender in the Neo-liberal Research Economy: An Enervating and Exclusionary Entanglement? In Kahlert, H. (Ed.), *Gender Studies and the New Academic Governance* (pp. 15 – 40). Bochum, Germany: Springer.

Morrissey, J. (2015). Regimes of performance: practices of the normalized self in the neoliberal university. *British Journal of Sociology of Education*, 36(4), 614-634.

Naidoo, R. & Jamieson, I. (2005). Empowering participants or corroding learning? Towards a research agenda on the impact of student consumerism in higher education. *Journal of Education Policy*, 20(3), 267-281.

Naruse, C.N. & Gui, W.H. (2016). Singapore and the intersections of neoliberal globalization and postcoloniality. *Interventions*, 18(4), 473-482.

Ng, C. H. (2009). Reforming learning in the Asia-Pacific region: An introduction. In Ng, C.H. & Renshaw, P.D. (Eds.), *Reforming Learning* (pp. 3-22). Springer, Dordrecht.

Ng, P. T. (2017). *Learning from Singapore: The Power of Paradoxes*. Singapore: Taylor & Francis.

Noble, D. F. (1998). Digital diploma mills: The automation of higher education. *Science as Culture*, 7(3), 355-368.

Nutt, J. (2010). Professional educators and the evolving role of ICT in schools: Perspective report. CfBT Educational Trust. [Accessed March 15, 2012] [www.ictliteracy.info/rf.pdf/ICTinSchools.pdf](http://www.ictliteracy.info/rf.pdf/ICTinSchools.pdf) .

- Ochs, E. (1979). Transcription as theory. *Developmental Pragmatics*, 10(1), 43-72.
- O'Connor, P. (2004). The conditionality of status: Experience-based reflections on the insider/outsider issue. *Australian Geographer*, 35(2), 169-176.
- O'Connell, D. C., Kowal, S. & Ageneau, C. (2005). Interjections in interviews. *Journal of Psycholinguistic Research*, 34(2), 153-171.
- OECD (2004). *Innovation in the Knowledge Economy*. Paris: OECD.
- Olaniran, B. A. & Agnello, M. F. (2008). Globalization, educational hegemony, and higher education. *Multicultural Education & Technology Journal*, 2(2), 68-86.
- Oliver, M. (2011). Technological determinism in educational technology research: some alternative ways of thinking about the relationship between learning and technology. *Journal of Computer Assisted Learning*, 27(5), 373-384.
- Olssen, M. (2016). Neoliberal competition in higher education today: research, accountability and impact. *British Journal of Sociology of Education*, 37(1), 129-148.
- Ong, Y.K. (2017). Speech by Mr Ong Ye Kung, Minister for Education (Higher Education and Skills), at the Launch of Singtel's Cyber Security Experience, on Monday, 10 July 2017. Retrieved from <https://www.moe.gov.sg/news/speeches/speech-by-mr-ong-ye-kung--minister-for-education-higher-education-and-skills--at-the-launch-of-singtel-cyber-security-experience>
- Paechter, C. (2013). Researching sensitive issues online: implications of a hybrid insider/outsider position in a retrospective ethnographic study. *Qualitative Research*, 13(1), 71-86.
- Parker, I. (2005). *Qualitative Psychology: Introducing Radical Research*. Buckingham: Open University Press.
- Patrick, F. (2013). Neoliberalism, the knowledge economy, and the learner: Challenging the inevitability of the commodified self as an outcome of education. *International Scholarly Research Notices*, 2013.
- Patton, M.Q. (2002). *Qualitative Research and Evaluation Methods* (3rd ed.). Thousand Oaks: Sage.
- Pawson, R., Tilley, N. & Tilley, N. (1997). *Realistic Evaluation*. Thousand Oaks: Sage.
- Pendergast, D. & Kapitzke, C. (2006). Virtual teachers: Negotiating new spaces for teaching bodies. *Pedagogies: An International Journal*, 1(4), 253-267.
- Pezalla, A. E., Pettigrew, J. & Miller-Day, M. (2012). Researching the researcher-as-instrument: an exercise in interviewer self-reflexivity. *Qualitative Research*, 12(2), 165-185.



- Pham, T. T. H. & Renshaw, P. (2013). How to enable Asian teachers to empower students to adopt student-centred learning. *Australian Journal of Teacher Education*, 38(11), 65-85.
- Phillipson, R. (2008). The linguistic imperialism of neoliberal empire. *Critical Inquiry in Language Studies*, 5(1), 1-43.
- Pillow, W. S. (2003). Confession, catharsis, or cure? Rethinking the uses of reflexivity as methodological power in qualitative research. *International Journal of Qualitative Studies in Education*, 16(2), 175-196.
- Poland, B. & Pederson, A. (1998). Reading between the lines: Interpreting silences in qualitative research. *Qualitative Inquiry*, 4(2), 293-312.
- Potter, J. & Wetherell, M. (1987). *Discourse and Social Psychology: Beyond Attitudes and Behavior*. London: Sage.
- Power, E. M. (2004). Toward understanding in postmodern interview analysis: Interpreting the contradictory remarks of a research participant. *Qualitative Health Research*, 14(6), 858-865.
- Powers, P. (2013). Rawlinson's three axes of structural analysis: A useful framework for a Foucauldian discourse analysis. *Aporia*, 5(1).
- Prensky, M. (2001). Digital Natives, Digital Immigrants. *On the Horizon*, 9(5), 1-6.
- Prime Minister's Office (2014a). *Transcript of Prime Minister Lee Hsien Loong's speech at Smart Nation launch on 24 November 2014*.
- Prime Minister's Office (2014b). *Transcript of Prime Minister Lee Hsien Loong's speech at National Day Rally on 17 August 2014*.
- Prime Minister's Office (2015). *Transcript of Prime Minister Lee Hsien Loong's speech at National Day Rally on 23 August 2015*.
- Prime Minister's Office (2016). *Transcript of Prime Minister Lee Hsien Loong's speech at National Day Rally on 21 August 2016*.
- Pryor, J. (2010). Constructing research questions Focus, methodology and theorisation. In P. Thomson & M. Walker (Eds.). *The Routledge Doctoral Student's Companion: Getting to Grips with Research in Education and the Social Sciences* (pp. 161-171). London: Routledge.
- Pryor, J. & Crossouard, B. (2010). Challenging formative assessment: disciplinary spaces and identities. *Assessment & Evaluation in Higher Education*, 35(3), 265-276.
- Raaper, R. (2016). Academic perceptions of higher education assessment processes in neoliberal academia. *Critical Studies in Education*, 57(2), 175-190.

- Rapley, T. J. (2001). The art (fulness) of open-ended interviewing: some considerations on analysing interviews. *Qualitative Research*, 1(3), 303-323.
- Reinharz, S. (1997). Who am I? The need for a variety of selves in the field. In R. Hertz (Ed.), *Reflexivity and Voice* (pp. 3-20). Thousand Oaks: Sage.
- Rhoads, R. A., Berdan, J. & Toven-Lindsey, B. (2013). The open courseware movement in higher education: Unmasking power and raising questions about the movement's democratic potential. *Educational Theory*, 63(1), 87-110.
- Richardson, L. (1994). Writing: A method of inquiry. In N. K. Denzin & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research* (pp. 516-529). Thousand Oaks, CA: Sage.
- Richardson, L. (1997). *Fields of Play: Constructing an Academic Life*. New Brunswick, N.J.: Rutgers University Press.
- Ritzer, G. (1998). *The McDonaldization Thesis: Explorations and Extensions*. London: Sage.
- Roberts, J. (2001). The drive to codify: implications for the knowledge-based economy. *Prometheus*, 19(2), 99-115.
- Robertson, J. W. (2003). Stepping out of the box: Rethinking the failure of ICT to transform schools. *Journal of Educational Change*, 4(4), 323-344.
- Robison, R., Rodan, G. & Hewison, K. (2005). Transplanting the neoliberal state in Southeast Asia. In R. Boyd & T. Ngo (Eds.), *Asian States: Beyond the Developmental Perspective* (pp. 172-198). London: Routledge.
- Rosenau, P. M. (1991). *Post-modernism and the Social Sciences: Insights, Inroads, and Intrusions*. Princeton: Princeton University Press.
- Rowland, S. (2007). Academic development: A site of creative doubt and contestation. *International Journal for Academic Development*, 12(1), 9-14.
- Rubin, H.J. & Rubin, I.S. (2005). *Qualitative Interviewing: The Art of Hearing Data*. Thousand Oaks, CA: Sage.
- Rudd, T. (2013). The Ideological Appropriation of Digital Technology in UK Education: Symbolic Violence and the Selling and Buying of the "Transformation Fallacy". In N. Selwyn & K. Facer (Eds.), *The Politics of Education and Technology* (pp. 147-166). New York: Springer.
- Ryan, M.E. (2008). Small stories, big issues: tracing complex subjectivities of high school students in interactional talk. *Critical Discourse Studies*, 5(3), 217-229.
- Ryan, A. & Tilbury, D. (2013). *Flexible Pedagogies: New Pedagogical Ideas*. London: Higher Education Academy.

- Said, E. W. (2004). *Humanism and Democratic Criticism*. New York: Columbia University Press.
- Sandelowski, M. (1993). Rigor or rigor mortis: The problem of rigor in qualitative research revisited. *Advances in Nursing Science*, 16, 1-8.
- Savin-Baden, M. (2008). *Learning Spaces. Creating Opportunities for Knowledge Creation in Academic Life*. Buckingham: Open University Press.
- Scheurich, J. (1997). *Research Method in the Postmodern*. London: Falmer Press.
- Schram, S. (2012). Phronetic social science: An idea whose time has come. In B. Flyvbjerg, T. Landman & S. Schram (Eds.), *Real Social Science: Applied Phronesis* (pp. 15-26). Cambridge: Cambridge University Press.
- Seale, C. (1998). *Researching Society and Culture*. London: Sage.
- Selwyn N. (2007). The use of computer technology in university teaching and learning: a critical perspective. *Journal of Computer Assisted Learning*, 23, 83-94.
- Selwyn, N. (2008). From state-of-the-art to state-of-the-actual? Introduction to a special issue. *Technology, Pedagogy and Education*, 17(2), 83-87.
- Selwyn, N. (2011). *Schools and Schooling in the Digital Age: A Critical Analysis*. London: Routledge.
- Selwyn, N. (2012a). Making sense of young people, education and digital technology: The role of sociological theory. *Oxford Review of Education*, 38(1), 81-96.
- Selwyn, N. (2012b). Ten suggestions for improving academic research in education and technology. *Learning, Media and Technology*, 37(3), 213-219.
- Selwyn, N., & Facer, K. (Eds.). (2013). *The Politics of Education and Technology: Conflicts, Controversies, and Connections*. New York: Springer.
- Selwyn, N., & Facer, K. (2014). The sociology of education and digital technology: past, present and future. *Oxford Review of Education*, 40(4), 482-496.
- Shutkin, D. (1998). The deployment of information technology in the field of education and the augmentation of the child. In T.S. Popkewitz & Brennan, M. (Eds.), *Foucault's Challenge: Discourse, Knowledge, and Power in Education* (pp. 205-230). New York: Teachers College Press.
- Sim, S. F. (2006). Hegemonic authoritarianism and Singapore: Economics, ideology and the Asian economic crisis. *Journal of Contemporary Asia*, 36(2), 143-159.
- Skinner, B.F. (1954). *Teaching Machines and Programmed Learning* [Video file]. Retrieved from <http://www.youtube.com/watch?v=jTH3ob1IRFo>

- Smith, M. (1994). Recourse of empire. In M. Smith & L. Marx. (Eds.), *Does Technology Drive History? The Dilemma of Technological Determinism*. Cambridge: MIT Press.
- Smith, R. (2006). As if by machinery: The levelling of educational research. *Journal of Philosophy of Education*, 40(2), 157-168.
- Smith, K. M. & Jeffery, D. I. (2013). Critical pedagogies in the neoliberal university: What happens when they go digital? *The Canadian Geographer / Le G'eoraphe canadien*, 57(3), 372-380.
- Smith, J., Skrbis, Z. & Western, M. (2013). Beneath the 'Digital Native' myth: Understanding young Australians' online time use. *Journal of Sociology*, 49(1), 97-118.
- Society for Learning Analytics Research (2011). *Proceedings of the 1st International Conference on Learning Analytics and Knowledge*.
- Srivastava, P. & Hopwood, N. (2009). A practical iterative framework for qualitative data analysis. *International Journal of Qualitative Methods*, 8(1), 76-84.
- Straits Settlements (1895). *Straits Settlements 1894 Annual Departmental Report*. Singapore: Government Printing Press.
- St. Pierre, E. A. & Roulston, K. (2006). The state of qualitative inquiry. A contested science. *International Journal of Qualitative Studies in Education*, 19, 673-684.
- St. Pierre, E.A. (2012). Another postmodern report on knowledge: positivism and its others. *International Journal of Leadership in Education*, 15(4), 483-503.
- Sundén, J. (2002). *Material Virtualities: Approaching Online Textual Embodiment*. PhD dissertation, Linköping University.
- Tan, K. P. (2007). Singapore's National Day Rally speech: A site of ideological negotiation. *Journal of Contemporary Asia*, 37(3), 292-308.
- Tan, K. P. (2008). *Cinema and Television in Singapore*. Singapore: Brill.
- Tan K. P. (2012). The ideology of pragmatism: Neo-liberal globalisation and political authoritarianism in Singapore. *Journal of Contemporary Asia*, 42(1), 67-92.
- Tan, A. & Gosling, R. (2016). The European legacy and the higher education link in Singapore. In C. Hill, R. M. Fernandez-Chung (Eds.), *Higher Education in the Asian Century* (pp. 87-108). London: Routledge.
- Tanggaard, L. (2009). The research interview as a dialogical context for the production of social life and personal narratives. *Qualitative Inquiry*, 15(9), 1498-1515.
- Taylor, C. (1985). *Philosophy and the Human Sciences. Philosophical Papers: Vol. 2*. Cambridge: Cambridge University Press.
- Taylor, J. (2011). The intimate insider: negotiating the ethics of friendship when doing insider research. *Qualitative Research*, 11(1), 3-22.

Thomas, M.K. (2017). Globalization, Ironic Binaries, and Instructional Technology. In A.D. Benson, R. Joseph & J.L. Moore (Eds.), *Culture, Learning and Technology* (pp. 44-57). New York: Routledge.

Toh, Y. & So, H. J. (2011). ICT reform initiatives in Singapore schools: A complexity theory perspective. *Asia Pacific Education Review*, 12(3), 349-357.

Torrance, H. (2007). Assessment as learning? How the use of explicit learning objectives, assessment criteria and feedback in post-secondary education and training can come to dominate learning. *Assessment in Education: Principles, Policy & Practice*, 14(3), 281-294.

Torres, C. A. (2011). Public universities and the neoliberal common sense: Seven iconoclastic theses. *International Studies in Sociology of Education*, 21(3), 177-197.

Trocki, C. A. (2006). *Singapore: Wealth, Power and the Culture of Control*. New York: Routledge.

Usher, R. & Johnston, R. (1988). Exploring problems of self-directed learning within practice and discourse. *Studies in Continuing Education*, 10(2), 137-151.

Usher, R. (1996). A critique of the neglected epistemological assumptions of educational research. In D. Scott & R. Usher (Eds.), *Understanding Educational Research* (pp. 9-32). London: Routledge.

Velayutham, S (2007). *Responding to Globalization: Nation, Culture, and Identity in Singapore*. Singapore: Institute of Southeast Asian Studies.

Vu, K. M. (2013). Information and communication technology (ICT) and Singapore's economic growth. *Information Economics and Policy*, 25(4), 284-300.

Wacjman, J. (2004). *Technofeminism*. Cambridge: Polity.

Walshaw, M. (2007). *Working with Foucault in Education*. Rotterdam: Sense Publishers.

Wee, C. L. (2000). Capitalism and ethnicity: creating 'local' culture in Singapore. *Inter-Asia Cultural Studies*, 1(1), 129-143.

Wee, D. (2009). Singapore language enhancer: identity included. *Language and Intercultural Communication*, 9(1), 15-23.

Whittemore R., Chase S. K. & Mandle C. L. (2001). Validity in qualitative research. *Qualitative Health Research*, 11, 522-537.

Wiley, D. A. (2001). Connecting learning objects to instructional design theory: a definition, a metaphor, and a taxonomy. In D. A. Wiley (Ed.), *The Instructional Use of Learning Objects*. Available at: <http://reusability.org/read/chapters/wiley.doc>.

Wilkinson, S. (1988). The role of reflexivity in feminist psychology. *Women's Studies International Forum*, 11(5), 493-502.

Wilkinson, S. & Kitzinger, C. (2013). Representing our own experience issues in “insider” research. *Psychology of Women Quarterly*, 37(2), 251-255

Yang, R. (2005). *Globalization and higher education restructuring: Issues and debates. Globalization and higher education in East Asia*. Singapore: Marshall Cavendish Academic.

## Appendix A – Consent Form



### CONSENT FORM FOR PROJECT PARTICIPANTS

**PROJECT TITLE: Lecturers' Engagement with Digital Pedagogy in a Polytechnic in Singapore**

**Project**

**Approval Reference:**

ER/BW97/2

I agree to take part in the above University of Sussex research project. The purpose and process of the project have been explained to me. I have read and understood the Information Sheet, which I may retain for my own record. I understand that if I agree to take part in this research project, it will mean that I am willing to:

- Be interviewed by the researcher
- Allow the interview to be recorded
- Allow the researcher to have access to the online teaching and learning artefacts which are available on the Learning Management System (LMS) I understand that any information that I provide will be kept confidential, and the information that I disclose will not lead to the identification of any individual when the project is reported.

I understand that I will be given a transcript of data concerning me for my approval before it is included in the write up of the research.

I understand that confidentiality cannot be guaranteed for information that I might disclose in a group interview setting.

I understand that my participation is voluntary, that I can choose not to participate in part or all of the project, and that I can withdraw at any stage of the project without being penalised or disadvantaged in any way. I understand that I may request for the data pertaining to me to be removed up until the end of the analysis stage of the project.

I understand that the information provided by me may be used in future research and analysis that have research governance approval as long as my name and contact information is removed before it is passed on.

I consent to the processing of my personal information for the purposes of this research study. I understand that such information will be treated as strictly confidential and handled in accordance with the Data Protection Act 1998 of the UK and will comply with statutory requirements within Singapore.

I undertake to keep confidential any information disclosed by other participants in a group interview setting, and I understand they will also be asked to give this undertaking.

Name:

Signature

Date:

Independent witness to participant's voluntary and informed consent (if this is necessary for your project for example, where there is a relationship between the participant and the researcher which might be deemed to unduly influence the participant's voluntary consent).

I believe that \_\_\_\_\_ (name) understands the above project and gives his/her consent voluntarily.

Name:

Signature

Address:

Date:



## Appendix B – Interview Schedule

### Introduction:

Good morning (afternoon). Thank you very much for coming. This study is about how lecturers in a polytechnic feel about digital pedagogies and how teaching and learning is carried out in the online learning environment. Since you have recently been involved in incorporating online teaching and learning elements in your course/subject, your views and experiences will provide valuable insights into the study.

This study does not aim to evaluate your practices or experiences. Rather, I am trying to find out more about the lecturers' feelings about online teaching and learning in response to the new dimensions of time and space in the online environment. I am also interested to find out how teaching and learning is carried out in the online environment, and whether this is affected by the new dimensions of time and space in the online environment.

### Recording:

If it is okay with you, I will be recording our conversation. The purpose of this is to ensure that I can get all the details and at the same time be able to carry on the conversation with you without any disruption. (Stress the arrangements for confidentiality and anonymity).

**Access to online learning environment:** We will have access to TP's online learning environment during this interview session. Where appropriate, we may make reference to some of your online teaching artifacts. You may use it to exemplify a point that you may be making; this will certainly help me gain a clearer picture of what you may be sharing with me later.

### Consent From:

Before we get started, I would be grateful if you would please take a few minutes to read and sign this consent form.

(After the participant has returned the consent form, turn the recorder on).

### A. Interviewee background:

- How long have you been teaching at TP?
- How long have you been using technology for teaching and learning?
- Could you describe the kinds of tools/platforms that you have used?
- How have they supported your online teaching practice? (Interviewee may at this point make reference to some online teaching artefacts)

### B. Opening questions:

- What key words would you use to describe your experiences so far of using technology for teaching and learning?
- What have been some of your most positive/ negative experiences?
- Do you have a specific example? (Allow some time for participants to recall/reflect).

### C. Key questions:

In the polytechnic, we have often referred to online learning as anytime-anywhere learning.

- I would like us now to talk about online teaching and learning from the perspective of **time**. First, would you be able to share how time is being organised in a face-to-face (traditional) class compared to how it is organised in an online class?
- Let's consider the case of engaging students in an asynchronous class. For example, students may be able to engage with your class at different times of the day or different days of the week. What are your thoughts on this asynchronous mode of engagement and how does it affect your teaching?
- Two common expectations of students in online classes are that their lecturers should be able to respond speedily in an online class, and be always available (almost 24/7). How do you manage such expectations?
- Speed and efficiency are the hallmarks of technology. Can you share in what ways has technology given you more or less time to focus on other teaching priorities?

We have just discussed some aspects of online teaching and learning that is related to time – we will now turn our attention to another aspect of online teaching and learning, and that is related to **space**. OLIVE (Online Learning Interactive Virtual Environment) is the Polytechnic's online space for teaching and learning – and I'm sure you are fairly familiar with it.

- Let's compare the space in a physical classroom setting and the virtual learning space (OLIVE). For example, in a physical classroom, some of us may rearrange the seating arrangement to promote certain types of interaction. When we move to the virtual learning space, some practices may no longer be possible but other possibilities in teaching and learning may be opened to lecturers. Can you share with me some of your teaching and learning practices that are possible in the physical classroom setting but not possible in the virtual learning space, and vice-versa?
- What aspects of the online environment have been less helpful? (Or were there any hindrances in the online environment that has affected the way you teach?) Please elaborate.

Having supported the implementation of online learning for (duration) in your course ...

- What changes, if any, has the online environment made to your **teaching**? Is this a change for the better? Why? Why not? Can you give me an example of a change for the better/ worse?

If the respondents have not talked about how they **feel** in response to any of the above questions, then the following may be asked:

- What key words would you use to describe your feelings about using technology for teaching and learning?
- How do you feel about investing time in creating or adapting content for the online environment?
- How do you feel about teaching a large class (100 students) in an online environment?
- How do you feel about an online course that is driven primarily by online videos?

The following questions may be relevant for some respondents:

- How do you feel when you were told that you had to support an online course? Why?
- What is your experience of being a participant in an online course? Which aspect of the online learning experience do you like/dislike? Why?

**D. Ending questions:**

- Is there anything that you would like to add about the use of technology for teaching and learning?

Thank you for your time and insightful contributions.

## Appendix C – Sample of a Full Transcript

Please share how long you have been teaching at TP?

- It has been 21 years.

How about the use of technology for teaching and learning?

- I think more actively ... the last 4 to 5 years ... when LA has more training provided ... yah ... and also when I think we had to go into e-learning plus blended learning ... so there was more department coordinated effort, like someone started ... and someone come on board as well. So there was a bit of ... more encouragement and support.

Can you describe some of the tools and technologies that you have used?

- I think it's simple ones ... like those conducted by yourself and \_\_\_\_\_ - you know – how to interact with students, how to get their attention ... how to sort of ... re-write some of the instructions for OLIVE use, for off-campus practice. Like those that you have taught – polleverywhere, padlet, poplet, sometimes the comic strip ... sometimes those ... there's a few more ... I wanted to pick up as many but sometimes it takes a while to use it smoothly in class, sometimes subscription is a problem – after you used it multiple times, you feel like you cannot carry on with the same thing – like padlet and poplet – these two I kind of like locked out ... Or sometimes they upgrade the version, so ... there is some hindrance ... it is not as smooth ... and it sort of change my way of teaching ... in big way - not so much of content, but in ... yah – very, extremely different is last time we are – for me – I'm very detailed in my content preparation, and I'll make sure that the key things are in my PowerPoint, and it helps me to make sure that certain very important knowledge is mentioned in class. But over time ... this is getting very difficult because students are not very willing to listen ... so this comes in handy, like you break the whole 3-hour lesson into small bits, and you try to use different, different versions so that they are more interested. They cannot just depend on hearing, they are very eager to ... let's get doing ... So these are the two things that you see it's getting worse over the months and years because they are very restless ... And so it comes in handy – all these trainings – but the difficult part is to have enough variety when you stumble on some operational issues, then you want to change but you don't have time to learn another quick enough to apply.

OK - It appears from what I hear – you have changed your teaching practice of sorts ... Previously you have paid more attention to content preparation and delivery – and it's hard to do it in a 3-hour ... you know ...

- I mean – it has to change! The way of leading them to search for something they ... you know ... search for knowledge is different ... you have to prompt, you have to phrase it in curious questions ... their mentality is different ... very very different.

OK – so would it be right to say that the primary reason for trying some of these tools is to engage students – because they are ... the students coming in have changed, and it appears that ...

- I think all the time we engage them in the way we know ... But I think this e-learning and blended learning comes in earlier than we realized ... you know there is this impending change of behaviors – change because TP wants change –so we just do! (laughs) So I’m responding to you know – why not? Try a different way – anyway can’t possibly repeat the same pattern over the years. So we change because TP proposes, so, OK go along. So I’m quite glad I’m not caught in a nasty surprise like ... you know ... now that I feel it’s pressurising and I’m short of time to do it ... I’m still short of time to be perfect ... I wish I’m more skillful like \_\_\_\_\_ – she’s so resourceful and she’s got so many types to share with us and it comes easy to her but for me – No! Every little new game or whatever you all taught us ... it took me a while to be familiar with it – I mean just by clicking wrongly or going to the wrong site – I’m stuck. I’m easily stuck because I’m not a digital person – I find this virtual thing very very abstract ... highly abstract ... it’s just not ... and it’s very frustrating ... if you ... not like having a book – you can flip front and back – but this virtual thing, can get lost in the cyberspace ... so easily for me ... very easily for me ... so it’s very frustrating and I feel quite stupid to keep on asking, but thankfully the batch of trainers that comes along with you at that time ... a lot more ... how should I say ... not so intimidating. I mean we had all these training before ... but it was just like ... impossible ... impossible to learn and ...

I think the tools also ...

- Yah – nowadays more friendly tools ... and it is better for the audience – because our students, our audience are just out of school. You know, in some ways, they are really quite ... how should I say ... really young! We have really young audience, so we cannot do anything too intellectual, too bombastic, you know. I think OLIVE training has been going on, but it’s just that ... wow ... it’s so intimidating, and it’s so ... wow ... master level – no way, you know ... NO WAY! Every time you ask a question it’s like – Whoom – one whole booklet thrown at you – go and read – then no point ...

You mentioned about the shift - sometimes we move because we are personally interested in exploring tools and using tools to engage students, but you mentioned about institution’s move, so we have to move – but how do you feel about that?

- Well, these 4 -5 years that I say I’m more active is not the only time that the institution you know, prompt us to use a different method at that time, I don’t think we had that much help ... and no one really could understand ... and no one really stepped one step closer to Design or subject matter to help us – even when you go to training, it sounds very engineer ... it sounds very dry ... it sounds very infocomm ... you know. Not like ... LA also has been ... more ... coming down to different schools to try ... may be this second wave is better ... definitely ...

So it is about support – it sounds like lecturer like yourself and those from other schools are willing to give it a shot ... try it out ... but support is important ...

- Support there is ... but I think sometimes ... for me, I find that it is not threatening ... when the trainers are very encouraging ... in the sense like ... even when you do something simple, sometimes you don't know your audience really are far away ... like when you started some of the training using different smartphones ... sometimes we really come from somewhere not as close as you know - those engineers ... or certain lecturers who are more tech-savvy. So it's ... I think when there is a possibility that you are not being ridiculed or you are not being despised ... you start .... And you want to try again and again, and again and again ... you know who you can ask for help ... even though ... even if I don't come and ask for help ... some of the notes ... makes me want to try further ... yah ... yah ... Last time it's like – ah - so far apart, you know – better not, because I'd only sound stupid, that kind...

Ok – I think we may have addressed some of these, but could you think of one or two keywords that describe your experience in using tools and technologies for teaching and learning?

- I think it kind of enables me to be more spontaneous with students, in the sense like, if I ask them to do something, I could see what they're thinking, what they're producing, like when we do the Google Drive – so I could see their thoughts ... their progress. Amongst them, they could co-create something together, and I could look at this group, that group. That was something I really appreciate – because if it is pen and paper, I have to ... may be ... may be they take time to write ... and I take time to .... That kind of thing. So this ... e-thing ... quickens everything and makes everything quite transparent ... so it was spontaneous, it was engaging. And the good thing is that it can accommodate to student that has got different speed or on different task ... they can multi-task, you know ... so ... hmmm... that was the good part of it ... Not so good part of it is ... it's extremely time-consuming to pore over what they say on OLIVE, you know ... and to print out sometimes ... I'm really not a digital person ... I need to print out so that ... because in my mind, I will ... I have this anxiety that I haven't seen this person, that person, where do I find it? So I will just take 30 minutes or so ... I click on everything and I print out everything because it involves marking so I don't want to misunderstand where students misplace, or things like that ... or what time, so that kind of thing. Because you are so used to face-to-face, you have a sense of time ... who is late, who is what you know ... You carry the same habit to virtual, but it just makes me too busy ... I have to check time-stamps, I have to slowly get more relaxed about ... OK – one minute late is fine –that kind of thing you know what I mean? So ... it's a whole ting ... whole habit that is changed ... Even for students also, I think you need to prep them to use different habit when they submit work, or when they are you know ... when they are using “e” off-campus. I think last time I told you ... sometimes you want to do a quick survey, I ask them – just share on Padlet what you found - they will be quiet for a long time – I mean of course they put up something – after that they become perfectionistic again ... because I say sometimes when you share - people become very random or ... not so comprehensive, so I said, OK – put up 4 or 5 powerpoint, and then they become more perfectionistic you know – and so they wouldn't submit even within an hour, but ... so sometimes I have to relax ... cos time's up. 3 hours later, I have to go to another class, or on OLIVE, I will just say – OK, see you tomorrow – please make sure you put it up by 6 pm or 12 midnight. Wow – the next

day when you read it ... those who really concentrate and continue, very perfect, like a submission of an assignment ...

So is that a good change, but it comes at a price ... or ....?

- Hmm ... I think it is a good thing ... I'd say it is a good thing ... Because when students submit good work, you can ask them – OK, look at this person's work. There is a range of work, and you could tell the weaker ones that give you nothing – just slap a few pictures ... because they are probably outside - some of them confess ... sorry I was at the café, my battery runs low, or I was at the hospital visiting my grandmother ... you know they think off-campus means like that. They think that OK I just say hello to you ...

So you are right – because just now you said that students need to ... you need to shape their learning behavior ...

- Yah – so if you have a minority that is so hard core – very good – their work is precious, you just leave it there and say – please look at this person's work because the format is right ... how they sequence it ... they are good samples. Sometimes they set the tone, so ... I always start strong ... If I don't be serious, my students won't follow me ... it's very hard to catch them back ... you know you can scold them and all that ... They will just ... somehow, programmed that – OK, I can be easy with this lecturer ...

So is your current module “e” or not?

- My current module is more problem-based learning ... and I'm trying to improve certain skills. Because problem-based to me last time was like ... try not to spoon-feed too much and prompt them ... but sometimes ... the good thing is they get on working ... the bad thing is when there is problem, it is quite invisible. So nowadays I will try to ... try to facilitate discussion skills ... because I think that is where they could tap on each other's brains... sometimes their discussion is very short – “we finish” - then they want to go off ... But actually for groups that are successful, they share a lot more deeper, they conclude meetings better ... so these are the skills that the youngsters don't get it ... So in my THECPlus, because I did the whiteboard thing and all that – one round – not too sure... But I just want to try some other method – it's a different subject. So this one is PBL, and I thought – OK, if it is peer learning, then it has to be no nonsense – because some of them may not believe in group work, or from the start, they are already easy... free-rider. So I see what their life skill they could strengthen ... they could bring to work. I think discussion skill is something that the generation needs to be a little bit more professional ... so I started reading ... and then there were like – how to chair a meeting, how to ... - you know last time when we learn the PBL skills – the chairman skills and all that – the students keep telling me, quite a lot of them say that we are equally committed – we don't need chairperson. You know what I mean? (laughs)
- Now when I start reading, and there is some good write-up about how to handle chairings and all that – student level – I think it is very useful. So I try to use it. But again, when you extract and put note down for them - they don't read! Many ... problem is ... they don't read, no matter how simple notes you put ... And so you have to be like ... very watchful – this group has got people who are silent, this group has got people who are domineering ... Then you have something very concrete to help them do a little exercise or something ... But there are too many things to deal with, and too many little little exercises that you can put ... but sometimes you have to put

all these life skill one side and work tasks aside from work you know ... sometimes they think they are busy ... they are working ... means OK – nothing. But actually it's these communication skills and all that, it's also a by-product ... in fact a more important by-product ... or we think you know ...

- And so ... so ... the bad part is it is so time-consuming ... because the 3-hour lesson is over, but you have to re-print the thing and see what they say ... there is a lot of paper ... printing out ... reading ... You know in class – you can have 10 persons bombarding you and you can have a sense of how you want to help ... but in virtual, you have to look at what this person say and what that person say ... and sometimes I have experienced that people are silent – totally silent – so you think they are not working. But they told me, we have a whatsapp group! Then I say how come I'm not in there – we are working very hard on it – so I believe - they are very keen – but, I say I have to be there you know. So they totally operate without me, and they innocently didn't think that there was anything wrong ...

Interesting – I mean in terms of teaching practice – in the class you may have 15-20 students – and you know where they are ...

- ... because all your senses are alert you know ...

... and sometimes you may not need everybody to speak up ... I'm not sure what's happening in your class – but you'd still know where they are ...

- ... Yah Yah Yah - you can see their behavior ...

... then in the online environment ... it appears that we need to build in activities for them to ... then everybody has to say something, and everybody has to write something ...

- ... actually the learning is very low level ...

... that is something very interesting ... so we try to manage their presence by giving them small tasks ... so everybody must write something ... but that will surely add to your reading again ... print out ... read 20 people's ...

- ... Yah Yah Yah ...

... and then try to make sense again ... how to consolidate and synergise ... My struggle as a teacher would also be that how to move from that space to here.

- There are some people who are different – vocally or typing skills.

OK – we'll now move on to one of the focus of my research – which is about time. First, would you be able to share how time is organised in traditional face-to-face compared to how it is organised online – is the time used the same, and how do you organise that time?

- I think if you are doing face-to-face ... you have power with your voice, with your message. But if it is in the virtual world ... er ... to me .... I will make it as face-to-face as possible. Especially for the first few days – like say first day or so – so that they must know that I'm there ... it's a meaningful presence ...



Even online?

- Yah – I'll still say Hi ... I still talk ... If the OLIVE is very slow, I'll whatsapp them. Sometimes they say - I can't log in – I just say, OK go email, I'll give you this. It's really 3 ways you know – email, OLIVE and whatsapp you know – and sometimes phone call even you know ... It's like ... It's as much as face-to-face ... It's just that ... the preparation .... really ... in OLIVE you have to have one plan in case some people are faster, half an hour later, I must have something on, half an hour later, I have something on, with the faster one. So the people who are later, I'll go back to see whether they do ...

But is that also the case in the face-to-face class, do you also have the practice? Cos in the face-to-face, there will also be the faster ones ...

- In face-to-face ... ever since I learnt to have more interventions, I would also need to have separate activities with people who are restless .... It's just crazy ... We are like clowns ... it can be very .... very tiring ... It can work for your 9 am class, another class is a 3 pm after a 12 o'clock class ... they are entirely a different lot of creatures ... seriously ... Also it's the end of the day, and sometimes you feel disheartened quite fast - forget it, I might as well tell you – because I think all of you want to go home ...

Oh – this is interesting – online, whether it is 9, 12, 3, it is irrelevant any more ... it is on your own time ...

- But I don't like that way, I still like to .... face-to-face ... I finish one lesson, I know we interacted, I know because I have a sense of where you are, what I should do the next time I see you – I mean close a chapter and then move on to something... I don't like to go online and discover that I only see 5... the other 20 are missing ... and then go back and then search for the other 5, where as the fast one are already somewhere ... you know it's so ... not so unilateral ... I hate that kind of thing to bombard me ...
- So for this off campus ... I really have to anticipate ... I really have to plough through my lesson plan and see that this part this part this part, I'm doing this this this, so that they get it. The next day, they get it. The next day, they get it. Virtually seeing the scenarios ... and then I will have many many forums – every half an hour, I will time it – time-release it, time it - time-release it. So it's a very vivid thing you know?

OK – I get a picture of how you are trying ... because you try to reflect the face-to-face engagement ... so you want everybody to be on board at the same time ... engaged at the same time ...

- Yah, because for my subjects it's a lot of ... not just this thing, it's also behavioral ... you need to be with your friends, you need to peer-teach, you need to get something done, and there must be stages of development, this is retail operations .... And then sometimes it's running a project together – whether it's a styling exercise, or a photo-shoot exercise ... they are in groups. So ... I'm so used to handling classrooms ... if I have 5 project groups, I will just make sure I'm in touch with every 5, I sort of know what are the problems they might have ... and every individual ... who are the ... OK, steady ... who are the ones who need help. Or sometimes I can't really give them help, but I know that they are very weak. I mean if they really look for help, I will... But some of them are really just here ... may be some ... because of personal problems ... part-time work ... they really give you very little ... and sometimes ... after a while you have to pay attention to something else.

So again, face-to-face ... because you are experienced lecturer, you know how to manage and facilitate face-to-face, but then in online, you are trying to reflect what's happening in the face-to-face ... so does it take more time and effort from you?

- So it's like phrasing my questions ... anticipating their behavior ... Yah – it's a lot of phrasing ... phrasing inside OLIVE discussion board... I still use a lot of dialogue with them ... or make them say to me what is there ... then I feel that ... OK finish this lesson we can go on to the next thing ... or at least you know these things and you can do your assignment ...

So does that mode take more time and effort from you ...

- Oh – surely ... surely ...

... because you are trying to reflect what's happening in face-to-face so it may ... although this is 3 hours – you have some background work before, and then after also ...?

- Surely – so you know there's a few off-campus week - and so it involved certain week ... week1 or week 3 or week 2 or whatever - so for a certain subject, we have 4 weeks right? So for each OCL, I have to re-write the whole week of lesson plan in OLIVE. If I have 2 subjects, I have to re-write 2 subjects. So it requires quite a number of days before OCL comes onboard ... So as detailed as saying hello ... you know ... whether it's for a year 3 or year 1 ...

... because that's the type of classroom engagement you want?

- Yah yah yah – classroom engagement (laughs) – yah. And then also I have to start scanning notes ... In class, I can pass them past projects – you read, and you critique. Then for OLIVE, I have to do something against myself – sometimes I don't want students to read other people's work so thoroughly because they tend to take pictures, they plagiarise, they fill in the blanks ... They will start using the camera and take-take-take-take ... so that when they produce the report, they just follow ... no need to think ... I hate that, but for OCL, I have no choice ... I will scan some past students' work, I will say look at ... each group look at different report and critique... So there are certain things I have to relax also ... like ... it's open ... I have to think of some ways that when you do your work, you have to write in your own words ... that kind of thing.

Ok ... I think we may have addressed this also – about the asynchronous class – I think you already mentioned ... you prefer ... even your online class is trying to mirror a face-to-face class. So from 9 to 12, you would like them to be present ... you have activities maybe every half an hour and an hour ... so you rather that kind of class rather than ... asynchronous means ... you deploy this class activity, they do it at their own time – some students may do it today and finish, others wait till Friday, and then they come in and do a few things ... and so on ...

- In some ways I do that ... in some ways I do that. If it is a reading assignment, interview somebody ... so you could get your notes done and put it up and each other read it ... and give a more elastic deadline .... before that can you please just make comments ...

Ok – so you are more strategic ... whether an activity requires more time, then ...

- Certain ones where it is not so urgent that they interact, and be considerate to each other – more individual work, then it is fine. You upload and give you a few days to read ... when you feel like it, you just upload your comments ... your review.

Do your students expect you to be always available because we are now talking about 24/7 online class? And always available and speed of response – do they expect that of you or you actually set certain expectations?

- I try to satisfy the teething problem, so later ... question is lesser ... So the face-to-face feature is good, in the sense the dialogue is good ... But sometimes to ... in my practice, I will say that if it is 9 to 12, I would say that you have to do certain thing between 9 to 11, I will only come in and answer you ... 11 to 12 ... if you don't put it there, you don't get my answer. So after 12, you might not see me anymore, because I'm not on board. And then next day I come in ... timetabled hour, I'll surely browse and I'll tell you ... so I think my availability is less than 24 hours ... immediate or less than 24 hours ... Sometimes I'd say that you can drop me an email or you can whatsapp me, if it is urgent.

OK – so that is how you manage ...

- Yah, and sometimes I'll say clearly – certain thing are feedback, certain thing are marking – like if they want me ... I'd say by certain time, it is no more feedback, but it is marking ... no more shaping ... no more consultation ...

OK. Next question again related to time ... I'm just wanting to hear your thoughts on this ironical situation... technology proposed to give us more time – I also hear people saying actually we have less time to do what we need to do related to teaching and learning – so what are your thoughts on this irony?

- I don't think so ... I don't think so ... already tracking students and making sure that they are ... there is certain outcome continuously ... it's already ... no ... Face-to-face you can have a sense faster than online really. Online - you have to read what they say, you have to analyse ... then you mark grade. So I don't think time is an advantage ... No, I don't think so – preparation need more time, listening to them need more time, analyzing their thoughts need more time, concluding their grades also need more time – because you can't gauge them so you need them to write ... you need them to produce some artefact ... then you can really analyse. So it's really not time-saving at all ... seriously not ... Plus, to convert any subject in a small e-way ... 30%, 50%, blended, whatever ... actually takes a lot of thinking through and formatting it ... it's ... nobody wants to you time, seriously! Why didn't you do it – that's it!

Laughs ...

- And sometimes we do it because it is better for ourselves ... In the end who cares how much detail you go through ... Nobody gives you a bit more .... reward, incentive ... It's like – you better do it.

But from your experience ... OK, so these are investments of time ... sometimes it is our own time ... hopefully the learning is not disadvantaged ... the learning is still on par with the face-to-face class would you say ... regardless of all these institutional things ... do you feel that learning is at least on par, if not better, hopefully not worse ...

- It cannot be worse lah ... I think if the students are happily engaged, they feel they are learning, growing, ... that's it – that's the main thing that makes us reconsider ... the way we ... you know ... the way we challenge them ... So student satisfaction is important. I mean it's quite subjective to say that whether this batch of students learn more than the other batch ... I think sometimes it's how much they see the meaning ... or their self-growth. So, if they have been changing, and you are not changing then ... that makes your job quite unhappy too ...

OK – now we'll just talk quickly about the other dimension, which is space ... Again you are familiar with the traditional face-to-face class, or your studio – the way it's organised can support our teaching practice. So now we'll compare that space with the virtual learning space - are there things that either enhance or hinder the way that you teach in that space?

- I think ... if the student has to produce some work – I think research is no problem, reading is no problem. But if they have to use a workshop to do silkscreen, do tie-and-dye, then it is very hampering ... create a prop, painting in school – that one certain subject will suffer more ...

I think those are ... almost impossible to replace in the virtual .... But earlier on you also mention about ... I mean these are more related to classroom management - with your pair of eyes you can straightaway see where everybody is, with your experience you know whether they are engaged or not and so on ... whereas the virtual space is harder ... so you need to build in more activities or tasks ... because by their creation of artefacts will you know that they are doing something ... so these are ways that we manage the online space. Are there other things that you miss – seeing students' physical bodies in a physical space, whether the front of the class or back of the class, in a group ... Those things are important to you but in the online space, they just disappear or you need to use proxies to help you see that they are learning.

- I think the big difference is ... certain things you can use virtual way to help them learn. But certain things are very deprived, like people skills, cooperation skills, communication skills ... Like, ok ... got manners or not ... how you warm up to each other ... this kind of things gone ... gone...

So there are certain things that will disappear ...

- It will disappear if we use too much virtual learning, they are like robots ... and they are very task-oriented ... one thing about e-learning is – there is timing ... they want to do, and sometimes they want to do until finish – you can see them doing it, delivering it – quite on task, but very task-oriented, that's it!

So this is the task, within this time, I'll finish, I'm done - move on to the next ...

- And now with the new encryption thing is terrible ... like even some of the online subscription – those WGSN - you cannot access ...

What online subscription?

- Some of the e-subscription – WGSM – that one is very important for Design ... cannot access ... cannot enter ... because ... somehow the protocol is different now. You know our TP Wifi is terrible ... very terrible - I heard we are the only campus that is very terrible ... (laughs) It's very frustrating we have more e-subjects, but ... the students ... they will idle ...

... because students are using their own machines ...

- Yah ... but it's lagging or cannot load you know ...

I think many of the remaining questions we have addressed in part ... I'm not sure whether you want to address any of these. For example, let's say a course that is driven primarily by online videos ... how would you feel about that course?

- I'm one person that don't benefit ... in terms of time investment. Last time I think there were certain e-learning courses the staff can do – it will say this only require 9 hours – but I will do double you know ... because sometimes I don't understand what they are saying ... and if it is strictly listening or reading ... I'm at a disadvantage ... I'm quite a hands-on person, I need someone with the real tone of their voice or some interaction to ... I can capture ... because just listening and watching video, I'm very slow ... and then I have to playback and catch certain words. I am given 2 hours sometimes ... the learning hours ... but actually I spent 9 hours learning excel sheet! (laughs) The whole thing just disappear – you learn already but cannot register ... It's a Q&A, it's multiple choice - you click click click – then you go back and revise ... click click click ... doesn't suit me ... So if it is just video also I have problem. Sometimes I don't catch the accent.

Let's talk about your field – can the knowledge and skill in your field ... be all delivered through e-learning?

- ... I suppose it can be done, it's just that it requires time to write a nice module – it requires time.

Some subject lecturers' approach is basically chopping up the content – you know – into byte size ... byte-size learning is ...

- It has to be that way already ... because the way I was brought up, the way I was taught in the university ... you get an overview, you go through certain in-depth learning, then you try to show quality and volume ... when you are being assessed. But nowadays ... and that takes one semester in those days ... but nowadays every day is a challenge ... every day the students come in and just want to ... chit-chat ... and then they pass one day ... and then if they don't do well in their assessment, it's our problem again, that kind of thing. So you have really bait them ... everyday you bait them ...

Bait is it?

- Byte-size! So you have to ... every day's content I have to slice it ... this week you get this way, that week you get that ...

So the key question is ... is anything missing in this mode of teaching because we try to help students ... for lack of a better word ... spoon-feed or make it ... simplify certain subject matter but actually the subject matter can be quite complex, but because of the e-platform, we need to simplify it – either bullet points or a short video – is there something that is missing? When the body of knowledge in your field is this big, and you change it to this mode ... of presentation ...

- A lot of things will be missing – a lot of things will be missing ... because the students are too used to quick learning ... either playing a game or shopping or ... you know ... because of this Internet thing ... very quick – they need to know what do I get – and if they feel that ... aiyah ... so much ahh ... and then they will be distracted ... In my days, and even my first few batch of students, you tell them something and they will look for it ... they will have patience, they want to explore, they will set their own objectives ... The whole culture of learning is mature, is appreciative ... I know it is probably ... requires a certain way of doing things ... The students nowadays are like ... you know I have very severe cases like, you just say something, and they say – so how many words huh? Immediately they will just utter something – utter something – it's like ... they never process you know ... they immediately ask a question ... immediate! Even yesterday \_\_\_\_ was telling me how annoying it was with some of the students ... and we have more and more ... They are like parrots ... they are like hungry birds ... they come in and they just hahaha, sit there ... chit chat with each other, and we have to calm them down and then they will start listening ... 20 seconds later they will hahaha, talk to each other, use phone and all that ... really frenzied you know ...

What can we do?

- I don't know whether this is ... we are too caring and we are too nice ... and we ask them to complain you know ... that they feel we must be like service provider ... always very user-friendly, always very comprehensive ... It's like they buy a product – better work – don't work – return! Or ask many questions ... Wow - they hardly have a minute of silence to process. Of course not 100% of students are like that – some are very good. Some you know that they are listening, and you know ... but they are the minority that has got good manners, patience, you know ... courtesy ask you a question - they are minority. A lot of them are just very chatty, they are too energized ... they cannot appreciate ... they cannot appreciate... silently appreciate ... oh ... reading literature ... oh I want to pursue ...

Very interesting point ... because processing takes time and patience ...

- ... very different ... very different ...
- So the only way to engage them is to bombard them with something curious, like – what is the most .... do you know ... that kind of thing ... if you don't know ... it's like quizzing them ... quizzing them ... then they want to find out ... then ok ... then they might ... it's just like you bait them to be curious for a while ... but they will only do that ...

... but just for a short span right?

- ... they will only do that ... Ok – assess, assess ah ... (laughs)

But we have a responsibility ... if students are always ...

- That's why ... that's why I thought ... OK, so I shall ... you know keep on interjecting ... reflection – let's reflect ... in class. They busy you know ... they will keep on doing task ... then I'll reflect ... OK, so ... how was the discussion? Anyone kept silent? Anyone disagree but go on and you have an opinion in your head and you never say ... I have to ... in each group ... I have to try and dig out some problem issue for them to ... OK, do this – practice your discussion skill – a lot of time they don't see problem, they don't see problem – they just want to know – what are we doing... what are we doing... what are we doing? (laughs) you know what I mean ...
- Then there are some people they don't come one day then the next day they are very lost ... so they don't feel like guilty ... like I didn't come, so I better go and find out what happened ... they will just sit there and start cruising ... and then you realize there is a missing link somewhere ... then you ask them – how come you don't know ... - Yah, I didn't come, so I don't know what you all doing ... no guilt one you know ... no guilt!

It's all about me ...

- Yah, yah ... I don't know what's going on ... you know ... So I said what do you have to do now if you are the store manager ... I don't know ... But actually the templates are there – performance of the store manager – if you are 1, you are at this grade, if you only do this – 1 mark ... If you have a lot a lot a lot of this then you can rise ... 8 marks or 9 marks or 10 marks ...
- I mean you give them this thing ... have you read? ... Read! They will just ... Serious serious serious problem ... They just don't feel like ... their sense of self is quite different ... So she will say ... I don't know ... I don't know what's going on ... I said last week you say you don't know ... this week you say again that you don't know ... I think you shouldn't be passive ... one whole week has passed and you are still very lost just because one day you didn't come ... I seriously don't know what's wrong - is it our students only or is it from ...

Yah .. students also have a misconception of what learning entails ...

- Yah – a lot of time they just say what do you want? You know ... so I have to tell them ... you are running a business you know ... do you think you should do this? They just wouldn't dive in ... that's a ... so ...
- May be some of the fundamentals skills ... is not there ... to help them ... to empower them to learn ... not empower ... to facilitate? I don't know ... Actually we think we are empowering them by giving them independent learning ... sometimes they don't even know they should be in behavior-wise them or skill-wise ... they need certain preparation.

Good point! I think we need to induct them ...

- Ah – induct them! But the thing is we don't have so much time to induct ... seriously ...

May be as a school – or first year, something that has to be done has to be done at a more consolidated effort ...

- I mean we also tried ... like foundation year must learn all the artistic skill but in the end we also feel that these artistic skills fit no specialism... (laughs)... too generalised ... so may be remove the foundation year ... it's also like that ... So I don't know ... it's like
- OK – huh ... I also have to teach discussion skill as well? I don't mind ... if that can help you have better peer learning ... because if it is ...

Yah – about student learning outcomes ...

- Because last time when we have PBL, OK – now I give you this time – discuss... But a lot of times they don't know what is the problem ... They seriously have no idea - may be they are too young ...

OK – I think we have covered many things ...

- (Laughs) ... hope so ...

... even beyond the area of focus, but it's interesting because all these will add to the richness of the findings ...



## Appendix D – Participant Information Sheet



### PARTICIPANT INFORMATION SHEET

#### Lecturers' Engagement with Digital Pedagogy in a Polytechnic in Singapore

Dear \_\_\_\_\_,

I would like to invite you to take part in a research study related to your engagement with digital pedagogy in the polytechnic. Digital pedagogy in this study refers to how teaching and learning is carried out in the online environment. I am interested in whether some factors – for example, the dimensions related to time and space as lecturers move their courses online – have a part to play in shaping how teaching and learning is carried out in the online environment. I am also interested in exploring the emotional engagements of lecturers as they respond to the need of incorporating more online elements in their courses. Being a lecturer (and a stakeholder) in the polytechnic, your experiences and insights would be very valuable in ascertaining the role that technology might play in teaching and learning.

Before you decide whether or not to take part, I would be grateful if you would read the following information and decide whether or not you wish to participate. Please ask if there is anything that is not clear or if you would like more information.

#### WHAT IS THE PURPOSE OF THE STUDY?

The purpose of the study is to find out about lecturers' experiences in using technology for teaching and learning in the polytechnic, and the extent to which incorporating technology for teaching and learning has impacted on the nature of teaching and learning. I am also interested in hearing about how lecturers feel about incorporating new technologies into professional practices. The findings may inform policy and professional development related to the use of technology for teaching and learning.

#### WHY HAVE I BEEN INVITED TO PARTICIPATE?

You have been invited because you have incorporated technology for teaching and learning in your subjects in the past one to two years. Your unique experience as a lecturer who has incorporated technology for teaching and learning will provide insights into how lecturers engage with digital pedagogy, and what they feel about it.

#### DO I HAVE TO TAKE PART?

No. It is up to you to decide whether or not to take part. If you do, you will be given this information sheet to keep and be asked to sign a consent form. You are still free to withdraw at any time and without giving a reason.

**WHAT DO I HAVE TO DO IF I TAKE PART?**

You will be invited to take part in an interview which will not take more than 50 minutes. The interview will take place in the meeting space that is located near to the office of the Learning Academy. With your consent, the interview will be recorded and transcribed. I will send you a copy of the interview transcript for you to read and edit, if you require.

**WHAT ARE THE POSSIBLE DISADVANTAGES AND RISKS OF TAKING PART?**

In view of the fact that all data will be anonymised, there is no risk of any comments or views expressed being attributable to individuals. Although the process and findings of this study will be reported and made public in my doctoral thesis, the data will be presented in a completely unattributable format or at the aggregate level in order to ensure that no participant will be identified.

**WHAT ARE THE POSSIBLE BENEFITS OF TAKING PART?**

The research will provide an opportunity to talk about your experiences in using technology for teaching and learning. You will also be helping the researcher to further understand the experiences of lecturers as they respond to the increased need to use technology for teaching and learning. Your contribution in this study may be used to inform future staff development practices and eLearning implementation practices.

**WILL MY INFORMATION IN THIS STUDY BE KEPT CONFIDENTIAL?**

All information which is collected about you during the course of the research will be kept strictly confidential. Every step will also be taken to assure your anonymity. However, in reporting the data I may make reference to your age, gender, and years of teaching experience in the polytechnic. This will be done in a way that will not make it possible to identify you personally. In the event that you withdraw from the study, you may request for your data to be removed. This request for the removal of the data may be made up until the end of the analysis stage of the project.

**WHAT SHOULD I DO IF I WANT TO TAKE PART?**

To take part, please call me or email me directly.

**WHAT WILL HAPPEN TO THE RESULTS OF THE RESEARCH STUDY?**

The results of the research study will be written up for a dissertation which forms part of my doctoral research. Parts of the study may also be submitted for publication, or be presented at a conference. An additional short report of the research findings will be provided for distribution to participants, and be disseminated to the staff developers to inform their work and practice.

**WHO HAS APPROVED THIS STUDY?**

The research has been approved by my supervisor and the Cluster-based Research Ethics Committee (C-REC) of the School of Education and Social Work at the University of Sussex, UK.

**CONTACT FOR FURTHER INFORMATION**

**Woo Boon Seong**

Learning Academy, Temasek Polytechnic  
21 Tampines Avenue 1  
Singapore 529757  
Tel: (+65) 67806472 Email: woobs@tp.edu.sg

**Professor Louise Morley PhD, FAcSS**

Centre for Higher Education and Equity Research (CHEER)  
School of Education and Social Work  
Essex House  
University of Sussex  
Falmer, Brighton  
BN1 9QQ, United Kingdom  
Tel: (+44) (0)1273 876700 Email: L.Morley@sussex.ac.uk

**THANK YOU**

Thank you for taking time to read this information sheet.

**DATE**

1 March 2016