Preparing for uncertainty? Investigating the development of criticality amongst master's students at three UK universities

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"The ultimate hidden truth of the world is that it is something we make and could just as easily make differently".

(David Graeber, 2015)

"...the world's gonna be on fire and burning and no one says nothing about it".

(Research Interview Participant, 2017)

Abstract

This thesis aims to investigate the conceptualisation, development and application of criticality amongst master's students in three UK universities. Criticality, as an attribute, skill and disposition in graduates, is particularly important now in a time of increasing complexity, uncertainty and societal change in order to effectively prepare individuals to critically engage with their world. A higher education for the common good predicated upon students' development of criticality, which prepares individuals to effectually navigate and critically engage with the complex contemporary challenges society faces, is inarguably required (Barnett, 1997). However, within a context of neo-liberalism that pervades Higher Education, universities are seen to accentuate the development of students' transferable skills for their employability as graduates, rather than attend to their critical thinking development.

Following Barnett, I argue that universities should displace their narrow focus on critical thinking linked to an employability agenda to instead encourage students to develop and exercise criticality, enabling them to make meaningful contributions to society and the world. Previous research identified limitations in the extent to which students perceive and develop criticality in Higher Education, where such development is largely assumed and not evaluated. Relatedly, research questions whether students can transfer and apply critical thinking in contexts beyond their academic study. This is a particular concern within the burgeoning area of master's study in the UK where there is a scarcity of research about the development of critical thinking which could promote the growth of students as critical persons.

My research adopted a conception of critical thinking as *critical being* (Barnett, 1997). Questionnaires were completed by 293 master's students from 13 programmes at three universities to establish their conception of critical thinking, identify the key activities related to its development and to indicate their perceived level of critical thinking, and evaluate their related critical dispositions. Drawn from the survey, 18 self-selecting students took part in semi-structured qualitative interviews, exploring their experiences of developing and applying criticality. Four staff interviews were also conducted to provide additional insight into students' experiences developing criticality. Qualitative data was thematically analysed using NVivo, with quantitative data analysed via SPSS.

My findings revealed students' overwhelming preference for social interaction as the core means for facilitating their criticality development. International students in particular

struggled with developing a level of criticality that allowed successful engagement in the critical practices of western higher education. However, the diversity of peers and exchange of differing perspectives prompted students to think and reflect critically, potentially influencing subsequent changes in thought, beliefs and action. Identifying these "contexts of difference" was a key contribution from this research: where in combination these three elements – dialogue, diversity and differing perspectives – provided the most favourable conditions for students' criticality development. In addition, my research advanced Barnett's (1997) framework for critical being by creating a spectrum of criticality conceptualisations consisting of four categorisations capturing students' varying conceptions of critical thinking. Transposing this spectrum onto Barnett's (1997) framework for critical being allows the facilitation and evaluation of students' conception, development and application of criticality whilst also functioning as a pedagogical and curricular planning tool; this was the final key contribution from this research related to the application of criticality.

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Abbreviations

ANOVA	Analysis of Variance
APA	American Philosophical Association
CT	Critical Thinking
CTY	Criticality
EU	European Union
HE	Higher Education
HESA	Higher Education Statistics Agency
IELTS	International English Language Testing System
IoC	Internationalisation of the Curriculum
NNES	Non-Native English Speaker
QAA	Quality Assurance Agency
SCQF	Scottish Credit & Qualification Framework
SD	Standard Deviation
UK	United Kingdom
WHO	World Health Organisation

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During the near five years of this project, I have changed jobs three times, moved house, got engaged and worked (and studied) through a global pandemic; my journey through this research was, like much of the world and society now, complex and uncertain. However, the certainties I have had have been the support of my loved ones, friends and colleagues. My Mum, having bravely fought her own battles, is a source of strength and admiration for me and has forever been a unique influence as I work to try and achieve the potential she has sought to make possible through the sacrifices that she and my Dad have made in providing my brother and I with opportunities few are privileged with.

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Author's Declaration

I declare that, except where explicit reference is made to the contribution of others, that this thesis is the result of my own work and has not been submitted for any other degree at the University of Glasgow or any other institution.

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Chapter One – Introduction

> Critical persons are more than just critical thinkers. They are able to critically engage with the world and with themselves as well as with knowledge. It follows that we have to displace critical thinking as a core concept of higher education with a more comprehensive concept…that of critical being, which embraces critical thinking, critical action and critical self-reflection.

> (Barnett, 1997: 1)

1.1 Context of the research

Contemporary society is witnessing a period of rapid change on a multitude of levels and across political, technological, economic and social planes. Characteristic of this period of flux is growing uncertainty, seen in economic terms from the financial crash of the previous decade and its lasting impact, through ever-increasing advancements of technology and communication, driven predominantly by the internet; the prevalence of a de-centred social media, growing digital and nanotechnologies; as well as historic upheavals in both the political and social landscapes around the world, evident in Britain's exit from the EU and the controversial election of President Trump in the US and related phenomena of "fake news"[1]. Combined, these factors potentially impact democratic functioning and people's coherent understanding leading to growing mistrust amongst the public in relation to news media, with just 15% of UK respondents stating they trust the media - the lowest in Europe (European Commission, 2020).

The most recent and continuing symptom reflecting the change, challenge and uncertainty facing society is the current Covid-19 global pandemic which has led to previously unheard lockdown measures of entire countries, such as in the UK, in an attempt to manage the spread of the virus. The pandemic has led to more than 180 million cases of infection and 3.9 million deaths globally (John Hopkins University & Medicine, 2021) and an indirect impact on individuals' physical and mental health, social and personal relationships, as well as education and employment. In this context Covid-19 has dramatically increased an "infodemic" of misinformation (WHO, 2020 c.f. Brennen, *et al.*, 2020) in both social and print media regarding the origin and impact of the virus (Brennen, *et al.*, 2020). Arguably,

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1 "news or information that [people] believe misrepresent reality or is even false and misinformation" (European Commission, 2018: 8).

critical thinking is in greater need than ever to cut through the noise of media and to decipher meaningful, credible facts amongst a plethora of news and contested information.

Barnett (2000a: 415) describes "a world of supercomplexity" characterised by fragility, encapsulating four key concepts: contestability, challengeability, uncertainty and unpredictability. Relative and contiguous to these concepts are those of "change, turmoil, turbulence, risk and even chaos" (2000a: 415), defining our present age as insecure at best. Further complexity is manifest in the increase of automation which threatens to impact approximately 25% of UK jobs by the 2030s (Bakhshi, *et al.*, 2017).

In this context, serious challenges are presented to higher education due to the need to prepare individuals for their successful active participation in a constantly evolving society, and workplace. For example, the impact on knowledge, its veracity and capacity to enlighten requires resilience in terms of an individual's skills, attributes and dispositions to effectively navigate and engage in a supercomplex, uncertain environment. Consequently, individuals need access to education which supports the development of their knowledge, skills, and abilities so they can survive and succeed in contemporary society. However, rather than presenting a new challenge to universities, this outcome could be achieved by revisiting the founding principle which sits at the heart of higher education – the development of critical thinking skills which enable students to reason, to question, to challenge established knowledge, to construct their own argument and positions, and to take action. More than twenty years ago Barnett (2000a: 420) called for an "epistemology for uncertainty" in higher education so it met the challenges presented by a supercomplex society, adding that the "university – as it turns out – emerges in continuity with its rhetorical past" (2000a: 420). His call for action is no less relevant now. Higher education must refresh its mission and define its purpose so that it prepares its graduates for active and effective participation in society as 'critical beings'.

This thesis centres on the challenge identified by Barnett (1997) two decades past, questioning how and to what extent higher education (HE) is preparing students for their effective critical engagement as members of society. Its focus is on the development of criticality within master's students. Specifically, it asks *'How is criticality conceptualised, developed and applied by students in master's study?'*

Whilst in common usage and widely applied, critical thinking and its active adjective – "critical" - is polysemous in nature with its definition and conceptualisation often contested and inadequately articulated within HE (Moore, 2013; Davies, 2015). Yet critical thinking is ubiquitous as a term in higher education and externally in the rhetoric of employability

and the language of transferable skills. Brookfield (2000), like Bailin *et al.* (1999a), suggests that excessive use of the term 'critical thinking' and the lack of an agreed definition has resulted in an overall loss of meaning, affecting its scope in respect of what it is or could be in the HE context. This is problematic. If HE does not hold a shared understanding of what critical thinking is, how can it prepare its students and how will students be judged to have mastered it?

Prior to Barnett's (2000b; 2004) call for an "epistemology of uncertainty" he argued the need for HE to reconsider critical thinking "as a core concept of higher education with a more comprehensive concept" notably "critical being", "which embraces critical thinking, critical action and critical self-reflection" (1997:1). It is the concept of critical being which Barnett aligns with that of 'criticality', which *prima facie* extends from and encompasses critical thinking, progressing to a broader conceptualisation of critical thought. Thus, criticality is an extension of critical thinking "incorporating argument, judgement/reflection and critical action", extending "beyond the individual to the individual's participation in the world" (Davies, 2015: 65). Hence Davies (2015) reaffirms Barnett's (1997) conceptualisation of "critical being" and his argument that it constitutes the domains of knowledge, self and action within a broader socio-cultural view, a perspective which situates the individual in their place in the world and acknowledges the critical interactions between the two. Barnett's (1997) thinking led to his creation of a framework which is used throughout this investigation as a heuristic tool to explore students' criticality development; this framework is seen in Table 2-1 and discussed further in the following chapter. The outcome of this research therefore will serve to confirm or challenge Barnett's account of criticality in HE and the utility of his framework – its domains, levels and forms of critical being – 24 years after it was devised, recognising that the context for HE is now even more complex than it was then.

1.1.1 Inspiration: My undergraduate learning experience

Motivation and interest for this investigation into students' experiences of HE emanates from my own experience of studying for my bachelor's degree. It was transformational, ultimately altering my worldview and epistemology in relation to the nature of knowledge and its meaning, largely due to the development of my criticality. My inner self, life and career path were transformed, providing the basis for my drive to research others' experiences of learning, to consider if they too experience similar long-lasting, transformative change as a result of their engagement and study in HE, and specifically the role which criticality development may play in this process, if at all.

My undergraduate study was in a Business School. I had proceeded from secondary school to university in line with my peers, rather than through self-direction and motivation towards a specific vocation or career path. Studying marketing, particularly the normative, uncontested nature of reality and knowledge related to the rationale for the practice of marketing and advertising, I grew increasingly sceptical. In part, this was due to the mundane, prescriptive curriculum, organised as part of a core Business School framework. However, in my third year I was able to exercise a degree of autonomy in choosing elective modules, many of which were offered outwith the Business School. This freedom of choice enabled me to pursue sociological modules which ignited my interest and motivation to learn. Studying sociology, with its alternative disciplinary focus and critical nature, conspicuously critical theory, permitted me to confront my hitherto unchallenged acceptance of the capitalist business philosophy as a worldview, to which no alternative ontology/ideology was presented or discussed in my previous mono-disciplinary studies. Marxist and feminist schools of thought, principally explored through the writings of the Frankfurt School, provoked me to critically evaluate my existing thoughts, beliefs, values and ultimately my worldview and sense of self. Additionally, I then had the independence to form alternative perspectives, views, thoughts and understanding of marketing, business and wider society. This meant I could answer essay questions as I liked, no longer providing normalised, theoretical or tutor-guided answers in line with established marketing thought – I was now empowered and equipped to challenge the previously uncontested knowledge presented to me and its ideological and ontological foundation. An enlightening moment came when I attended two different classes (one marketing: 'consumer behaviour', and another sociology: 'consumer culture and society') to be shown the same video, '*The Century of the Self*' (BBC/Curtis, 2002), which were considered from entirely polarised perspectives.

This period of self-reflection and transformation was partly influenced by contemporaneous events such as the military and legislative responses to 9/11 and other societal developments as well as personal, social and cultural experiences. Such a self-determined route of interdisciplinary study permitted me the freedom to choose the subject of my learning, facilitating my formation of alternative perspectives, values, beliefs and understandings of the social world. My exposure to critical theory was empowering and presented me with a "disorienting dilemma" that compelled me to examine myself critically, as I reassessed long-held assumptions about knowledge, beliefs and understandings of the world, reality and society. I was empowered to establish and express my alternative perspectives and understandings prior to taking action through critical discourse within my studies and

political action – a process that reflected Mezirow's (2009) conception of transformative learning experiences and Barnett's (1997) development of the critical person across three forms and domains of critical being.

My learning experience within HE was indeed transformative, ultimately changing me to become a critical person (Barnett, 1997) and, providing me with conscientization, as Freire (1996) would term it. As a result, I was able and motivated to "perceive social, political and economic contradictions, and to take action against the oppressive elements of reality" (Freire, [1970] 1996: 17). This led me to undertake master's and doctoral study to further my own knowledge, criticality development and career in order to hold a position where I can assist others in developing their own autonomy and criticality, as well as stimulating the inquiry of this research into students' development and application of criticality.

Developing criticality was a main driver in transforming me and my worldview, providing a motivation to learn, personal autonomy, the drive to participate more fully in society and to question inequitable realities, worldviews and also my personal frame of reference and points of view. I had to develop criticality as part of my transformative learning experience. This thesis asks whether the master's students on which it centres have had similar opportunities, space and support to develop their criticality - and if they have, whether they have been able to apply it.

1.1.2 Further motivation and inspiration: My professional academic experience

These questions were anecdotally answered during my own professional experience working in HE, teaching and supporting students, and later staff. Initially, I worked in a professional service capacity supporting the effective learning of students, delivering lectures on key "study skills" topics such as academic writing, referencing and critical thinking to students at all levels of study and various disciplines as part of a central university department. Critical thinking and its component elements such as critical analysis, critical argumentation, critical reflection and writing critically repeatedly arose as topics of focus, with academic staff most often requesting support for their students in the form of workshops and lectures led by me to address perceived and/or actual deficits in their students' capacities. Across all discipline areas - computing, journalism, business, nursing, and education - critical thinking was the common dominator seen as deficient within student cohorts. One-to-one appointments with students and group consultations confirmed that critical thinking in its many constituents (reading critically and evaluating evidence, constructing arguments, writing critically etc.) was the foremost area of difficulty for the majority of students -

undergraduate, postgraduate, home and international - seeking academic support in their studies.

My first-hand experience and the recurring theme of students' situated struggle in critical thinking (Brookfield, 2003) encouraged me to focus my master's research on investigating the experiences of education students in their development of criticality from their undergraduate degree study, and their level of development as graduates. Findings from interviews showed limited development among students with the majority developing "early criticality", as per Johnston *et al.*'s (2011) development framework, while all of those sampled were able to operate within each of Barnett's three domains – knowledge, self and world. However, few of the students were able to apply the criticality they developed in their studies to the domains of self and world by extending their application of criticality beyond formal knowledge encountered within their university study to other areas of their lives. These findings evidencing the limitations of students' criticality development and its restricted application beyond their studies (formal knowledge) further motivated my interest in the scope of criticality in HE in respect of how it is conceptualised, developed and applied by students. As Johnston *et al.* state:

> It probably does not matter whether a student can function effectively in more than one academic field at university, but how and in what ways they can transfer what they learn from their higher education to their lives beyond graduation is important. (2011: 221)

Further professional experience as an academic, teaching and assessing master's students reflected concerns from my previous anecdotal experience working with students and the findings of my previous research in this area. My concern and interest were amplified when working with international students. They seemed to face extraordinary difficulty not only in criticality development, but in comprehending what critical thinking and "being critical" was, as well as how to demonstrate it. Very often their critical thinking (or lack of) was cited as problematic by their tutors yet expected in their assessed work. The odds were against them because they had to read, think, communicate and write in their non-native language and in unfamiliar pedagogical and physical surroundings. It was this most recent experience, informed by my own learning experiences in HE, my professional insight supporting students and later my research in the same area, that has inspired and motivated this present research which investigates the experiences of master's students in developing criticality within their studies, and examines how they conceptualise, develop and apply it.

1.1.3 Rationale for Research into Student Criticality Development

With the pronounced societal changes already discussed, as well as increasing numbers of international students participating in postgraduate study in the UK, a higher education for the public good is increasingly required which prepares individuals to critically and actively engage with the complex contemporary challenges society faces. One of the most significant recent developments in higher education in the UK has been massification of HE, where university study moves from a largely aspirational endeavour predominantly restricted to elite sections of society, to an educational experience which is a now a common expectation of a large proportion of society. In addition, HE is rapidly becoming marketised through charging students tuition fees for degree study, specifically in England with the re-introduction of undergraduate fees, which has led to an increasing voracity amongst universities to recruit international students with sizeable fees as the incentive for such competitive, corporate practices (Beighton, 2018). This is exemplified by the recent impact of Covid-19 where the anticipated steep reduction in the recruitment of international students is having a profound impact on universities' financial projections and their enterprise model (Duffy, 2020).

UK Higher Education can now be seen to have reached massification with over 1.9 million students studying in the UK as of 2018/19 illustrating a 20% increase since 2000/01 (Higher Education Student Statistics Agency [HESA], 2020). UK universities have also embraced the logic of the market by developing themselves as competitive enterprises driven by managerial systems that support performance measurement in the pursuit of efficiency gains (Barnett, 2011; Noble & Ross, 2019) and in their strive for revenue growth in the form of fees, largely through international student recruitment.

These moves to massify HE and adopt the market-led approach that have driven, in part, the quest to recruit international students may be viewed as antithetical to the purpose of higher education and its role in advancing solutions to current and future societal needs. To counter these challenges, Barnett (1997:4) argues "a higher education – especially a mass higher education system – which takes critical thinking seriously can act indirectly as a formative agency in society simply through the power of critical dispositions as they are released into society". In other words, to battle the supercomplex nature of contemporary society (Barnett, 2000a), universities should be supporting their students to develop as engaged and empowered critical citizens.

However, the extent to which students in HE are able to develop criticality and what fosters or supports such development requires further research, according to Johnston *et al.* (2011).

Moreover, if such a critical disposition or skill set is developed - as advocated by most universities in their mission statements, strategies and prospectuses - it is important to understand how students conceptualise criticality as a skill for reasoning/argumentation, as a disposition toward knowledge claims, or as a fundamental way of being and engaging critically with the world. If students do develop criticality, to what extent do they develop it toward Barnett's ideal critical being and how do they utilise this criticality? Is its application only practiced within academic domains and for professional purposes, or do students cultivate a more considered, critical disposition which motivates them to take critical actions in society as a result of their deliberations and judgements?

Given the difficulties identified amongst undergraduate students in developing criticality to varying levels according to discipline, personal resources and background, as reported (Johnston, *et al.,* 2011; Graham, 2015), in addition to the large growth in international postgraduate students (Audit Scotland, 2016; HESA, 2020), an investigation into the development and application of criticality amongst such a diverse student cohort is worthy of exploration. This is even more important because of the nature of the expectation attached to master's level study. For example, the Quality Assurance Agency's (QAA) (2020: 4) Characteristics Statement on Master's Degrees states:

> …all master's degree graduates [should] have in-depth and advanced knowledge and understanding of their subject and/or profession, informed by current practice, scholarship and research. This will include a critical awareness of current issues and developments in the subject and/or profession; critical skills; knowledge of professional responsibility, integrity and ethics; and the ability to reflect on their own progress as a learner.

Criticality appears quite explicitly in this statement by the QAA, whilst also featuring as a dominant theme within both the national (Scottish Credit and Qualifications Framework [SCQF]) and international (European Qualification Framework [EQF]) qualification frameworks which establish the criteria for qualifications in terms of the learning outcomes students should achieve through master's study. Yet the focus is on critical thinking as skills and knowledge within a discipline and its related profession, as well as one's own ability to reflect as a learner. I would argue that this demonstrates a limited view of critical thinking at master's level, where it is situated in relation the use of knowledge as a professional competency, suggesting an inadequate scope of critical thinking's foci and potential purposes in relation to Barnett's view of critical thinking in HE, its interpretation and possibilities.

The SCQF (2019: 27) descriptor[2] for Level 11 (master's study) – "Critically review, consolidate and extend knowledge, skills, practices and thinking in a subject/discipline/sector" – also emphasises a critical element and an extension of knowledge. Like the QAA statement, however this relates to critical thinking as a cognitive skill for use in evaluating knowledge which further reflects a restricted view of critical thinking in the academy. Moreover, in relation to students' holistic learning and development, this is certainly not conversant with Barnett's tripartite view of reason, reflection and action. Furthermore, SCQF Level 11 denotes progression in complexity from Level 10 (Honours degree study), building upon prerequisite knowledge, learning and the development of critical faculties and abilities considered to occur within undergraduate study. Arguably, such progression in critical thinking and knowledge as implied by these quality assurance mechanisms is problematic by assuming straightforward development between levels of study and in the skills and abilities which they suggest students develop and build upon. For example, Johnston *et al.* (2011) warn of issues transferring from undergraduate to postgraduate study where, if students change in their discipline of study, they may perform at lower levels of criticality than previously, suggesting a lack in some critical resources and knowledge. It could be argued that the practice of criticality and its development in master's study may then be further hampered for students learning in a different field of study from their first degree. This is especially important for international students who may be learning in a new subject area, learning context and culture, whilst whilst utilising their non-native language. This is an issue highlighted by Fakunle *et al.* (2016) from their research into international master's students experiences of critical thinking in a UK university.

International students form a large cohort of postgraduates in the UK. These students face additional challenges in adapting to learn in a different culture, pedagogical context and language (Foster & Yufeng, 2010; Durkin, 2011; Tian & Low, 2011; Dong, 2015; Shaheen, 2016). Their experiences of study in UK HE are worthy of investigation in order to explore and better understand the complexity of the challenges they may face relating to critical thinking; their inclusion in this study adds a distinct element to the research.

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[2] The SCQF consists of 12 levels which "provide an indication of the complexity of qualifications and learning programmes. SCQF levels are based on a single set of Level Descriptors that are the common reference points and definitions which provide a way of recognising learning that is outcome-based and quality-assured" (2019: 2).

While an abundance of literature exists on the perceived difficulties of international students adapting to cultural and educational norms, there is a lack of literature focusing on specific areas of their study experience, such as in master's level study and criticality development (Hammersley-Fletcher & Hanley, 2016: Fakunle *et al.*, 2016). Empirical studies often focus on the instrumental skills view of critical thinking in relation to international students (Lun, *et al.* 2010; Rear, 2017) and do so using quantitative measures (Lun, *et al.* 2010; Floyd, 2011). With critical thinking development a focus of UK HE in general and master's study in particular, this may potentially be seen as a western centric concept (Fox, 1994; Atkinson, 1997; Durkin, 2011).Thus, "international students may be at a disadvantage in understanding the underpinning principles of critical thinking" (Hammersley-Fletcher & Hanley, 2016: 978), not to mention their subsequent development of this central aspect of higher, postgraduate learning. In addition, there is a lack of "conclusive evidence on exactly how critical thinking is developed over time" (Fakunle, *et al.*, 2016: 31), despite extensive theorisations regarding critical thinking development and primary research from philosophy and psychology.

Thus, there is a pressing need to research intensive high-level HE study such as one-year master's programmes in the UK which are increasingly characterised by diverse cohorts of home, UK and international students from various national and cultural backgrounds. Such research would allow for the exploration and comparison of the experiences of home and international students in the development of criticality; their associated processes of learning, subsequent level of development and their application of criticality to provide an improved understanding in this area.

Furthermore, researchers, scholars and educationalists need explicitly to comprehend criticality development and understand which teaching and learning practices support this development, how any development may be evaluated and the efficacy of frameworks such as those of Barnett (1997) to achieve this. There is also the necessity to explore empirically how students at this level of study might take the critical thinking they develop in academia and apply it as critical citizens in everyday life within society and in their professional roles, or whether their criticality remains bounded in its application to the academy and formal knowledge, as Barnett argues is largely the case in UK HE (1997; Davies and Barnett, 2015a).

1.2 Aim of the research

The development of critical thinking and criticality among students in HE is largely under-researched and is ostensibly an implicitly assumed process of assimilation occurring during a student's study (Barnett, 1997; Johnston, *et al.,* 2011). More importantly, it is markedly considered – and required - to be developed to a higher-level during master's study (QAA, 2020; Fakunle, *et al.*, 2016). It is the aim of this research to investigate how, and to what extent, students develop criticality within their master's study. Building upon an earlier study (Graham, 2015) which investigated criticality development of final year undergraduate students and highlighted disparity in graduates' predicted level of criticality development, this study focuses on the development of criticality among students on various master's courses in three Scottish universities.

Key to the research is consideration of the growing diversity of student cohorts within a massified and increasingly internationally focused university sector, specifically at master's level, and the experiences of these students, both home and international, in their journey to develop criticality. This often involves learning in a new subject area, and for some, learning in a foreign country using a non-native language. Literature suggests that for those international students from Asian collectivist cultures, cultural differences adversely impact on students' understanding of critical thinking, their skills and abilities to think critically, and their disposition to be critical (Durkin, 2011; Dong, 2015; Chen, 2017; Zhang, 2017), potentially inhibiting their development and subsequent application of criticality. Moreover, there is need to uncover the pedagogical processes and practices that both support and negate students' development (Fakunle, *et al.*, 2016). This could help in understanding how the skills, abilities and competencies proposed by the QAA (2020) and in qualification frameworks may be developed by master's students. In addition, it explores if, and how, the forms and levels of criticality that Barnett describes can and may be realised in contemporary HE, or if development is restricted to instrumental, traditional notions of critical thinking relating to knowledge and argumentation. In particular, identifying which activities in learning and teaching practices of educators, aid criticality development in master's study would be of significant benefit in contributing to the further theoretical and empirical development of criticality frameworks (Barnett, 1997; Johnston, *et al.,* 2011); this would apply to educators seeking to assist students in such development as well as students themselves who may want to pursue a critical and empowering educational experience.

Most significantly, it is intended that this study illuminates the scope of criticality as it is considered and practiced in HE. Is criticality viewed purely instrumentally as a skill and

disposition with which to engage in relation to argumentation and knowledge claims within academia, or is it conceived of more broadly within Barnett's three forms (critical reason, critical self-reflection, critical action) and related domains, or as a way of being? Central to this question is students' application of criticality in domains outside of academia and formal knowledge, as a potential means to enable effective navigation and critical engagement in the contemporary landscape of change, complexity and uncertainty in an era characterised by phenomena which include a global pandemic, "fake news", populist politics and catastrophic climate change.

1.2.1 Research Questions

How is criticality conceptualised, developed and applied by students in master's study?

In seeking to answer this central research question and its three areas of focus in relation to criticality – conceptualisation, development and application – four underpinning research questions were established to address these aspects, starting from students' conceptualisation of criticality through to how they potentially apply the criticality they may develop. These questions consider the curricular processes and pedagogical activities used by staff that both they and students perceive to aid criticality development before evaluating the extent of student's criticality development and the possible contexts in which they apply criticality:

RQ1: How is critical thinking conceptualised among master's students?

RQ2: What learning activities promote critical thinking development?

RQ3: What approaches do staff use to foster critical thinking development?

RQ4: To what extent do students develop and apply criticality?

To answer these research questions, a mixed-methods design reflecting the constructivist approach was adopted utilising quantitative and qualitative data collection methods. While general in nature, the research questions are intended to be answered in respect to experiences of the students sampled within the three universities, specifically the social sciences and health and social care disciplines, in relation to criticality development during their master's study. As such, answering these research questions would only provide insight as they relate to the sampled students, their subject areas and their respective universities of study, rather than being representative of all UK master's students' experiences of criticality development. However, considering the relative size of the Chinese cohort within the sample (42%), it may be that this research can provide insights of more general relevance in terms of the experiences of these students specifically in regard to critical thinking within

postgraduate study in the content of UK HE. The quantitative survey provides insight into students' perceived self-development of critical thinking from their previous studies, and the activities they felt supported their development, as well as providing a measure of their critical thinking disposition and their present attitudes and beliefs toward critical thinking from the scale instruments incorporated. The survey helped provide an overview of key aspects relating to the existing criticality development of a large number of students from a variety of master's courses at three universities. Following the survey, the qualitative in-depth interviews allowed for the key themes arising from the quantitative findings to then be explored further with a sub-sample of survey respondents, moving from the general to the specific and investigating the personal and contextualised experiences of students in their development and application of criticality.

1.3 Thesis Overview

The research is presented across seven chapters in this thesis. This introductory chapter has provided a context and rationale for this study, signifying its importance to me and more importantly in the HE context, within contemporary higher education.

The second chapter reviews the literature concerning critical thinking and criticality in HE. It briefly establishes the definitional difficulties of critical thinking, clarifying the difference between critical thinking and criticality, before exploring conceptualisations of critical thinking and their theoretical development. The theoretical orientation of the research, Barnett's (1997) critical being thesis, is presented and critically evaluated. Building from this conceptual basis, the discussion investigates the position of criticality in UK HE, considering changes to the role, remit and landscape of higher education, as well as critically exploring a central debate around critical thinking and culture, considering the challenges master's students may face developing and demonstrating criticality within their academic studies. Following this, the operationalisation of criticality within the curriculum is examined as well as considering the approaches to measure students' development of criticality in the classroom, including relevant empirical research.

Chapter three introduces and situates the research in terms of methodological considerations, outlining the research paradigm, ontological and epistemological positions adopted. Practical aspects of the study such as the sample selection, recruitment, research methods, their selection and development, and collection of data are discussed. The chapter concludes by outlining ethical considerations and the data analysis techniques used for the empirical data gathered.

Chapter four presents a detailed discussion of the findings from descriptive and statistical analysis of quantitative data gathered from 293 students representing 13 master's programmes at three universities. Observations and significant findings from my devised questions, allied to findings from two validated scales incorporated into the survey, are presented before thematic analysis of data arising from the open-ended question is reviewed.

Chapter five provides an extensive discussion of the findings from the qualitative interviews following their thematic analysis – the focus of this chapter is on presenting *what* interviewees said. The key themes emerging from the data analysis are outlined and investigated, while conceptual and experiential accounts of students' interviews are discussed in relation to the emergent themes from the data analysis.

Chapter six focuses on interpreting interviewees' responses and the significance of their accounts in relation to both the academic literature and Barnett's theoretical framework of criticality development, aiming to assess students' conceptualisation, development of criticality and the contexts or domains where criticality is, or may be, applied. In addition, the key insights identified in both findings chapters are explored and related to the research questions.

The final chapter reflects on the significant findings from the research project and presents a series of answers to each research question based on my research and its findings. The chapter details the contribution to knowledge offered by this research by addressing how criticality is conceptualised, developed and applied by students involved in master's study, specifically confirming students' preference for social, dialogic means for developing criticality. My identification of "contexts of difference" where three elements combined - dialogue, diversity and differing perspectives – were revealed as providing the most favourable setting for students' criticality development; a key contribution from this research. Furthermore, in creating a spectrum of critical thinking conceptions and advancing the operationalisation of Barnett's (1997) framework were additional contributions resulting from my research.

Finally, the limitations of the research are discussed and recommendations offered for continued and future research into criticality development in HE.

The thesis now progresses to the literature review, in chapter two.

Chapter Two – Conceptualisations and Theoretical Approaches to Criticality

> Around the world, people are called upon to vote on a wide range of critical issues. The irrational (uncritical) voter is a threat to all of us, as are irrational politicians, business executives, and scientists. We believe that we can create a better future by enhancing critical thinking skills of citizens around the world.
>
> (Butler, et al., 2017: 45)

2.1 Introduction

This chapter provides a critical examination of the literature and research about critical thinking in higher education (HE), exploring the theoretical foundation for this research and the context in which to consider the findings. The chapter begins by setting out the complexity and contestation surrounding critical thinking as a concept by presenting an overview and brief consideration of the numerous alternative definitions within the literature, highlighting the lack of consensus of this core concept within HE. The theorisations of critical thinking in the conceptual literature are then explored, outlining the key debates and developments, from views of critical thinking as an instrumental skill, to both skills and dispositions, before setting out a broader view of critical thinking as a social practice.

Significant conceptual contributions and debates related to critical thinking are evaluated, focusing on the two main strands of thought on critical thinking and its purposes in HE. These are critical thinking as skills, dispositions and mindset, which sit within the context of knowledge and academia linked to employability; and the sociocultural view which sees critical thinking as having to extend further in its sphere of development and purpose. This chapter charts how the concept of critical thinking has developed from being conceived as a rational process and means for logical problem solving, a form of epistemological development, and a transferable skill to an ontological focus advancing reflexivity and an inclination to social and political engagement. Discussion of such trends moves away from one-dimensional views of critical thinking to broader conceptions of the skills and dispositions of individuals to think logically and systematically, towards views that consider the whole person and their critical engagement and actions, their own thinking and being in the world within which they function. This multi-dimensional view, as I broadly define it, extends from critical thinking to criticality, engendering a more complex set of not only knowledge practices but also engagement with one's own values, assumptions and thinking

as well as ways of interacting with the world – the view adopted and applied in the context of this research.

The theoretical framework applied in the thesis - Barnett's (1997) *critical being* – is then outlined to argue that this conception of "critical being" is among the most distinctive and important work on critical thinking in HE. Progressing to investigate the position of critical thinking within HE, the discussion addresses key concerns relating to critical thinking's role in the academy and to the purpose of HE itself. A central debate about critical thinking and culture is then explored: the case of Asian students studying in the UK and how criticality may challenge these learners as they adapt to western academia. How the conceptual considerations, policy and sectoral developments cascade into the curriculum and how this translates into modes of learning and pedagogical methods employed is then discussed. Literature in the academic literacies field is reviewed in analysing the position of critical thinking in relation to the experiences and challenges students can face in conforming to learning, teaching and assessment practices while attempting to realise and develop their criticality. The chapter then concludes by presenting findings from a selection of significant empirical studies, concentrating on research focussing on students' criticality development, and specifically those applying Barnett's conception of criticality and research focussed on master's level students.

In following this path, this chapter presents an extended review of the literature which is necessary due to the conceptual complexity of this topic as well as the level of controversy, contestation and attention critical thinking has received in the HE literature.

2.1.1 Unpacking Critical Thinking

Critical thinking is "a defining concept of the western university" (Barnett, 1997: 2) and commonly viewed as signifying the "higher" in Higher Education (Danvers, 2018: 549). Denoting a variety of activities relating to students' engagement with and scrutiny of knowledge in a process of informed academic debate and argumentation, critical thinking as a concept permeates universities' pedagogical practices, strategies and vocabulary. It is seen as a key competency or attribute to be developed within graduates as a result of their study, representing the essence of a university education (Barrie, 2004; Nicol, 2010). However, even while an extensively discussed concept, "critical thinking remains as elusive as ever" (Davies, 2015: 41). Staff and students fail to share a common interpretation of this crucial concept (Moore, 2013; Graham, 2015), to the potential detriment of students who are repeatedly asked to apply critical thinking in their studies while they are likely confused and unclear over its meaning (Moon, 2005). Whilst critical thinking is a "major and enduring"

element of HE and the development of criticality in students is a fundamental goal, understandings of criticality are both "conceptually and empirically unclear" (Johnston, *et al.*, 2011: preface); students' development of critical thinking in university is seen as inadequate and in need of empirical investigation to better comprehend the complexities involved and experienced by students (Arum & Roska, 2011; Johnston, *et al.*, 2011; Huber & Kuncel, 2016).

Thus, notwithstanding decades of scholarship, debate and ever-increasing ubiquity of the term, there is little agreement among scholars on definitions or conceptions of critical thinking (Bailin, *et al.*, 1999a; Brookfield, 2000). Over 20 years ago, Barnett (1997: 2) highlighted the multitude of definitions of critical thinking, suggesting that the conceptions that persist today are "inadequate for the modern age" and claimed that HE "which prides itself on critical thought, has done no adequate thinking about critical thinking" (1997: 3). Blair (2019: 4) echoes this, showing that this problem persists two decades later:

> 'critical thinking' has become a buzzword, or buzz-term. It is found in virtually every college and university mission statement. Yet, simultaneously, its vagueness has been deplored and its intellectual respectability correspondingly denigrated.

Bailin *et al.* (1999a: 286) suggest that while no "correct" notion exists this does not imply "that all conceptions of critical thinking are equally good or defensible". Conceptions equating critical thinking with cognitive skill dominate the literature, taking a view that critical thinking is a practical transferable skill deployed in an intellectual interrogation of aspects of formal knowledge. For example, definitions from key proponents include views of critical thinking as "reflective and reasonable thinking that is focussed on deciding what to do or believe to do" (Ennis, 1985: 45), as well as "the art of analyzing and evaluating thinking with a view to improving it" through the application of universal intellectual standards (Paul & Elder, 2006: 4). Such views see critical thinking as an instrumental skill exercised in a decontextualised, disembodied intellectual process in relation to knowledge as undertaken by the rational individual (Danvers, 2016a). Even those such as Seigel (1988) who allude to certain dispositions or attitudes which support critical thinking in the form of a "critical spirit" or "character", still refer to a range of reasoning skills in its execution (Bailin *et al.*, 1999b). The use of conflicting and overlapping terminology, derived from different disciplinary origins including philosophy and psychology, does not assist in seeking clarity in both conception and definition.

The conception of critical thinking (or criticality, as I will clarify shortly) that I adhere to builds on the view of Barnett in his thesis of critical being and Davies' (2015) related "model of critical thinking in higher education" that encapsulates the conceptual evolution in critical thinking. Figure 2-1 below illustrates (clockwise) the key developments in critical thinking which Davies (2015) outlines and which will be covered in this chapter.
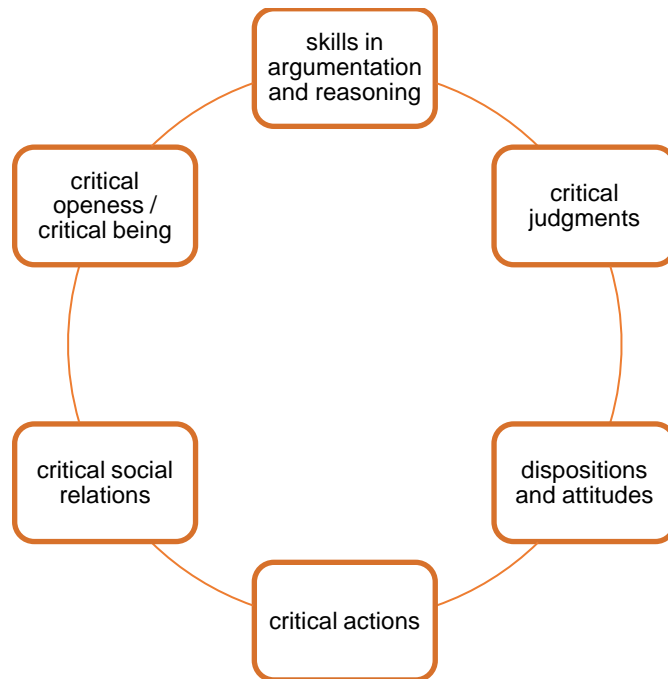
Figure 2-1 – Conceptual Developments in Critical Thinking (Adapted from Davies, 2015)

2.2 Conceptions of Critical Thinking

A starting point for most definitions of critical thinking is the thought processes of the individual and the development of their skills to exercise rationality and logic in making judgements and/or solving problems. This captures much of the core emphasis in the critical thinking movement (CTM) prominent in scholarly work around critical thinking, especially in the US. Such a view is seen in the definition provided by way of a consensus statement by the American Philosophical Association (APA) in defining critical thinking as:

> "purposeful, self-regulatory judgment which results in interpretation, analysis, evaluation, and inference, as well as explanation of the evidential, conceptual, methodological, criteriological, or contextual considerations upon which that judgment is based" (APA, 1990: 2).

However, HE scholars argue that such rationalist, cognitive skills-based conceptions do not reflect the breadth of critical thinking scholarship and its application both within and outwith HE (Barnett, 1997; Davies, 2015; Davies & Barnett, 2015a). A stronger emphasis on

criticality enables a more holistic focus on the individual, contextualised within the wider world and on their development of critical thinking in the form of skills and dispositions which support a critical attitude, mindset or "critical spirit" (Siegel, 1988), so that they may engage in society and contribute towards its transformation. This emphasises what Barnett (1997) calls "the critical life" - where criticality is more than a sense of doing, but a way of *being*.

Criticality, Barnett (1997) argues, is a broader concept than critical thinking, incorporating thinking, reflecting and acting critically – not merely concerned with skills and dispositions toward thinking, as in much of the literature. Davies and Barnett (2015a: 14) state that criticality "is a term deliberately distinct from the traditional expression 'critical thinking', which was felt to be inadequate to convey the educational potential that lies to hand". This view expands critical thinking from a focus on the individual and their skills and dispositions to think critically, to a state of being which considers individuals' place in the world and their social relations, and their actions upon the world across various contexts (Davies, 2015). Johnston *et al.* similarly argue for a broad conception of students' development of critical qualities that encompasses their "social, moral and intellectual critical development within the modern world and education" (2011: 8), as criticality attests to (Barnett, 1997; Davies, 2015; Dunne, 2015).

Crucial to criticality is the contention that "one be moved to do something" (Burbules & Berk, 1999: 52). Thought, deliberation, reflection or judgment is not sufficient. The inclusion of action as an essential and unique aspect of criticality marks this recent development from traditional views of critical thinking. When considered in this way, criticality conceptually encapsulates one's thinking, being and acting whereby the individual reflects on their knowledge whilst developing capacities for critical thinking, critical self-reflection and critical action, a consequence of which is their development and embodiment of critical being (Barnett, 1997; Johnston, *et al.*, 2011; Davies & Barnett, 2015). This conception is adopted in this research; therefore critical thinking is a necessary constituent of criticality but it is not sufficient to capture the broader considerations of criticality. Criticality thus conceived has the potential to be an educationally transformative concept which helps to re-conceptualise and extend the notion and position of critical thinking in universities, along with the subsequent role of universities in facilitating criticality development to influence and support society.

2.2.1 Critical Thinking as Skills and Dispositions

To comprehend Barnett's tripartite conception of critical thinking, it is incumbent to review the significant developments in critical thinking scholarship that helped inform his own philosophical views. Drawn largely from the field of analytical philosophy, key authors in the first wave of thinking (Paul, 2011) and the CTM include Paul, Ennis and McPeck. Robert Ennis (1962: 8) proposed that critical thinking comprised "correct assessing of statements" before updating this to his much-quoted definition of critical thinking as "reasonable and reflective thinking that is focused on deciding what to believe or do" (1985: 45), where the emphasis on argument evaluation is maintained, yet reflection is included alongside reason. The later inclusion of reflection could be seen as an influence from Dewey (1933). Glaser can be seen to follow much of Dewey's (1993) thought related to reflective thinking, focussing upon knowledge or beliefs as the subject of examination where logical enquiry and reason supply the methods, though Glaser (1941: 5) introduces the notion of "an attitude of being disposed to" engage critically. Glaser therefore established a fundamental development within the CTM in his recognition of the need for both elements of skill to reason logically and enquire, but also the disposition or "attitude" as he calls it - what McPeck (1981: 8) terms "propensity" - to engage with a task and utilise such skills in thinking to a purposeful end. Davies (2015) identifies the asymmetric relationship where argumentation is requisite for judgment making yet judgements based on reflection ideally cannot take place without argumentation. It is this view of critical thinking as a skill in argumentation which can be learned and developed by students in relation to "identifying, analyzing and evaluating arguments and propositions" which Davies (2015: 50) terms the 'skills-view' of critical thinking but which Barnett (1997) critiques as "transferable skills" talk emblematic of much of HE.

Ennis also proposed abilities and dispositions required to function as a critical thinker and developed a taxonomy of these which educators could use with their students in supporting their critical thinking. Ennis (2015) continued to refine his initial list of fourteen dispositions and twelve abilities (or skills) from 1987, to twelve dispositions and eighteen abilities based around his popular definition. His definition that outlines reason and reflection, like Dewey and Glaser, also highlights "deciding what to believe or *do* [emphasis added]", which implies that from critical thinking action should result – the third form of Barnett's (1997) view of criticality; critical action. However, Davies (2015: 52) contends that Ennis' view does not mean that the critical thinker has any "commitment to action" whereby one can engage in the critical thinking process without applying or implementing a decision or action. As

Ennis' definition and taxonomy demonstrate, his view of critical thinking lies largely in relation to formal knowledge and the application of knowledge in relation to academia.

Paul (1995) argued that 'weak' critical thinking focusses on arguments and their components in isolation where critical thinking skills and dispositions are applied within one's own perspective and self-interests without proper scrutiny of one's own assumptions and beliefs in doing so. Contrastingly, 'strong' sense critical thinking relates to one's character and moral sense of personality whereby thinkers consider seriously the perspectives, worldviews, and assumptions of others, in addition to their own, and evaluate their own possible self-deception, egocentrism, emotions as well as ethical issues within the thinking process (Paul, 1995; Johnston, *et al.,* 2011; Fisher, 2019). Thus Paul (1992; 1995) saw focusing on thinking about one's thinking (metacognition) as a key means to develop and refine critical thinking, taking students through decision making processes by analysing problems, alternative actions, potential consequences and allowing them to practise in abstraction before applying this in real-life (Fisher, 2019).

McPeck also saw critical thinking as a composition of knowledge, skills and dispositions in defining it as "the propensity and skill to engage in an activity with reflective scepticism" (1981: 8). Emphasising, like Paul and Siegel, the need for a conducive attitude or disposition to use one's skills in critical thinking, McPeck introduced the now enduring general versus field-specific debate in critical thinking, where he is in direct opposition to colleagues such as Paul and Ennis. McPeck posited that rather than being a generic skill or disposition that can be learned and applied in multiple contexts, such as another subject or field, known as the "transfer question" (1990: 11), critical thinking is subject-specific as each subject or field requires its own forms of knowledge and required thinking skills. In rebutting Ennis' view that critical thinking is general and applicable in its transfer to a multitude of contexts, McPeck (1990: 10) argues:

> I think that there are almost as many different kinds of critical thinking as there are different kinds of things to think about. The criteria for applying and assessing critical thinking derive from the thing (call it a topic, subject, field, or domain) being discussed or thought about at the time.

In contrast, Paul (1989) viewed critical thinking as transferable in terms of the logic and skill in reasoning where all the disciplines are modes of thought and knowledge amenable to general forms of critical thinking. Yet, McPeck viewed "objects of thought…[as] differ[ing] enormously in scope, quality and variety", suggesting that "there can be no one general skill

or limited set of skills (including formal logic) which could do justice to this wide variety of objects" (1990: 10) of study. Instead, McPeck proposed that traditional discipline-based learning is the most advantageous, if not the sole means for critical thinking development. However, this argument is symptomatic of the skills view of critical thinking in viewing these as skills to be developed by individuals in relation to knowledge, its evaluation and analysis which are mediated by disciplinary-based epistemic communities and their rules. As Barnett (1997) claims, this narrow view which the CTM finds itself debating overlooks broader considerations which present quite a different way of conceiving critical thinking – he suggests that rather than asking "What is critical thinking?", we should ask "What is critical thinking for?" Such an enquiry presents larger questions and considerations for critical thinking, suggesting its scope advances beyond the bounds of individuals and their rational and reflective engagement with knowledge.

While the philosophical approach characterised by the CTM and their work did much to advance the focus on critical thinking and its remit in HE, these conceptions of critical thinking are not sufficient for the scope of this research. These approaches, whilst introducing dispositions required to exercise skills in critical thinking, focus on the individual dimension and view critical thinking as a skill to learn and practise (Davies, 2015). With their lists of logical rules, intellectual standards and criteria (exemplified in Paul & Elder's *Elements of Thought* model, 2006: 5), this view of critical thinking is overly complex for practical use where having to remember and apply these is a detached and burdensome process. Moreover, the positivist focus on this tradition assumes knowledge is objective, stable and conceivable, rather than fluid, partial and contested. Both this tradition and the CTM is viewed as overly rationalist and masculine (Johnston, *et al.*, 2011) whilst also lacking in its disembodied, decontextualised vision (Danvers, 2016b; 2018) based on western values and thought without acknowledgement of other cultures, genders, ideologies (Davies, 2015) and epistemological perspectives.

Additionally, in viewing thinking critically as an immaterial, cognitive process there is no connection to a resulting act. One can therefore engage in an abstract critical thinking process regarding a decision or judgement and reach a conclusion without the need for any action to be taken by the thinker, the result can remain a philosophical endeavour with no tangible outcome (Johnston, *et al.*, 2011; Davies & Barnett, 2015). This contrasts with criticality and Barnett's imperative toward action, leading to his consideration of the whole person engaging in critical thought in domains beyond knowledge to engage with the world and oneself critically.

However, the contribution of the philosophical approaches to critical thinking scholarship, emphasising logic and argumentation, cements its importance in critical thinking, in HE and life generally. For Davies (2015), and Andrews (2015), argumentation is a foundational, core skill required in our information age to support sound, informed reasoning and judgement. Whilst a valid and vital contribution, this view of critical thinking is still stuck in the domain of formal knowledge, circulating at the lower levels of criticality - not looking to transform, but to deconstruct and interpret arguments and logic.

Moon (2005) views critical thinking as related to epistemological development. She sees a student's "conceptualisation of the nature of knowledge" as indicative of their critical thinking capacity (2005: 8) as this understanding is likely to influence their functioning. Moon borrows from studies such as Perry (1970) to describe this, though she leans more heavily on Baxter Magolda's (1992) conception and research. Baxter Magolda (1992) outlined four stages of epistemological development or "patterns of knowing" (Johnston, *et al.*, 2011: 63). She argued that students progressively developed from "absolute knowing" to the different forms of knowing through advancement of their learning in HE. Baxter Magolda (1992) identified, "contextual knowing" as the most advanced stage or level, where "knowledge is seen as constructed and is understood in relation to the effective deployment of evidence that best fits a given context" (Moon, 2005: 9). Indeed, Baxter Magolda (1996), acknowledges the importance of contexts external to academia such as professional work and self (e.g. evaluating one's personal and professional experiences) and by moving towards the nature of knowing and epistemological development, connects with Barnett's critical being and three forms of criticality and four levels whilst recognising the "social nature of knowing" (Moon, 2005: 11).

This perspective evidently advances from the previous skills and dispositions notion asserted by the CTM and philosophical perspective by considering how critical thinking is learned and developed, incorporating progressive development considered in levels, application in domains outwith academia and the social aspects of criticality development.

2.2.2 Critical Thinking as Social Practice

Encapsulating what Davies (2015) called the "skills-plus-dispositions-plus-actions view" that includes critical thinking as criticality and the "skills-plus-dispositions-plus-actions-plus-social relations view" capturing critical pedagogy, social approaches to critical thinking illustrate the conceptual development toward critical being (Barnett, 1997), which I argue is the most persuasive, broad and representative account of criticality in HE.

Criticality

For Barnett, criticality goes further than views of critical thinking which incorporate reason, argumentation and reflection in placing the (critical) person at the forefront, recognising their wider character and engagement in the world (Davies, 2015).

This "thinking without a critical edge" (Barnett, 1997: 17), is more concerned with epistemic adequacy, whilst criticality fuses epistemological and ontological concerns – it is a "deeply existential position wherein each human being is celebrated as more than the sum of their parts" (Dunne, 2015: 93). Moreover, with the supposition that one be motivated to *do* something resulting from their critical thought and reflection (Burbules & Berk, 1999), criticality introduces a new dimension in incorporating action as a central pillar (and form) of criticality. Barnett suggests that, rather than educate students to develop and demonstrate critical thinking as skill in analysis and judgement, criticality as the *modus operandi* of HE "can also prompt students to understand themselves, to have a critical orientation to the world, and to demonstrate an active sociopolitical stance toward established norms or practices with which they are confronted" (Davies & Barnett, 2015a: 16).

Criticality presents a model for HE in the potentially radical development of students as whole persons in relation to their world, beginning with "discipline-specific critical thinking skills", moving toward achieving a level of "transformatory critique", and finally developing as a critical being (Barnett, 1997: 103). Criticality is both transformative and emancipatory in its vision and potential.

In considering the human being and their place in the world with action as a core tenet, criticality also widens from focussing on the individual to considering their relation to others seeing critical thought as a collective project collaboratively developed in critical dialogue between individuals through "sustained interchange and around collective standards" (Barnett, 1997: 17). Thus, criticality sees knowledge as socially constructed and sustained in an ongoing process and social practice which involves meaning-making and re-making (Burbules & Berk, 1999). Criticality adds much to previous conceptions of critical thinking as concerning technical, instrumental views of logical analysis toward fallacies in knowledge founded in rationality, as well as those perspectives equating critical thinking with intellectual and cognitive development, through approaches which acknowledge how thinking and learning develops in interaction with others in structured environments.

For example, Davies (2015: 70) illustrates this conceptual development in the diagram below, where criticality moves from *thinking* to *doing* and from focusing on the *individual* to the *individual in relation to others and the world*.
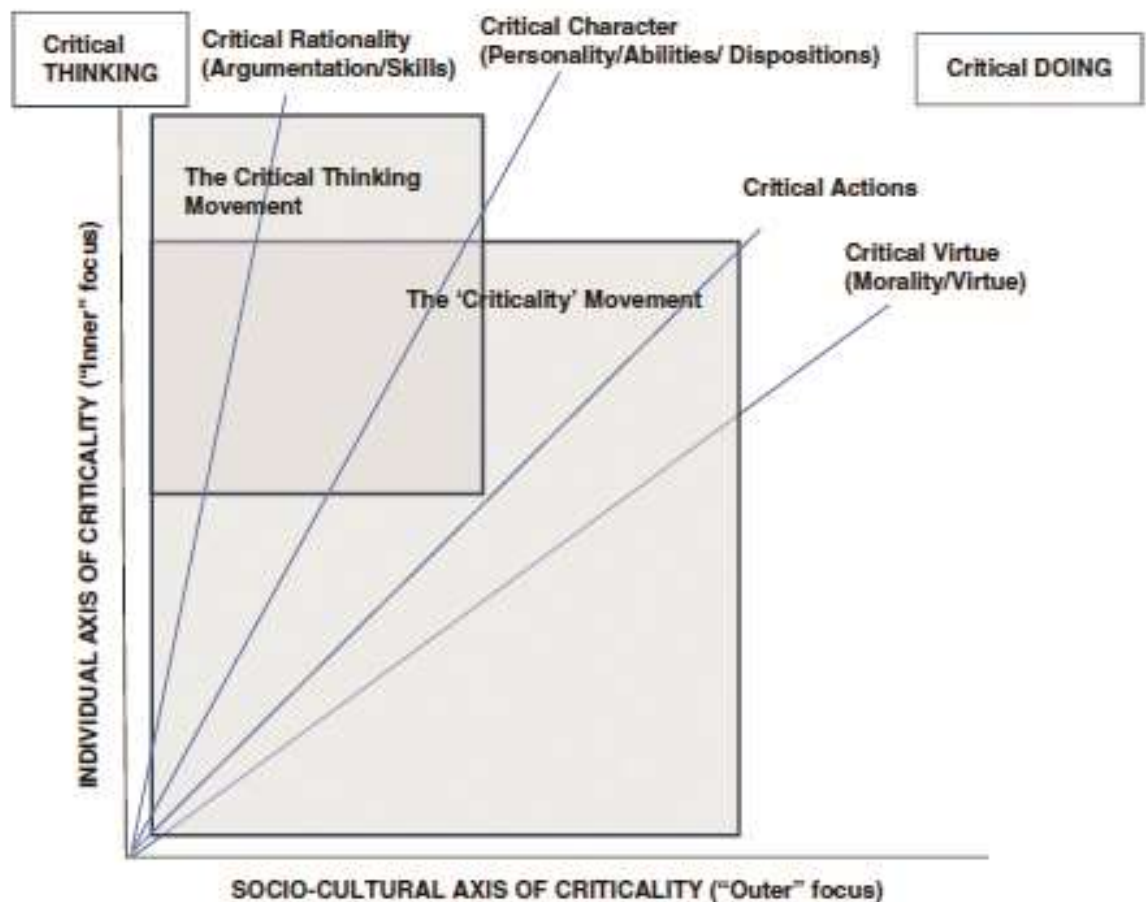
Figure 2-2 – Axis Diagram of the Critical Thinking and Criticality Movements

(Davies, 2015: 70)

As the diagram shows, criticality extends from the conceptions of critical thinking as skills, dispositions and abilities to introduce both action and ethical dimensions where criticality brings a recognition of morality: "ethical decisions are, of course, usually (if not always) accompanied by ethical *actions* [emphasis original]" (Davies & Barnett, 2015a: 18).

Following their research of the criticality development of undergraduate students of modern languages and social work in England, Johnston *et al.* (2011) produced their own framework for criticality development. Guided by Barnett's (1997) conception of critical being, Johnston *et al.* (2011) sought to add a more practical, operational framework underpinned by empirical findings, informing Barnett's theorisation with data on the experiences of students in their own studies and their criticality development. Johnston *et al.*'s (2011)

framework, seen in <u>Appendix 1</u>, consists of three levels of criticality – early, guided and late criticality – across a horizontal axis which appears more developmental and fluid than Barnett's. In addition, as a framework grounded in data and real-life experiences and practices of students in developing criticality, it is more contextualised to HE, with each level connected to processes (sourcing information, reading) and products (essays, presentations) related to student learning. However, the framework introduces complexity with each level containing four aspects - entry into the critical process, solution searching, rationale building and understanding the territory - and each aspect has multiple subsidiary facets, which I contend begins to hinder the practicality of its use. While Barnett's framework might seem too sparse and conceptual, Johnston *et al.*'s appears too unwieldy and impractical for use in this research.

Critical Pedagogy

Overlapping considerably with criticality and advancing conceptually from previously discussed positions on critical thinking, critical pedagogy is characterised by a distinct political and activist focus. Considering education broadly as the practice of freedom repressed by social and some educational conditions (Davies, 2015), critical pedagogy is strongly associated with one of its original advocates, Paulo Freire ([1970] 1996). It contends that different modes of education and their institutions potentially work to oppress and indoctrinate students within a capitalist ideology - with learning becoming a means to emancipation and transformation. Henry Giroux (2010a: 1) defines critical pedagogy as:

> an educational movement, guided by passion and principle, to help students develop consciousness of freedom, recognize authoritarian tendencies, and connect knowledge to power and the ability to take constructive action.

Critical pedagogy has a particular political edge, contending that we live within a capitalist ideology that saturates our daily discourse, social institutions and media where a critical education is needed to enable students to uncover these conditions and be empowered to critically engage with them. Ideology here is taken to mean "structured claims about the world that are systematically related to social interests" and which present a "partial view of the world, a partiality that not merely reflects but furthers certain interests, and characteristically interests that spring from positions of power" (Davies & Barnett, 2015c: 525). In this regard, critical pedagogy becomes a form of "ideology critique" (Brookfield, 2001: 8), of "speaking truth to power" (Brookfield, 2015: 529) and a "language of possibility" (Giroux, 2004: 41) where not only is the system, structure and purpose of

education itself questioned critically, but teachers are seen as central in enabling such critique.

Similarly, Barnett suggests of his higher levels of criticality that students should be able to stand outside of disciplines, frameworks and institutions, or "bodies of thought" (1997: 72), to scrutinise and interrogate their societal functions, ideologies and consider how they may exercise power in what he terms "sociological metacritique" (1997: 75).

He explicitly links the two key conceptions, incorporating the philosophical and psychological fundamentals provided by critical thinking and the socio-political components advanced by critical pedagogy. Criticality and critical being particularly, which combine the skills and dispositions with the social practice approach, most aligns with my understanding and view of criticality development as it relates to my own lived experience as both student and staff member.

2.3 Critical Thinking as Critical Being

Having introduced key aspects of Barnett's conception of criticality, I now explore his significant contribution in more depth. Ronald Barnett provides an essential text for this research, '*Higher Education: A Critical Business'* (1997), in which he outlines his theory of critical being, a theorisation of what HE can set out to instil within its students in supporting the realisation of a "true learning society" (6). This is the key theory underpinning my research.

For Barnett, critical thinking - or "criticality" as he re-phrases it - should consider the whole person and their process of becoming a critical being, through developing their capacities in critical reason, critical reflection and critical action – what he labels three forms of criticality. These exist in an interdependent, fluctuating and evolving relation within their respective domains of knowledge, self and world, which are themselves dynamic and interconnected. Through critical being Barnett visualises the whole person as a critically engaged member of society capable of "transformatory critique" of knowledge and "collective reconstruction of" their self, and the world (1997: 103).

In his model of critical being, Barnett introduces four levels of criticality from "critical skills" through to "transformatory critique" aligning with the three forms of criticality and their three domains of expression. Barnett suggests that "each succeeding level offers ever higher forms of alternative possibilities of understanding" (1997: 7). Table 2-1 illustrates Barnett's levels, domains and forms of critical being.

Table 2-1 – Barnett's Levels, Domains and Forms of Critical Being (1997:103)

Table 2-1 has been removed due to Copyright restrictions.

Barnett contends that in HE critical thinking functions at instrumental levels largely located in the domain of formal knowledge and that, when writing in 1997, the domains of self and world were being introduced to HE with scant attention given to them regarding critical thinking. As with the interpretation of critical thinking in relation to knowledge, critical thinking related to self and world are restricted to more operational, instrumental levels, limiting the emancipatory potential of such a vision that critical being presents (Barnett, 1997: 8). For example, Barnett contends that self-reflection in HE can be seen as developing from notions of self-regulation and self-monitoring as an ideology of its own, but one restricted to an agenda of instrumental reason and for the progression of economic ends not of oneself. Here he suggests "the internal 'life' reproduces the external life" (Barnett, 1997: 91) where economic ends are sought via self-reflection and reflexivity in place of emancipation and empowerment through re-construal of the self – "a form of instrumental control of the self by the self" (1997: 79). In relation to the world domain and critical action, Barnett suggests universities are returning "to their mediaeval inheritance when they were much more a training for a profession" (1997: 79), as seen in the increase in professional and vocational courses. The critical action envisaged in HE practice falls short of that for "social and personal transformation" (1997: 85) and instead is instrumentally focussed on a non-critical element where "situations are taken as given: the actions are worked out against a horizon of givens (of social and economic institutions, of customers and of profit, of products and their having effects)" (1997: 85). In view of these observations, Barnett seeks to extend the scope of critical thinking, the forms it may take and the contexts in which it may be applied – outside the academy and the epistemological domain.

As an educational philosopher, Barnett (1997: 4-5) stands apart from those discussed earlier from the CTM in viewing critical thought as being "educationally radical" and having emancipatory potential in that the form of critical thought he proposes is a form of "social and personal epistemology". This is notable in this view of criticality as "a process of personal emancipation" and means for us to perceive and act upon "illusions or ideologies"

that cloak us (Barnett, 1997: 6-7). Moreover, Barnett maintains that the issues surrounding HE and critical thought have been underestimated without HE having a proper conception of critical being that can help re-shape modern society.

Barnett's thesis is motivated by his concern over the purpose of HE and the remit which critical thinking has within the purpose of the university and its curricular and pedagogical focus. Barnett's (1997) proposed critical being is a reaction to an increasingly corporatised and commodified higher education. While stating that critical thinking is a "defining concept" of HE, Barnett contends that we have "no proper account of it" (1997: 1). He views universities as a site of challenge where knowledge and ideology can be scrutinised and new possibilities imagined. Here the university is seen as having an importance as a social institution contributing toward the common weal and in advancing society, hence his concern for society's future without attention and proper conception of criticality.

Barnett posits that HE's mission should be focussed on supporting students in developing "not just the capacities to think critically but to understand oneself critically and act critically" so that they may develop as critical persons "who are not subject to the world but able to act autonomously and purposively within it" (1997: 4). Consequently, his vision is for a HE that should act "directly as a formative agency in society simply through the power of critical dispositions as they are released into society" – a leap from the contemporary rhetoric and policy focus of universities where critical thinking relates to their "delivering given ends with ever greater effectiveness" (Barnett, 1997: 3). Central to this argument, and this thesis, is that the prevalent view of critical thinking as skills and dispositions overlooks the purpose and possibilities for critical thinking. Within the employability narrative of UK HE, critical thinking is largely seen as a form of economic competency and as self and professional development for economic life – rather than a means to challenge ideology - critical thinking in this sense becomes an ideology in itself[3] (Barnett, 1997).

This is quite a radical view of both the place of critical thinking in HE and of the role of HE itself within society more broadly, compared to the instrumental view of critical thinking in the present employability agenda. Here employability and the mantra of "transferable skills"

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[3] Burbules and Berk (1999) make this very critique of critical pedagogy highlighting this as a form of potential indoctrination, rather than the 'ideology critique' Brookfield suggests. Burbules and Berk's warning is heeded here and counter-balanced with the prevailing neo-liberal ideology characterising contemporary HE.

(Barnett, 1997) have risen in stature and omnipotence, reframing conceptions of critical thinking and its role in higher learning (Davies, 2015).

Barnett (1997: 65) proposes three domains in which people can exercise criticality:

- CT1 - ideas, theories, propositions and knowledge (critical reason)
- CT2 – oneself, the internal world (critical self-reflection)
- CT3 – the external world (critical action)

Barnett therefore rebuts the CTM view by extending the scope of critical thinking beyond knowledge, highlighting its purposes in being able to "take up a stance against the world, to evaluate a proposition, and to attempt to understand oneself" (1997: 66). To realise this, HE needs to broaden the scope of critical thinking in embracing the domains of world and self in addition to formal knowledge and talk of analysis, evaluation and synthesis (Barnett, 1997). Barnett proposes that HE which aims to inculcate a critical spirit, must be "sensitive to all three domains of critical being" (1997: 70) whereby the student sits at the centre in equal relation to all three forms of criticality in their formation as a critical person, as

illustrated in Figure 2-3. As Barnett (1997: 104) states, "it is the concept of the student as person, therefore, that supplies the conceptual and practical glue in a higher education for critical being".

Figure 2-3 has been removed due to Copyright restrictions.

Figure 2-3 – Critical Being as the Integration of the Three Forms of Criticality

(Source: Barnett, 1997: 105)

As progressive and distinctive as Barnett's model is, I find his use of language occasionally confusing and his model overly-complex, exacerbated by his use of comparable terms such as critical thinking, critical thought, critique, metacritique, metacritical and criticality. As Hildson (2007: 2) suggests, Barnett's writing is both serious in its "thinking about thinking", and more abstract in its focus and thus potentially of limited utility at a micro-level. Relatedly, Blakey finds that Barnett's "socio-philosophical writing is complex and not for everyone" (2011: 39). Moreover, the blurriness between levels and domains opens a further problem in terms of what delineates these from one another and relates them (Johnston, *et al.*, 2011), yet Barnett does state that each domain may (and should) be inhabited simultaneously in a single act (1997). In the case of levels this is not aided by the concentric terminology. Establishing how one moves between the levels is also problematic, with the focus on these being more descriptive than definitive in outlining ways and means of development and the associated educational actions that could support this.

There is also an ambiguity between critical action as distinct from critical thought. For example, Barnett states "action in the world can itself be a form of knowledge production and validation" while purporting that "critical thought is a set of actions" (Barnett, 1997: 68). In recognising this "fuzzy" distinction he explains "CT1 [critical thought] becomes CT3 [critical action] when it is taken outside the world of propositional discourse and is subject to other discourses of the wider world (of political action and power, of economic interests and of instrumental reason)" (1997: 68). As Blakey states, whilst Barnett does suggest critical thinking informs critical action, it is very difficult to identify "a clear description of what critical action actually means" (2011: 85). Generally, within Barnett's work there is a high level of abstraction in how he supports and presents his argument, which could potentially detract from the power his thesis conveys as a transformatory educational vision, as well as its pedagogical realisation (Creme, 1999; Hildson, 2007).

Barnett's lack of attention to emotion and feelings related to criticality are highlighted as overlooked by Elton (1998), though Creme (1999: 469) states that he does refer to emotion

albeit "rather passingly". Yet by contrast, Hildson (2007: 4) claims that Barnett's thesis actually facilitates emotion in the formation of the critical being, and Barnett himself suggests critical thought is not purely cerebral, recognising that the presence of emotion is "intimately implicated" (1997: 48) within his view of criticality. In short, he recognises the presence of emotion by uniting self and action with thinking, for example:

> The expression of critical thought calls for emotion (if only emotional control), commitment and courage. (Barnett, 1997: 48)

Barnett proposes that HE can contribute to creating "a genuinely learning society" by recognising and opening the planes of knowing, reflection and action whereby a higher education for the "critical life" is established (1997: 167). To allow students to attain the full scope of criticality expressed across the three domains, and thus achieve the formation of critical beings, Barnett (1997) proposes three conditions for HE whereby students must be:

1. "exposed to multiple discourses" (167) in the form of different perspectives and epistemological stances and their own understanding through experiential and practical, as well as intellectual, experiences.

2. "exposed to wider understandings, questionings and [the] potential impact of [their] intellectual field" (168). This can be achieved through engaging students in broader debates and views of their own discipline within society and wider perspectives this presents as part of their studies, acknowledging multiple and competing perspectives whilst establishing their own understanding of the world and themselves.

3. possessing a "committed orientation [on their part] to this form of [critical] life" with a readiness to engage with other perspectives, view their own world from the perspective of others, and risk critique not just from those within but also outwith their own intellectual and professional world. This resultantly "calls for heroic dispositions on the part of students". (1997: 169)

Additionally, Barnett acknowledges the need for students to have significant "personal and psychological resources" (*ibid*) – though he does not suggest what these resources may be and how they may be supported and developed for students to achieve higher states of criticality.

Despite its abstract nature and complexities Barnett's critical being provides the theoretical foundation for this thesis and the lens through which critical thinking, and criticality, are framed throughout this investigation. Barnett's conceptualisation connects most strongly to my own view of critical thinking as well as its place in HE. Moreover, it is one which

"transcends preceding concepts" (Blakey, 2011: 39) of critical thinking through its tripartite notion of domains and forms of criticality where both "world" and "action" respectively add a real-life, practical element to this multi-dimensional theory that envisages the whole person in their critical engagement with knowledge, them self and their world. Barnett's critical being is progressive in viewing criticality as contributing to society and human wellbeing in tackling the challenges presented to us, and in doing so has empowering and emancipatory potential.

2.3.1 Intellectual Resources

An additional conceptualisation used to support my research in adopting Barnett's consideration of criticality and how it may be developed by students is Bailin *et al.*'s (1999a) view of critical thinking as requiring intellectual resources for competence in critical thinking. The authors' conception of intellectual resources that students require for critical thinking are summarised below:

1. *Background knowledge*: knowledge, understanding and ability to source knowledge about an issue or a specific context. One's depth of knowledge, understanding and experience in a specific context determines their ability and degree to which they can think critically in that context.

2. *Operational knowledge of the standards of good thinking*: knowledge of relevant standards of critical assessment that comprises judgment of intellectual products (e.g. credibility of statements from authority) and principles guiding deliberation (e.g. considering alternatives and consequences of each).

3. *Possession of critical concepts*: the ability to differentiate and apply concepts to distinguish types of intellectual products or analyse them, for example: assumptions, arguments, implications of arguments, statements, definitions.

4. *Heuristics helpful in guiding critically thinking*: a range of strategies or heuristics that support thinking tasks, for example: thinking of counterexamples, asking for real-life examples, listing pros and cons against each side.

5. *Habits of mind*: which include certain commitments, attitudes or habits of mind that dispose him or her to employ these resources in thinking critically, e.g. respect for reasons and truth, an inquiring attitude and open-mindedness (Bailin, *et al.*, 1999a: 290-295).

I see Bailin *et al.*'s (1999a) work as addressing a gap in Barnett's critical being by proposing intellectual resources which students will require to develop criticality that he only briefly alludes to as "personal and psychological resources".

Bailin *et al.*'s (1999a) interpretation may prove helpful in highlighting areas in which students may be lacking in certain resources and how this impacts upon their level and development of criticality. However, Bailin *et al.* (1999a) fail to acknowledge that students may have disproportionate levels of resources and access to these due to social, cultural or personal background. Significantly, Johnston *et al.* (2011), point out that due to varying levels of social and cultural capital - as well as possible cultural differences regarding critical thinking (Atkinson, 1997) - these proposed resources are not universally applicable or achievable, especially within the diverse, massified student corpus of contemporary UK HE. Cultural capital relates to one's socio-economic status, educational level and employment as well as use of language and accent which converges to form one's cultural capital impacting their social relations and status, and located within a *habitus* (Bourdieu & Passeron, 1990; Maton, 2008). Some students, due to their background and previous educational experience have differing levels of resources, knowledge and cultural capital, and may resultantly *not fit* within the institutional habitus of the university (see Thomas, 2002 and Maton, 2008). This is a significant issue in UK HE where the diversity of the student body is intensified by an increasing growth of international student numbers, adding to students' varying level of resources and their ability to develop these further. This is discussed later in relation to culture.

2.4 Criticality in Higher Education

The massification of higher education is one major development in UK higher education over the last few decades which has re-characterised the student demographic (MacDonald & Stratta, 2001; Street, 2004; Haggis, 2006). Another externally driven development is the influence of a global-market society marked by 'supercomplexity' (Barnett, 2000a; 2000b; Giroux, 2004). Both developments present questions about the university in contemporary society: its purpose; the position and conceptualisation of criticality in the university; and the extent to which criticality is developed by students during their studies and applied therein and outwith. Such questions are only further compounded by the growth and grip which corporate forces – ideological and operational – have upon HE.

These significant changes in UK HE over the past 30 years have moved it from an elite system of education for the privileged few, to a system of mass higher education expanded to enable access to a far broader swathe of society (Barnett, 1997; Haggis 2006). However, with this expansion to near universal access to university, and more recent legislation, there has been a shift in HE to one where "universities are now asked to participate actively in the widening inequalities associated with a neoliberal global market order" (Holmwood, 2014: 62), witnessed in the ranking and measures of universities and their "successes".

Driven by a globalised market economy, the neo-liberalism which has encapsulated much of global society has also permeated HE, advancing the corporatist agenda reflected in much of the world (Holmwood, 2014; Beighton, 2018; Noble & Ross, 2019). HE is now tightly within the grasp of the neo-liberal agenda run for private, not public good (Noble & Ross, 2019). These developments present questions as to the role and purpose of the university in contemporary society – is it for the development of an educated citizenry, a form of public good for the furtherance of humanity, society and democracy, or a means for personal and professional development, economic furtherance and a means to support the market economy?

Graduate attributes and employability are two interrelated examples of terms that dominate contemporary HE, reflecting the narrative around its economic purpose, its role supporting the labour market, and government policy by producing "work-ready graduates" (Baker, 2020). Graduate attributes are defined as the "skills, knowledge and abilities of university graduates, beyond disciplinary content knowledge, which are applicable to a range of contexts" (Barrie, 2004: 262) which students are to develop during their degree study.

Graduate attributes also encapsulate the narrow visions of critical thinking that Barnett (1997) infers HE to be championing in its mantra of transferable skills.

Barnett (1997) decries the employability focus which shapes much of the rhetoric surrounding critical thinking in HE, where it is largely seen as a transferable skill and one highly valued by employers (World Economic Forum, 2016), though quite a specific and sterile form of critical thinking. Over twenty years ago, Barnett (1997: 59) spoke of a "new managerialism" restricting the scope of critical thought in universities driven by outcomes and metrics as indicators of value and productivity in assessing their work to serve the needs of the economy. In this HE landscape students become products themselves (Barnett, 1997). This has driven performativity, managerialism and internationalisation, reducing HE and education to a marketplace where students are seen as individual consumers with a series of choices to make in relation to their education, employment and earning prospects and long-term futures – educational choices are reduced to an economic decision related to individual, private interests.

However, there has been some shift from an exclusive employability focus - attributes linked to skills for employment - to a wider, more holistic conception of graduate attributes incorporating values and qualities linked to graduate's societal roles (Barrie, 2004; Hughes and Barrie, 2010; Hounsell, 2010; 2011). This more progressive conception starts to bridge this gap between the proposal of the centrality of criticality in the academy (as I propose) and this instrumental view of critical thinking as skills. Indeed, Nicol exemplifies this in contending that critical evaluation should be seen as the "core attribute" of university education whereby developing critical evaluative skills and capacities "will result in the simultaneous development of multiple [graduate] attributes" (2010: 1). In a broader conception of graduate attributes, Barrie (2004: 269) describes three overarching attributes as:

- *Scholarship*: An attitude or stance towards knowledge
- *Global citizenship*: An attitude or stance towards the world
- *Lifelong learning*: An attitude or stance towards themselves

This demonstrates clear alignment with Barnett's criticality domains (knowledge, self and world), with Barrie's (2004) framework a potential bridge between such conceptions of learning and how this may be realised. However, while graduate attributes are conducive to such aims, it may also be viewed as another example of performativity in action within HE and commodifying education as a pseudo-tangible asset. In this way graduate attributes act as a certification of critical thinking for employers and do not equate with my broader vision

that develops individuals, their thinking, attitude and ability to question, act and engage with society towards its progression.

Such a contemporary view of students as consumers of higher education is rejected by Parkes, *et al.* (2020: 114), who argue for:

> a transformational conceptualisation [of HE] that is founded on the values of democratic engagement, meaningful dialogue and co-operative working to support personal growth, human flourishing and positive contributions to the world around us.

This position complements Barnett's (1997) critical being. Yet a view of critical persons as an aspiration of universities is unlikely to gain traction within a system motivated by financial returns and aiming to provide work-ready individuals for the needs of the market. Instead, the discourse of critique is under threat as "instrumental and operational discourses colonise HE's discursive territory" (Barnett, 1997: 36). And rather than seeking to support criticality in HE, the aim is to deliver "minimal professional competence" (1997: 68). In this context, critical thinking is not purposed for combatting ideology, but provides a "very benign form of critical thought" which restricts the facilitation of students to engage critically with the wider world in which their education is both situated and influenced by (Barnett, 1997: 4). Instead, this notion of critical thinking promotes problem-solving and enhancing productivity in the workplace, not emancipatory social acts. Brodin (2015: 268), converging with Barnett, argues criticality is constrained to the domain of critical reason with transformatory critique rarely achieved, explained in part because "the university delivers what society asks for: effective operators who serve instrumental and pragmatic agendas". In this context "good" critical thinkers "do not rock the boat" (Davies, 2019: 18). Nevertheless, as Danvers (2019: 5) suggests, while such analyses of neoliberalism's effects appear overtly negative, presenting it as an "amorphous 'enemy' both to higher education and critical thinking", neo-liberalism may not be 'monolithic' and entirely to blame for all these developments in HE, though it arguably largely drives many of these trends As Danvers (2019: 5) contends "neoliberalism represents an important contextualising backdrop to UK higher education".

2.4.1 Internationalisation

Tian and Lowe (2009: 659) contend that the "internationalisation" predominantly seen in UK HE is driven by "economic and financial rationales associated with a particular neo-liberal discourse of globalisation into which higher education has been subsumed", which is specifically seen in the recruitment of international students.

Between 2005/06 to 2014/15 students studying in Scotland from the European Union (EU) swelled by 97% and students outwith the EU increased by 58%, showing a steady, substantial growth in international students (Audit Scotland, 2016). The increase in international student numbers in the UK is most dramatic in postgraduate study where the majority (56%) are international students (Higher Education Statistics Agency [HESA], 2020). However, this growth is even more marked in taught postgraduate courses where the rise is mainly among non-EU international students. In 2014/15 there were 110,840 non-EU international students growing to 129,575 studying postgraduate master's full-time in 2018/19 – a 15.58% increase in four years, while in the same period EU student participation has remained relatively stable with 23,470 in 2014/15 and 23,050 in 2018/19 (HESA, 2020). Moreover, Chinese students now account for the largest national cohort of students from outside the UK studying in Scotland and the UK (Audit Scotland, 2016; HESA, 2020).

Internationalisation of the Curriculum (IoC) is a possible means, conceptually and pedagogically, to address concerns relative to criticality in the curriculum, growing internationalisation of student cohorts and their development of criticality, particularly considering the difficulties they may face (Bennett Moore, *et al.*, 2003; Durkin, 2011; Shaheen, 2016). Tian and Lowe (2009: 673) argue that "a distinction must be made between the economic rationales for recruiting large numbers of overseas students and the cultural rationale that aims to develop intercultural understanding and 'international mindedness'". Leask (2009: 209) defines IoC as "the incorporation of an international and intercultural dimension into the content of the curriculum as well as the teaching and learning processes and support services of a program of study". An internationalised curriculum is seen as a vehicle through which students can develop "graduate capabilities, global citizenship and intercultural competency" (Leask, 2015: 53). This is parallel with the aims related to criticality development in helping prepare students as the critical persons Barnett (1997) envisages who can manage multiple conflicting views, stand outside of frameworks to consider their own place in the world, and act accordingly. Like Leask, I understand IoC as integrating global perspectives and experiences into the teaching, learning and assessment of students' learning, and support services, to provide students with a more rounded learning

experience. This can be achieved by incorporating differing perspectives across the discipline whilst also viewing the students themselves – home and international – as learning resources in what they bring to the classroom in terms of their experiences, values, beliefs and perspectives.

However, as Zimitat proposes "internationalising curricula is not just about content, it also requires changes in pedagogy to encourage students to develop critical skills to understand forces shaping their discipline and challenge accepted viewpoints'" (2008 cited in Leask, 2011: 10). The development of intercultural competence is a key focus of IoC. In this context interculturalism is a pedagogical approach that actively and explicitly encourages teachers and students to become aware of their own assumptions and to begin the process of unravelling these assumptions through a constructive but potentially provocative interaction with different perspectives and 'tools' (Cunningham, 2017). As Tian and Lowe suggest, "Intercultural learning concerns not only the acquisition of new knowledge at a higher cognitive level but the '*authentic*' experiences of intercultural interaction [emphasis original]" (2009: 668), which IoC aims to provide, bridging the economic internationalisation model within HE. This is especially important as such intercultural interaction "does not develop naturally in spite of the articulation of celebrating diversity in the pervasive rhetoric of higher education internationalisation" (Tian & Lowe, 2009: 668). Such international, intercultural approaches to learning can genuinely support the inclusion of international students over marginalisation whilst also assisting in the development of intercultural competence (Deardorff, 2006) and arguably criticality (Parks, 2020). A means to achieve this would be in embracing IoC through the lens of global citizenship which captures an "idea of agreement on universal ideals such as equity and social justice, at the same time as honouring difference" (Clifford & Montgomery, 2014: 30). Such a view shares key traits of Barnett's (1997) critical person in having moral and ethical responsibilities and an emphasis toward positive action towards the world, while linking to Barrie's (2004: 269) second overarching graduate attribute.

2.5 Critical thinking and Culture

With increasing numbers of students enrolling in tertiary study in the UK (Scott, 2013), including a vast rise in international students, there is a changing student demographic in UK HE (Thomas & May, 2010). Alongside this increase in student enrolment and diversity is a developing literature exploring the frequently cited problems associated with international students' learning in western contexts, predominantly Asian students, and their ability to develop and demonstrate critical thinking. It is therefore important to ask what is meant by critical thinking in non-western settings (Davies & Barnett, 2015), to briefly explore this debate and to identify from the literature the culturally related factors which may promote or inhibit students' criticality development.

2.5.1 West vs East

While critical thinking is a core concept of the academy in its relation to knowledge (Barnett, 1997), it is not the preserve of western modes of thought even though it is largely influenced by scholars from the West (US, UK and Europe). Paton (2011), Bali (2015), Sigurdsson (2015) and Chirgwin and Huijser (2015) have argued convincingly that in Eastern and indigenous societies respectively there exist equivalents to critical thinking in terms of the intellectual and cognitive skills valued and exercised in those cultures. Paton (2011) argues that critical analysis "as the basis of our knowledge systems…is an amalgam of various intellectual traditions" which he contends "discerns an indivisible solidarity between the various strands of humanity" (2011: 29). However, there remains a cultural bias towards critical thinking as pertaining to western intellectual tradition and cultural values which those from non-western settings must adapt to and the perception that they may be disadvantaged in fully achieving, due to their cultural traditions' valued thinking skills.

In a widely cited and critiqued article, Atkinson (1997: 89) reflects this cultural-specific position, claiming "critical thinking is cultural thinking". In suggesting critical thinking is specific to the West, Atkinson argues that as a social practice critical thinking is "discoverable if not clearly self-evident only to those brought up in a cultural milieu in which it operates" (1997: 89). Durkin (2011: 274) meanwhile suggests that critical thinking in the western tradition is less preferred in Asia and Eastern culture and may be incompatible with the values and thinking skills of Chinese students. She claims critical thinking "neglects the cultural and academic norms of international students where they are different from western norms" in relation to argumentation and debate due to their Confucian heritage. As Floyd

(2011: 290) notes, such views of Fox (1994) and Atkinson (1997) hold that critical thinking is "essentially a western skill and not valued in Confucian cultures".

Whilst it is a broad view of critical thinking as social practice and with societal application this does present a culturally biased, deficit view towards international students, their home countries and cultural traditions (Bali, 2015). In my view, this notion is conflated with critical thinking as a social practice, leading to a misinterpretation, as Fox (1994) notes of it, being culturally specific due to its often opaque and tacit definition and means of development. Such views adopting a "comparative cultural" approach where the "problem lies in a different cultural tradition" (Zhang, 2017: 858) see international students marginalised due to western academic norms imposed upon them alongside their lack of knowledge and understanding of critical thinking which is often "considered self-explanatory" (Tian & Low, 2011: 64). Bali (2015) argues this reflects an ignorance and condescension towards the capacities of these individuals for critical thought and its skills and dispositions by viewing this as distant and non-compatible to those from non-western countries, what Biggs (1997) termed 'conceptual colonialism'. This view can be seen as being maintained in the interventions and support offered to international students in UK universities, in the form of preparation courses and extra-curricular classes assisting in their adaption to the mode of thinking they are assumed to lack (Wingate & Tribble, 2012). At this juncture, it is important to consider whether it remains appropriate for universities to maintain their focus on or present conceptions of critical thinking given the present dynamics of the sector, including internationalisation and the "pivot to Asia" (Davies & Barnett, 2015b: 297).

The narrow, ethnocentric, male-oriented view of critical thinking that dominates this debate, based upon western notions of logic and individualism, is identified by Chirgwin and Huijser (2015) as differing from some of the values and skills associated with Confucianism due to the focus upon individual values, skills and dispositions relating to analytical logic and active learning. Durkin (2011) suggests the notion of critical thinking in UK HE is aggressive and confrontational, favouring critical argumentation and debate as part of a pedagogy that favours active, dialogic learning. She suggests this concept conflicts with maintaining harmony, saving face and avoiding confrontation, which is important in China. Durkin (2011) argues that Chinese, Confucian culture is, in contrast to the CTM view of critical thinking, feminist in favouring informal logic which is conciliatory in nature and values intuition and experience over formal logic, which is polarising, argumentative and requires evidence. As a result, Durkin argues that Chinese students who come to UK HE from a

culture that prefers an informal, female style of reasoning which is collaborative, interpersonal and affective, are potentially disadvantaged in developing critical thinking due to this. Dong (2015) though argues that problems faced by Chinese students are not due to their collectivist culture but rather an "uncritical cognitive disposition" from Chinese tradition (2015: 351). Dong (2015) argues three key factors explain these critical thinking difficulties: Confucianism as a philosophical, social tradition; Chinese educational tradition, and, differences in language and thought patterns.

Notwithstanding this debate, problems do exist in relation to international students' adaptation to study in western countries where critical thinking provides a particular challenge to those from different cultures and educational traditions, although this is largely a result of different approaches and experiences of education rather than being unconducive to cultural tradition or alternative thinking styles (Tian & Low, 2011; Bali, 2015, Manalo, *et al.*, 2015; Chen, 2017; Zhang, 2017). However, when considered through the lens of IoC, which values interculturality and global citizenship, criticality does arguably present an appropriate conception of critical thinking conducive to all students when explained and effectively supported; Barnett's critical being extends beyond national and cultural contentions in considering the whole person in relation to the world while valuing morals, ethics and values, implying a social justice approach that belies criticality as purely aggressive argumentation

2.5.2 Cultural and Educational Traditions

Durkin (2011) cites Gee (1994) in suggesting that our socio-cultural context determines higher order cognition such as critical thinking, where "cognitive expression" is linked to culture and social communication. Gee states that "all humans who are acculturated and socialized are already in possession of higher order cognitive skills, though their expression and the practices they are embedded in will differ across cultures" (1994: 189). Cultural context may then impact on how students may be able to develop and exercise critical thinking.

China demonstrates a potentially limiting context in this regard. China's one-Party authoritarian state with its Confucian tradition and legacy is widely critiqued by authors (Foster & Yufeng, 2010; Durkin, 2011; Dong, 2015; Zhang, 2017) in terms of the cultural norms it has promoted that translate into attitudes and behaviours which many argue are contrary to critical thinking and its related modes of cognition, such as questioning and argumentation. Some authors (Atkinson, 1997; Foster & Yufeng, 2010; Durkin, 2011) argue this reluctance towards critique as well as the Chinese state's control of education leads to a

lack of critical thinking embodied by students entering western HE where alternative forms of thinking skills, attitudes, and behaviours are valued. Dong (2015) describes how Confucianism values hierarchy and authority, and whilst Confucianism doctrines are no longer dominant in China an "implied dogmatism about truth and knowledge still is" (2015: 361).

Zhang (2017), similar to Dong (2015), argues that political and ideological factors in China have the greatest impact inhibiting critical thinking among students due to the State's regulation of the undergraduate curriculum itself. Zhang claims that the "four treasures" (compulsory modules) within the curriculum undertaken by all undergraduates in China that relate to politics and ideology influence student's cultural and political values. Zhang contends that the Chinese State aims to subjugate independent thought, political judgement and potential dissenting attitudes towards ideological norms, denying the opportunities and thus ability for Chinese students to develop critical thinking skills and dispositions prior to any international postgraduate study, where this difficulty in adapting to western HE is pronounced (Tian & Low, 2011; Floyd, 2011; Fakunle, *et al.*, 2016; Pu & Evans, 2019). This is clearly the antithesis of Barnett's (1997) critical being and the learning society he espouses.

Chen (2017), like Dong (2015) and Zhang (2017), sees the Chinese educational system as fostering dialectical, two-sided thinking which students apply in relation to critical thinking having learned "the theory of two sides" from the high-school philosophy curriculum. Chen (2017: 148) asserts that this style of thinking leads students to reduce complex critical thinking to a binary exercise dividing an issue, problem or argument into dualist terms of pros and cons potentially hampering forming logical conclusions and subsequent decision making:

> Chinese Indigenous Philosophy states that in life, matter, and the world, there are always contradictions. In everything black, there is something white. In everything white, there is something black, as illustrated by Yin-Yang symbol. The balanced harmony is emphasized rather than contradictions.

Having noted the argument that that critical thinking is not exclusive to western culture, there are culturally related differences possibly impacting students' critical thinking conception, development and ability, including cultural context and traditions, as well as education. Results from research identifying such factors are discussed in the final section of this chapter.

2.6 Criticality in Master's Study

At a policy level critical thinking features strongly in documentation and statements regarding learning and teaching, and relevant pedagogic approaches that aim to support students' development of disciplinary knowledge, subject-specific and transferable skills, as well as aligning with individual HEI's graduate attributes descriptors (QAA, 2018; 2020). At master's level in particular the Quality Assurance Agency for HE (QAA) (2020) set out the focus around criticality as largely underpinning learning at this level where the development of in-depth, advanced knowledge informed by a critical edge is emphasised. This is also reflected in the Scottish Credit & Qualifications Framework (SCQF, 2019) where an emphasis on critical thinking permeates the suggested outcomes for graduates at this level with 'critical' featuring as a prefix throughout the Level 11 descriptor statements. Master's study is largely equated with a focus on advanced knowledge and skills development where criticality is an omnipresent feature, whether in relation to divergent disciplinary perspectives, self-reflection, or in the review, selection, application and justification of research methodologies (QAA, 2020). In short, critical thinking is a defining characteristic of master's study. However, the focus on 'critical thinking' here does appear instrumental and narrow, with the implied notion of criticality largely skill-based.

The QAA (2013) does appear to redress this notion somewhat by advancing seven facets of 'mastersness' which articulates how criticality is considered, positioned and permeates throughout master's study. This view of master's study (QAA, 2013) aligns with Barnett's notion of criticality across its domains and forms, as seen in the emphasis upon:

- students applying knowledge to different contexts,
- attention to professionalism (which can act as a praxis for the application of criticality and learning),
- a focus upon real-world issues and problems in learning activities,
- an appreciation of different worldviews and the provisionality of knowledge (and of the world),
- an encouragement for students to develop their own positions relating to knowledge, arguments or claims, and,
- the importance of reflection and both learning and applying ethical behaviours in practice (QAA, 2013; 2020).

There is a need to consider how these advanced educational aims are to be realised in the curriculum, and the pedagogical implications these present. As suggested, compared to undergraduate courses, students are more central to their own learning and that of their peers

in master's study. In UK HE pedagogies tend to centre on active, dialogic learning where language is salient within key methods of learning centred around workshop-style teaching featuring discussion and assessments, dominated by writing (Bennett Moore, *et al.*, 2003; O'Donnell, et al., 2009). Hence a largely constructivist pedagogical approach is favoured in the UK where active learning processes are valued over passive forms of learning seen in other contexts (Shaheen, 2016), like China (Dong, 2015). Such active pedagogies are viewed as supporting critical thinking and its development through facilitating the constituent intellectual processes of analysis, evaluation, debate and argumentation within a learning approach which is largely dialogic and dialectic.

2.6.1 Critical Thinking and Pedagogy

This section critically examines how the popular pedagogies of master's study may affect criticality development amongst the increasingly diverse postgraduate student cohorts. In addition to the economic barriers raised by the reintroduction of tuition fees in the rest of the UK in 1998, socio-cultural factors may inhibit international students' criticality development. These include adapting to a new academic context and its academic conventions relating to tacit knowledge, behaviours and practices, including the expectations relating to critical thinking. Literature has developed around academic literacies which specifically focusses on the conventions and practices normally centred around academic writing that students engage in during study. These authors recognise the diversity that massification brings to HE and the implications brought to bear on students and their learning due to this (Lillis & Scott, 2007). Others investigating postgraduate student transitions to study identify similar concerns in relation to the adaptation to study of these learners, predominantly non-traditional, including international students.

For example, O'Donnell *et al.* (2009: 29) found a diversity amongst postgraduate students and that students "experienced difficulties in the mastery of key skills or academic practices, suggesting that postgraduate students do not come 'equipped' for their studies in higher education". They found that assumptions of student homogeneity (i.e. the traditional route which assumed postgraduates progressed directly from undergraduate study) link to staff views of students' preparedness for master's study, which may fail to support the "diverse set of needs" of these students, and their success (O'Donnell, *et al.*, 2009: 32). Similarly, Zhang, who investigated Chinese students' transitional experience to UK master's study, found that students first need to adapt to the unfamiliar, UK academic approach before they can then focus upon "learn[ing] critical thinking to gain academic achievement" (2020: 186). Tian and Low (2011) also claim that the context of learning and adaptation of Chinese

students to new, unfamiliar and complex learning contexts is a core consideration in relation to how they may develop critical thinking with their previous learning experience. Such adaptation includes familiarisation to the active and discursive pedagogies which can present challenges to students, particularly those from different educational cultures who are less conversant with such pedagogies and views of knowledge as constructed and contestable (Zhang, 2020; QAA, 2020). Consideration of the dominant pedagogies in postgraduate study are worth brief exploration in contextualising this in relation to culture.

Discussion

Discussion in the form of formal in-class group discussions in tutorials or seminars is a favoured pedagogical method in western HE associated with facilitating critical thinking, and a qualitatively different learning activity for many Asian students (Durkin, 2011; Dong, 2015; Chen, 2017). Dong (2015) argues that pedagogy in China seldom allows discussion, questioning or inquiry, favouring transmissive teaching and an exam-oriented curriculum. He claims the pedagogical approach has not changed, with passive approaches still dominant within Chinese university curricula. Moreover, Bali (2015: 324) argues that the "use of discussion/dialogue as a pedagogy for promoting critical thinking automatically privileges students who are more comfortable and familiar with this pedagogy, as well as those more confident". This also disadvantages those less proficient in the target language (Floyd, 2011; Rear, 2017).

Discussion in itself is specifically difficult for Asian students having to read/listen to information in their non-native language, then process and attempt to understand the question, problem or information prior to responding verbally in the target English language, given the cognitive load this requires (Lun, *et al.*, 2010; Rear, 2017). Such a task of reasoning and argument analysis is already cognitively demanding for native speakers and is therefore of significant cognitive challenge for those students far less proficient in the language and especially with the added demands of critical thinking (Lun, *et al.*, 2010; Floyd, 2011). This challenge that discussion can present then affects international students' participation and confidence. For example, Bali (2015: 332), like Shaheen (2016), reported that tutors observe students as "staying close to the text" and being uncomfortable expressing themselves in class due to low confidence.

Markus and Kitayama suggest that non-western and Asian cultures have a more "interdependent self-construal" (1991 cited in Manalo, *et al.*, 2015: 313) than western cultures that are more centred on the individual. In contrast, Confucian cultures promote collectivity and harmony (Dong, 2015), which helps to explain why students from such

cultures can feel uncomfortable with the perceived conflict in class that discussion can present (Durkin, 2011), while in addition potentially lacking in confidence due to language ability. As Durkin (2011: 285) states:

> contributing to class debates may appear alien at first to many Chinese students, and they may see western argumentation as being unattractive in light of their own cultural values. Some may choose to remain silent, preferring to listen for fear of making mistakes, looking unintelligent or offending others.

Among Asian learners overseas, language impacts significantly on their engagement in typical learning activities in western HE such as debate, discussion and essay writing. Language takes a privileged position in HE (Chirgwin & Huijser, 2015) in both oral and written forms in teaching, classroom discussion and assessment. Language then plays a significant role in international students' participation in discussions designed to support their learning. However, the impact of language also reaches into other aspects of pedagogy and assessment like academic writing.

Writing

Lillis and Scott claim that "students' written texts continue to constitute the main form of assessment and as such writing is a 'high stakes' activity in university education" (2007: 9). Thus, writing is "the most important learning activity in most of our subjects" (Hammer & Griffiths, 2015: 247) where evidence of critical thinking is the key outcome of essay writing (Andrews, 2015). Yet, students' learning here is still problematic, not just relating to the primacy of language in the written form. For example, students commonly struggle to produce essays of depth and rigour which demonstrate criticality in the form of coherent argumentation and criticality (Hammer & Griffiths, 2015) – both for home and international students (Graham, 2015; Wingate & Tribble, 2012). Hounsell (1997) shows the wide miscomprehension among students about essays, with even those students who viewed essays as "evidenced arguments" selectively and uncritically locating information to support their essay's point of view. Atherton (2013) suggests master's level writing should possess crucial features which include: using evidence to support claims, provide a critical aspect which subjects claims and evidence to critical examination, present the writer's position, build a coherent argument, and recognise the conditionality of knowledge.

Pu and Evans argue that writing in HE "is essentially a manifestation of how one understands the nature of academic knowledge and how one defines one's role in relation to it – whether as a consumer or as a creator of knowledge" (2019: 52). They found that "positioning" was

the key factor impinging on how students demonstrate greater or lesser degrees of critical thinking in their writing and learning. Critical thinking in this way relates to "certain patterns of engagement with knowledge as students learn to establish their voice in the academic field" (Pu & Evans, 2019: 52) and how they learn to position themselves in the field amongst academic authors. This view resonates with Barnett's (1997) critical being in seeing the student as able to move position from consumer to critic to creator of knowledge, in the process establishing their own voice. However, students must first be aware of such criteria for academic writing before learning and developing the skills, capacity and propensity to exercise these within their learning.

Atherton (2013: n.p.) claims that "recognising work at Master's level is one of those 'I can't describe it, but I know it when I see it'" situations, exemplifying the challenge facing students in writing critically at this level when academics themselves find this hard to articulate and define. This reflects how Fox (1994) and Atkinson (1997) consider critical thinking as a social practice, making it hard to explain due to the concept being learned socially, contextually and to a degree, unconsciously. However, criticality is a core aspect of learning and assessment at this level and students' achievement is largely dependent on developing and applying criticality. Yet while highlighting that "criticality in students' work is highly prized" in assessment criteria for postgraduate writing, Andrews claims it is "always a hidden criterion in the judgment of excellence and…a key distinguishing feature between work that is mediocre and work that is rated as very good or above" (2015: 58). Such a tacit position regarding criticality in writing is one convention and practice of academia that presents students with a barrier they may not yet be aware exists upon entry to master's study (Shaheen, 2016; Zhang, 2020). Exemplifying this, Maringe and Jenkins found that "international students position themselves as vulnerable outsiders working within an ill-defined but highly valued language environment" (2015: 609) where they described their adaptation to new academic writing conventions as "painful". Such implicit "skill" and practice in relation to writing which assumes knowledge and a degree of competence on the student's part is criticality. Here, as Chirgwin and Huijser (2015) suggest, "critical thinking can be closely linked to academic literacy" and, I argue, to literature in academic literacies where academic success is conditional to developing and demonstrating criticality and which itself requires conformity to academic conventions and practices to achieve it.

2.6.2 Criticality as Conformity

For students to develop and demonstrate their criticality they must first adapt to the established, accepted, nuanced and largely unspoken academic conventions and practices within UK HE, mostly commonly associated with academic writing. For example, Maringe and Jenkins (2015: 624) found international students in the UK perceived **"**writing as an experience of forced conformity to vague, inconsistent, questionable and undefined standards" where they struggled with conventions of academic writing, partly due to the "elusive nature of academic writing standards" (624). Zhang (2020: 179) also found that "academic writing is a big challenge for Chinese international students" particularly relating to criticality and that difficulty "adapting to the new academic culture is an important aspect of Chinese PGT students' experience" which they must address before they can develop their critical thinking. Key to academic literacies is the notion that writing and associated practices within HE are largely socially-mediated and often not made explicit. The academic literacies field, therefore, challenges the deficit view taken towards students' individual abilities and skills in academic practices such as writing and their knowledge of the academic norms, conventions and practice in HE (Haggis, 2006).

Academia traditionally favours a uniformity of language practices reflective of the homogenous cohorts of an elite system that acculturated students into such literacies and practices through their formal education prior to HE (Maton, 2008). However, as noted this has fundamentally changed given recent developments in the sector which have transformed the student corpus, as Figure 2-4 illustrates.

Diversity dimensions	Examples
Educational	Level/type of entry qualifications; skills; ability; knowledge; educational experience; life and work experience; learning approaches.
Dispositional	Identity; self-esteem; confidence; motivation; aspirations; expectations; preferences; attitudes; assumptions; beliefs; emotional intelligence; maturity; learning styles; perspectives; interests; self-awareness; gender; sexuality.
Circumstantial	Age; disability; paid/voluntary employment; caring responsibilities; geographical location; access to IT and transport services; flexibility; time available; entitlements; financial background and means; marital status.
Cultural	Language; values; cultural capital; religion and belief; country of origin/residence; ethnicity/race; social background.

Figure 2-4 – Dimensions of Student Diversity in HE

(Source: Thomas and May, 2010: 5)

As Thomas and May (2010: 4) suggest, "student diversity can incorporate difference across a number of dimensions, namely previous education, personal disposition, current circumstances and cultural heritage". Criticality, specifically a student's need to think critically and exemplify it in their reading and writing is seen as one area of difficulty brought by a mass HE system where students from a range of different backgrounds have been added to the traditional cohorts of UK HE, but learning, teaching and assessment practices have not changed to reflect this.

Gourlay (2009) highlights that students both struggle to "decode unfamiliar practices" in HE and that discrepancies exist between staff and students on requirements and expectations of them, as previous research on critical thinking revealed (Moore, 2013; Graham, 2015). Critical thinking and the related practices of reading, writing, identifying and using credible sources of evidence to support claims and construct arguments are just some of the processes and practices in academia that remain implicit, with student's experience and understanding of them assumed, placing them at a disadvantage. For international students in particular, Maringe and Jenkins (2015: 624) found they "appear to position themselves as a marginalised academic tribe whose struggles are exacerbated by lack of clarity in standards expected and the stigma associated with being seen in deficit terms and not in terms of being different". They suggest difference should be privileged over deficit in such instances, as IoC scholars would maintain. Moreover, Johnston *et al.* (2011: 139) found that "non-

traditional students had not previously practised 'critical reason' activities such as writing academic essays" and identified background knowledge in the subject as a precursor to students' criticality development. Clear connections can be made here with the intellectual resources Bailin *et al.* (1999a) suggest are needed for critical thinking, specifically "background knowledge", "knowledge of thinking standards in a particular field" and "possession of critical concepts" which certain postgraduates, as suggested above, may lack.

These are two key issues - background knowledge and knowledge of practices and conventions in academia - relevant to postgraduates, not just to undergraduates, especially as Lillis and Scott (2007) note that students are often "boundary crossing" and moving disciplines (O'Donnell, *et al.,* 2009). Lillis and Scott (2007: 19) suggest it is important here for students to be able "draw on their existing resources for meaning making". However, the practices and resources familiar to them may not be conducive to a new learning context, leaving their learning potentially limited until they are conversant with the expected academic practices, particularly in relation to critical thinking and writing (Zhang, 2020). As one Japanese student in Maringe and Jenkins' research in the UK stated, "we learn what is needed without expecting to be told explicitly by anyone" (2015: 621).

Yet, Haggis (2006), like Lillis and Scott (2007), suggests these deficiencies relate instead to institutions, disciplines and pedagogical interactions, rather than viewing difficulties in relation to convention and practices of academia as problems located within students. She claims, "many of the problems experienced by learners are at least partly being caused by the cultural values and assumptions" (Haggis, 2006: 533) underpinning various aspects of pedagogy and assessment practice. Atkinson (1997) exemplifies how such assumptions and cultural factors can be seen to be problematic in relation to critical thinking by proposing that it is best viewed as a tacit or "common sense" social practice. Resulting from an implicit understanding, Atkinson suggests, "social practices tend to resist satisfactory definition and are especially difficult for their users to describe" (1997: 72). In turn, this leads to difficulty both for teachers to define and explain critical thinking to students but also in supporting its development, particularly when teachers' own lack of clarity about what encompasses critical thinking results in confusion about to how teach and assess critical thinking (Pithers & Soden, 2000), as well as how they can help students develop it.

2.7 Developing Criticality

Having discussed criticality in master's study, the dominant pedagogies and practices seen within UK HE, as well as the challenges these can present to certain student cohorts, this final section looks toward theorists and research specifically focussed on students' critical thinking development in HE.

2.7.1 Teaching for Critical Thinking

Amongst the methods proposed for teaching and supporting students' critical thinking development common themes emerge, overlapping with some of those practices previously discussed. Pithers and Soden's (2000) review of research identified ways forward for critical thinking teaching: supporting subject-specific interventions over generic, standalone courses and their specific promotion of student-centred approaches. Davies (2019), like Pithers and Soden (2000) and Green (2015), favours subject-specific critical thinking interventions over standalone generic critical thinking courses, popular in the US and usually taught by philosophy departments and focussed on argumentation, though with limited evidence of their effectiveness (Green, 2015). Suggestions from Pithers and Soden's (2000) review also include: having students view knowledge as partial and fluid, promoting students' independent thought and control over their learning; tutors scaffolding students and modelling critical thinking; challenging students' ideas in class by asking for examples, similarities etc. Pithers and Soden (2000) suggest small group tutorials are the ideal setting where critical dialogue that supports critical thinking development situated within problem-based learning approaches, show promise in accommodating these suggestions and students' development.

Key themes that emerge from the broader literature relating to teaching and supporting critical thinking development, overlapping with suggestions above, are briefly summarised below.

Epistemological development

Baxter Magolda recommends building on student's experience, and "helping students analyze their experience in light of external evidence" (1996: 303) and offers six suggestions for promoting critical thinking in HE in seeking 'contextual knowing'. Relatedly, Kingsbury and Bowell (2015) propose that teaching critical thinking as epistemic virtues can help address the "problem of transfer" from learning criticality in academic contexts to other domains.

Critical Inquiry

Bailin and Battersby (2015) argue for an inquiry approach to teach critical thinking that emphasises the "comparative evaluation of competing arguments with the goal of making reasoned judgements" and makes "explicit the connections between disciplinary inquiry and inquiry more broadly". Bailin and Battersby suggest this would provide students with the understanding and skills needed for critical thinking in real-life and disciplinary contexts (2015: 137).

Modelling

Brookfield (1997: 28) emphasises the most important means to supporting critical thinking development is tutors modelling their own "commitment to and engagement in critical thinking". As, "modelling critical thinking not only gives learners a model, scaffold and point of access to the process, it also builds trust between learners and teachers" (*ibid*). Barnett reinforces this notion arguing that academics should "live out their own identities fully and utterly…[and]…reveal themselves to their students as the hard-pressed inquirers that they are" (2015: 70). This is a process of inquiry that Barnett suggests involves modelling from academics and their collaborative exploration with students towards critical consciousness (1997; 2015).

Discussion

Kuhn (2019: 146), suggests privileging "direct peer-to-peer discourse" as she views critical thinking as argumentation that is best developed in dialogue with others through peer-to-peer discussion as a way of testing, developing and evaluating arguments. Brookfield (1997) reflects this in suggesting conversational approaches in the classroom, noting the value of peer discussion where peers may act as "critical mirrors" to one's own assumptions.

Experiential Activity

Moon (2005), like Baxter-Magolda (1996) and Mitchell et al. (2004), encourages the use of placements and out-of-class activities for students to gain vital experience which they then build upon, connect back to existing knowledge, build new knowledge and challenge assumptions via reflection, as well as possibly practising criticality they have developed earlier.

While there are numerous approaches, practices and methods suggested for developing students' criticality, the key concern for my research is how this translates into practice: how effectively universities are developing students' criticality and to what extent this is occurring.

2.7.2 Measuring Critical Thinking

While many techniques and processes are proposed to teach and support students' critical thinking, there are also multiple means through which it may be assessed or measured. Ku (2009) contends that there is no consensus on the measurement of critical thinking. However, measures of critical thinking interventions and their effectiveness are pre-dominantly quantitative in design and method, with most aiming to measure participants' skills in critical thinking instead of their dispositions, attitudes and experiences of critical thinking. These questionnaires stem from a positivist tradition and are themselves incompatible with my research approach and its critical theoretical foundation as provided by Barnett's critical being.

Despite the many suggestions for teaching critical thinking and means to assess its prevalence amongst students, several studies have sought to measure student's critical thinking development within HE and have identified limited development. Among the most significant and widely reported was Arum and Roska's (2011) study which sampled 2,322 students at 24 US HEIs where they found 45% of students showed no significant increase in critical thinking skills after two years of college, while 36% made no significant improvement after four years of study (Arum & Roska, 2011). Such results caused alarm in the US and more widely (Davies & Barnett, 2015a; Davies, 2019) regarding HEIs' commitment to develop the critical thinkers they purport to. However, directly contrasting Arum and Roska's (2011) findings are those of Huber and Kuncel's (2016) study. Their meta-analysis reviewed quantitative critical thinking research and synthesised "effect sizes to estimate the magnitude of gains on general critical thinking measures" (Huber & Kuncel, 2016: 432). They found that critical thinking skills and attitudinal dispositions increased across a variety of timeframes during degree study. In concluding and contradicting Arum and Roska's research, Huber and Kuncel state their "study has demonstrated that college is already effective at fostering critical thought" (2016: 60). This conclusion is supported by an earlier meta-analysis conducted by Abrami *et al.* (2008) which found a limited but positive effect for critical thinking interventions, finding effect size differences relative to the type of intervention and level of implementation.

Other relevant quantitative research includes that of Arslan *et al.* (2014) in Turkey where 1,293 first- and fourth-year students were tested using the California Critical Thinking Disposition Inventory (CCTDI), where a negative correlation between year of study and critical thinking skills was found. The authors also found a positive correlation where female students showed significant difference in critical thinking levels over males, in addition to a

demographic correlation where the strongest association was between their mother's education level and a student's critical thinking tendency. Relatedly, Cheung *et al.* (2001: 577), who surveyed 577 Hong Kong students from first to third year, found "students of upper-class families or fathers excelled in critical thinking compared with students of lower classes". The authors claim that "resources associated with social class may be partly responsible for these differences" while the field, level and year of study had no significant effect. Such findings suggest a link between social class and critical thinking, highlighting complex sociological factors impacting students' critical development, whilst also illustrating the importance of availability of resources as Bailin *et al.* (1999a) propose.

While quantitative testing is helpful in some ways in measuring students' skills and performance in critical thinking, these studies (and their methods) generally adopt a narrow view of critical thinking as skills, usually in argumentation. Such quantitative measures, with a limited conception of critical thinking as measurable skills, neglect the complex, contextual and affective elements of experiences of students in developing as critical persons (Danvers, 2016a). They tend to avoid a social constructivist interpretation, in which many uncontrollable variables exist which cannot be measured, isolated or excluded. Instead, I would argue that the use of relevant scales with a focus on students' dispositions, attitudes and beliefs, alongside qualitative methods would be more conducive to this research. This would allow for the social and contextual nuances of such development to be explored, such as those identified relating to gender, social class and background from quantitative studies (Arslan, *et al.* 2014; Cheng, *et al.* 2001; Karahan & Iskifoglu, 2020).

2.8 Research Insights into Criticality Development

As with the quantitative research, concerns regarding the extent of students' critical thinking development are also highlighted in qualitative studies. Baxter Magolda (1992), for example, found that only 2% of the 80 undergraduates she tracked for four years developed as "contextual knowers" upon graduating, similar to King and Kitchener's (1994) longitudinal findings.

Research suggests "prompting" via various means such as tutor feedback and grades helps foster critical thinking (Fakunle, *et al.,* 2016; Halx & Reybold, 2017). Gently encouraging students using "benign force is the most effective means to stimulate immediate critical thinking in undergraduate students" (Halx & Reybold, 2017: 130), while "bringing about a disorienting event" (*ibid*), or a "disorienting dilemma" (Brookfield, 2012; 2015; Mezirow,

1997), such as a "first grade shock" from an exam score, catalyses this development (Halx & Reybold, 2017).

In terms of research activity, Hammer and Griffiths (2015) and Wilson *et al.* (2015) found that engaging students in assessed research projects, such as dissertations, developed their critical thinking. Subscribing to a Barnettian conception, Wilson *et al.* (2015) found that authentic research projects developed high levels of criticality in students, not within the "world" domain but in "knowledge" and "self", due to the myopic view adopted within students' research projects.

From their research of students' work placement internships, Carson and Fisher speculate that the "workplace experience itself facilitated students' movement up the ladder of criticality" in challenging their own assumptions that may not have been possible in the academic environment (2006: 713). These students noted the importance of dialogue with critical friends as producing an "opportunity for challenge" (Carson & Fisher, 2006: 714).

Researching the views of students and staff on connections between language, culture and criticality, Parks (2020) found support for Barnett's critical being concept where language degrees successfully facilitated student criticality development in all three domains, and to the highest level, transformatory critique. This was similar to Yamada's findings that modern languages students encountering 'otherness' prompted them to reflect on their own assumptions and beliefs from their culture, "comparing and contrasting between their own and Japanese language and culture" (2009: 18). Such mutual development of students' criticality, critical cultural awareness and transcendence through the levels and all three domains is positive, suggesting culture appears to have both enabling and inhibiting aspects regarding criticality development as seen in the previous 'Critical Thinking and Culture' section.

2.7.5 Undergraduate Research

Of specific salience to this research are those studies which, like Parks (2020), have adopted Barnett's thesis as their conceptual position (Blakey, 2011; Wilson & Howitt, 2016). These tended to focus on the level of undergraduate programmes and the most significant is Johnston *et al.*'s (2011) large-scale two-year research study, *Development of Criticality among Undergraduates in Two Academic Disciplines: Social Work and Modern Languages* (Brumfit, *et al.*, 2004). Tracking students through their degrees to investigate criticality development, this case study included participant observation, interviews with students and staff, and analysis of students' work (exams, essays, drafts, notes, presentations), while also

giving a unique focus to students' out-of-university experiences (placement/year abroad) (Mitchell, *et al.* 2004). Overall, their research found that criticality development is a dynamic, non-linear process that is complex and contextual with development relating to the individual self, their previous educational and life experiences, and resources. Johnston *et al*. (2011) found criticality development in HE was a process of socialisation by co-constructing critical understanding between students and staff via lectures, seminars and group interactions, implicit modelling and explicit instruction of critical thinking. They also identified practice of being critical via class activity and assessment as fostering criticality development through enabling students to develop and use different types of knowledge and make connections between these (Mitchell, *et al.* 2004; Johnston, *et al.,* 2011).

Significantly, the criticality project's research found that these students' out-of-university experiences – practice placement and year abroad – "had a profound effect on the development of criticality" (Mitchell, *et al.*, 2004: 11), reflecting similar findings of Baxter-Magolda (1996) and Carson and Fisher (2006). Moreover, like Danvers (2016a; 2016b), Mitchell *et al.* (2004: 9) found a divide in "patterns of criticality development" between vocational and academic disciplines. Overall, the authors stress that the knowledge resources of students prior to these experiences, and more generally, are a key factor for their criticality development.

Another researcher utilising Barnett's thesis as a lens to investigate criticality development is Blakey (2011). She found "critical being needs both education and life experience to develop and that the relationship between these lives is uncertain" (Blakey, 2011: 109) and, as a lifelong process of development, critical beings may "not be seen at undergraduate level" but may be developed beyond undergraduate study and externally to education, as Johnston, *et al.* (2011) identified. Blakey (2011: 131) found that "students developed critical thinking as a result of realizing their autonomy", that personal experiences and beliefs have substantial influence on criticality and that group work was optimal for students' criticality development in providing the conditions for the discussion and teaching of values. Blakey (2011) claims from her data, that critical being essentially relates to realising one's own values, subjecting these to interrogation and re-evaluating them.

Wilson and Howitt (2016: 1160) adopted a Barnettian criticality conception and maintain it is a "socially emergent phenomenon". They found criticality is best developed via learning and teaching that emphasises "social dimensions of both the exercise and nature of criticality" and that its higher levels can only be developed with social forms of learning (2016: 1165). They found students developed in all three of Barnett's domains where some

students developed a "hyperopic view" aligning to higher levels of criticality, which was attributed to discussion and peer-tutor relations. In terms of the domains, in "knowledge" most students were found to have changed their view of scientific knowledge as "purely objective truth-seeking" (Wilson & Howitt, 2016: 1173) with some students subsequently viewing "science as a sequence of transformations of understanding" (1174) from their exposure to different perspectives during class discussion. For the domain of "self", Wilson and Howitt (2016) identified that exposure to others' ideas and the beliefs of peers helped students critique their own thinking, reflecting Brookfield's notion of peers as "critical mirrors". Students stated they valued the "variety of background knowledge that their peers brought into the class" (Wilson & Howitt, 2016: 1176), with students exemplifying reflexivity and awareness of their own biases. In the domain of "world", due to the university context of the course students had limited opportunities to take critical action in the world but many expressed willingness to act. Wilson and Howitt (2016) highlighted students' greater awareness of socio-cultural factors impacting their subject and how it is viewed in the world beyond their studies, aligning with Barnett's transformatory critique.

Additionally, Wilson and Howitt (2016: 1170) contend that "ethicality was intertwined with criticality" as students' judgements were seen to be based on ethical as well as reasoned and emotive premises, linking with Blakey's (2011) finding that values are significant to criticality development. Of note is Wilson and Howitt's (2016: 1166) suggestion, reflecting Johnston *et al.* (2011) and Blakey (2011), that higher levels of criticality remain "reserved for graduate study" where they consider this relies on students' possession of substantial disciplinary knowledge, which may be a challenge to those "field changer" students and those schooled in different educational traditions to whom criticality may be novel, as well as those learning in a non-native language.

The earlier section on 'Critical Thinking and Culture' highlighted postulations that critical thinking is exclusively a western concept which is incompatible with certain cultures' thinking styles due to their traditions and values, though various studies researching international students' experiences in relation to critical thinking refute this. For example, Floyd (2011: 289) found critical thinking significantly impacted by language proficiency rather than cultural factors, highlighting the "double challenge" Chinese students face in having to think critically and learning to do so in a second language. Rear (2017) researched Japanese students' critical thinking comparing their critical thinking skills in Japanese (first language) and English, finding cognitive overload and language proficiency hindered their critical thinking. Paton (2011: 36) found Chinese and Indian students showed a depth and

variety of thought from interviews indicating "a remarkable level of critical thinking". He suggests international students lack critical qualities within their academic work due to difficulties of studying "in the context of edge of knowledge discourse in a second, third or fourth language" (2011: 27). Pu and Evans (2019: 51) found, like Paton (2011), that students' positioning in relation to knowledge was a key factor in them demonstrating critical thinking in their writing, where critical thinking is a key issue in developing academic literacy, especially at postgraduate level. Moreover, Tian and Low (2011) found Chinese students lack knowledge of critical thinking and other academic norms of western HE and their previous learning experiences having greater influence on their critical thinking ability than any cultural factors.

Therefore, in contrast to Fox (1994), Atkinson (1997), and Chen (2017), who proposed that critical thinking is culturally specific and not universal, these findings suggest that rather than Chinese culture and incompatible thinking styles, it is students' low language proficiency, previous schooling, and lack of experience in and/or conversance with critical thinking that affects their students' understanding and development of critical thinking.

2.7.6 Postgraduate Research

In contrast to the abundance of research into undergraduates' criticality development, there are far fewer studies focussing on postgraduate, master's level - and even fewer taking an overtly Barnettian focus. As highlighted, Baxter Magolda (1996) found low levels of criticality in undergraduates, but later found that postgraduates attained higher levels of development than achieved in undergraduates. Of particular significance here was the importance of work and professional environments in supporting students' critical thinking by becoming "knowledge constructors" (Baxter Magolda, 1996). This suggests postgraduate students with greater resources, including knowledge from a previous degree and arguably more life and learning experience, may be more likely to exhibit development to higher levels of criticality.

However, research with Postgraduate Diploma in Education (PGDE) students in Botswana by Moeti, *et al.* (2016) found these trainee teachers exhibited low levels of critical thinking. Cultural norms and socialisation seemingly hindered the critical thinking and confidence of some students due to social class and family background, including conformity with authority and the need to work whilst studying, similar to Cheung *et al.*'s (2001) finding. Similarly, Greenman and Dieckmann (2004: 251) identified a correlation between the role of culture and criticality in a teacher education course where students developed a critical lens which then gave them "'legs' to take action" (251). Students were found to engage in

praxis by taking critical action, with six of the seven interviewed applying criticality in their work. Greenman and Dieckmann (2004: 251) suggest that dialogue in the course allowed students' "transformation through critical linkages" and exposure to new topics and perspectives.

2.7.7 Master's Research

In relation to research specifically on the development of criticality amongst master's students there are few studies like those discussed previously which adopt a full Barnettian conception and approach to data analysis. Hammersley-Fletcher and Hanley (2016) sought to explore what international students understood as critical thinking and the value or importance they attached to it. They interviewed six students from Saudi Arabia, India and Nigeria who were also "experienced professionals already working as practitioners in the field of education" (Hammersley-Fletcher & Hanley, 2016: 984), finding that these students operated at level one and two in Barnett's (1997) schema. In addition, some students viewed critical thinking as related to truth seeking with others viewing it as negative, related to criticism. The authors identified a lack of tutor consensus on the necessary standard of critical thinking for master's study which was reflected in the level of critical thinking they promoted, and how their students understood and developed this, given "differing advice about being 'critical' without, perhaps, very systematic understandings coming from the tutor" (Hammersley-Fletcher & Hanley, 2016: 986). They also found students experiencing difficulty with academic writing (a tension between expressing their own voice while supported by the work of others) intertwined with misconceptions of students on what it was to be critical. Overall, the students accepted criticality as a helpful approach to problem solving and decision making, demonstrating low levels of criticality operating solely within the domain of knowledge.

Similar research conducted by Bennett-Moore, *et al.,* (2003) with international students (no number) from Poland, Hungary, Russia, Canada, and the US found they experienced a culture shock studying in the UK due to different educational approaches and learning and teaching styles. Students, for example, expected more class contact time while the focus upon independent learning was novel. Students noted that with low class contact time they had less opportunity for dialogue and to interact with and learn with their peers where they could benefit from the diversity of their perspectives. "Home" students, found this mutually beneficial in providing a critical view of their own critical approaches while allowing international students to build their confidence to share views in class (Bennett-Moore, *et al.*, 2003).

As with other research with international students studying abroad, language issues were found to provide difficulty in reading, thinking and speaking or writing in another language, and critically. This difficulty is exacerbated by some students lacking foundational knowledge in their subject area (i.e. field changers) giving them more to learn before they can critique this knowledge (Bennett-Moore, *et al.*, 2003; Johnston, *et al.,* 2011). As with the earlier discussion on culture, active-learning approaches such as seminar discussions were found to promote criticality but also induced anxiety due to issues with language, confidence and different cultural values regarding discussion (Bennett-Moore, *et al.,* 2003: 86). Students were also found to perceive texts as authoritative (including where tutors were authors) impacting negatively on their positioning, expression and critique in their reading and writing. Related to this were misunderstandings in assessment and related academic conventions (such as what denotes plagiarism and critical argumentation) where some students failed to answer set questions or adhere to instructions provided.

Unlike the two previous studies, Fakunle *et al.* (2016) researched the experience of Chinese master's students studying in Scotland, interviewing six students in relation to their perspectives of how they developed criticality during their one-year study. While interviewing such a small sample of students and for only 30 minutes, there are limitations to the strength of Fakunle *et al.*'s findings, especially as they aimed to seek a "deeper understanding" which is arguably challenging in a half-hour discussion or from three hours of recorded interviews. Relating to students' views on what facilitates their critical thinking, Fakunle *et al.*'s key findings included: tutors' help, class discussion, writing assignments and interaction in social groups. Specifically, the researchers found that feedback acted as a "trigger event" for students' criticality development, where the students' first assessment "feedback was a pivotal source of awareness and motivation to develop critical thinking" (Fakunle, *et al.*, 2016: 33), like the "grade shock" Halx and Reybold (2017) found that triggered undergraduates' critical thinking. The participants explained that they began to develop a better understanding of critical thinking over three to four months having initially started their master's degree from a position viewing it as a negative concept associated with critique, as Durkin (2008) and others found, with some having first encountered the term critical thinking in their programme handbook (Fakunle, *et al.,* 2016). One of Fakunle, *et al.*'s (2016: 33) participant's noted a sense of learning shock in terms of their new learning context having come direct from China and unexpectant of additional academic requirements to their home context, for example:

> They [tutors] just say critical, critical, critical! What do they mean?

Most significant are their findings related to social interaction as clearly supporting students' critical thinking, confirming the findings of Blakey (2011), Johnston *et al.* (2011), Wilson and Howitt (2016) amongst others. While new to the students and anxiety-inducing, "the context of class discussions helped the participants to articulate their own critical perspective of valid or superfluous viewpoints expressed by their peers" (Fakunle, *et al.*, 2016: 34).

The research literature discussed herein has illuminated the complexity of criticality development in HE as an embodied, affective, contextual and complex process that goes well beyond notions of critical thinking as a simple, linear process of skill development (Johnston, *et al.,* 2011; Danvers, 2016a; 2016b; Wilson & Howitt, 2016; Fakunle, *et al.*, 2016). The seminal finding seen in most studies discussed is the prevalence of the social element in peer and social interaction which is seen to support criticality development by a variety of means, including: class discussion, group work, tutor discussions, and social groups and events. Other notable themes aiding student criticality development from these papers include:

- Extra-academic experiences

- Modelling of critical thinking - explicitly and implicitly

- Epistemological development and positioning, and

- Reading, writing and research activities

The findings discussed here show generally low levels of criticality development amongst both undergraduates and postgraduates with some exceptions, and largely demonstrate that advanced development within each of Barnett's three domains is also limited. There is, then, arguably a need for additional research to further understand students' own perspectives on how they develop criticality in their master's study, in which of Barnett's domains they develop and to what level does this development occurs.

2.9 Summary

This chapter has provided an in-depth critical review of the conceptual, theoretical and empirical literature surrounding critical thinking in higher education, establishing the underpinning conceptual framework provided by Barnett whilst contextualising this (and the research itself) within the extensive literature spanning this complex and contested topic. In outlining and discussing critical thinking conceptions this review disentangled the key debates and contestations highlighting the lack of consensus across the literature in relation to this core and defining concept of HE then problematised contemporary developments in

the sector affecting critical thinking, before reviewing its place within UK master's study and relevant research into students' development of criticality.

Progressing from examining philosophical perspectives of critical thinking as a technical skill in argumentation emanating from the Critical Thinking Movement (CTM), the broader skills-plus-dispositions views that see critical thinking as requiring a disposition in addition to skills were also scrutinised. In doing so a seminal dispute regarding critical thinking as being generic or subject-specific in its development and practice was addressed and intentionally side-stepped due to its myopic concern which could stymie the focus and progression of my research given its narrow, constricted conception. However, contributions from philosophy and psychology were noted in considering how critical thinking stems from a tradition of logic, reason and argumentation which can be supported through ascribing to intellectual rules and/or normative standards (Paul & Elder, 2006; Ennis, 2015), and requiring both skills and dispositions. Literature from psychology illuminated views of critical thinking as equating to how students conceive of and develop knowledge (Perry, 1970; Baxter Magolda, 1992), whilst suggesting that critical thinking is learned and progressively developed through staged levels. In moving closer to the adopted conception, the review then discussed positions maintaining critical thinking as a social practice considering it more broadly in a socio-political view that emphasises action and societal transformation. Here critical comparisons were made between the overlapping positions of criticality and critical pedagogy with both positions maintaining a socio-political view of critical thinking extending beyond the scope and focus of the previous conceptions with their holistic, active and moral focus that strive toward ends of social justice, and view criticality as socially constructed and enacted.

Following this advancement through the critical thinking literature, the central theoretical underpinning of my research was further scrutinised in Barnett's (1997) critical being, which I contend is the most convincing, holistic and multi-dimensional view of criticality which fits with my own experiences of the possibility HE holds in this regard, and its broader potential societal purpose. Barnett's thesis of critical thinking as critical being was shown to advance from previous positions centred on epistemology to one which presents an ontological view of criticality considering the individual in relation to knowledge, the self and their world, with radical, transformative potential. Bailin *et al.*'s (1999a) intellectual resources notion of critical thinking was then considered as a complimentary conception to support this research, suggesting students require a suite of resources in order to develop as critical thinkers, a notion supported by findings of the criticality project (Mitchell, *et al.*,

2004; Johnston, *et al.*, 2011). However, while this conceptualisation is important it is not enough for this research, hence its use in conjunction with critical being.

Having established the theoretical position of this thesis and the progression to this stance from the evolving critical thinking literature, the position of criticality in HE was then discussed considering its place within a sector in the grip of neoliberalism which is driving certain recent developments. It was argued that developments around marketisation and managerialism are limiting the conception of critical thinking as instrumental in supporting a skills and employability agenda, making the realisation of a radical concept of criticality particularly challenging. Internationalisation as a possible means to potentially re-dress some of the retrograde trends within the academy discussed herein and support criticality development. Building from trends of massification and internationalisation, the following section moved to focus on a sustained debate surrounding critical thinking and culture, specifically the critical thinking related challenges of Asian students in the UK. This review dispelled notions that critical thinking was a uniquely western conception incompatible with Asian students due to intellectual traditions and thinking styles. Whilst differences in Eastern societies around sociopolitical context, philosophical and educational tradition were identified, the challenges of critical thinking Asian students face were found to relate to language, context and pedagogical divergences – not culture.

Sharpening the focus, discussion moved to criticality in the curriculum specifically in master's level learning and teaching and how critical thinking is considered within this. This discussion helped contextualise many of the challenges students face in adapting to and conforming with the conventions and practices of academia, specifically how these appear in processes of critical thinking and writing presenting difficulty for various diverse student cohorts, such as international students. Again, this suggested the difficulties students face in this regard are external to them, relating to the context, custom and practices of HE and not as a deficit within students themselves.

While universities *say* they develop critical thinking in students in their prospectuses, websites, graduate attributes, learning and teaching strategies and assignment criteria, it is important to question how this actually occurs. How do students develop criticality and in what ways and, if they do, to what extent do they develop, like that of critical being or to more technical, instrumental conceptions advocated by CTM proponents?

In moving from theoretical to empirical literature to attempt begin to answer this question, research seeking to measure critical thinking development quantitatively was noted and its limitations highlighted for the purposes and focus of my research. Specifically, qualitative

research of undergraduates and postgraduates' experiences of critical thinking and the factors influencing their development were examined with the key themes supporting such learning outlined, and gaps within the research identified. An apparent gap exists in research adopting a Barnettian conception in investigating the specific experiences of master's students employing both quantitative and qualitative methods to evaluate students' perceived level of development and explore their embodied experiences of criticality.

Chapter Three – Methodology

3.1 Introduction

As observed in the previous chapter, there is "little empirical research on the key question of what is actually happening in terms of criticality development across the higher education curriculum" (Johnston, *et al.*, 2011: 67). This scarcity of research is more conspicuous amongst master's students, with less attention having been paid towards them in primary research related to criticality development than to undergraduates, more so for international postgraduates and their experiences of study in the UK (Fakunle, *et al.,* 2016). This research aims to address this gap through gathering primary data from student questionnaires and interviews, and via interviews with academic staff teaching master's students.

In this chapter, the research design and methods employed in this research are discussed while being framed within the theoretical and methodological literature relevant to the study. The methods employed for the collection of primary data are explained and justified relating to their selection in addressing the research aim and attempting to answer the research questions about the development of criticality amongst master's students. Prior to discussing the research approach, design, methodology employed in the research and the primary data collection, a short discussion surrounding the research paradigm which informs, guides and underpins the project is presented to ground and contextualise the practical discussion of the design and methods applied that follows.

3.2 Research aim

As mentioned at the thesis outset, my rationale for this research was guided by own experiences teaching and observing the evident difficulty amongst master's students in developing criticality. This observation was compounded by face-to-face discussions with students during and after class about their understanding and limited application of criticality to theory and literature generally, while struggling to construct their own forms of argumentation in assignments. Moreover, my previous research (Graham, 2015), and that of Johnston, *et al.,* (2011), highlighted limited development of UK home students' criticality resulting from their degree study.

As the literature review illustrated, there are few empirical studies investigating the experiences and development of criticality amongst postgraduates (e.g. Bennett Moore, *et al.*, 2003; Hammersley-Fletcher & Hanley, 2016; Fakunle, *et al.,* 2016). The central research question seeks to address the gaps in the research literature by asking:

How is criticality conceptualised, developed and applied by students in master's study?

This is then deconstructed and addressed in the following research questions:

1) How is critical thinking conceptualised among master's students?
2) What learning activities promote critical thinking development?
3) What approaches do staff use to foster critical thinking development?
4) To what extent do students develop and apply criticality?

As suggested by Mason (2018), Appendix 2 outlines these research questions, mapping them against the methods employed within the research design and indicating the expected data to be yielded from each method towards answering the overarching research question above. As stated in Chapter 1, while general in their wording, the research questions in terms of the conclusions they may yield are limited to the experiences and accounts of the master's students who make up both the survey and interview samples, as well as both their areas of study and institutions they attend. However, while limited in generalisability the results of the study are likely to present implications for practice which may be more general in nature related to critical thinking development and pedagogic practice within the postgraduate context. Such implications for practice are discussed within Chapter 6 and outlined in the concluding chapter, Chapter 7.

Research questions are often viewed as the 'backbone' of research design, in preference to hypotheses (specifically in qualitative research), aligning with ontological and epistemological considerations whilst connecting *what* is intended to be investigated with *how* the research is to be conducted (Mason, 2018). As Bryman (2004) suggests, research questions should be clear, researchable, link to existing theory and research, connect with one another, neither be too narrow or broad and allow the possibility to make a contribution to knowledge in that area. I have attempted to achieve what both Mason and Bryman suggest in creating my research questions where they focus upon my research, its subject and specifying how the research will be carried out and what data I required to be gathered, while helping delineate and focus the research itself.

3.3 Research approach and paradigms

The theoretical framework underpinning the research follows Barnett's (1997: 8) critical being. In his thesis, Barnett positions himself and his conception of criticality firmly within a critical theory paradigm, informed by the work of Habermas, which he claims has "emancipatory potential". Barnett (1997: 142) illustrates his naturalistic, interpretivist

ontology in his repeated advocacy of critique, transformation and the "ontological reconstruction" of the individual and their own world (or reality) in standing out of societal structures and "our immediate critical frameworks" (141), which critical being holds. In describing the "critical form of life" he advocates, Barnett (1997: 5) makes explicit his epistemological position where "knowledge is not given: it is socially sustained and invested with interests and backed by power", illustrating his clear constructivist, transactional epistemology buttressed within a critical theory paradigm that sets out to "critique the world" (*ibid*).

Thomas Kuhn coined the term "paradigm", which he related to "the entire constellation of beliefs, values, techniques shared by members of a given scientific community" (1970: 75), which could equate to a discipline or field. Usher claims paradigms are "frameworks that function as maps or guides for scientific communities, determining important problems or issues for its members to address and defining acceptable theories or explanations, methods and techniques to solve defined problems" (1996: 15). Cooper (2001) proposes paradigms more normatively relate to theoretical frameworks or sociological perspectives which can align, fit and guide our assumptions of the social world which we seek to research.

Following Kuhn's work (1970), there was, as Guba and Lincoln (1994) term it, a paradigm shift away from positivist, quantitative approaches to post-positivist approaches to social research with the growth of research in the social sciences and the subsequent rise of interpretivism. This noted shift in perspectives or paradigms from positivist conceptions of a single discernible, measurable and objective reality was influenced by this "interpretivist turn" (Hammersley, 2012) and the view that there is no one singular reality, but that reality is individually and socially constructed and best understood through interpreting others' experiences and accounts of their reality. This research follows the interpretivist turn in seeking to explore and understand students' experiences of criticality development.

3.4 Research Philosophy

Discussing these competing paradigms, Guba and Lincoln (1994: 105) define a paradigm, which they contend questions of methods should always follow, as "the basic belief system or worldview that guides the investigator, not only in choices of method but in ontologically and epistemologically fundamental ways". In a similar vein, Patton (1990) views a paradigm as a general perspective or worldview, a means to deconstruct the complexity of the real world. Guba and Lincoln (2001) and Denzin and Lincoln (2001) both view paradigms as pertaining to three underpinning assumptions relative to: ontology, epistemology and

methodology. Ontology, epistemology and methodology can be viewed in a "logical primacy" with each informing and guiding the other (Guba & Lincoln, 1994: 109).

3.4.1 Ontology

Within research, the ontological question pertains to the nature and form of reality, if we may be able to comprehend reality, and, if so, what are we likely to be able to know and understand (Guba & Lincoln, 1994). In this way, Hammersley considers ontology to consist of "a set of philosophical assumptions about the phenomena being studied" (2012: 2). In adopting a critical-constructivist paradigm guided by Barnett's critical being which itself is informed by critical theory, my research commits to an ontology that views reality as partially comprehendible being influenced by social, political, cultural and economic values and factors which are reified by structural forces (Guba & Lincoln, 1994). Further, this ontological view sees such reality as individually constructed where each individual "has a separate and unique reality" (Darlaston-Jones, 2007:21) rather than sharing one universal, static reality. This ontological approach is then naturalistic, rather than rationalistic in the positivist tradition, seeking to understand how individuals construct their reality and the societal impacts upon this and their lived experiences (Guba & Lincoln, 1985).

Thus, in order to apprehend such realities and individual experiences this research attempts to capture and understand each individual's reality and the impact social constructs may have when intersecting with one's characteristics, beliefs and background in relation to their motivation for and experience of master's study with specific consideration of experiences in developing criticality (Darlaston-Jones, 2007). This includes considerations to the role of culture, gender and context, and intellectual resources including language and academic literacies upon individuals' learning experiences (Bailin, *et al.,* 1999a; Shaheen, 2016).

3.4.2 Epistemology

In line with the paradigm and ontological vocation of the research, the epistemological perspective pertains to the nature of knowledge and how this can be interpreted and comprehended, if at all (Hammersley, 2012). In this regard the research subscribes to an interpretivist epistemology that is subjective and transactional, seeing knowledge and what can be known as contingent as the "investigator and the investigated object are assumed to be interactively linked" (Guba & Lincoln, 1994: 110). As such, it is acknowledged that my role as the researcher is subjective and interactive in generating and collecting data as well as in my analysis and reporting. Johnson and Onwuegbuzie (2004) acknowledge that the researcher and researched cannot be detached as the researcher is the only source of any

reported reality and knowledge; such beliefs view multiple, subjective realities to exist where inquiry cannot be objective as in the positivist/post-positivist paradigms. Such an interpretivist perspective holds that the researcher aims to gain an understanding rather than an explanation of social realities so that some causal account of this may be reached (Bryman, 2004). This research then follows Barnett's (1997) thesis in using a means of critical discourse that places the student as a person at the centre to consider how both internal and external forces impact upon them and their study experiences relating to criticality. It is therefore subjective in epistemology, viewing reality as subjectively and socially constructed by individuals where context, such as institutions, and political, cultural, historical and social values all shape and impact upon our realities, what we consider and value as knowledge, and the knowledge we construct (Darlaston-Jones, 2007).
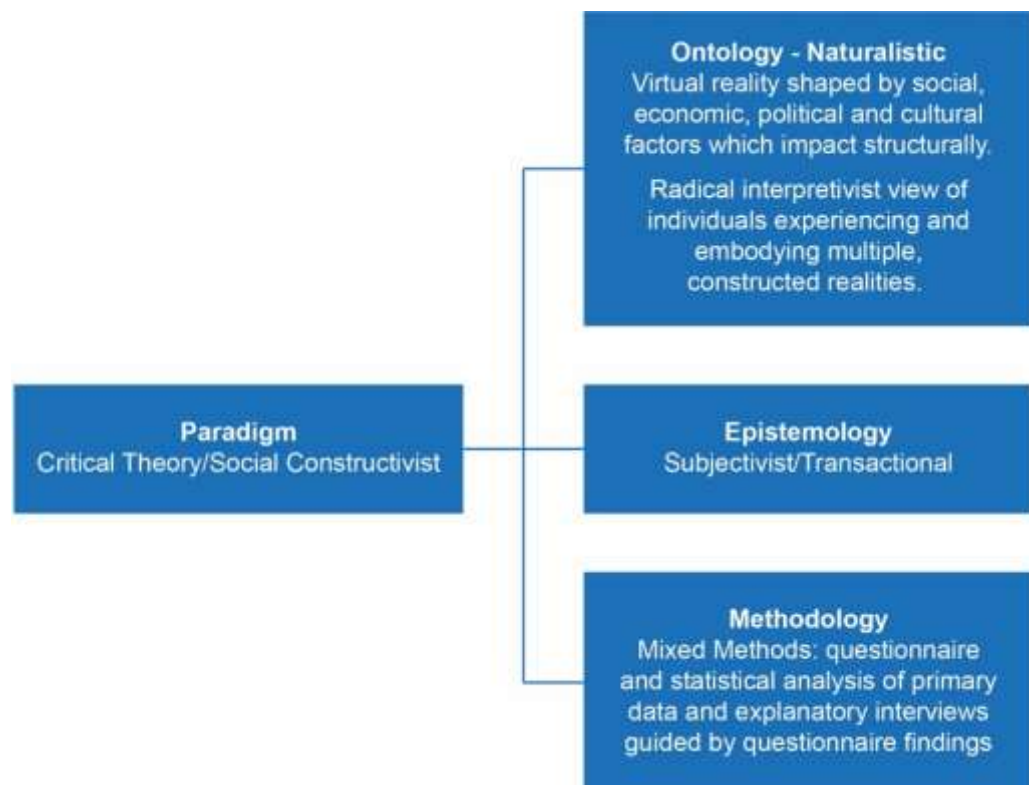
Figure 3-1 – Research Paradigm & Positioning

3.4.3 Methodology

Key to considerations concerning paradigms are qualitative and quantitative approaches to research which align and divide the positivist and interpretivist paradigms (Lincoln & Guba, 2000). Previous academic debate contested the value and efficacy of qualitative research when philosophies and approaches clashed in what was termed the "paradigm wars" of the 1980's and the "interpretivist turn" (Gage, 1989). Resultantly, qualitative research it may be

argued is now seen as equally valid and rigorous as its positivist, quantitative antecedent (Guba & Lincoln, 1994; Hammersley, 2012).

There has since been a blurring of distinction between qualitative and quantitative approaches in combining both methods of research, where it could be argued that mixing methods is now accepted as a legitimate, and much adopted, methodological strategy within the academic community (Johnson & Onwuegbuzie, 2004; Creswell & Clark, 2018). Niglas (2007) suggests that a mixed-methods methodology is best viewed as a qualitative-quantitative continuum where combining multiple, complementary methods can help to better answer research questions and provide robust data and evidence through uniting macro and micro level perspectives on the issue under study. As Creswell and Clark (2018: 8) suggest, mixed methods approaches are best utilised to address "different types of research problems (or questions)" and where a need to explain initial results exists. This is the case here where the quantitative survey provides a means to gather views and data from a larger population of students, while the qualitative interviews allow for results from the survey to be explained relating to individual students' experiences. This adopted approach, where qualitative and quantitative methods were functioning sequentially (Sechrest & Sidani, 1995), allowed a triangulation of data relating to students' criticality development via surveys and student interviews, complemented by interviews with staff teaching the same students.

Thus, mixed methods are likely to provide a fuller understanding of student criticality development than using a single method or approach, and as Creswell and Clark (2018: 23) claim "a combination of both forms of data provides the most complete analysis of complex problems". This explanatory sequential design was also adopted by Parks (2020) in her research of student criticality.

Using the notation system for mixed-methods designs initially developed by Morse (1991 c.f. Creswell & Clark, 2018), the research design notates as 'quan → QUAL' depicting the explanatory sequential design used where quantitative method (survey) was conducted first followed by qualitative methods, and where the qualitative method (interviews) are given "greater emphasis in addressing the study's purpose" (Creswell & Clark, 2018: 63). It is worth justifying the use of a quantitative method here as it ostensibly clashes with the critical-constructivist paradigm. Creswell and Clark (2018: 42) provide a supporting rationale and explanation for such a design:

If a study begins with a survey, the researcher may be implicitly using a postpositivist worldview to inform the study, beginning with specific variables and empirical measures framed within an a priori theory that is being tested in the survey project. Then, if the researcher moves to qualitative focus groups in the second phase to follow up on and explain the survey results, it is possible that the worldview shifts to more of a constructivist perspective.

Applicable to my survey, key variables would be students' critical thinking conception, background and resources assessing Bailin *et al.*'s (1999a) intellectual resources model whilst also testing Sosu (2013) and Stupple *et al.*'s (2017) hypotheses that critical thinking development is determined by the factors they aim to respectively measure; dispositions, attitudes and beliefs. The main focus of the project lies in evaluating Barnett's (1997) thesis against the accounts and experiences of students in HE following on from the survey findings, thus reverting to a critical-constructivist paradigm.

3.5 Research Design

Bryman (2004) describes research design as a framework which encapsulates the collection and analysis of data which is arrived at following the negotiation and decisions made around key factors relating to the topic, the approach to it and to the collection of data relevant to the research topic or problem, as discussed in the previous sections. The research design combines the various elements making up the research process into a coherent structure which then guides the collection of primary data and its analysis.

3.5.1 Justification of methods selected

I had initially planned an alternative research design which was solely qualitative and longitudinal, incorporating recurring interviews and participant observation. This design was not realised as it was largely unachievable due to quickly identified issues relating to access to and recruitment of student participants as well as likely attrition of students during the research process. Additionally, my own availability and that of student participants due to time required and the commitments of myself (working full-time at a distance from participants' institutions) and students (studying an intensive one-year programme full-time or studying part-time whilst also working). While the longitudinal design was unfeasible, so too was participant observation as a research method. Participant observation as undertaken by Thunithett (2011), and Danvers (2016b) focussed upon critical thinking in classroom settings and how its development is encouraged and facilitated by staff. This was not practicable given work commitments, travel and limited availability of classes scheduled

outside working hours, as well as the additional issue and complexities of working as a tutor on related courses within one of the HEIs sampled. As a result, the mixed-methods, explanatory sequential design previously discussed was established and implemented, incorporating questionnaires and interviews.
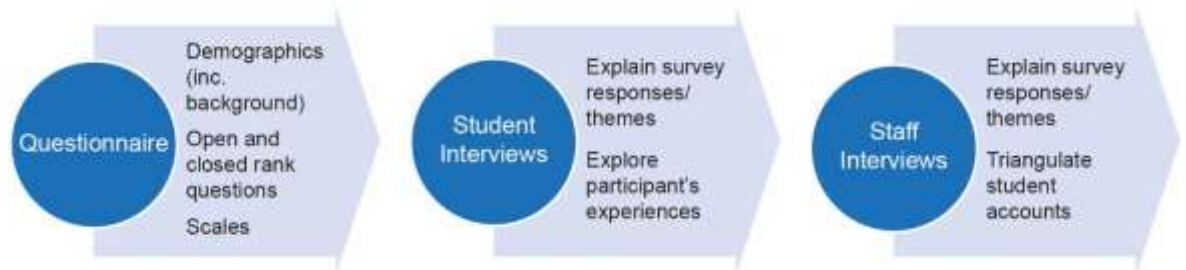
Figure 3-2 – Research Design and Methods

3.5.2 Sampling

The research followed a purposive approach to sampling where "information-rich cases" were selected for in-depth study (Patton, 1990). This approach can be seen to adhere to two sampling strategies, maximum variation sampling and opportunistic, convenience sampling (Patton, 1990). In identifying a range of disciplines and degree programmes for the sample, specifically selecting master's programmes (n11) across the College of Social Sciences in the lead institution this conformed to the maximum variation sampling strategy intended to capture and describe "the central themes or principal outcomes that cut across a great deal of participant or program variation" (Patton, 1990: 172). This sampling strategy in allowing for diversity and variation, provides "high-quality, detailed descriptions of each case, which are useful for documenting uniqueness, and important shared patterns that cut across cases and derive their significance from having emerged out of heterogeneity" (Patton, 1990: 172).

As this explanatory sequential design was weighted in favour of the qualitative method, the use of this strategy allowed for a wide variation amongst the sample (age, gender, race, nationality, previous and current degree study) in relation to criticality development, or the "dimension of interest" (Patton, 1990). Specifically in relation to the choice of sampling students from the two additional universities, this followed a convenience sampling strategy where the "sample is one simply available to the researcher by virtue of its accessibility" (Bryman, 2004: 100), with access permissible due to my then current work at the second institution and ability (through colleagues, and the Dean of School's approval) to access master's students. The sampling of students at the third institution was opportunistic (Patton, 1990). I was able to exploit an unexpected opportunity presented by a colleague at a conference to sample students within her institution, bringing the programmes sampled to

thirteen (n13). Bell (1999) suggests such convenience and opportunistic sampling are generally acceptable due to the limitations of such time limited research projects and when the reasons for this and the sample make-up is explicitly outlined.

Selecting master's students

The research set out to investigate the development of criticality at postgraduate level having identified a gap in the literature and empirical research. As noted previously, existing research in this area centres on undergraduate students, indicating a need to investigate postgraduate study and masters' students specifically, especially with the massification of postgraduate study in the UK and through the vast recruitment of fee-paying international students, whom, as discussed previously, can face significant criticality related challenges. I believe it is important to understand the experiences of students at master's level given my first-hand experiences of their difficulties developing criticality at this advanced and burgeoning level of study, and to also understand and share the experiences and trials such students, particularly international students face studying in the UK.

Moreover, like Fakunle *et al.*'s (2016) participants, many of the students sampled within education and specifically those undertaking the Educational Studies degree could be labelled "field changers" having changed from the subject of their undergraduate learning which potentially presents them with greater challenge in establishing a base knowledge, possibly impacting their criticality development during their master's study. The research aims to identify such potential influencing factors through analysis and cross-comparison between students, their backgrounds, demographics and previous and current study.

Choosing programmes and universities

The research originally sampled master's students within the School of Education at the lead institution due to the convenience, ease of access and my familiarity with the largest master's degree programme which has a diverse cohort of students – home, EU and international – who were perceived to struggle to demonstrate and develop criticality. However, the sample was extended to include students in another School (Social and Political Sciences) and those from two other universities to broaden the sample and the scope of subjects and degree programmes to allow cross-comparison between disciplines.

Following discussions at the second university, where I then worked, a Programme Leader for MEd Early Years agreed her students could be accessed and sampled for this research. The sample was then further extended to include a third institution and subject, students studying a master's in midwifery, providing an additional opportunity for comparison across

an increasingly diverse sample. Whilst not cognate with the original sample of students on master's courses in education and social sciences, comparison between the three sub-samples from different universities, from differing subjects and programmes could highlight variances between these discipline areas in students' level and development of criticality. The additional sub-samples add a distinct flavour to the overall sample by including master's students in early education and healthcare, moving beyond purely education and social science programmes and permitting analysis between the professional and academic programmes sampled. Additionally, including these courses allows for analysis and comparison between vocational and non-vocational (or professionally oriented vs academic) programmes, investigating findings by both Johnston *et al.* (2011) and Danvers (2016b).

Table 3-1 – Programmes Sampled for Questionnaire and Number of Students Participating

Programme	No. Completing Survey
MSc/MEd Educational Studies	131 students
MSc Adult Education, Community Development and Youth Work	27 students
IntM International Masters in Adult Education for Social Change (IMAESC)	9 students
MSc Public and Urban Policy	31 students
MSc/MRes Global Security	25 students
MSc Education, Public Policy and Equity	14 students
MSc Political Communication	16 students
MEd Early Years (2nd institution)	16 students
MM Midwifery (3rd Institution)	16 students
MSc Teaching Adults	7 students
MSc Museum Education	<5 students
MEd/MSc TESOL	<5 students
MEd Children's Literature	<5 students

Having three institutions included in data collection allows for comparison between the institutions' practices, and the different disciplines. The home university for the research is an ancient Scottish university, while the additional two are both post-1992 Scottish universities granted university status following the Further and Higher Education Act 1992 and otherwise known as new or modern universities. The home institution is an example of a research-intensive university with a strong international presence and reputation, and very large numbers of international students. The two post-92 institutions contrastingly are examples of teaching-led universities which while they are similarly internationally driven and ambitious with growing numbers of international students have traditionally engaged in widening access agendas educating home, UK students primarily. As a result, having students in the sample representing the three institutions will allow for comparison between these universities and the experiences of their students. The research aims to test assumptions made in response to the "massification" of higher education (Street, 2004) amid accusations

of its "dumbing-down" through universities' challenge in meeting the needs of an increasingly diverse student body and the resource implications of this (Haggis, 2006).

3.6 Research methods

The time taken to gather the necessary data was protracted due to full-time work commitments, the complexity of accessing (and recruiting) multiple programmes and the layers of approval processes needed to gain access to student respondents – specifically in regard to phase one administering the questionnaire. Relationships with existing contacts and staff members allowed a route to begin negotiation and ease access to classes to administer the questionnaire.

3.6.1 Questionnaire

Questionnaires were selected as a method to gather a general overview of how the cohort – in a much larger sample than it would be possible to interview – conceptualised critical thinking, perceived their level of critical thinking development, their critical thinking disposition and the value they associated with critical thinking in master's study. In-depth, semi-structured interviews then offered the ability to dig-down into the indicative findings from the survey and expand upon the key themes which arose from this general data, adding context and depth to these. As both Bell (1999) and Procter (2001) suggest, questionnaires are valued by social researchers for their ability to provide data about attributes, beliefs, values, intended behaviour and personal experiences. Having elected to incorporate questionnaires within the research design, initial thoughts were to use an established critical thinking questionnaire. However, as outlined in the previous chapter, the majority of these are cognitively based, aiming to measure participants' skills in critical thinking over their dispositions, attitudes and beliefs relating to critical thinking. These limitations of popular critical thinking instruments alongside financial and time restraints (Carrington, *et al.*, 2011) led to the development of a questionnaire for the purposes of this study seeking to determine students' previous learning experiences and their dispositions and attitudes to critical thought.

To achieve this the survey incorporated two validated instruments developed within the UK HE context which employed Likert scales – Sosu's (2013) *Critical Thinking Disposition Scale* (CTDS) and Stupple *et al.*'s (2017) *Critical Thinking Toolkit* (CriTT) – in addition to questions I devised to gain a rough understanding of students' awareness and perceived ability to meet the expectations of master's study regards criticality.

To being the questionnaire, demographic data including language were gathered as both Cheung *et al.* (2001) and Arslan *et al.* (2016) suggest background and gender may impact upon students' critical thinking levels. Moreover, as noted previously, Chirgwin and Huijser (2015) highlight the privileged position language has in HE, and the "double challenge" learning in a second language and developing criticality presents to non-native speakers (Floyd, 2011). Respondents were then asked about their previous undergraduate study as Lillis and Scott (2007) point out that many students are now "boundary crossing" in changing their field of study for their master's, whom I refer to as "field changers". Students were additionally asked the reason for their master's study because as Moeti *et al.* (2016) found, intrinsic motivation and subject interest also impact student's critical development. Following this contextual background information, the survey proper started with the concept of "graduateness" (Barnett, 1997: 81), prompting students to recall their first degree and their development of graduate-level attributes, namely critical thinking, which Nicol (2010) suggests is an overarching graduate attribute. Students were then asked to offer their own conceptualisation of critical thinking to gain a comprehension of how students understood this core concept. As various research has found, students' understandings of critical thinking vary considerably with many showing no or very limited comprehension (Huang, 2008; Philips & Bond, 2014; Manalo, *et al.*, 2015) with students therefore not effectively engaging in critical thinking and limiting their development, while others have been found to express broad, deep understandings (Zhang, 2017; Phillips & Bond, 2004).

Furthermore, given evidence from literature showing difficulty some students can have in adapting to a new mode of learning and teaching (Zhang, 2020; Durkin, 2011; Bennett Moore, *et al.*, 2003), the survey proceeded to ask students about the previous modes of learning and teaching they experienced in undergraduate study to gain further insight into how this could impact critical thinking development. Due to findings such as Fakunle *et al.*'s (2016) that for some international students their first encounter with critical thinking was in master's study, and that earlier encounters lead to greater criticality development in undergraduates (Graham, 2015), students were asked about their previous encounter with critical thinking. Prior to the scale instruments, students were additionally asked about their:

- understanding and perceived level of critical thinking,
- previous experiences of university learning and encounters with critical thinking, and
- views on the contexts and activities which aided their critical thinking.

The survey then moved on to completion of the two scales. Using 5-point Likert scales, Sosu's (2013) CTDS was developed in response to the scarcity of instruments for measuring critical thinking dispositions (Huber & Kuncel, 2016). Informed by a taxonomy of critical thinking dispositions, Sosu intended to create a reliable measure of the success of programmes of study "in nurturing critical thinking attitudes in participants" (2013: 109). In Barnettian style, Sosu (2013) questions the authenticity of claims that without suitable dispositional measures how it can be asserted that critical thinking dispositions lead to improvements within various domains of lived experience. The CTDS consists of 11 items which measure the dispositions of "critical openness" and "reflective scepticism" with the two factors shown as valid and reliable from testing with different groups where both undergraduate and postgraduate cohorts "understood the items in the same way" while the instrument could "discriminate between the groups in line with general expectations" (Sosu, 2013: 116). Sosu states that "critical openness" "reflects the tendency to be actively open to new ideas, critical in evaluating these ideas and modifying ones in light of convincing evidence", while "reflective scepticism" "conveys the tendency to learn from one's past experiences and be questioning of evidence" (2013: 115). These two factors encapsulate the key views within critical thinking definitions and the dispositional taxonomies as the previously literature reviewed demonstrates (APA, 1990; Fasko, 2003; Davies, 2015).

The other validated instrument, the *Critical Thinking Toolkit* or CriTT, was selected to complement the CTDS through intending to measure students' attitudes toward and beliefs about critical thinking (Stupple, *et al.*, 2017). The use of the CriTT also reflects the research itself in moving from a cognitive to a sociological focus concerned with respondents' beliefs and attitudes toward critical thinking. Stupple *et al.*'s (2017) development of the CriTT was informed by the findings of Duro *et al.* (2013) that a range of attitudes and beliefs amongst students regarding critical thinking can potentially impact positively or negatively on students' ability to demonstrate critical thinking. Piloted with 33 undergraduate psychology students, the CriTT consists of 27 items using 10-point Likert scales and three self-explanatory factors – "confidence in critical thinking", "valuing critical thinking" and "misconceptions" – which they argue connect with the theoretical and applied elements of critical thinking. Stupple *et al.* (2017: 97) state that their analyses "demonstrate that the CriTT is a robust, valid and reliable measure of student attitudes and beliefs about critical thinking". The authors suggest that future research further tests the scale and factor structure "with a wider population of students from a diverse set of UK and international institutions to assess whether the findings associated with the scale are generalisable beyond the present university or discipline" (Stupple, *et al.*, 2017: 97) – which this research is attempting in

employing this instrument with a diverse set of students studying at master's level across various disciplines and universities.

Having completed the two scales, students were then asked two final self-reporting questions on the importance they do, or will, assign to critical thinking in the workplace, professionally and in their everyday, personal life. The questionnaire developed can be seen in Appendix 3 and an explanation of the devised themes and questions chosen can be seen in Appendix 4. Exposing students to a survey focussing explicitly on critical thinking may potentially benefit them, specifically those to whom the term and/or concept may be less familiar. As Stupple *et al.* (2017: 98) suggest:

> […] 'critical thinking' is implicit in broader constructs of academic thinking and self-concept, but using the word 'critical' (and elaborating on it, clarifying it, and presenting examples) can help students to focus on a key aspect of academic thought in a more deliberative, intentional and conscious way.

Likert-scales

As both scales – CTDS and CriTT – require to be validated with the present sample, my adaptation of the CriTT Likert scale from 10-point to five-point for consistency was justifiable. While finer, 10-point scales, as Dawes found, do mean respondents use more of the scale points in their responses they also produce "slightly lower mean scores, relative to the upper limit of the scale" (2008: 75). So, while a coarse scale (e.g. 5-point) provides fewer options for positive or negative sentiment, leading to negative skew or kurtosis, finer scales (e.g. 10-point) allow for more options but also greater cognitive load and completion time for respondents. Dawes (2008) found 5-, 7- or 10-point scales as being suitable for analytical tools such as confirmatory factor analysis with each producing data exhibiting no significant variances around the mean. Thus, while rescaling instruments previously utilised for data collection with a comparable sample over a set time either from 5- to 10-point, or vice-versa, could have possible implications for comparability over time, rescaling an instrument from a 10-point to 5-point scale for single use with a different sample should not be problematic for the validity or reliability of the scale, which requires validation through confirmatory factor analysis regardless (Dawes, 2008). In designing the questionnaire and integrating the two scales it was then decided to adjust and harmonise these for consistency throughout the survey.

Additionally, utilising a 5-point response-format, as Aguirre (2010) notes, can reduce the cognitive challenge upon respondents making response choices more manageable without

the precision required to accurately judge between points on a 10-point response format. Establishing the options available for answers to each Likert response format not only created uniformity throughout the questionnaire but also helped to reduce its overall length and help to avoid risking "respondent fatigue" (Bryman, 2004), especially amongst NNES in the sample. Further adjustments to Stupple *et al.*'s (2017) instrument were made where a psychology focussed question (Q23) was amended, following the advice of Bryman (2004) in avoiding technical terms where possible, where "analogies" was changed to "similarities": *"I can identify similarities between theories"*. As suggested by Stupple *et al.* (2017), question four was also adapted to suit the context of the research from *"Critically thinking is particularly important in psychology"* to *"Critically thinking is particularly important in master's study"*. Meanwhile, items from the CTDS were re-ordered and mixed randomly as per Sosu's (2013) suggestion in advising against the clustering of factors (reflective scepticism and critical openness) as they may negatively affect Cronbach Alpha results in analysis.

Piloting

The finalised questionnaire was piloted with academic colleagues; the intention was to measure the time it took to complete the questionnaire, sense check its layout, format and instructions, and to seek feedback on the clarity of question wording and validity. The completion time was recorded between eight to ten minutes and some adjustments were then made to the surveys, such as providing further instructions for completion of the survey and some re-wording of questions to ensure clarity. Following an additional pilot exercise with a sub-cohort of the sample, additional amendments were made though these largely related to formatting and further details to include when briefing students on survey completion prior to distribution. This largely relatedly to the correct answering of ranking questions (Q6, Q14 & Q15).

Access and recruitment

Having considered alternative means to access and recruit students to participate in the research, an advantageous and efficient approach to recruit large numbers of students was more likely if the students were in a classroom setting and their attention captive. Programme Leaders for the selected master's programmes were contacted to request their permission to access and recruit students within their classes. Having gained the appropriate approval, this approach was very successful and allowed for both targeted recruitment of students and near one-hundred percent completion rates from each class sampled, also aided by electing to

utilise the survey in a hard-copy, paper format to be completed whilst the researcher was in the class.

Whilst this may have led to ethical concerns around students involuntarily participating or being pressured to complete the survey in class, students were explicitly advised by me, the researcher (and in the participant information section), that they did not have to undertake the survey, that it was entirely voluntary and they could withdraw at any time, and could address any questions or concerns to me (or supervisors, or stated ethics contact) by email or there and then. Conversely, rather than hindering or pressuring students' participation, my presence in class allowed students to ask questions of the research and survey instrument specifically prior to completing it (or not in some cases) and allowed students an opportunity to seek clarity over questions, their instructions and wording. Several students in classes did opt not to undertake the survey. In total, 293 students from 13 master's courses at three universities were surveyed. Appendix 5 provides a detailed overview of the large, diverse survey sample.

Students were offered an incentive to encourage their participation with the research and completion of the survey, replicating the actions of many researchers including Mitchell *et al.* (2004: 3). Students were offered the chance to win a £50 Amazon voucher by completing the survey and adding their email address to an open-text section in the questionnaire. Participants were informed that they did not need to add their email address should they not want to be entered into the prize draw which took place following the administration of all the surveys. Respondents were also recruited for interview participation in the same section of the questionnaire. This was the sole means of identifying respondents for interview before attempting to then recruit participants who had previously expressed their willingness to participate during survey administration.

Gathering data

As aforementioned, there was a genuine need for flexibility in collecting the data due to full-time, and part-time, work commitments and arranging to attend classes and gather data. This was compounded as the questionnaire was administered in the start of the academic session between September and November 2017. Prior to the distribution of the questionnaires for completion, a short briefing was given which provided a short overview of the doctoral research and rationale for this project and the questionnaire. In doing so, the importance of critical thinking development within higher education was detailed in establishing the relevance of the topic, research project and the survey to them as master's students. It was emphasised to students that their participation was voluntary and not associated in any way

with their degree study or grades, that there was no correct answer, and that the survey was not a test. Additionally, instructions on how to complete the survey correctly were provided (e.g. ensuring answer circles were filled and not crossed or ticked) as well as highlighting the incentive whilst highlighting the option to opt-in for interviews later.

3.6.2 Interviews

My choice of semi-structured interviews was guided by the data I hoped to gather in helping to answer the research questions posed. Holding with the ontological and epistemological positions of the research, interviews, while not generalisable to a larger population, do allow for a detailed exploration and analysis of themes and issues which emerge from the survey, which itself can be said to be more broadly representative though without the depth and inability to answer the "why" and "how" questions which qualitative data provides to addend the "what" that quantitative data affords. Mason (2018) discounts both structured and unstructured interviews as "misnomers" not consistent with qualitative methodology as the approach, justification and logic for structured interviews stems from survey methodology, while no interview can be totally devoid of structure. Mason (2018) also asserts that interviewing can be intensive, complex and hard work with a lot of planning and "thinking on your feet" with necessary "intellectual and social skills" required for successful interviews which allow for the "investigative dynamics that will help to yield the best possible data" (116). With my experience in interviewing and working extensively with students (and staff), I felt skilled enough, as Bell (1999) suggests, to understand and utilise such an approach to interviews. Interviews were chosen as most congruent with the ontological approach in valuing peoples' experiences, interpretations, perceptions and viewing these as "meaningful properties of the social reality" (Mason, 2018: 111), which I am seeking to explore. Moreover, interviews align with the identified epistemology in seeking to dialogue and learn from participants' experiences within the world, higher education and the development (and use of) criticality within these contexts.

Interview Schedule

Developing the interview schedule and its questions, like the survey, was an iterative process. This was informed partly by previously conducted interviews focussing on students' criticality development in undergraduate study (Graham, 2015), as well as questions devised by Duro *et al.* (2013) for their student focus groups exploring understandings of critical thinking in HE. The construction and design of the schedule was linked to the survey and research questions, addressing each progressively through the schedule, moving from students' conceptualisations of critical thinking to if, and how, students apply the criticality

they may have developed. For example, Danvers' (2016a) questions around understandings of critical thinking, how students are taught to be critical, students' views relating to how critical thinking related to their studies, their wider lives and careers were integrated into the schedule. The final student interview schedule can be seen in Appendix 6.

Additionally, interview schedules were tailored to incorporate specific questions relative to each institution and programme and aspects of interest to the research. For example, students at the home institution were read a statement from the graduate school in relation to the learning they would experience and asked for comment, while students at the secondary institutions were quoted sentences from their programme's webpage stating the intended learning and focus of the course (or being taught in this way) and asked for comment.

Participant Recruitment

As stated, participant recruitment for interviews was planned via voluntary opt-in of students when completing the questionnaire and as 293 completed the questionnaire it was expected that enough could be recruited for interview. However, converting students from stating an interest in follow-up interviews after survey completion to interviewees was challenging. Most students emailed with an interview invite failed to respond and those who did usually involved several corresponding emails to arrange suitable dates and times for both the student and researcher.

Another challenge faced was how to best target and approach respondents in order to avoid skewing the sample with those respondents who are confident and more highly developed critical thinkers self-selecting. This was an issue Wilson and Howitt (2016: 1169) also faced with participants "doubly self-selecting", as mine were for both survey and interview participation. A potential skewness in the sample was identified early on when most respondents reported in interviews to be confident and well-developed critical thinkers. In attempting to temper this, a further 43 students who opted in for interview from the survey, who better reflect the ages, sex and programmes, and level of (self-reported) critical thinking development across the sample, were approached for interview. Another strategy employed in parallel with this was consulting with a Chinese doctoral research colleague who offered to help me to recruit Chinese students (of which n121 were surveyed) by translating my interview invite email. This intended to ease Chinese student's concerns regarding their lack of knowledge of and confidence in critical thinking and in spoken English as being barriers for them in engaging in the interview. This intervention to translate the invite email was successful in recruiting more Chinese students who reflected the majority of students sampled, adding balance to the interview data. Following the survey in the first semester, 18

students from eight master's programmes were interviewed in semester two 2017/18. A profile of student interviewees can be seen in <u>Appendix 7</u>.

Data collection

Interviews were conducted with students to gain a qualitative insight into their experiences of master's study with particular reference to their conceptions and development of criticality. Interviews aimed to gather context relevant to each student and how their prior experiences, background and present circumstances impacted upon their studies, their development of criticality while studying, and their likelihood of exercising their criticality within and beyond academic contexts or settings. Interviews also prompted students to consider which methods of teaching or practices related to their own learning that were most conducive to developing criticality through an in-depth discussion about their master's study.

The questionnaire provided a baseline for measuring students' conception and (self-reported) levels of critical thinking, accessing and utilising the responses relating to these aspects from the survey provided context and personalisation to the interviews than would otherwise have been the case. Focussing on the respondents' self-reported development and the importance of critical thinking to them, as well as their definitions, allowed me to use these to probe specific issues, themes and questions as well as asking for explanation for any deviation and development in their understanding during the intervening period. Having participants' survey responses to hand in interviews allowed me to bring in some background from participants' responses to build rapport in interviews, whilst seeking explanations and more detail, e.g. questioning the influence of a student's previous degree. Moreover, this provided the ability to "drill-down" in interviews from where the survey left off; what does critical thinking mean, where have students encountered and developed it and how well developed is their critical thinking now – asking them *"would you change your survey score today?"*.

It was expected that interviews would require not more than one hour of students' time, however due to the rich dialogue and naturally developing conversation of the students' overall experience this was surpassed, with most averaging 90 minutes. All student interviews took place in the office of the researcher's first supervisor within the home institution and were recorded with a digital recorder before being transferred to an encrypted hard drive and saved using non-identifying pseudonyms prior to transcription.

Staff

Interviewing staff who worked with the interviewed students (their programme leaders) allowed for an exploration of their conceptualisations of criticality, how they felt their students could and should develop criticality, and how they expect students to demonstrate this during the course. It was anticipated, as highlighted in similar studies (Johnston, *et al.*, 2011; Bennett Moore, *et al.*, 2003, and Hammersley-Fletcher & Hanley, 2016), that a dichotomy may be realised between staff and students with regard to conceptions of criticality, how this should be or is developed, and if the conditions and means for such development are genuinely facilitated or hindered by the present pedagogy and curriculum. Four programme leaders from two of the universities surveyed and representing the Educational Studies, Political Communication, Education, Public Policy & Equity, and Midwifery programmes were interviewed at their place of work.

Staff were interviewed in the academic session 2018/19 following that in which students were surveyed and interviewed, meaning many had recently graduated, providing staff the opportunity to reflect on students' development throughout the course. In interviewing academic staff there was an interest in exploring their programme-specific observations and experiences of working with students as well as also discussing the observations and experiences of the students interviewed from their course. Many of the interview questions were adapted for suitability with staff, so as not to appear to be challenging them or their practice. Care was taken in the wording and how I approached the asking of questions to staff around their knowledge and perception of critical thinking, so as not to be seen to be putting staff on the spot. Additionally, schedules for each interview were contextualised with data from the survey relevant to the student respondents on their course, which also helped in approaching some questions with staff that could be seen as possibly challenging them by using the data to ask the questions.

3.7 Limitations

As noted throughout the chapter, there were limitations which impacted the research design and data collection, the overarching one being time. For example, limitations due to working full-time hindered my ability to conduct participant observation and observe the dynamics and learning and teaching within master's courses sampled. Time also affected the ability to conduct focus groups due to timetabling, teaching and my own work schedule, the availability of students in certain classes sampled as well as the need travel to other institutions. Having had trouble recruiting and scheduling interviews with students, I

considered further methods such as focus groups, however due to the limited availability of students and myself, and both the logistics and the administration needed to organise and conduct these, this could not be realised.

Additional limitations relate to the use of the questionnaire in a critical-constructivist paradigm; however, this does provide a broad overview of many students relating to their own perceptions of their critical thinking level and development as well their disposition and attitudes toward critical thinking. Interviews as the main method then allowed for greater exposition of the survey findings at an individual level to ascertain detail surrounding their experiences of criticality in master's study within the context of their study, aligning with Barnett's (1997) holistic view of criticality encompassing knowledge, the self and the world.

3.8 Researcher Positionality

Working in HE prior to and whilst conducting my research part-time led me to be informed and motivated by what I experienced in my practice working with students and in supporting staff' academic practice. This subsequently meant the research could in part share hallmarks with elements of an action research approach, specifically in my interest in the context of the research into students' development of criticality being largely informed from my experiences working with students in this area. In this view, practitioners like me become practitioner-researchers having "identified a problem during the course of their work, see the merit of investigating it, and, if possible, of improving practice" (Bell, 1999: 7).

This sense of positionality in my research, as a practitioner in two of the institutions studied and a researcher in one called me to question my position within and in relation to the research itself. As someone in this professional position and with specific personal characteristics and traits, I must, in line with my identified ontological, epistemological and methodological approach, reflect upon my own impact on the research project – on respondents in survey administration and interviews and my engagement with the data itself. As a male, English-speaking, Scottish academic I embody particular ideas and associated traits which likely had some influence on my ability to engage with academics in arranging access to collect data, the data collection itself and the analysis of the data – assumptions and implications which I believe need to be addressed to exercise researcher reflexivity and not assume my detachment and objectivity with the data or project more widely. Danvers (2016b: 96) in sharing similar considerations and research interests whilst holding a similar position and set of traits, though female, explains that:

As a PhD researcher and as someone with experience in teaching critical thinking, it could be that the participants will see me as someone who is the gatekeeper and/or validator of what critical thinking is and should be.

Thus, my position professionally and personally has an unavoidable influence and impact upon the research which brings with it power in my position as a researcher in engaging with this topic of critical thinking and students' development of criticality, whilst informing the accounts I shall provide emanating from the experiences of the students. However, my cognisance of the subjective, dialogical nature of research and knowledge generation alongside my own position, privilege, experience and interaction with participants and their previous experiences, beliefs and values informing the research provides me with an awareness which constrains any assumptions, influence and bias throughout my data collection, analysis and reporting. These considerations and their possible implications, particularly in data collection, were likely to be more pronounced in my engagement with international students, specifically those from Asian cultures, who may be more respectful to such figures of authority (and older individuals) specifically within an educational setting (Thunithett, 2011) abiding to their wishes and telling them what they think they want to hear.

3.9 Ethics

3.9.1 Ethical considerations

Ethics are of utmost importance to the design, planning, conduct, analysis and the reporting of research. This project followed the British Educational Research Association's (BERA) 'Ethical Guidelines for Research' (BERA, 2018) which themselves are informed by the ethical principles agreed with the Academy of Social Sciences in 2015. Howe and Moses (1999) describe an increasing complexity surrounding research ethics following the "interpretive turn" and the increasingly expanding use of methods. In discussing the protection of research participants, citing a move away from the utilitarian benefit-harm calculations of previous social research (e.g., Stanley Milgram's 1974 obedience study), Howe and Moses observe widespread agreement that "certain ethical principles should constrain the manner in which researchers may treat research participants in meeting the traditional utilitarian goals of advancing knowledge and otherwise benefitting society" (1999: 24). Hammersley and Traianou (2012: 7) agree in arguing "the prime ethical responsibility of researcher is to pursue worthwhile knowledge; no other goal should be substituted for this, nor should it be compromised by other concerns unless it is ethically required as regards dealings with other people". Both Howe and Moses (1999) and

Hammersley and Traianou (2012) agree that informed consent is one, if not the, most salient ethical principle in educational research, where participants are able to assess the risks and benefits associated with participation in a project and that they are free to, upon their own understanding, to decide to participate or not.

All participants were provided with a Participant Information Sheet for both the questionnaire and interviews (shown in Appendix 8 & 9) informing them in detail about the research, its purpose, and the reason they were asked to participate. Based on the information provided, respondents then gave their consent to participate by completing and returning the questionnaire and by completing a consent form for interviews (Appendix 10) which ensured their confidentiality and anonymity was maintained.

Involving international students in interviews was a key aim of the research. Enslin and Hedge (2008) highlight ethical concerns and implications stemming from the growth and near reliance of UK universities upon international student recruitment and the exorbitant fees they pay fundamentally questioning the ethics of international student recruitment. I felt it important to provide this growing cohort of individuals, who can be marginalised in UK HE (Maringe & Jenkins, 2014), a voice in regard to their experiences of life and study within the UK.

3.9.2 Ethical approval

An ethics application was approved by the College of Social Sciences Research Ethics Committee at the host institution, with minor revisions to supporting documents. Following ethical approval, three amendments were submitted and approved (1) to extend the sample to additional universities, (2) to gain permission to interview a staff member at another institution, and (3) to bring forward the approval date for data collection to allow near immediate collection of data following approval as the semester was soon to begin.

To extend the sample for the research beyond the lead institution ethical approval had to be sought and granted by the home institution providing permission for this before then being required to submit my approved ethics application alongside additional research ethics applications to the ethics committees of the additional universities. Ethical approval was obtained for the two additional institutions and copies of the approval gained from all three institutions can be seen in Appendix 11.

3.9.3 Data collection

The benefits of engaging with the research, it was proposed, outweighed any risks or discomfort participants would be likely to experience. Due to the non-sensitive, low risk nature of the research it was difficult to identify specific risks. Risks may have been perceived by students and would have been addressed upon participation – for example, students may think that engagement/non-engagement with the research could affect their grades and/or, that by discussing their conceptions and experience of critical thinking, which could be limited, may affect their position on the course or grades, neither of which they would be assured were correct. No participants raised any concern regarding risks involved through participating in the research. Participants, as non-vulnerable, consenting, educated adults, were unlikely to feel discomfort discussing an academic topic such as critical thinking and criticality development. I aimed to ensure that interviews only addressed content relevant to students' stage of study in terms of their expectations of critical thinking, their conceptualisation of this and their own development of this during their course. Furthermore, my questioning in the interviews was non-invasive and sensitive to students' wellbeing and were conducted in an accessible and discreet location.

3.9.4 Data analysis

For the questionnaire, no personal, identifiable data was gathered, rather demographic data on the students in terms of age, gender, nationality and previous education and employment were sought for comparison across the sample and in relation to questions and scaled items within. Names and contact details were only collected from those who agreed to participate in a prize draw; or, who additionally consented to be contacted in relation to interview participation and were encouraged to use their university email to avoid identifiers from a personal address. Once the prize draw was complete these email addresses were permanently deleted. Names and contact details of potential interviewees were securely stored and deleted once interviews were completed.

Confidentiality of data was ensured with all interview transcripts of both staff and students de-identified with pseudonyms used in place of personal identifiers in results and transcripts stored in a secure location with digital copies saved on an encrypted hard drive. Only data which is non-identifiable and related to participants was retained, for example, qualifications, previous education and employment and programme of study.

3.9.5 Dissemination

In line with the approved ethics application from the home institution, the results from the research were made available to peers, colleagues and disseminated more widely through presentation of conference papers based upon the project and the data gathered, submission as a completed doctoral thesis before possible publication of journal articles informed by the data collected and analysed during the research.

3.10 Data Analysis

Quantitative analysis was undertaken using SPSS 25 to produce descriptive statistics on the sample, for example, in terms of demographic data. SPSS was also used for statistical analysis of data from the questions I devised (discussed in [Section 3.6.1](#)) and from the two scales integrated within the survey, analytical tests such as Chi-square, analysis of variance (ANOVA) and paired sample t-tests were performed for this analysis. T-tests were utilised in statistically assessing the mean scores between students' scoring of their responses to Likert-type questions. Normally used to test the hypothesis that two samples share the same mean (Field, *et al.*, 2012), I used paired sample t-tests to determine any differences in the mean scores of the survey student sample to different questions. For example, for questions 18 and 19 asking of the importance students assign to critical thinking in the context of professional, working life and personal, daily life, respectively. While the samples are the same it is the responses to the question and the means of this which are being tested, rather than comparing the means for separate samples for the same question, as in independent samples t-tests (Lund Research, 2018a). As such, paired samples t-tests compare the ratings at the individual level against each other for the responses to each question seeking to identify any statistically significant differences in the scores of individuals between questions (Field, *et al.*, 2012). As tests of difference t-tests are robust in being able to be used with varying sample sizes and where they can account for invariance (Lumley, *et al.*, 2012). In addition, Cohen's d, a recognised measure of effect size, was used to test for the effect size of the outcome of t-tests (Kotrlik, *et al.* 2011). Deviating from tests of significance like t-tests, effect size "focuses on the meaning of the results and enables comparison between or among studies which further enables researchers to judge the practical significance of quantitative research results" (Kotrlik, *et al.* 2011: 132).

ANOVAs were also performed against the questionnaire data, where, as t-tests test the hypothesis that the two samples have the same mean, ANOVA tests the null hypothesis of independent, unrelated groups that three or more means are equal, thus group means are

equal (Field, *et al.*, 2012; Lund Research, 2018b). For example, a one-way ANOVA was performed to test if the mean scores of the three nationality groups of students (discussed in Section 4.3) were equal in how they responded to different survey questions such as questions 18 and 19 or if significant differences between the mean scores of the three groups were observed. Lund Research (2018b) identify six assumptions which data must 'pass' to deem a one-way ANOVA as appropriate for the data and to produce valid results, however it is noted that real-world data may not always pass or meet these six assumptions with solutions available should certain assumptions not be met. In testing for the normality of distribution to support the use of ANOVA in assessing assumptions related to the data, the Shapiro-Wilk test was performed. The Shapiro-Wilk test identifies data as not normally distributed when low values are evident within a random sample, expressed in a *W* value (Glen, 2021a) or by the significance, or 'Sig.', value produced by SPSS where if this is greater than 0.05 data is distributed normally, while if below 0.05 the data is not normally distributed (Lund Research, 2018c). However, it is worth noting the test's weakness in that it biases large samples, where larger samples have greater tendency to produce statistically significant results (Glen, 2021a), though this is a limitation of the test it still provides a function in normality testing.

Additionally, Chi-square tests of association were undertaken to determine relationships between two independent variables (Lund Research, 2018d). For example, Chi-square tests were used in analysis of the survey data to establish if there was a relationship or association between the three nationality groupings of students and their previous mode of learning and teaching (Q9), as well as their first encounter with critical thinking (Q12), where relationships between the groups and their responses to question nine and 12 could be determined. Where significant associations were found from Chi-square tests, effect size was measured by Cramer's V, an accepted measure of effect size (Kotrlik *et al.*, 2011) where higher values indicate a strong effect size (Glen, 2021b).

The questionnaire incorporated two scale instruments – the Critical Thinking Disposition Scale [CTDS] (Sosu, 2013) and Critical Thinking Toolkit [CriTT] (Stupple et al., 2017). As outlined in Section 3.6.1, the scales followed on from the questions I developed (discussed in Appendix 4) and ahead of the final two self-devised Likert scale questions asking students of the importance of critical thinking to them in their personal, daily life and professional, work life. As illustrated in Appendix 3, the CTDS scale appeared as Question 16, 'Critical Thinking Dispositions', while the CriTT scale featured as Question 17, 'Critical Thinking in

Master's Study', within the final questionnaire. The questionnaire itself and where the scales appear can be seen in Appendix 3.

Given the inclusion of the two scale instruments – CTDS (Sosu, 2013) and CriTT (Stupple *et al.,* 2017) – within my survey both scales required validation with my own sample having been validated with samples different to my own. To do this, I followed the validation processes and procedures detailed by Sosu (2013) and Stupple *et al.* (2017) respectively in describing how they validated the scale instruments they have created. This involved applying the same tests described in each paper in establishing if the same factors or constructs (derived from the items [or questions] within the scales) were evident among my sample from their responses and how this scoring compared with that of their samples, and whether the expected factor structure was replicated. For example, critical openness and reflective scepticism (Sosu, 2013) and the three factors Stupple *et al.* (2017) identified within the testing and validation of their scale – confidence in critical thinking, valuing critical thinking and misconceptions. For the Sosu (2013) scale this involved both Exploratory Factor Analysis (EFA), used for his first mixed-group sample, and Multigroup Confirmatory Factor Analysis (MGCFA). Here, for Sosu (2013: 112), the EFA helped ascertain "initial factor structure of the items specified in the instrument and to retain those items that exhibit[ed] good psychometric properties" which helped establish the latent factors underpinning sets of items and the extent to which these related to the factor, to then be confirmed by MGCFA. Confirmatory analysis "helps to determine the structural validity and reliability of measurement instruments" (Sosu, 2013: 114) and was used to determine the stability of the scale produced from the EFA against different groups to "establish construct validity" (*ibid*) and possible measurement invariance. Most notably, Sosu (2013: 116) found support for the CTDS' validity and reliability from the MGFA where analysis of his results "show[ed] that the factor structure of the CTDS is equivalent across undergraduate and graduate groups and participants in both groups understood the items in the same way".

Stupple *et al.* (2017) conducted factor analysis on their initial 41 items performing Principal Factor Analysis (PAF) with Oblimin (Kaiser Normalization) rotation while also using the Kaiser-Meyer Olkin measure of sampling adequacy (KMO) and Bartlett's Test of Sphericity in testing the validity of their items and sample for factor analysis. From this they identified three factors which they later interpreted via a Pattern Matrix to assess the items within each factor having identified a criterion of 0.45 as the threshold with items below this excluded. From this factor analysis, the authors validated their three factors with their respective item loadings (see Stupple et al. 2017: 94-95). Sosu's (2013) item development was based on his

own analysis of taxonomies of important critical thinking dispositions from the literature which he then iteratively tested and refined, Stupple *et al.* (2017: 93) also developed items from the literature and Duro *et al.*'s (2013) findings though sought to validate the items and criterion validity against "measures of argument evaluation, belief biased thinking and cognitive reflection". As such, validity of the three identified factors - Confidence in Critical Thinking; Valuing Critical Thinking and Misconceptions – was determined through statistically significant correlations (positive and negative) between the factors and the responses of the same students to the Argument Evaluation Test (AET). However, Stupple et al. (2017: 95) revealed lower factor loadings for Misconceptions than the other two factors, while explaining that this third factor also did not reveal a statistically significant correlation with belief-driven responding on the AET. Given my use of each of these scales with my own sample, which is both diverse and complex, arguably extensively different from Stupple et al.'s undergraduate psychology students and more comparable with Sosu's two mixed samples of undergraduates and postgraduates, I replicated the actions of both Sosu (2013) and Stupple *et al.* (2017) described here in validating their respective scales (and their identified factors) with my sample to assess their validity and reliability for use. Further details on scale validation and the quantitative analysis undertaken are detailed in the next chapter (Section 4.5) where results are presented and discussed.

Qualitative data analysis consists of many conflicting and overlapping approaches (Heaton, 1998; Glaser, 2002; Reissman, 2003; Bryman, 2004; Charmaz, 2006). My analysis of the qualitative interview data followed a thematic approach to analysis advocated by Braun and Clarke (2006; 2012) and derived from Miles and Huberman (1994; 2014) amongst others. Thematic analysis, as Riessman (2003: 2) suggests, emphasises "the content of a text, 'what' is said more than 'how' it is said, the 'told' rather than the 'telling'". However, Maguire and Delahunt (2017: 3) contend that rather than focus on the language and content of data, thematic analysis' goal is "to identify themes, i.e. patterns in the data that are important or interesting, and use these themes to address the research or say something about an issue". They argue that it is about much more than summarising data, as thematic analysis "interprets and makes sense of it" (Maguire & Delahunt, 2017: 3). Braun and Clarke (2012: 57) state that thematic analysis:

> is a method for systematically identifying, organizing, and offering insight into patterns of meaning (themes) across a data set. Through focusing on meaning across a data set, TA [thematic analysis] allows the researcher to see and make sense of collective or shared meanings and experiences.

In keeping with the research approach and its dialogical nature the analysis employed is naturalistic and interpretive, where knowledge generation occurs through interaction with participants informed both by my own and their previous experiences. Utilising this method permits exploration and identification of meaningful trends, insights and phenomena within individual cases and across the dataset, whilst being able to dig deeper in locating hidden meanings, conceptualisations and beliefs that lie behind the language of participants (Braun & Clarke, 2006; 2012).

3.10.1 Frameworks

The analysis was additionally informed by Barnett's (1997) framework of critical being providing *a priori* themes by means of his domains (knowledge, self and world). Bailin *et al.*'s (1999a) intellectual resources required for critical thinking also provided an *a priori* theme in considering what resources students required for criticality development and how these supported or hindered their development generally and across Barnett's three domains. These frameworks informed this analysis but did not guide it, contextualising and informing initial *a priori* coding structure used for the analysis itself, while testing the adequacy of these theoretical constructs in relation to their efficacy for theorising student criticality development. A similar approach was undertaken by researchers also investigating student criticality development (see Thunithett, 2011; Johnston, *et al.*, 2011; and Wilson & Howitt, 2016), informing their analysis of data using the available theoretical frameworks which may then be modified and enhanced through such cross-comparison with primary data relevant to the topic and issues under examination.

3.11 Conclusion

Following on from contextualising the topic of research and identifying specific gaps here in understanding the experiences of students in developing criticality within master's study, this chapter has positioned my empirical research within the philosophical and practical research literature, supporting the pre-established theoretical framework provided by Barnett (1997). In seeking to contribute knowledge in this vast and contested field, I aim to not only provide further empirical and conceptual insight from this research, but also to enhance students' learning and development of criticality across HE while simultaneously seeking to illuminate pedagogical processes and approaches for staff to support such student learning and development. The thesis now advances to working to fulfil these ambitions and attempt to answer the research aim outlined at the beginning of this thesis and this chapter by moving

to report findings that seek to answer the central research question - *How is criticality conceptualised, developed and applied by students in master's study?*

Chapter Four – Quantitative Findings and Analysis

4.1 Introduction

Following the previous chapter outlining the research paradigm, design, approach and methods adopted for the research, this chapter presents the findings of the quantitative empirical research from the questionnaires. The questionnaire administered to a large and varied student sample collected an array of valuable data and related insights into students' critical thinking and development, which the follow-up in-depth interviews explored in greater depth.

The chapter begins by highlighting observations from the data collection, and its entry, before outlining the sample of students surveyed in the questionnaire, prior to reporting descriptive statistics from the survey and followed by statistical analysis. Validation of the two Likert scale instruments employed in the questionnaire against the sample are then discussed, and analysis of the data generated from these scales presented. Analysed qualitative data from the open-text question regarding students' definitions of critical thinking contained within the survey, is then reported.

4.2 Observations from Data Collection

Administering the self-completion questionnaire provided an unforeseen benefit in observing the students completing the questionnaire. The survey took longer for all students to complete than expected when piloting, with clear variations in completion timings between the programmes, with students for whom English was not a first language taking longer, while several Asian students in the Educational Studies course took considerably longer completing the questionnaire with some taking twenty-five minutes. Furthermore, the same students, who dominate the sample, were seen translating questions, showing their difficulty with language, and 'Googling' critical thinking in answering the open question: *"What does critical thinking mean to you?"*. Moreover, there appeared possible collusion between students in answering and/or translating questions and sharing their understanding of words and concepts, even though efforts were made to ensure clarity of language used. This suggests many of these students possessed limited competence in English.

Despite clear instructions following each question in terms of how participants were asked to respond – select all that apply; select one; select three and order in terms of importance – many students incorrectly answered several questions, namely those ranking questions. This led to errors being made in rank questions with the incorrect scoring of ranking items with

missing and multiple responses being provided incorrectly, while some respondents had scored Likert-type responses in reverse. These errors followed a verbal introduction, explanation of and instruction of how to complete the survey, provided to each class prior to consent and completion.

Interestingly, one professor when arranging to access and survey their students commented that the questionnaire was "too hard" and would be a challenge to their students – a telling comment given the focus being master's students and the instrument a questionnaire, not a test.

4.3 Survey Sample Profile

The sample of students who completed the questionnaire consisted entirely of students (n293) studying on a master's degree in one of the three Scottish universities sampled between September and November 2017. The table below presents an overview of the sample in terms of age, gender, nationality, language and undergraduate degree.

Table 4-1 – Sample Profile – Questionnaire

Sample	293 master's students	3 universities	13 master's programmes
	Total	**Females**	**Males**
Age	Mean = **26.64**	Min age = 19; Max age = 52	Min age = 22; Max age = 49
	19-23 = 128 (44.1%) 24-30 = 109 (37.6%) 31-52 = 53 (18.1%) 3 missing cases	19-23 = 107 (47.3%) 24-30 = 79 (35.0%) 31-52 = 40 (17.5%) Mean = 26.54	19-23 = 21 (32.8%) 24-30 = 30 (46.9%) 31-52 = 13 (20.3%) Mean = 26.98
Sex	**M = 64; F = 229** **M=21.8%; F=78.2%**		
Nationality	**40 nationalities** Chinese = 123 (42%) UK = 107 (36.5%) Other = 61 (20.8%) 2 missing cases	Chinese = 112 (38.5%) UK = 87 (29.9%) Other = 29 (10.0%)	Chinese = 11 (3.8%) UK = 20 (6.9%) Other = 32 (11.0%)
English as First Language	English = 105 (**41.2**%) Not English = 150 (**58.8**%) 38 missing cases	English = 78 (40.0%) Not English = 117 (60.0%)	English = 27 (45.0%) Not English = 33 (55.0%)
Undergrad Degree	Arts & Humanities = 53 (20.6%) Business = 43 (16.7%) Creative = 16 (6.2%) Social Science = 70 (27.2%) Education = 47 (18.3%) Science = 28 (10.9%) 36 missing cases	Arts & Humanities = 38 (18.5%) Business = 38 (18.5%) Creative = 14 (6.8%) Social Science = 47 (22.9%) Education = 45 (22.0%) Science = 23 (11.2%) 24 missing cases	Arts & Humanities = 15 (28.8%) Business = 5 (9.6%) Creative = 2 (3.8%) Social Science = 23 (44.2%) Education = 2 (3.8%) Science = 5 (9.6%) 12 missing cases

As Table 4-1 illustrates, the sample was heterogenous and complex, with unique characteristics. For example, the sample consisted of students from 40 different countries with a diverse spread within this and a distribution of ages from 19 to 52 years of age. There

were a large number of countries represented though with limited coverage in places due to dispersal across nationalities. Due to this, analysis was undertaken by focusing on larger categories. The nationalities were first condensed to regions – Africa, Asia, Central and South America, Europe and North America – for ease of analysis, before condensing to more populated categories of UK, Chinese and Other. Appendix 12 shows the categories and breakdown of the nations represented. The representation of the sample across geographical regions is shown below:
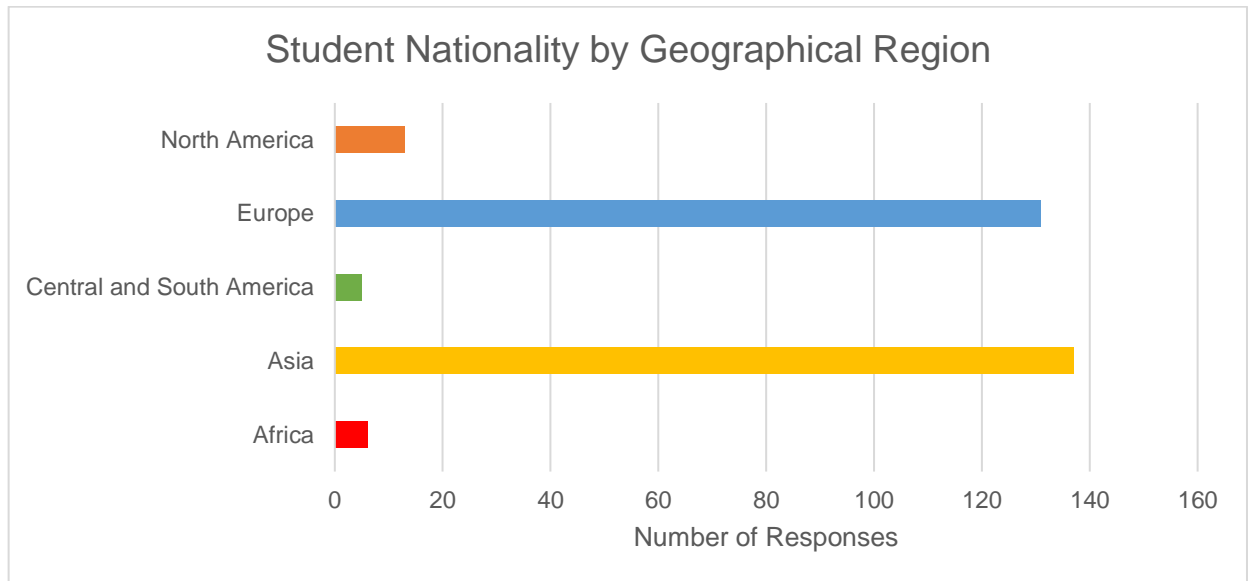
Figure 4-1 – Student Nationality by Geographical Region

As the figure shows, the sample broadly represented Asia n137 (46.9%) and Europe n131 (44.9%). In comparison, there were six (2.1%) students from Africa, five (1.7%) from Central and South America, and 13 (4.5%) from North America, with two missing cases. Due to the uneven spread among these regions, student nationalities were further condensed into two national groups – Chinese and UK – with the remaining respondents spread more diffusely across countries and regions grouped into an 'Other' variable. As Table 4-1 details, the majority of the sample (n123, 42%) were from China with at least 9 out of 10 of these students studying the Educational Studies programme (n113, 91.9%). UK students represented 36.5% (n107) of the sample with their programme representation far broader than the Chinese cohort. Those students from the other 38 countries represented were encapsulated into the 'Other' category accounting for 20.8% (n61) of the sample, these students were similarly distributed across the 13 programmes sampled. Table 4-2 shows the 13 master's programmes which the students were then enrolled on and their distribution across them:

Table 4-2 – Programmes Sampled for Questionnaire and Number of Students Participating

Programme	No. Completing Survey
MSc/MEd Educational Studies	131 students
MSc Adult Education, Community Development and Youth Work	27 students
IntM International Masters in Adult Education for Social Change (IMAESC)	9 students
MSc Public and Urban Policy	31 students
MSc/MRes Global Security	25 students
MSc Education, Public Policy and Equity	14 students
MSc Political Communication	16 students
MEd Early Years (2nd institution)	16 students
MM Midwifery (3rd Institution)	16 students
MSc Teaching Adults	7 students
MSc Museum Education	<5 students
MEd/MSc TESOL	<5 students
MEd Children's Literature	<5 students

Multiple master's programmes were recruited for the questionnaire, though as shown in the table some of these had very small numbers of students. Convention suggests not reporting cell counts less than five (n5) for such variables to maintain anonymity and privacy; for this reason, these programmes are not reported in detail.

The complexity of the sample was further reflected in the fact that 58.8% (n150) reported as Non-Native English Speakers (NNES) displaying the diversity of their nationalities (n40). While 38 participants did not respond to the question, 105 (41.2%) stated English was their first language. Of the 38 missing responses analysis indicated that 13 of these were Chinese students, 20 from the UK and 5 from the Other category, suggesting a similar split in native language as those who responded to the question.

Due to the near binary status of the sample seen in the nationality and language split, creating nationality groupings of Chinese, UK and Other was considered justified to encapsulate the two largest categories covering nationality and language, whilst still representing the countries outwith the UK and China which the Other grouping represented. However, it is recognised that the Other category in divergence with UK and China categories is a very heterogenous grouping, which provides a third perspective beyond the duality UK and China may represent, which is seen in the near even split within sex in the Other category. While Fakunle *et al.* (2016) advise not treating Chinese students as a homogenous group, this recoding was justified due to the fact that Chinese students make up the largest nationality both in this sample at 42.1% (n123) and as a national cohort in Scottish and UK master's study (Audit Scotland, 2016; HESA, 2020). Moreover, isolating Chinese, UK and Other nationalities, as well as English and non-English native speakers acknowledges the students'

perceived cultural distance from UK HE and its learning and teaching styles. Both the literature (Durkin, 2011; Floyd, 2011; Tian & Lowe, 2011; Dong, 2015; Zhang, 2020) and professional experience suggest that Chinese and NNES are likely to experience challenges in this regard due to nuanced differences in educational approaches they previously experienced. Hence this recoding was intended to acknowledge these qualitative differences which possibly creates distance from a complex, western academic concept of criticality (Durkin, 2011), which is explored within the qualitative interview data and presented in the following chapter. Native speakers - e.g. UK, US and Canadian students – were considered likely to have a commonality in HE cultures and generally less cultural distance to the UK, educationally, socially, culturally and politically, while the complexity of the concept of critical thinking used in UK HE may be easier to comprehend and adapt to than for those NNES from more distant cultures as China.

The sex of the sample was weighted towards females at 78.2% (n229) with 21.8% of males (n64) and where over half of the females studied the Educational Studies master's programme (n118). Of particular note here is the predominance of females across the sample though specifically within the China national grouping which features a very small number of males with only n11 (8.9%) compared with 112 females representing 91.1% of the group and 38.5% of the sample. The UK grouping also reflected a gender imbalance between males (n20, 18.7%) and females (n87, 81.3%), while the Other grouping had a relative gender balance with 32 males (52.5%) and 29 females (47.5%) within this category.

In rhythm with the variety of master's programmes, nationalities and ages, there were many differences in the qualifications held by respondents seen in the many undergraduate degree subjects (n156). The distribution of undergraduate degrees is seen in the subject groupings as shown in Table 4-3 below:

Table 4-3 – Undergraduate Subject Groupings

Arts & Humanities - 53 (20.6%)	Social Science - 70 (27.2%)
Business - 43 (16.7%)	Education - 47 (18.3%)
Creative - 16 (6.2%)	Science - 28 (10.9%)

As with the spread of undergraduate degree subjects, students' master's programmes (n13) were condensed to subject groupings to ease comparison and differentiation given the number of programmes. These categories were social science, education, and health & social care reflecting the location of these subjects within the School structures of their institutions. The programmes were grouped as shown below:

Table 4-4 – Condensed Master's Programme Groupings

Education (n189, 64.5%)	Educational Studies; Teaching Adults; Community Development; Education Public Policy & Equity; Museum Education; TESOL; Children's Literature; Adult Education for Social Change
Social Science (n72, 24.6%)	Global Security; Public Policy; Political Communication
Health & Social Care (n32, 10.9%)	Midwifery; Early Years

When the subject groupings of students' undergraduate degrees are compared with the condensed groupings of their master's courses, considerable differences can be seen between these and suggest the need for further investigation of these "field changers" in the following chapter.

4.4 Survey Reporting – Descriptive Statistics

Prior to the two scale instruments incorporated into the questionnaire, a series of questions were posed to establish students' background and experiences of critical thinking. As explained within Section 3.6.1 of the previous Methodology chapter, the rationale for the inclusion of these questions was justified in relation to previous research (Graham, 2015) and literature. Targeting aspects related to critical thinking and its pre-existing development amongst students, these questions covered: previous modes of learning and teaching; encounters with critical thinking (when and where); discernment of critical thinking definitions; contexts and activities related to critical thinking development in previous study; and skills relevant for effective critical thinking. Whilst biographical to some extent, these questions were intended to provide data which may illustrate core aspects which could enlighten what supports students' perceived development of critical thinking. For example, students were asked about factors relative to their backgrounds (such as previous teaching and learning approaches) which Cheung *et al.* (2001) and Moeti *et al.* (2016) found significant, whilst also beginning to learn of students' resources (personal and intellectual), which Johnston *et al.* (2011) found significant for students' development of criticality.

4.4.1 Reasons for Master's study

Students were asked why they had chosen to study their master's degree and to rank the reasons provided in order of importance from 1-3. Overall, the most important influence on the choice to pursue master's study was personal interest (27.3%) followed by career or

employment reasons (24.8%) and expanding knowledge (17%). The reputation of the university, current job requirement, Continuing Professional Development (CPD), course reputation and location each scored below 10% respectively, and lower in importance. Table 4-5 presents students' ranking of those reasons selected most important to them and is split by regional grouping and sex.

Table 4-5 – Students' Motivations for Master's Study

Region	Motivation/Reason for Study	Male	Female
China	Personal Interest	33.3%	25.9%
	Current Job Requirement	12.5%	11.7%
	Location	n/a	2.9%
	Expand Knowledge	12.5%	20.5%
	Career employment	20.8%	20.0%
	Uni Reputation	12.5%	10.7%
	CPD	4.2%	2.9%
	Course Reputation	4.2%	5.4%
UK	Personal Interest	24.3%	30.6%
	Current Job Requirement	5.4%	4.5%
	Location	8.1%	3.0%
	Expand Knowledge	13.5%	14.9%
	Career employment	32.4%	35.1%
	Uni Reputation	5.4%	3.0%
	CPD	5.4%	7.5%
	Course Reputation	5.4%	1.5%
Other	Personal Interest	24.5%	26.2%
	Current Job Requirement	8.2%	1.6%
	Location	6.1%	9.8%
	Expand Knowledge	16.3%	14.8%
	Career employment	18.4%	19.7%
	Uni Reputation	8.2%	13.1%
	CPD	6.1%	8.2%
	Course Reputation	12.2%	6.6%

Notable contrasts in the data here could be seen between the national groupings, where for the Chinese cohort personal interest was ranked most important by both males and females followed by career and employment. However, Chinese females were relatively more likely to select the response of expanding their knowledge from master's study (20.5%) than male counterparts (12.5%); while males appeared relatively more likely to indicate the importance of personal interest (33.3%) than knowledge expansion compared with females (25.9%). Although it should be noted that male Chinese student participation was low at only n11. Moreover, in hindsight knowledge expansion and personal interest could be conflated where

personal interest relates to knowledge accumulation and/or learning. Strangely, no Chinese males selected 'location' as an important reason for their chosen master's study while some females were motivated by the location of their university. This is surprising given the distance Chinese students must travel in moving to live abroad for at least a year. However, the Chinese students (23.2%) did rate the reputation of their chosen university as more important to their choice to study than students in the Other (18.8%) and UK (8.4%) grouping. This ostensibly suggests international students pay more consideration to the reputation of their chosen institution than UK students, where location may be a consideration but is less identifiable from the data. Additionally, in contrast to these findings for university reputation, the Other cohort (18.8%), specifically males (12.2%) (in contrast to the males in the UK and China groupings compared with their female counterparts), appeared to assign more importance to course reputation than those in the China (9.6%) and UK (6.9%) cohorts. This might suggest that students from outside of the UK and China, whether due to scholarship programmes or funding, paid greater attention to the reputation of their chosen course to inform their decision to study.

The Chinese group (59.2%) and Other group (50.7%) ranked personal interest as most important to their reason for study, while the UK students (67.5%) ranked career or employment as the most important motivations for their master's study, followed by personal interest (54.9%). Across the overall sample of greatest contrast was the importance that the UK group appeared to attach to career and employment from their responses compared with the preference for personal interest shown amongst the students in the China and Other groupings. From the overall responses within the sample both males (32.4%) and females (35.1%) ranked personal interest as the most important reason influencing their master's study. Ostensibly, this could suggest UK students were more extrinsically motivated in pursuing a master's degree for career advancement than their international counterparts in the China and Other cohorts who were possibly more intrinsically motivated in seeking to learn and/or pursue their interests. However, the assumed proximity of UK students' place of work and study being more directly linked and contextually coherent than those students from international settings, could be one possible explanation for this.

What can be established is the impact personal interest, factors of employment and career advancement, and expansion of knowledge have as being most influential factors motivating students' master's study. While surprisingly location and university reputation were of less significance, contradicting the rhetoric of the importance of institutional tables, ratings and rankings as guiding students' study options (Universities UK, 2019). An area was left blank

for students to specify any other reasons influencing them in addition to those provided. 'Other' reasons provided by students included both personal and professional development with international students (Russian and Chinese) looking to gain "experiences in a foreign country" and "be more independent", while also looking to "learn educational related knowledge", with others from North America choosing their master's programme due to the "programme content", to improve their "skill development" and in preparing to "switch professions".

4.4.2 Critical Thinking Development – Students' Self-Rating

After being prompted to offer their own written understanding of critical thinking (which is reported following the quantitative data), students were asked to rate how well developed they felt their own critical thinking was on a 5-point Likert-type scale. Figure 4-2 below presents the results. Overall, only 18 students (6.3%) of the 288 (from 293) who answered this question rated their critical thinking as highly developed. Thirty-three percent (n97) said their critical thinking was well developed, while 41.7% (n120) reported as being unsure of this development. Fifteen percent (15.6%) stated they had developed critical thinking, with 2.8% (n8) saying they had not developed their critical thinking skills and abilities well.
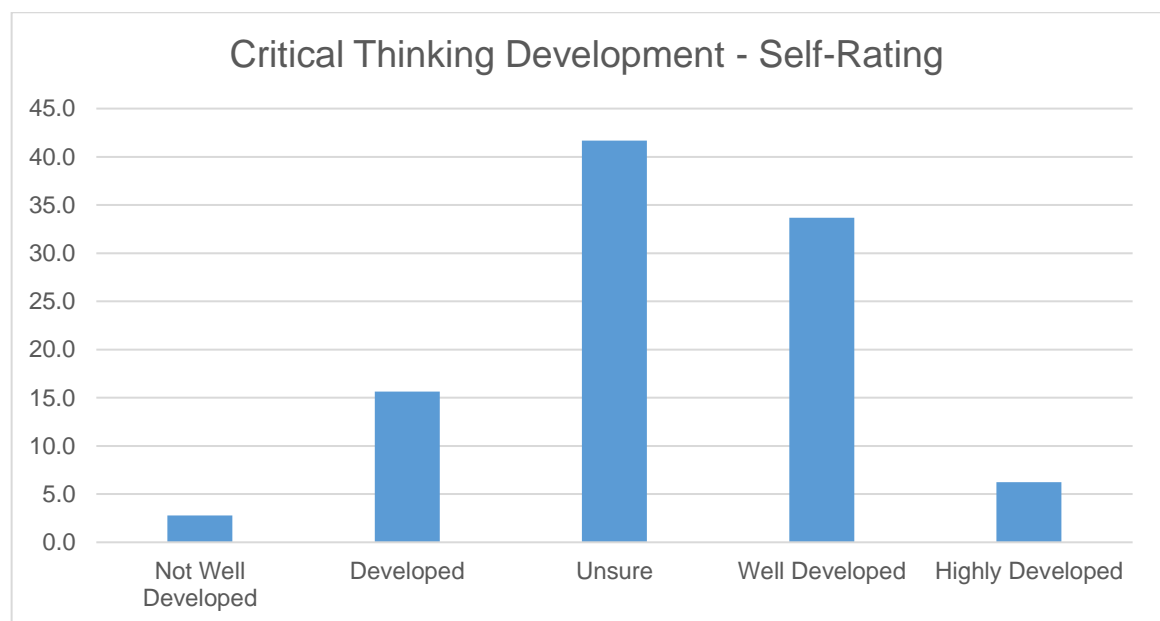
Figure 4-2 - Critical Thinking Development - Self-Rating

The mean score across the sample was 3.25 (S/D .892) illustrating a distribution skewed toward development over lack of development though with scoring clustered around the mean and neutral "unsure" point. The clearest observation across the whole sample was the majority reporting (41.7%) as unsure of their development, however when language (English native or non-native) was selected, 45.8% of English native speakers reported as highly or

well developed, while 34.5% of non-native speakers reported as highly or well developed. This suggests this lack of surety is not a linguistic factor, though greater reporting of development (or confidence in own development) is reported by English native speaking students.

Crosstabulation by nationality grouping revealed students within the Other grouping reported the highest level of critical thinking development with 57.4% reporting as "highly" or "well developed", compared with 41.3% UK students reported as "highly" or "well developed", and only 29.6% reporting the same from the China group. Contrasting with results of the whole sample where 39.1% reported as "'highly" or "well developed", this finding also conflicted with expectations whereby UK students may have reported the highest level due to the ubiquitous emphasis of critical thinking within these settings and their expected development as graduates within a sector accentuating critical thinking as a core graduate attribute. With small cell counts violating the assumptions for Chi-square tests, the non-parametric Independent Samples Kruskal Wallis Test was undertaken to test the hypothesis that the distribution of critical thinking development was the same across the three groupings. The Kruskal-Wallis H Test allows for comparison between two or more groups which is rank-based and often used to confirm if statistically significant differences exist between these groups (Lund Research, 2018e). This hypothesis was rejected and the difference across the groups was significant ($p<0.01$), in addition a pairwise test confirmed that only the difference between the Chinese and Other grouping was significant ($p<0.01$). However, there could be cultural factors which work toward explaining the results of this self-reporting question. For example, British self-deprecation could possibly account for under-reporting as could be the case with Chinese students and their reluctance to boast, alongside lack of familiarity with critical thinking and resulting lower levels of development – as may also be the case with UK students. Students from the Other grouping may have more confidence in their own abilities, such as critical thinking, and be high-performing students from their home countries. Certainly, some students from the Other cohort were on competitively funded scholarships which could account for part of this.
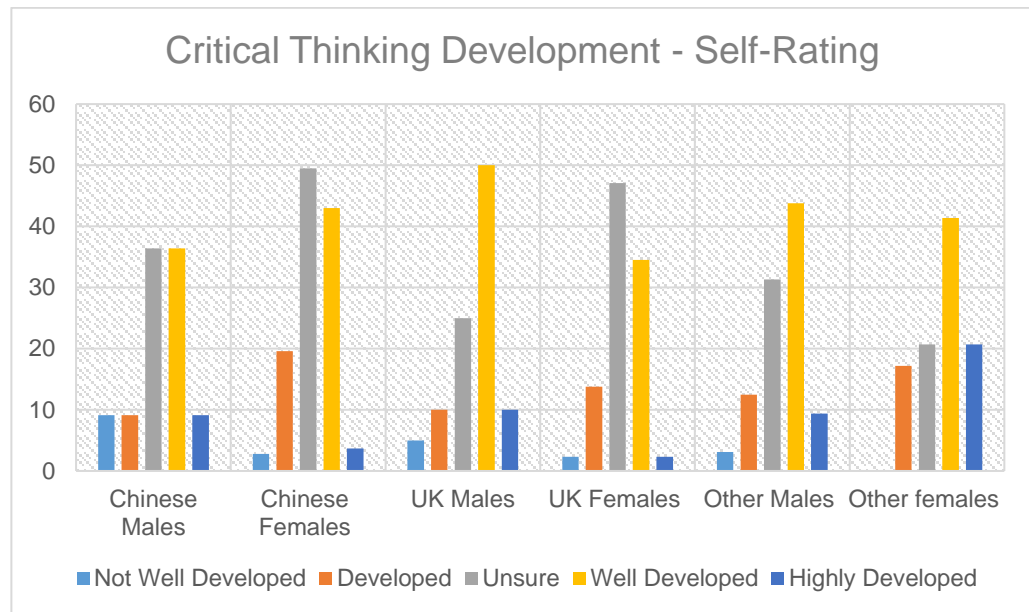
Figure 4-3 – Critical Thinking Development - Self-Rating by Regional Grouping and Sex

As Figure 4-3 above shows, when additionally split by gender, more Chinese (49.5%) and UK females (47.1%) reported as "unsure" than male counterparts respectively (36.4%, 25%), with males reporting as more "well" (36.4%, 50%) or 'highly developed' (9.1%, 10%) in both groupings also. However, the trend is reversed for males reporting as "unsure" in the Other grouping with 31.3% compared with 20.7% for females, while more females reported as "highly developed" (20.7%) in critical thinking than males at 9.4%, though with 2.4 percentile between the sexes for "well developed". These differences between the groups are more notable given the inversion seen within the Other grouping which has a greater equality between the number of each sex, in contrast to the overwhelmingly female dominated China and UK student groupings, especially given males reported higher critical development (54.7%) than females (35.8%) when results for "well" and "highly developed" were combined.

4.4.3 Previous Learning & Teaching Mode

Students were asked to recall their previous study in relation to the mode or approaches to learning and teaching they experienced and asked to select one from the choice of: independent learning, memorisation/rote learning, active learning, or inquiry-based learning. Research shows students' previous educational modes can impact upon their critical thinking and adaptation to new modes or contexts of study (Tian & Low, 2011; Zhang, 2020). Overall responses showed varied experiences of students in their learning with independent and memorisation/rote learning separated by 0.3% as the most selected response. 29.8% reported they had experienced memorisation/rote learning while 29.5% stated their previous study

had been independent learning, while 23.3% experienced active learning and 15.1% inquiry-based learning. As Figure 4-4 shows, when analysed by nationality grouping, memorisation/rote learning scored highest (45.1%) for Chinese students followed by independent learning (23%). In contrast UK students predominantly reported (43.7%) independent learning followed by active learning (29.1%) as their most common experience of learning and teaching. Results from crosstabulation of previous learning and teaching mode responses against the three nationality groupings confirmed a significant association between nationality group and previous mode of learning and teaching, revealed by Chi-square test results $(x^2 = 36.188, df = 6, p < .001)$. Further supporting this association between students' context of previous study or nationality, and the mode of learning and teaching experienced previously were results from Cramer's V (0.252, *p*<.001) demonstrating a very strong effect size where the Cramer's value is greater than 0.25 (Glen, 2021b). As Botsch (2011) and Glen (2021b) describe values closer to 1, or 0.25 or higher, suggest a very strong effect size, as found here.

The contingency table, or cross tabulation, produced from the Chi-square tests also provided an additional insight into this association, where expected counts provide the estimated frequencies for each cell of the variables within the cross-tabulation where the expected count represents the null hypothesis of no association existing between the variables analysed (Glen, 2021c).
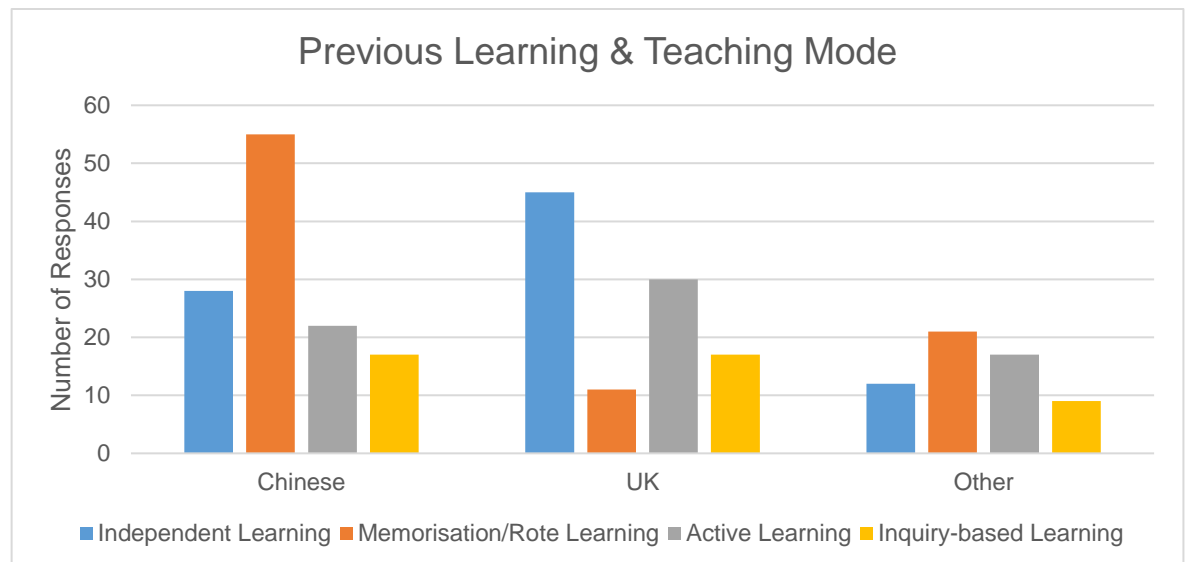
Figure 4-4 – Previous Learning and Teaching Mode by Regional Grouping

Differences between the observed cell counts and expected cell counts within this crosstabulation confirmed that UK students (45 observed, 30.8 expected) were relatively more likely than expected to report independent learning than those in the two additional

groupings. Chinese students are relatively more likely than expected to report rote learning or memorisation than independent learning (rote/memorisation, 55 reported, 37.4 expected; independent learning, 28 reported, 3635 expected), while students in the Other nationality grouping were also relatively more likely than expected to report rote learning (21 reported, 18.1 expected) than UK students. What the Chi-square results reveal is a significant association between students' previous mode of learning and teaching and their nationality grouping where UK students were more likely to report independent learning and active learning than rote learning or memorisation. In contrast, students in the Chinese grouping were relatively more likely to report rote learning or memorisation as their previous learning and teaching mode, while students from the Other grouping also reported rote learning or memorisation as their previous mode of learning and teaching. Memorisation or rote learning scoring highest amongst Chinese students could go some way to explain most being unsure of and more limited in their critical thinking development, potentially supporting assumptions relating to Chinese educational systems and rote learning, and a resultant impact on critical thinking (Dong, 2015). Again, the Other grouping presents a differing view with memorisation/rote-learning scoring highest (35.6%) closely followed by active learning (28.8%) with little between independent (20.3%) and inquiry-based learning (15.3%) compared with the other groupings. This more even spread of modes of learning and teaching experienced by these students likely reflects the diversity of their nationalities and educational experiences.

4.4.4 Critical Thinking Terms Encountered

Participants were offered four key critical thinking terms regularly used in HE – critical analysis, critical reflection, critical evaluation and critical awareness – and asked which of these they had encountered in their previous study. Unlike findings presented from the previous questions, there was no apparent influence of gender. For example, this was best evidenced for critical reflection, Chinese males (40%) females (49%) UK males (73.7%), females (73.8%) and Other males (66.7%) and females (72.4%), and more so for critical analysis, Chinese males (81.8%) females (85%) UK males (100%), females (90.18%) and Other males (86.7%) and females (86.2%). Breaking down the terms encountered by sex and national grouping, where the Other groupings presented some contrasting results, the notable, though expected findings, was the predominance of critical analysis, which the Chinese cohort most identified. Moreover, the China grouping showed less familiarity with critical reflection (48.2%) compared with UK (73.7%) and Other (69.5%) groupings,

possibly due to the disciplinary focus of their previous degrees and mode of learning and teaching.

4.4.5 First Critical Thinking Encounter

Retaining a focus on development and previous study, students were asked at what point during their previous learning they first encountered critical thinking. Generally, most reported they encountered critical thinking in their first year of university (30.5%), 20.9% at high school, 18.5% in their third or final year and 8.2% in their second year of university. A notable finding was 4.8% of the sample stating they did not recall, suggesting they possibly had not encountered or developed critical thinking during previous study until this point, as Huang (2008) and Fakunle *et al.* (2016) discovered with some of their Chinese master's students.
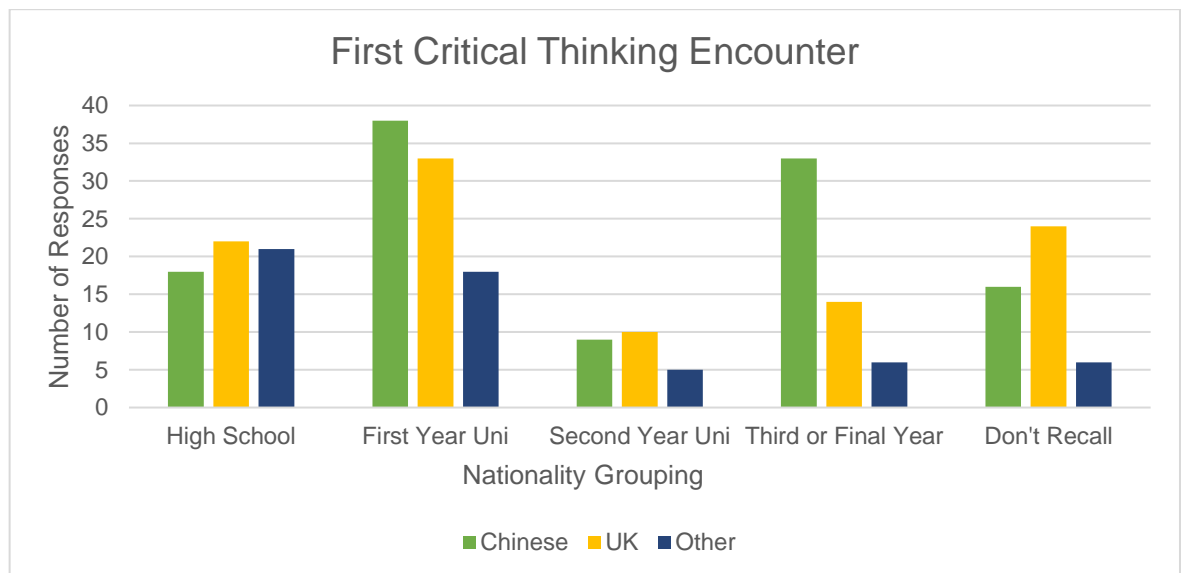
Figure 4-5 – First Critical Thinking Encounter by Nationality Grouping

When split by nationality, respondents in the Other grouping predominantly reported encountering critical thinking in high school (37.5%, n21), compared with only 15.8% amongst Chinese students and 21.4% (n22) of UK students. Following this, the most common encounter for Chinese (33.3%) and UK (32.0%) students was in first year of university. The UK grouping reported the highest percentage of students unable to recall their first critical thinking encounter (23.3%) suggesting they had forgotten, were not aware when it was first encountered or had not yet encountered critical thinking, which is unlikely following undergraduate study.

Crosstabulation of first critical thinking encounter against the three nationality groupings identified significant differences found between nationalities, though when split by gender

these were not observed due to low number of males compared against females, revealed by results of a Chi-square test. However, Chi-square test results did reveal a significant relationship between students' nationality grouping and their first encounter with critical thinking amongst the female participants ($x^2 = 21.879, df = 8, p < .005$). Low cell counts from male participants violated assumptions for the Chi-square where the same relationship cannot be supported due to the low numbers within the sample and nationality groupings. From the cross-tabulation and expected cell counts it could be seen that students in the Other nationality grouping (21 reported, 12.5 expected) were relatively more likely than expected to encounter critical thinking in high school than peers in the UK (22 reported, 23 expected) and China groupings (18 reported, 25.5 expected), while Chinese students were relatively more likely than expected to encounter critical thinking in third or fourth year of undergraduate study (33 reported, 22.1 expected). Observed and expected counts of UK students revealed a more mixed picture with the largest number unable to recall their first encounter with critical thinking (24 reported, 17.4 expected), which suggests the potential implicit nature of the concept in HE, and its ambiguity.

4.4.6 Context of First Critical Thinking Encounter

Students were additionally asked in which context their critical thinking encounter took place, provided with the following options and asked to select all that applied:

- lectures,
- class discussions,
- assignment criteria,
- module or course handbook,
- assignment feedback, and/or
- independent study tasks.

From the 291 who responded to the question, the most selected context for critical thinking encounters was class discussions, at 23.6%. Following discussions were lectures (19.9%), assessment criteria (18.3%), independent study (16.3%), assessment feedback (12.8%) and course/module handbook as selected by 7.8%. This highlights the significant role played by facilitated discussion between students in the classroom environment as a site for encountering, and possibly developing critical thinking.

Context of First Critical Thinking Encounter
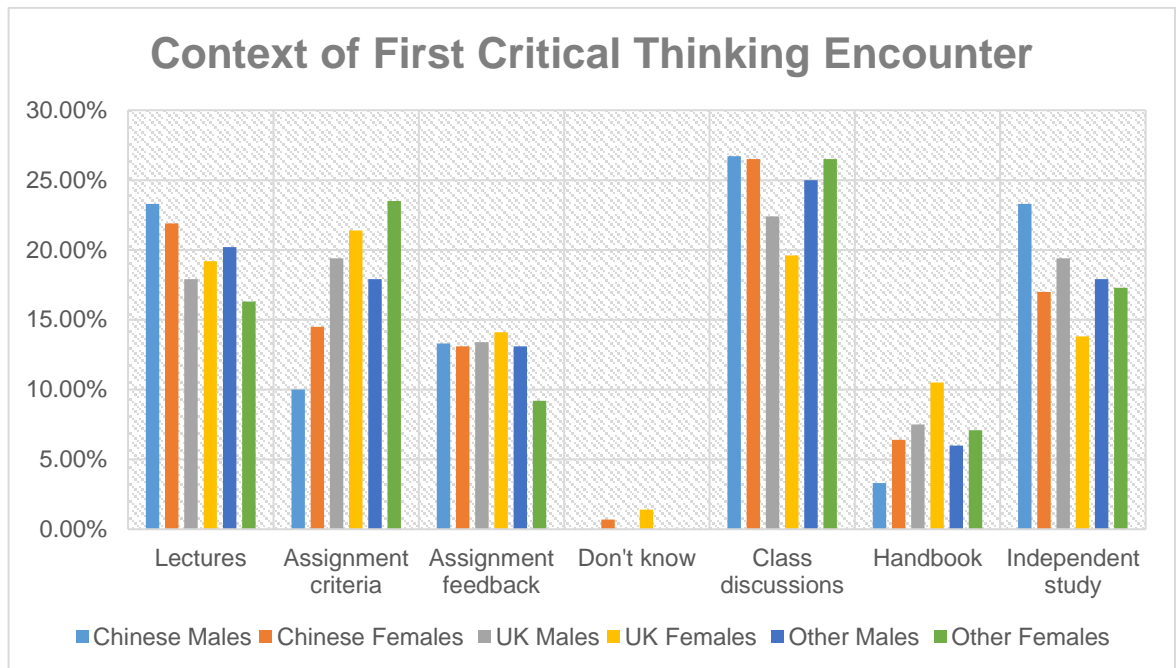
Figure 4-6 – Context of First Critical Thinking Encounter by Nationality Grouping and Sex

When responses were split by nationality grouping and gender some notable differences appear. For example, UK students were the lowest amongst the groupings in reporting class discussions as their initial critical thinking encounter, while students in the China and Other grouping rated this highly. Following this, responses between the sexes in the China and UK groupings showed divergences with Chinese (23.3%) and UK (19.4%) males reporting independent study for their initial encounter compared with females from the China (17.0%) and UK (13.8%) grouping. Additionally, differences appear between the groupings regarding assessment criteria as a context of encounter with fewer in the China group reporting this context (35.8%) compared with those in the UK (67.3%) and the Other (62.3%) categories. This could suggest a more formalised, explicit critical focus within assignments that these students in the UK and Other groupings undertook in their respective countries in their previous learning, than those in the China group.

4.4.7 Learning Activities and Contexts

Building on previous learning and development of critical thinking, students were asked what contexts and learning activities they felt helped them develop their critical thinking from their previous degree study. Nine learning activities and contexts of learning were listed, and participants were asked to select the top three from the list and to rank these in order of importance. Figure 4-7 illustrates the overall student responses presenting their highest ranked responses to this question.
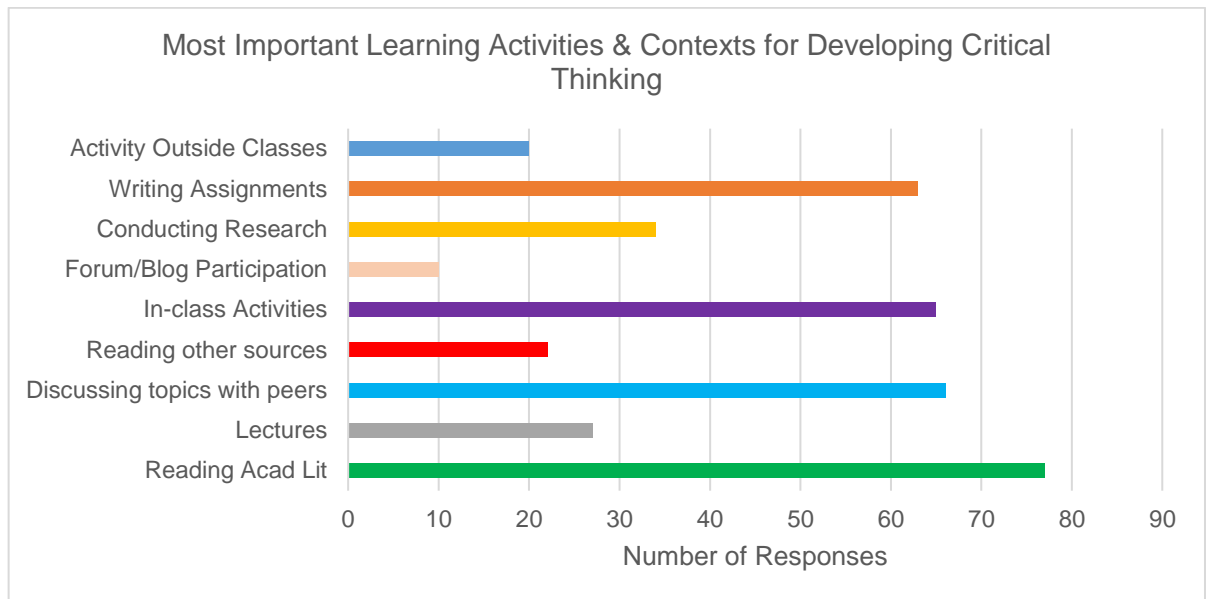
Figure 4-7 – Most Important Learning Activities and Contexts for Developing Critical Thinking

Rated as "most important" amongst the students was reading academic literature (20.1%), closely followed by discussion with peers (17.2%), in-class activities (16.9%) and writing assignments (16.4%). It is noteworthy that lectures only appeared to be rated by 7% of the sample as the most important learning activity supporting their critical thinking development, with reading and discussion, both contrasting as individual and social endeavours, the favoured activities in this regard. Students ranked reading academic literature as the highest amongst "important" activities (16.8%) followed by in-class activities (15.6%) and discussion with peers (15.0%). This suggests that discussion and other tutorial or seminar related activities could have been perceived by some to be encompassed within in-class activities, with the two activities possibly intersecting, with "Discussing topics, concepts/theories and issues with peers or classmates" being quite specific compared to "In-class activities (workshops, tutorials, debates, discussions, seminars, presentations etc.)" which aimed to capture additional activities within classroom environments in addition to lectures. The salience of discussion and contact time with peers and tutors appears of significance in this light.

The headline findings here change considerably when data is split by nationality grouping and gender, as Figure 4-8 below shows. Chinese females (29.5%) selected discussion as most important rather than reading academic literature (26.8%) as the overall sample did.
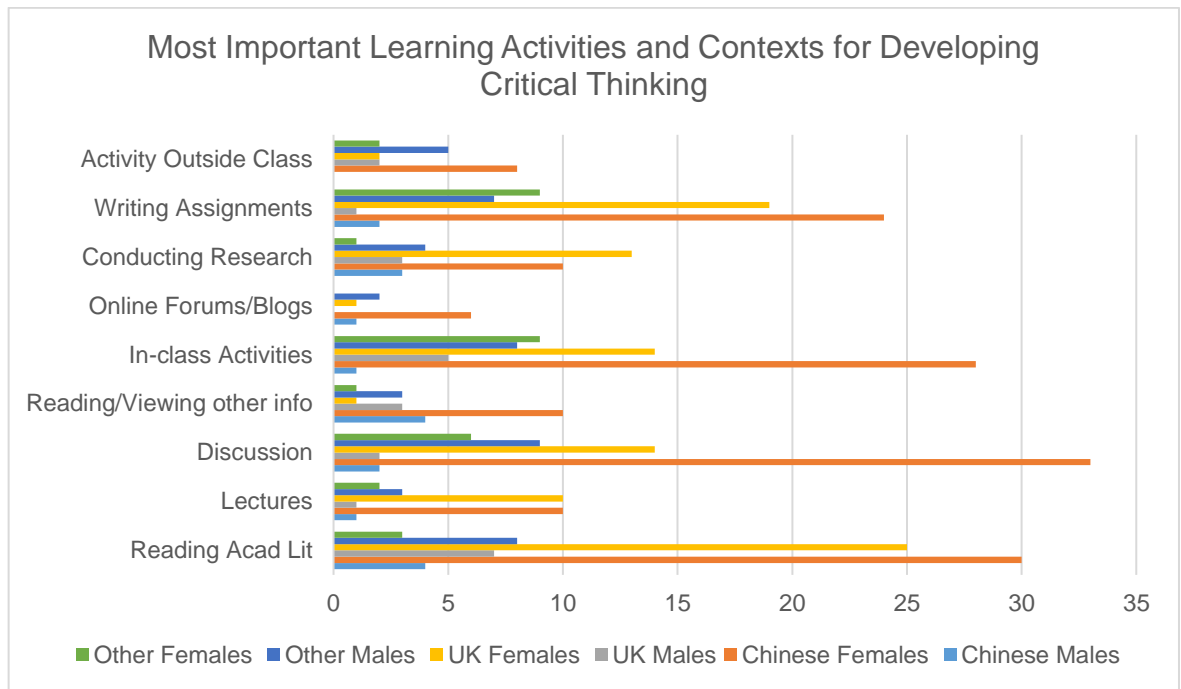
Figure 4-8 – Most Important Learning Activities and Contexts for Developing Critical Thinking by Nationality Grouping and Sex

In contrast UK females rated reading academic literature top (28.7%, n25), followed by writing assignments (21.8%, n19) and both discussion (16.1%, n14) and in-class activities (16.1%, n14). Females in the Other cohort differed again from females in the two former groups in jointly favouring writing assignments (31.0%, n9) and in-class activities (31.0%, n9) followed by discussion (20.7%, n6). This demonstrates differences in preferences amongst the female sample when split by their national grouping and reflected against the top-line sample results. Moreover, the male students in both China (36.4%, n4) and UK (35.0%, n7) groupings selected reading academic literature as their most important learning activity for developing critical thinking, with peers in the Other grouping opting for discussion (28.1%, n9) followed jointly by reading academic literature (25.0%, n8) and in-class activities (25%, n8). What these findings show is a preference amongst UK females and males and Chinese males in all selecting reading academic literature as the key means to develop critical thinking, while Chinese females and males in the Other cohort favoured discussion, and females in the Other cohort favouring neither, instead preferring writing and in-class activities.

To my surprise writing assignments scored low on this question in comparison with other activities. This could be due to the differing pedagogies within Chinese education possibly requiring less written assessment, or a preference away from it as an enabler of critical thinking for this largest sub-sample. Furthermore, the finding relating to the unpopularity of

lectures is intriguing given their predominant role within formal teaching time, when not favoured by many students in promoting their criticality with only 27 students from the 293 sampled selecting this as the most important activity or learning context which aids critical thinking development.

In addition, barring the preference of UK females to reading literature, these findings to suggest students' preference for social means as facilitating their critical thinking development with a strong preference for discussion and in-class activities within the sample, as literature and research show (Wilson & Howitt, 2016; Kuhn, 2019).

4.4.8 Essential Critical Thinking Skills

Students were then presented with a list of twelve skills and asked to select four of these skills which they considered to be essential for good or effective critical thinking. These skills unordered within the questionnaire, were:

Interpreting	Identifying assumptions
Asking questions for clarification	Evaluating arguments
Synthesizing claims	Inference making
Analysing claims	Recognising theories and concepts
Predicting	Problem solving
Reasoning verbally	Constructing an argument

Ten of these skills were adopted from Davies' (2015) taxonomy of critical thinking skills with my own addition of "constructing an argument" and "recognising theories and concepts" in light of these key critical thinking skills and their requirement and prevalence within master's study (Atherton, 2013). Multiple response analysis was performed for the results of this multiple response question asking students to rank the listed critical thinking skills in order of importance to them in relation to their view of critical thinking (Huizingh, 2007). The students' responses are illustrated below:
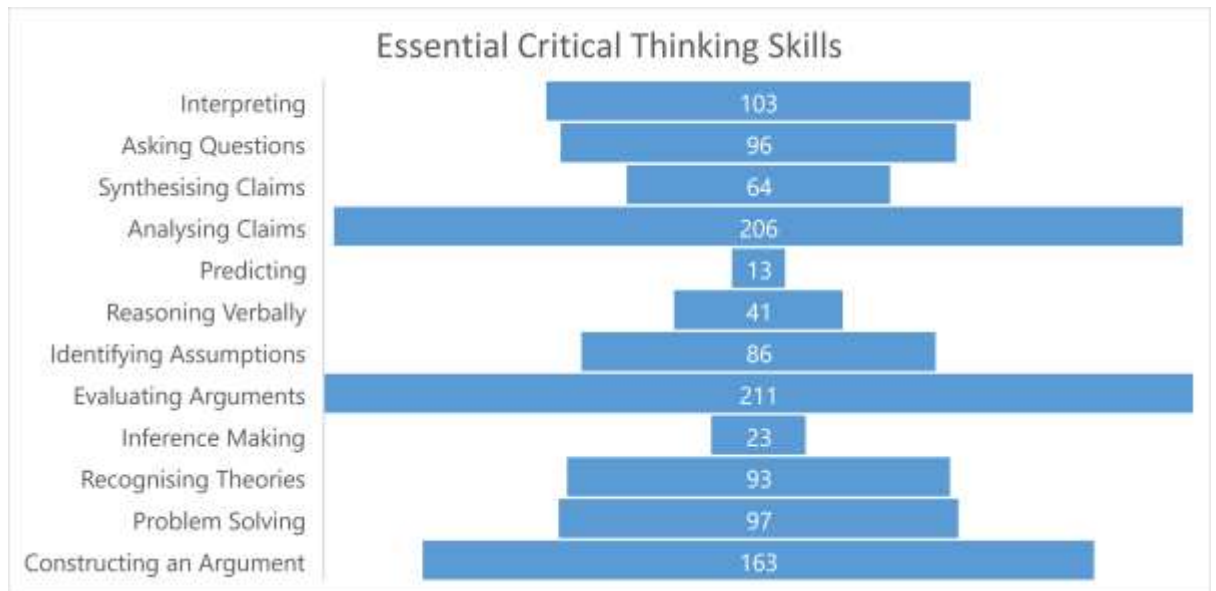
Figure 4-9 – Essential Critical Thinking Skills - Most Important

As with the previous question asking students to rank activities or contexts of learning, many participants made errors in correctly ranking their responses within these questions, possibly due to misinterpreting the instructions or not understanding these within the questionnaire. Due to this, only data for those items (activities and skills) top ranked/scored by students is reported.

Of the 1,196 responses provided by the students, and as Figure 4-9 above shows, 72.3% (n211) of students selected "evaluating arguments" as the skill they thought most important for critical thinking. "Analysing claims" was second selected by 70.5% (n206) of students, while "constructing an argument" followed, chosen by 55.8% (n163) of the sample. Following the three top items, the remaining nine skills saw a significant drop in responses from students. These overall results suggest students through selecting "evaluating arguments" are conversant and familiar with a core aspect of critical thinking which is a complex critical thinking skill, as Davies (2015) outlines. However, while indicating familiarity with this term and skill, it does not represent understanding, requisite development of or application of this skill, but rather possible familiarisation with the term and task within their academic learning activities. For example, other complex critical thinking skills as identified by Davies' (2015) taxonomy – "reasoning verbally" and "inference making" – score lowly in comparison with 3.4% and 1.9% of responses respectively. Of the top four selected by students, they do span the levels of critical thinking skills from "foundational" ("interpreting"), "higher-level" ("analysing claims") and "complex thinking skills" ("evaluating arguments"); the addition of "constructing an argument" and its selection, in third with 13.6% of responses, infers an understanding

amongst some of the sample of the need for and incremental development and application of such critical thinking skills for use within master's study. However, it is worth noting that students on the Educational Studies (n131 students) programme undertake a compulsory module with an assignment that expressly requires students to identify and defend claims, while analysing the claims made by peers who present these initially in seminar presentations. Contributing to 46.1% (n95) of the responses in selecting "analysing claims", 72% of Educational Studies students selected this option, partly explaining the very high response rate this item gained. However, "evaluating arguments" saw an even higher response rate by the overall sample where the Educational Studies students could again be seen to skew this with 78% (n103) also selecting this item.
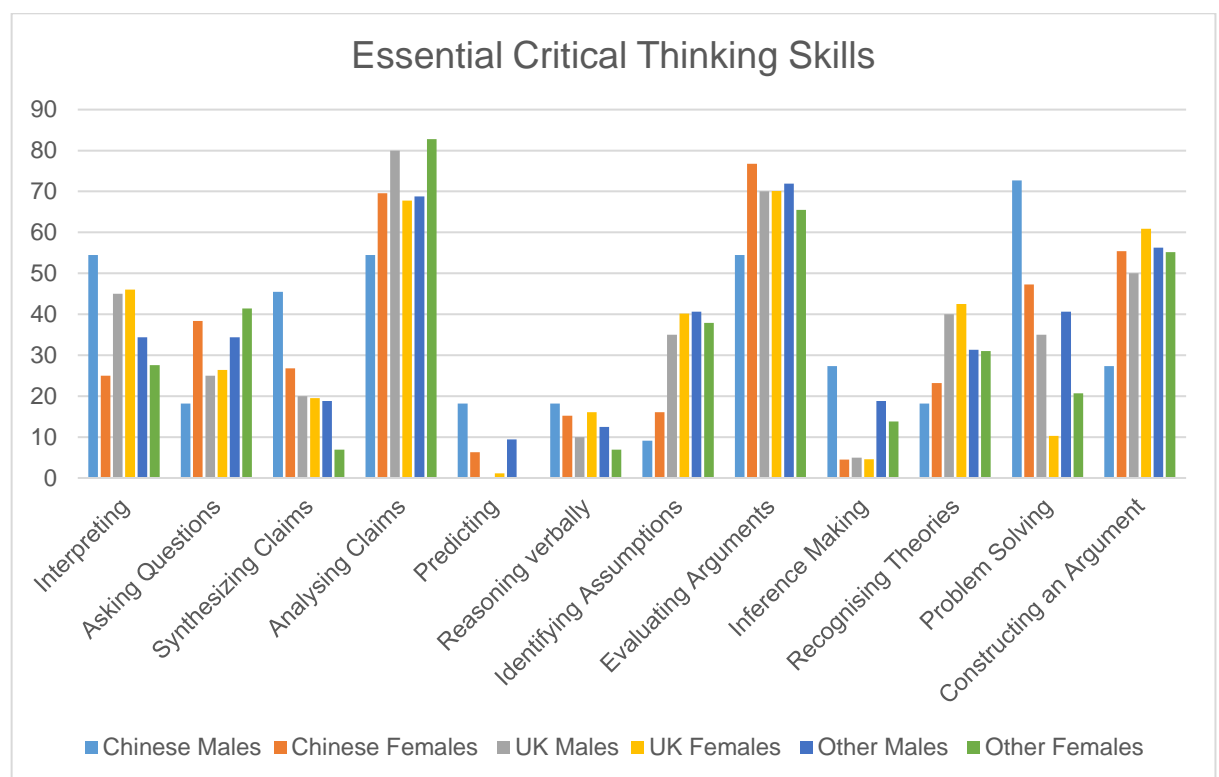
Figure 4-10 – Essential Critical Thinking Skills - Most Important by Nationality Grouping and Sex

When splitting the data by three-level national grouping and sex, the results become more intriguing. For example, contrary to my own expectations and much of the literature, Chinese males in particular were the respondents proportionally more likely to select the complex critical thinking skills, apart from "evaluating arguments" (54.5%), as essential – "reasoning verbally" (18.2%), "inference making" (18.2%), and "problem solving" (72.7%). For "evaluating arguments" and "analysing claims" the top-level results appear replicated across the sexes and national groupings. "Evaluating arguments", scored lowest by Chinese males, is seen again in responses for "constructing an argument" (inserted by me), the third highest

rated item (n163) though with only 27.3% selecting this as one of four most essential critical thinking skills compared with 55.4% of their female counterparts – though very low numbers of males hinder accurate comparison. Also of note relating to complex critical thinking skills are the very low scores from UK students, particularly in "inference making", "reasoning verbally" and "problem solving" when the expectation would be that UK students would likely be most conversant with such skills and their use from their familiarity with UK HE, compared to their international peers.

4.4.9 Critical Thinking Importance

Following the two scale instruments in the survey (discussed in the next section), students were posed two additional questions addressing the actual (or perceived) importance they attached to the utility and/or application of critical thinking within both their professional, work life and personal, daily life. These questions were devised with the view that the responses may allow for initial insights into students' conceptualisation of critical thinking in line with traditional skills-based, technical views or more akin to the adopted view of criticality which I pertain to in terms of the scope and utility they attach to critical thinking.

Professional, Work Life

All participants responded to both questions. For the question, "*How important do you think that critical thinking is (or is likely to be) in your professional life/work, career, future career or profession?*" the sample scored a mean of 4.42 (S/D .909) on the five-point scale of importance with 61.1% (n179) stating critical thinking was or would be "very important" in their work or career, and 27.6% (n81) stating it would be "important".
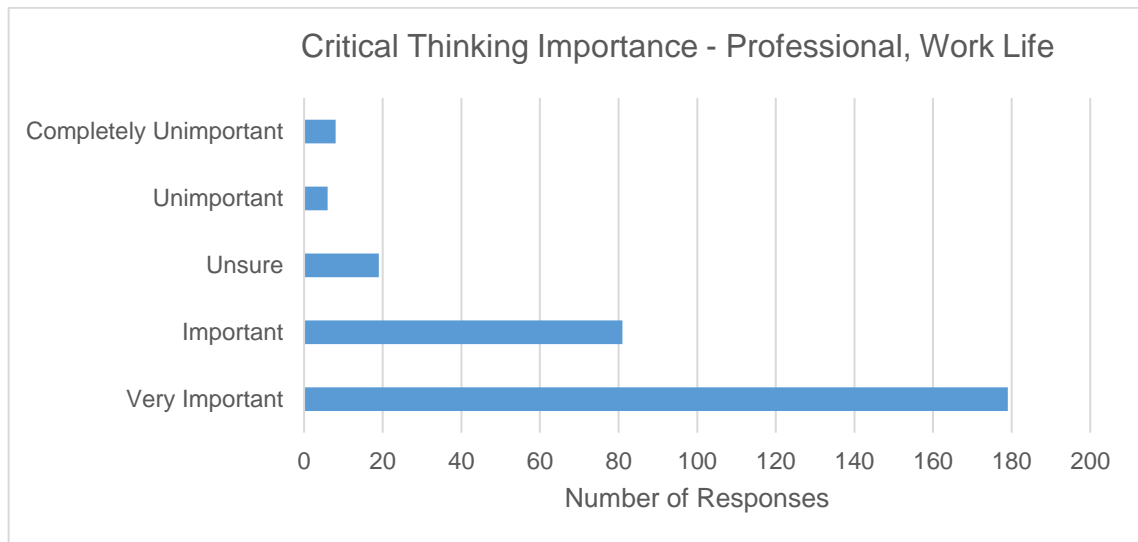
Figure 4-11 – Critical Thinking Importance – Professional, Work Life

Only 4.7% (n14) stated that critical thinking would be or was "unimportant" within their work or career, while 19 (6.5%) students were "unsure" of the importance within their professional context. Most students, 88.7% (n260), clearly identified that critical thinking was either "important" or "very important" in their work or future career. From the nationality groupings it was Chinese students who ranked work highest as "very important" with 70.7% of the cohort selecting this with 21.1% viewing this as "important" and the lowest percentage in the sample "unsure" (4.1%), as compared with 9.3% of UK students and 6.6% of Other students. Thus, UK students showed the most doubt in this question and had the highest proportion responding that critical thinking in professional life was "unimportant" or "completely unimportant" at 5.6%, while Chinese students (91.8%) attached the most importance to critical thinking in this context, followed by students in the Other (88.6%) and UK (85.1%) groupings.

Personal, Daily Life

When asking the students, *"How important is critical thinking to you in your daily life?"*, the results illustrated variation between the perceived importance of critical thinking and its use within the two differing contexts of everyday, personal life and professional, work life.
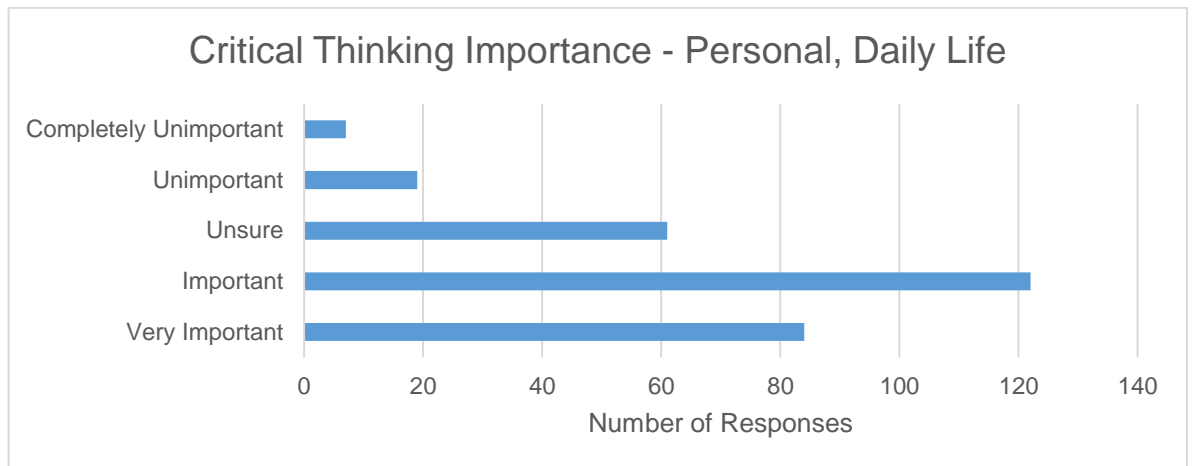
Figure 4-12 – Critical Thinking Importance – Personal, Daily Life

A lower mean score of 3.87 (S/D .978) for personal, daily life compared with a mean of 4.42 (S/D .909) for professional, work life suggests the role of critical thinking is seen as more important in the workplace than in daily life.

Figure 4-13 below illustrates the differences in the responses of students to these two questions. A paired samples t-test was conducted to compare the mean scores for both questions on the importance of criticality at work and in personal life. There was a significant difference identified in the scores for professional, work life (M=4.42, SD=0.90) and personal, daily life (M=3.87, SD=0.97) contexts (t (292)=11.166, $p < .005$ (.000). The effect size calculated from the Cohen's d (d=0.652 (292), p<0.001) value suggests a moderate to large effect size. Therefore, there was a significant difference amongst the sample between the importance students attached to critical thinking in their personal life and professional life with students viewing critical thinking in professional, work life as more important. This significant result may be indicative of the scope of critical thinking amongst the sample and suggest they may view its application or utility as context specific. The interviews allowed for this finding to be explored further with some of the questionnaire respondents, discussed in the following chapter.
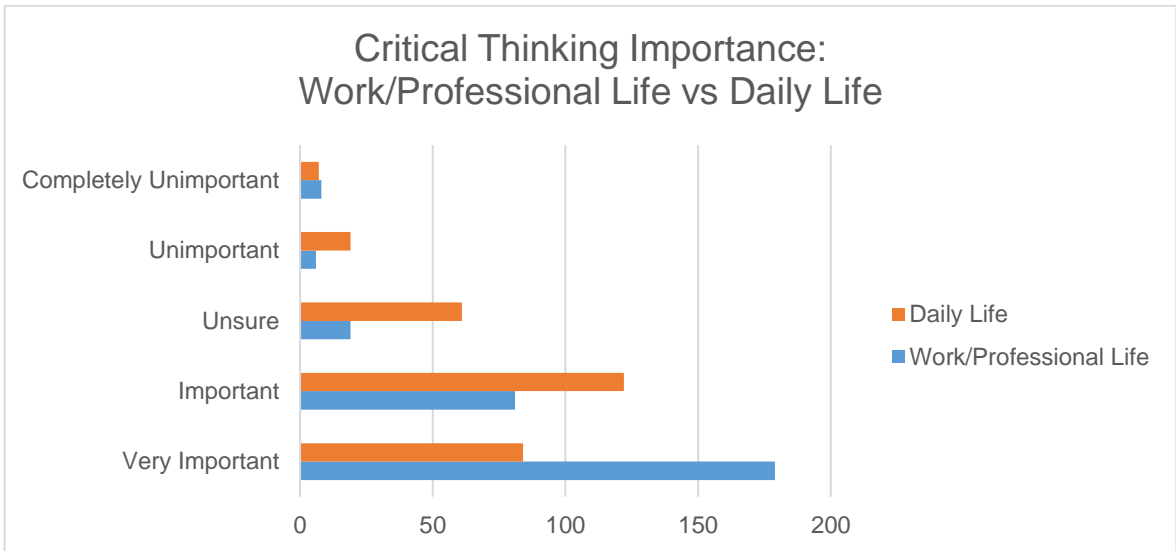
Figure 4-13 – Critical Thinking Importance – Mean Scores: Professional, Work Life vs Personal, Daily Life

In contrast to the 88.7% (n260) overall importance reported by students of critical thinking in the workplace, only 70.3% (n206) reported critical thinking as either "very important" (28.7%, n84) or "important" (41.6%, n122) within their daily life. 61 students (20.8%) were "unsure" of its importance in their personal life, while 8.9% (n26) reported that critical thinking was either "unimportant" (6.5%, n19) or "completely unimportant" (2.4%, n7).

Splitting the dataset for these responses, however, highlighted a level of ambiguity in the findings related to critical thinking's importance in students' personal, daily life.
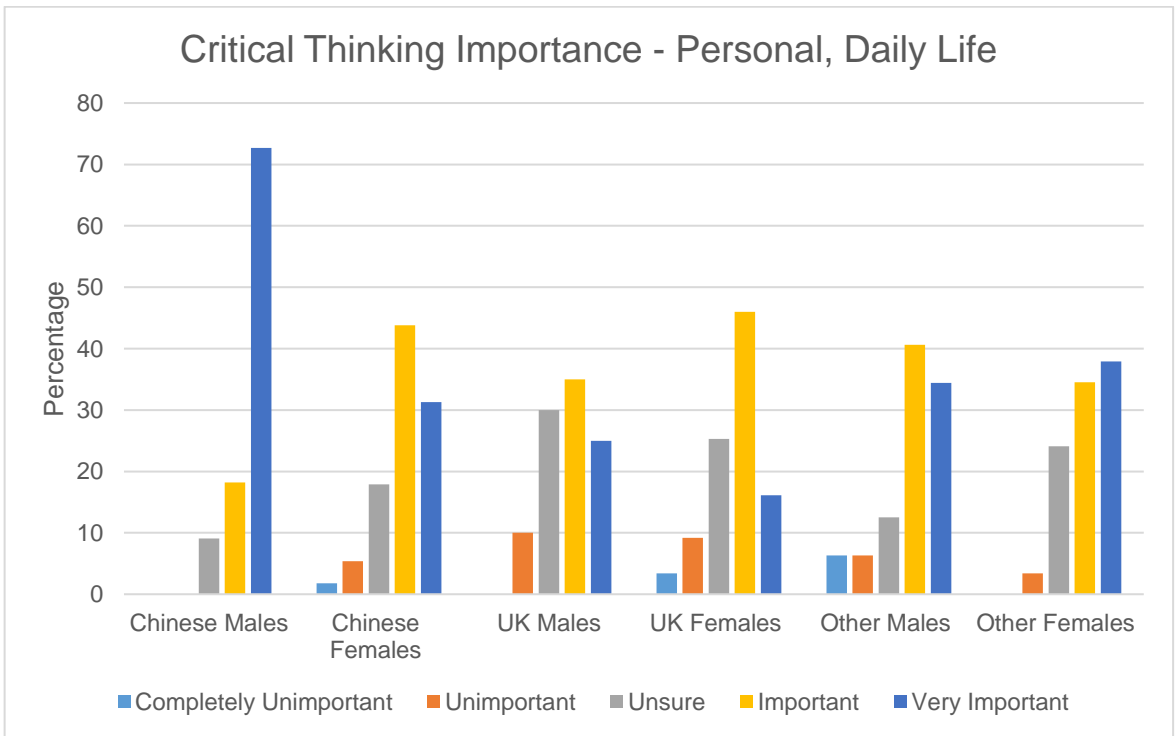
Figure 4-14 – Critical Thinking Importance in Personal, Daily Life by National Grouping and Sex

As Figure 4-14 illustrates, there is a level of equivocality seen in the distribution of responses in personal, daily life importance. Chinese males, though very small in number, responded with the highest rating with 90.9% viewing critical thinking in daily life as "very important" (72.7%) or "important" (18.2%), compared with only 60.0% of UK males and 75.0% of Other males. Also illustrative from the figure above is the greater proportion of UK (12.1%) and Other (8.2%) students viewing critical thinking here as "unimportant" or "completely unimportant" compared with their Chinese peers (6.5%), to my surprise. Moreover, a glance of the table in Figure 4-14 shows the highest level of doubt amongst UK students (26.2%) compared with students in the Other (18.0%) and Chinese (17.1%) groups.

In contrast, responses from students split by nationality cohort and sex for critical thinking's importance in professional, work life appear more evenly distributed with students in all groupings and sexes responding unequivocally in assigning more importance to critical thinking in this context. What is clear is that students' lack of doubt, seen in the previous figure for daily life, is vastly reduced in this context with UK students still the most "unsure" at 11.5% amongst females, while no males in this group are "unsure" of critical thinking's importance in work compared with 30% of UK males "unsure" of critical thinking's importance to them in their everyday life.
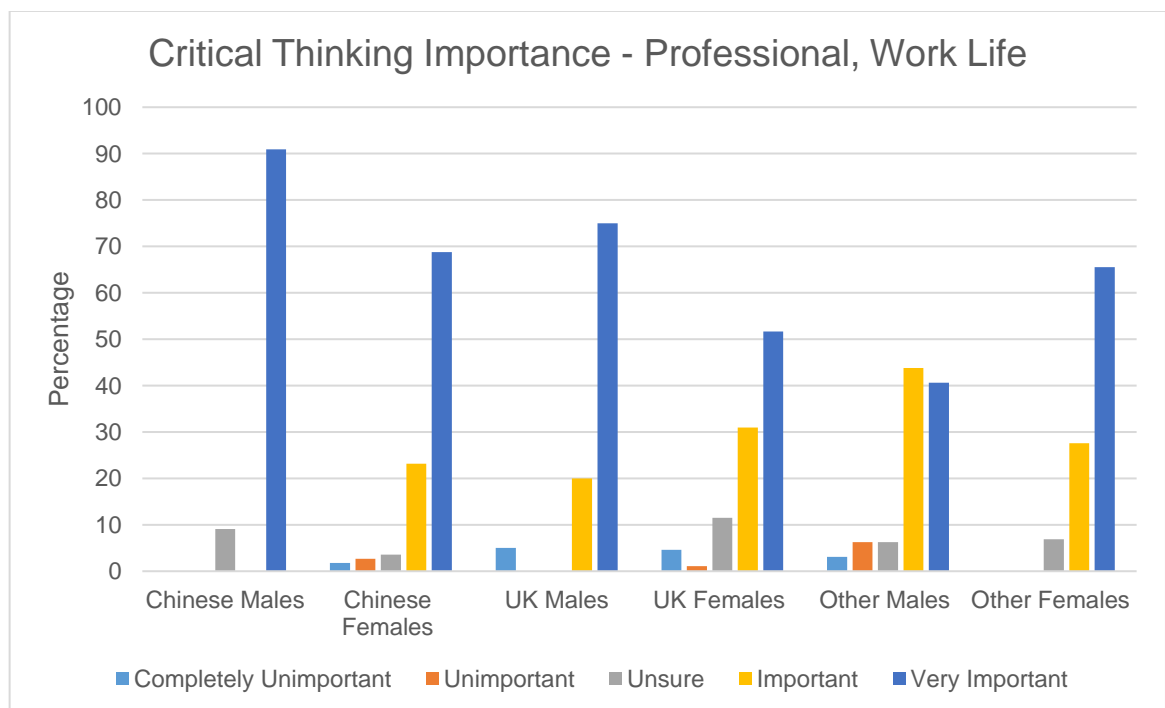
Figure 4-15 – Critical Thinking Importance in Professional, Work Life by National Grouping and Sex

Not only did all groupings and sexes report higher importance here, but critical thinking in professional life was viewed overall as "very important" by a higher proportion of the student sample. For example, Chinese males reported 90.9% for the perceived importance they attached to critical thinking in daily life when combining "important and very important", while for work life 90.9% responded viewing critical thinking as "very important", this sub-group also had the smallest difference in their responses to these two questions. Moreover, in every sub-grouping students resoundingly reported critical thinking in professional settings as "very important" (n179) assigning a higher level of importance here than in daily life (n84).
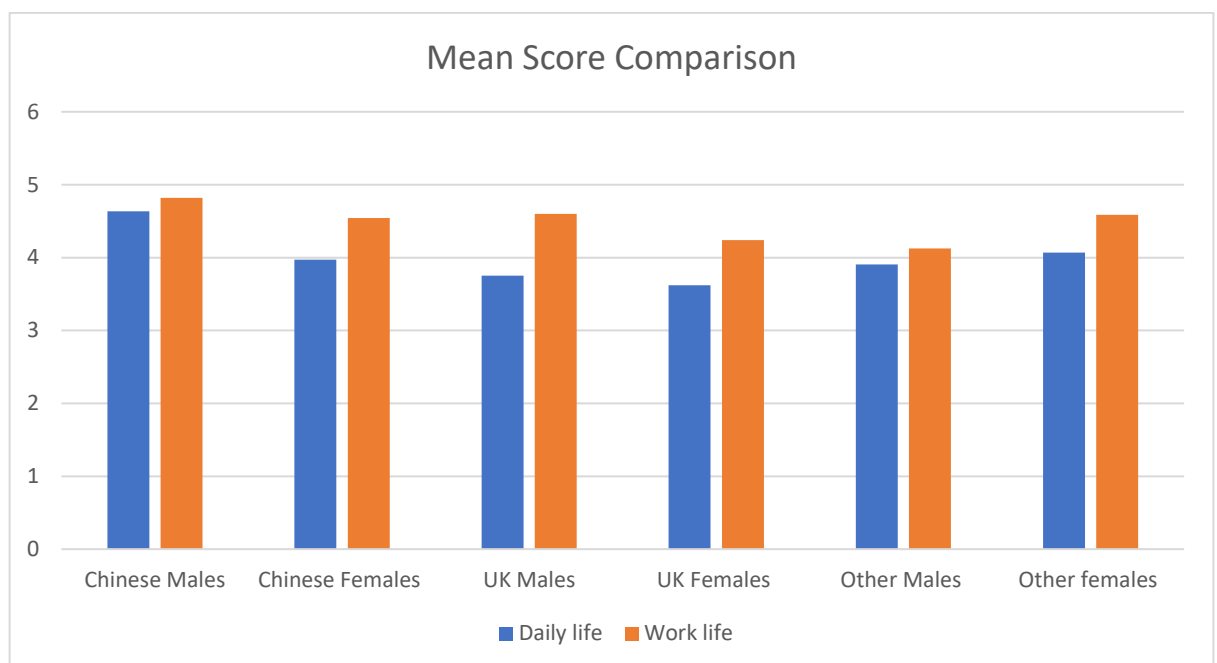
Figure 4-16 – Comparison of Mean Scores for Critical Thinking Importance in Professional, Work Life vs Personal, Work Life by National Grouping and Sex

As with the response totals and grouping breakdowns for each question, Figure 4-16 further demonstrates through comparison of mean scores that across every sub-grouping – sex and nationality cohort – students attributed greater importance to critical thinking in work life than daily life. The starkest difference in importance designated to each context was, to my surprise, among UK students with the highest mean differences observed among males (0.85) with females (0.62) in their responses viewing work life as more salient for critical thinking than daily, personal life.

As noted in Section 3.10, ANOVA was used to test if the means from three or more unrelated groups were equal, in this case the three nationality groupings. However, when testing assumptions for ANOVA testing between the nationality groups and gender for critical thinking's importance, outliers were found in the data. Assessment of a boxplot identified seven outliers, two within the UK grouping and five within the Chinese grouping; these were determined to be neither data entry nor measurement errors. Rather, these outliers were seen as genuinely unusual values amongst the responses and were kept within the data rather than modifying the values or removing the outliers. Due to this, data was not normally distributed for each group, as assessed by Shapiro-Wilk test ($p<.05$), and analysis of variance (ANOVA) not conducted. Instead, further analysis was performed by way of non-parametric tests in the form of paired samples t-tests. As Lumley *et al.* (2002: 151) contend, t-tests, like linear regression, are "valid for any distribution" where they are specifically useful in larger samples in comparing the mean of a variable for differing subjects.

Findings from paired samples t-tests reinforced the findings discussed herein, highlighting a significant difference in mean scores amongst the three national groupings where students reported higher importance of critical thinking within professional, work life over personal, daily life – UK students (-.663 *t* (107) = -7.454, $p<.005$ [.000]), Chinese students (0.536 *t* (123) = -8.445, $p<.005$ [.000]), and Other students (-.360 *t* (61) = -3.084, $p<.005$ [.003]). Results from Cohen's *d* indicated a moderate to large effect for Chinese (*d*=0.761 (122), $p<.000$) and UK students (*d*=0.721 (106), $p<.000$), and small to moderate effect size for students in the Other grouping (*d*=0.394 (60), $p<.003$) (Kotrlik, *et al.*, 2011). Furthermore, comparing mean responses by sex within nationality grouping between these two questions was undertaken through further paired samples t-tests. Statistical significance in mean difference was also found at this level between UK males (-.850 *t* (20) = -3.655, $p<.005$ [.002]) and females (-.620 *t* (87) = -6.488, $p<.005$ [.000]), amongst Chinese females (-.571 *t* (112) = -8.717, $p<.005$ [.000]) and Other females (-.517 *t* (29) = -3.360, $p<.005$ [.002]).

4.5 Survey Scale Validation

As described in the methodology chapter, two validated scale instruments were adopted for the questionnaire to gain insight into students' attitudes and beliefs of critical thinking in master's study using Stupple, *et al.*'s (2017) Critical Thinking Toolkit (CriTT), as well as students' critical thinking disposition using Sosu's (2013) Critical Thinking Disposition Scale (CTDS).

In relation to both scales, these first had to be validated against my sample, which is both complex and diverse. This complexity and diversity became more apparent when comparing it with the Stupple *et al.* (2017) sample population which comprised 133 undergraduate psychology students from first and second year aged between 18-50 years, and predominantly female (98 to 29). While both age and sex were approximate with my sample, nationality was not disclosed but mention of using terminology "familiar to UK students" (Stupple, *et al.* 2017: 93) suggested most sampled were UK students. Moreover, with nationality potentially homogenous the same can be said of the subject area and level of study with all Stupple *et al.*'s (2017) respondents studying undergraduate psychology; in contrast to my sample of 40 nationalities from 13 master's programme at three universities.

In comparison with Sosu's (2013) sample, my sample had shared more commonalities. Firstly, Sosu's (2013) two sample populations contained students from education, a subject cognate with the largest cohort of my sample and many other programmes within my sample. Secondly, Sosu sampled both undergraduate and postgraduate students employing two samples containing both student cohorts within each; while it would have been more advantageous for my purposes for undergraduates and postgraduates to be sampled separately to help compare directly with my master's sample, his samples do bring more heterogeneity than Stupple *et al.*'s (2017). Moreover, what this did provide for Sosu was comparable latent means within the sample between the two constituencies whereby "graduate students scored significantly higher on both dimensions of critical thinking disposition than undergraduate students" (Sosu, 2013: 115), suggesting the validity and reliability of the scale construct.

4.5.1 Critical Thinking Toolkit (CriTT)

As detailed in Section 3.10, I attempted to replicate Stupple *et al.*'s (2017) data analysis as presented in their paper for the data generated from my own sample in order to validate the scale instrument and its three identified factors for use with my sample, following their actions in doing so (see Stupple *et al.*, 2017: 94-96). Firstly, having created scales from summing all 27 items from all three factors, I sought to measure the scale's reliability using Cronbach's alpha. The scale itself was seen to have a high-level of internal consistency with a Cronbach's alpha of 0.872, though with the alpha value close to 0.9 this indicates there is a degree of redundancy with the scale (Lund Research, 2018f). Moreover, there were low correlations with several items, such as item 6 (.066), item 10 (-.222), item 12 (.069) and item 21 (.060). These items represent the "Misconceptions" factor which Stupple et al. (2017) themselves highlighted as having lower factor loadings compared with the other two

factors, "Confidence in Critical Thinking" and "Valuing Critical Thinking". Moreover, when attempting to run Principal Axis Factoring (PAF) there were issues with some of the underlying assumptions. Examination of the Correlation Matrix suggested issues with several items having correlations below 0.3. Of the 27 items, only three of these had correlations below 0.3 (items 6, 10, 12 and 21) with the remainder all violating the 0.3 assumption with some values exceeding 0.6 (e.g. item 4 [.744], item 13 [.661]) and another five items (14,15, 19, 20 and 27). In addition, collinearity was deemed too high at 0.00001024 when recommended minimum is 0.0001 (Leech, *et al.,* 2007). Moreover, while KMO and Bartlett's test met criteria when examining KMO measures (Measures of Sampling Adequacy) for individual variables item six was deemed unacceptable (.371); item 12 was judged to be miserable; and item 20 at best mediocre (Kaiser, 1974). Furthermore, as earlier noted, initial communalities showed seven items did not meet the minimum criteria of >.30 (Laerd Statistics, 2015), as suggested by Stupple *et al.* (2017) in specifying their 3-factor solution. Examination of the rotated structure matrix showed no item loadings above 0.45 for Factor three, "Misconceptions"; two items failed to load above 0.45 on Factor one, "Confidence in Critical Thinking"; while all expected items loaded on Factor two "Valuing Critical Thinking" (see Appendix 13 for table).

Given these results it would seem justified to compare and contrast scores for at least two of the factors identified by Stupple *et al.* (2017) - Confidence in Critical Thinking and Valuing Critical Thinking.

Figure 4-17 shows the sum scores for these groupings for the first two factors. Demonstrated in the graph below, every sub-grouping by both nationality and sex scored higher in relation to "Valuing Critical Thinking", with each group scoring higher in this factor than in "Confidence in Critical Thinking".
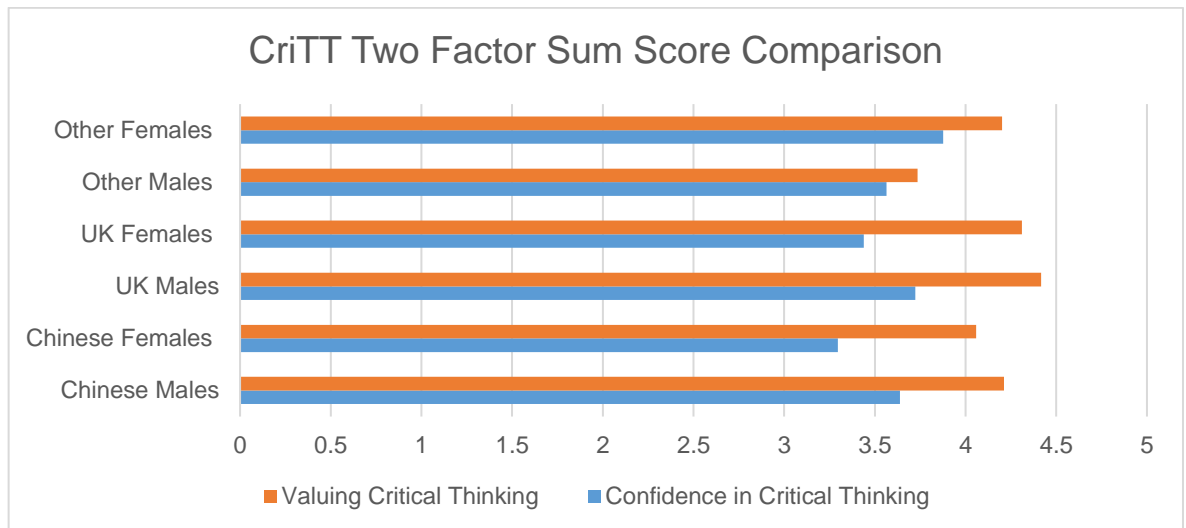
Figure 4-17 – Sum CriTT Factor - Confidence in Critical Thinking and Valuing Critical Thinking- Score Comparison by Nationality Grouping and Sex

Ostensibly this suggests that students across the sample potentially had less real or perceived confidence in their critical thinking level and/or abilities, while scoring higher in relation to how much they value critical thinking. Thus, students seem to strongly value critical thinking and its use within higher education, though they have less confidence in their own critical thinking in comparison. It could be argued that such knowledge of critical thinking and the importance students attached to it may have emanated or been influenced by the ubiquity of critical thinking with course literature and documentation, assessment criteria, feedback etc.; while the discrepancy in confidence could be implicated in the less explicit nature of critical thinking in terms of definitions, explanations and effort to establish shared understandings of this key term and concept with students within HE – as findings in the following chapter suggest.

What does appear striking here, though in-line with the previous findings presented, is that UK students appear to have the largest incongruity between how much they value critical thinking versus their confidence in critical thinking. Comparing means between the nationality groupings for these two factors, revealed a statistically significant difference between the mean score for UK students (-.838 t (107) = -12.577, $p<.005$ [.000]) and Chinese students (-.745 t (123) = -11.071, $p<.005$ [.000]), while no significance was found for students in the Other cohort (-.224 t (60) = -2.470, $p<.005$ [.016]).

This possible discrepancy between students' confidence in critical thinking and the value they attach to it was briefly explored by means of a paired samples t-test comparing the means of students' critical thinking development self-rating (Q8) against students' reported rating for critical thinking's importance in professional work-life (Q18), the context students

scored more highly than daily-life. It was thought a similar relationship involving confidence and value or importance of critical thinking could be seen by comparing responses for these two questions which, in different ways, are indicative of both confidence (self-rating, Q8) and value of critical thinking (importance, Q18). Findings of the paired samples t-test did identify a significant difference between the mean scores of these two variables, (-1.184 t (288) = -16.430, $p<.005$ [.000]). This suggests a correlation between these factors of confidence in critical thinking and valuing and/or the importance assigned to critical thinking by students. This finding is further explored in the qualitative findings and the subsequent discussion chapter.

4.5.2 Critical Thinking Disposition Scale (CTDS)

Fortunately, the factors identified by Sosu (2013) for his Critical Thinking Disposition Scale (CTDS) were replicated amongst my sample in data analysis, identifying convergence with Sosu's two factor structure – critical openness and reflective scepticism. As with the previous CriTT scale (Stupple et al., 2017), I also replicated the actions and procedure detailed by Sosu (2013) for his analysis of the factor structure in validating the CTDS instrument and its two factors for use with my sample. Notably, this involved both Exploratory Factor Analysis (EFA) and Multigroup Confirmatory Factor Analysis (MGCFA) (see Sosu, 2013). As suggested, the homogeneity of Stupple *et al.*'s (2017) sample compared with my own, may be a prime cause of this. In seeking to measure students' dispositions, Sosu's scale had quite different factors to Stupple *et al.* (2017), as highlighted in Section 3.6.1.

As Sosu (2013) advocates, students' responses were first summed to provide an overarching dispositional score for the whole scale, covering both factors, following his suggestion of dispositional scores sitting within a categorical range of low (11-34), medium (35-44) and high disposition (45-55). Figure 4-17, below, presents the overall disposition scores from the CTDS categorised as suggested and assessed by nationality grouping. Using these summed scales for the 11 items to test for internal consistency of the CTDS scale itself using Cronbach's alpha, a result of 0.855 suggested the scale was reliable (Lund Research, 2018f).
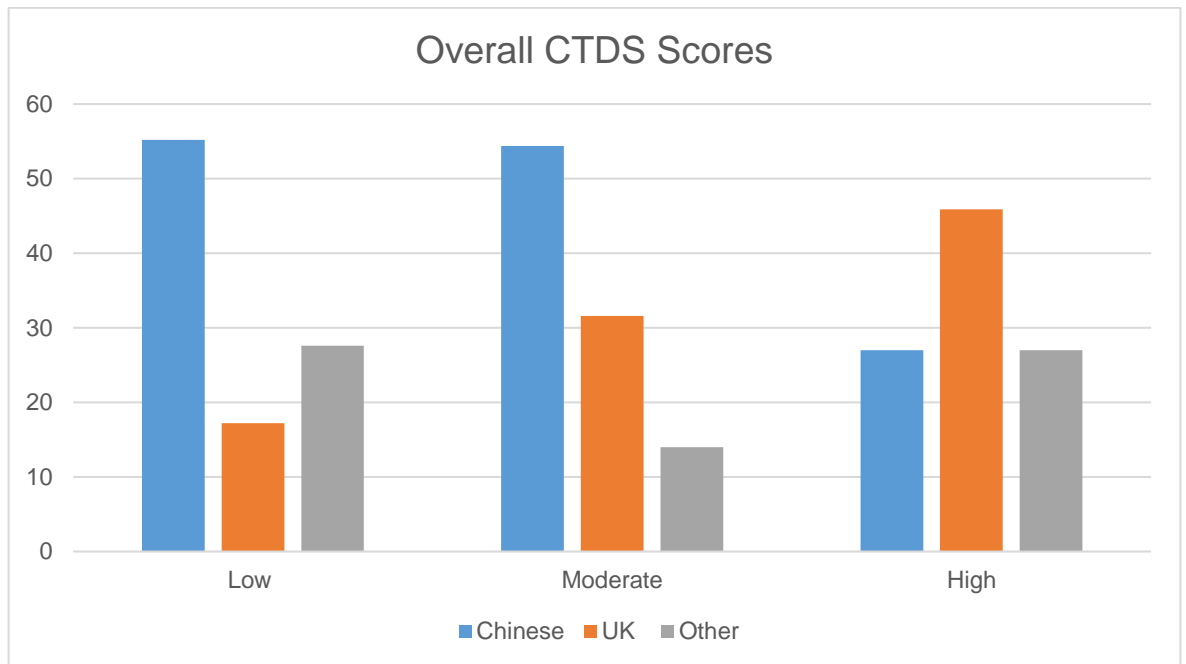
Figure 4-18 – Overall CTDS Disposition Scores by Nationality Grouping

As the graph demonstrates, UK students (n56) scored highest in terms of disposition at 45.9% compared with even numbers of students (n33) in both the China (27.0%) and Other (n33, 27.0%) grouping also categorised with a high critical disposition from their summed scores. Scoring in the moderate category is quite differently distributed with Chinese students (n74, 54.4%) relatively more likely to indicate a moderate disposition, while UK students followed (n43, 31.6%) with only 14.3% fewer students scoring moderate over high disposition, with only 14.0% of Other students (n19) scoring moderately overall. Lastly as would be anticipated from related literature, Chinese students were the most populous group found to score a low disposition (n16, 55.2%), though to a lesser extent than may have been predicted.

Additionally, splitting the data by sex revealed further notable insights. Figure 4-19, below, illustrates the divergence between the genders within their nationality grouping.
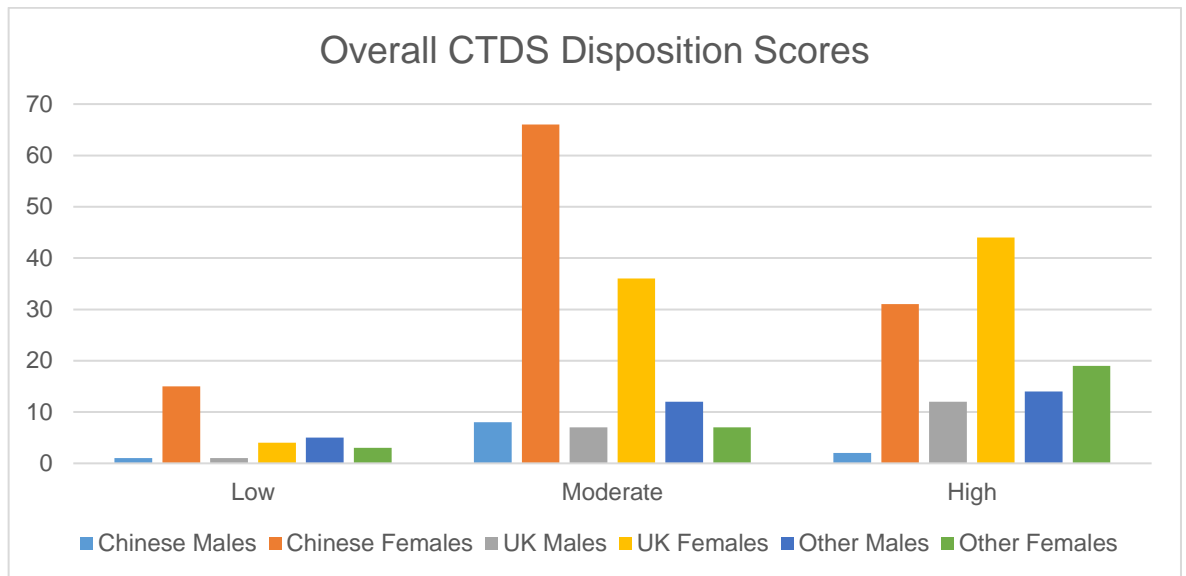
Figure 4-19 – Overall CTDS Disposition Scores by Sex and Nationality Grouping

The graph shows both UK females (n44) and Chinese females (n31) were the most populous groups within the high category. Moreover, the highest proportion of the sample across the three groupings scored in the moderate category (n136, 47.4%) and again within this, by Chinese females (n66, 60.6%) and UK females (n36, 33.0%). Acting as a counterbalance with the sample as a whole, the Other cohort, and evidently helpful here in providing a form of triangulation, shows the gender differences are not as stark as the graph and percentages suggest. Students in the Other grouping illustrated similarities in the responses of both genders within each category (high - females n19, 65.5%, males n14, 45.2%; moderate – females n7, 24.1%, males n12, 38.7%; low – females n3, 10.3%, males n5, 16.1%).

Critical Openness

Analysis of the first sub-scale revealed similar findings and distribution of the nationality groupings across the low, moderate and high categories as seen in the overall disposition scores in Figure 4-18 above. Figure 4-20 demonstrates this correlation in scoring.
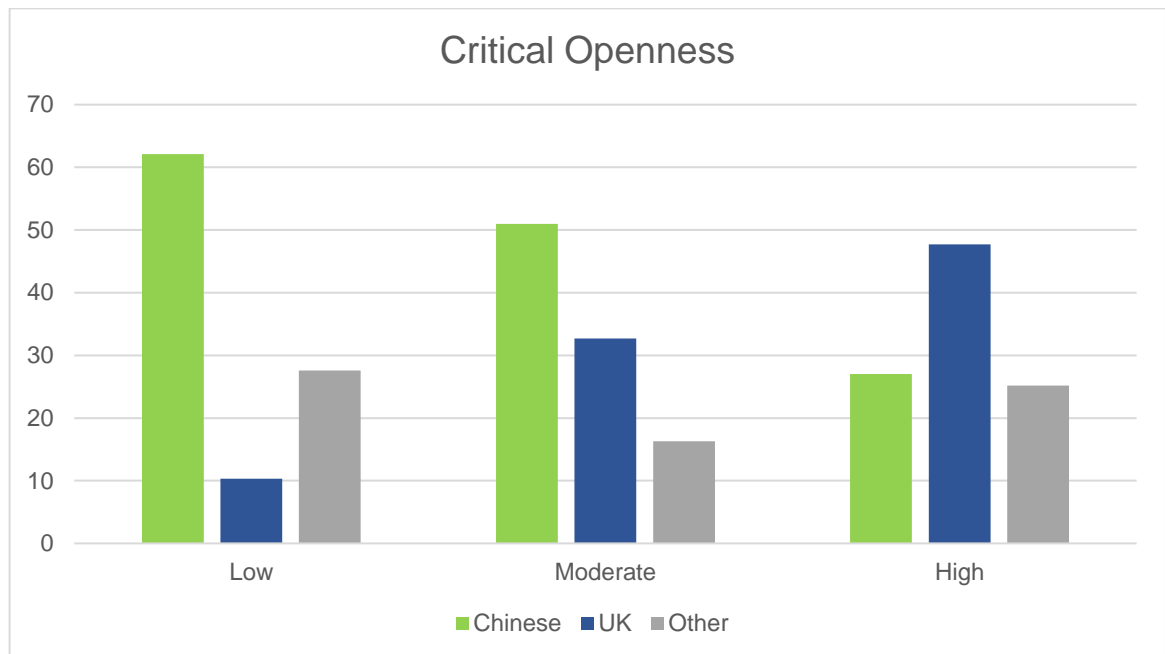
Figure 4-20 – Critical Openness Scores by Nationality Grouping

As seen above, UK students were the largest grouping scoring a high disposition (n53, 47.7%), followed by Chinese (n30, 27.0 %) and Other (n28, 25.2%) students. Chinese students, as with total scores, were the largest group proportionately (n75, 51.0%) within the moderate disposition category while students in the UK (n48, 32.7%) and Other (n24, 16.3%) groupings then followed. Fortunately, as with the overall dispositions, only 29 students across the three groupings scored a low disposition in the "critical openness" sub-scale, with Chinese students the majority here (n18, 62.1%).

As seen in the results for scoring categories by national grouping at the overall and "critical openness" levels, the distribution of scoring across the three categories of high, moderate and low is largely mimicked, as it is again when analysing these sub-scale results by gender and nationality group and comparing back to overall scoring and distribution. Figure 4-20 illustrates a near-stencil like reflection of the same output for overall disposition scores seen in Figure 4-18. This is partly explained by the "critical openness" factor containing most of the scale items (7 out of 11) and therefore having relatively more influence on overall scoring.
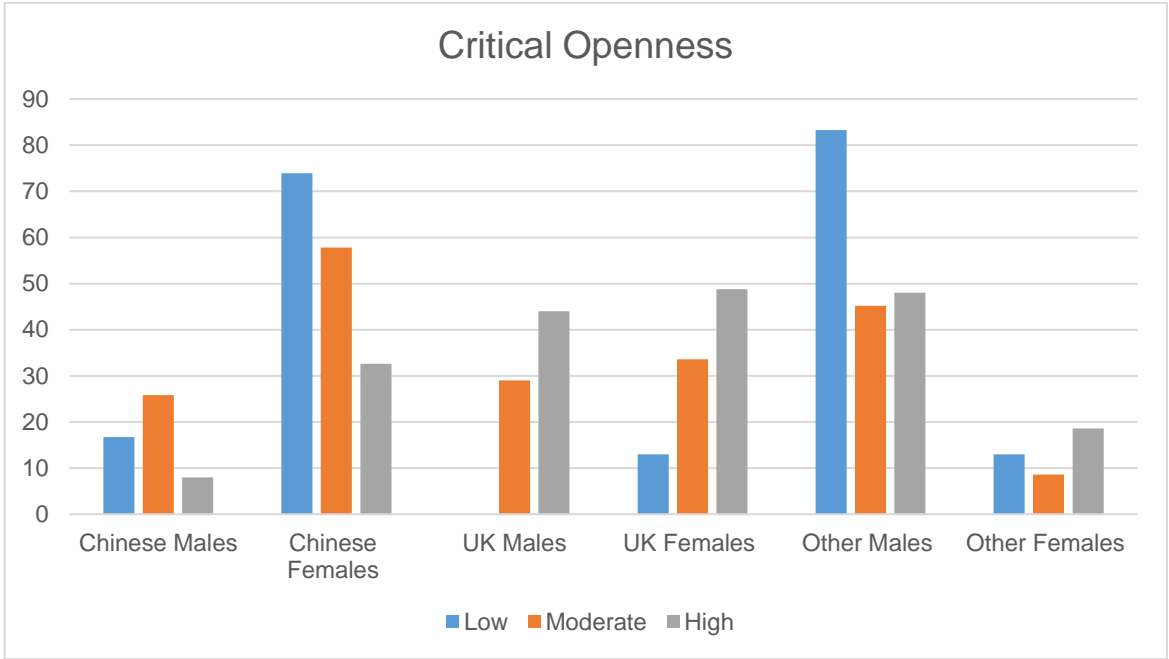
Critical Openness

Figure 4-21 – Critical Openness Scores by Nationality Grouping and Sex

Reflective Scepticism

Analysis of the second factor, shows the contrast in results for this sub-scale in comparison with those for the first sub-scale and overall scoring – shown in Figure 4-22. Notably, the scoring within the high category has greater dispersion from the previous factor, where UK students still score highest (n45, 36.9%), closely followed by Chinese (n42, 34.4%) and Other (n35, 28.7%) students.

Reflective Scepticism
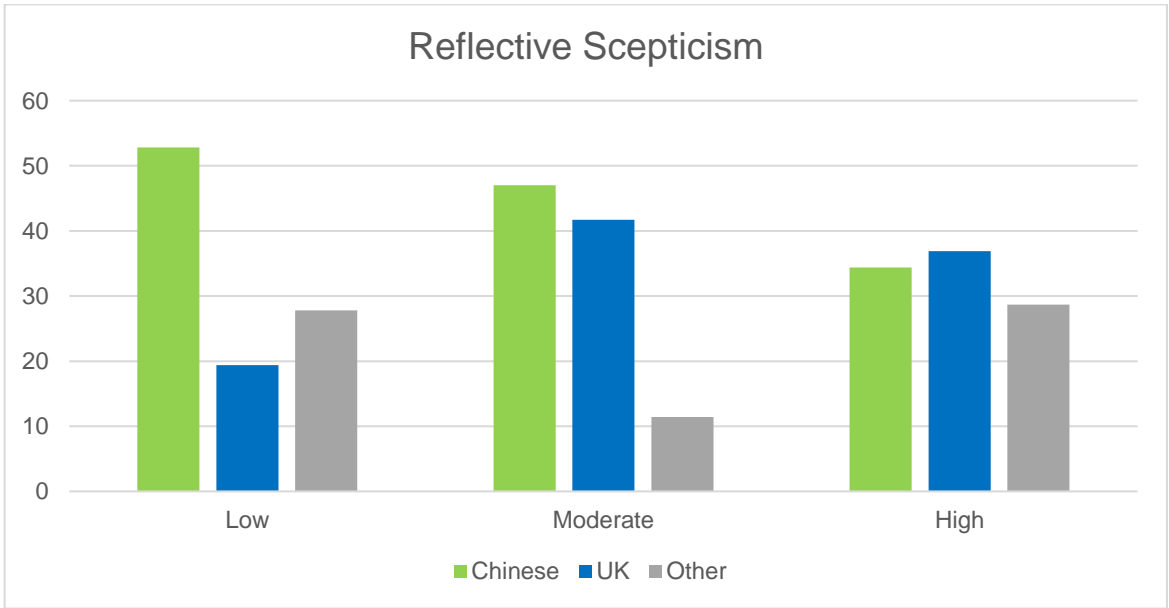
Figure 4-22 – Reflective Scepticism by Nationality Grouping

The higher number of students scoring a high disposition here is then reflected in the lower values seen within the moderate category, though this tends to follow the pattern of distribution for the same category in "critical openness" and overall scores. UK students (n55, 41.7%) in the moderate group rose as did Other students (n15, 11.4%), while there were slightly fewer Chinese students (n62, 50.4% as compared to n75, 51.0%) in this group as with the first factor and overall scores. Scoring in the low category was largely consistent with the previous factor also with minimal change.
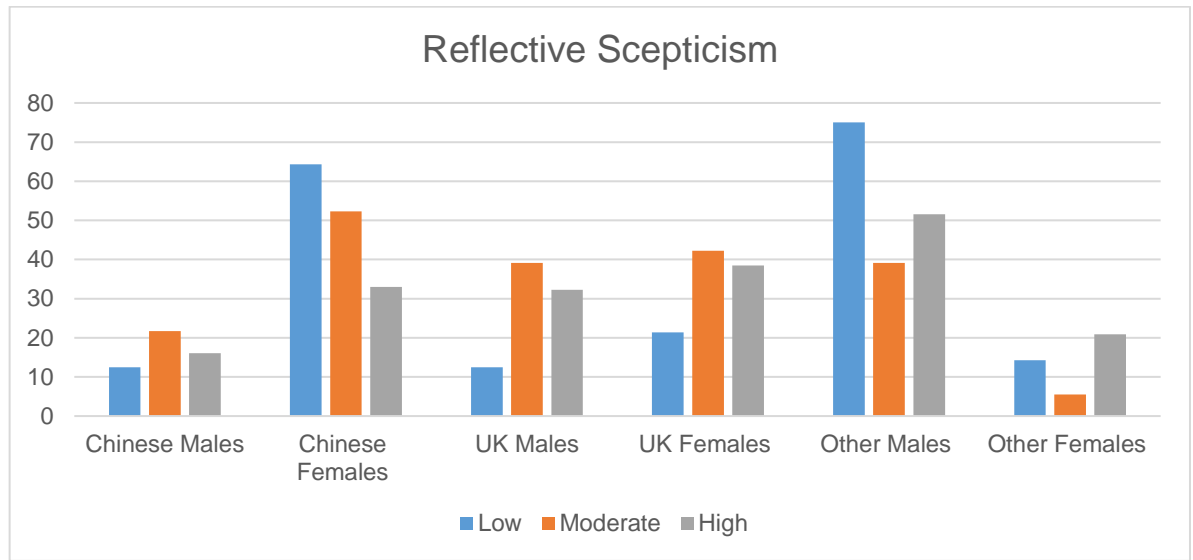
Figure 4-23 – Reflective Scepticism by Nationality Grouping

Further scrutiny of this factor by sex and nationality grouping reveals a switch in distribution shown in Figure 4-23 above. Within this "reflective scepticism" factor by count, Chinese females (n37, 33.0%) are the largest cohort within the high category having shifted from UK students (n35, 38.5%), within "critical openness", with only n2 students between the results as compared with n14 in the last factor. However, when considering these results by gender an in percentile, as presented in Figure 4-23 above, males from the Other grouping (n16m 51.6%) are the most populous sub-cohort within the high category, though the low number of males across the entire sample (n61), with the greatest proportion (n31) in the Other grouping and therefore skewing the significance of this scoring. Additionally, Chinese students not scoring highest here (or in the previous factor, and overall) could be due to the low numbers of males (3.8%, n11) within the cohort, of which the UK group had double (6.9%, n20) and which added to the female scores to return the highest scoring cohort in both factors, as Table 4-1 shows.

Apart from this reverse in the high category, there is little difference in the scoring distribution between the nationality groupings, sex and the two factors other than the lower

volume of scoring within the moderate category and specifically in those of the China and UK cohorts due to their higher scoring in the high category. This suggests that the UK group have the highest proportion of students with a high critical thinking disposition followed by those in the students in the Chinese group and then those students within the Other grouping.

Testing for association between the three CTDS categories – low, moderate and high – and the three nationality groupings, suggested an association existed between these two variables. Chi-square test results ($x^2 = 25.160, df = 4, p < .000$) revealed a significant association existed here between national grouping and the CTDS categories, which was also supported by the effect size as per the Cramer's V value of 0.209 (*p*<.001), where 0.15 to 0.25 denotes a strong association (Botsch, 2011; Glen, 2021b). As can be seen from the descriptive statistics reported for the overall CTDS scale and across its two factors, UK students were the national grouping who were found to possess the largest number of participants with a high critical thinking disposition, partly explained by the low number of males negating the China grouping's category positioning, as mentioned above. Consistent within all of these results were UK students as highest in both dispositional factors, Chinese students highest with the moderate and low categories, and second across the high categories at nationality level. Meanwhile, students in the Other cohort scored third in all categories in both factors in numbers of responses, though notably matched the Chinese cohort (n33) in second position within the high category for overall dispositional scores; when based on percentage reporting from within nationality grouping, the small numbers within this grouping (n61) skewed the results when viewed in comparison with the UK (n107) and China (n123) groupings populated by nearly double the number of students.

4.6 Student Conceptions of Critical Thinking

Aiming to help answer the first research question – How is critical thinking conceptualised among master's students? – students were asked near the start of the questionnaire (Q7):

In your own words, what does critical thinking mean to you?

In offering their own definitions of critical thinking students provided rich data in the form of free text which was extracted from the paper surveys into digital form for analysis using optical character recognition software, Remark. The open-question analysis was then undertaken using a thematic approach like that employed for the interview data following Braun and Clarke (2012) where key terms associated with critical thinking from the literature and those recurrent within the definition data guided the creation of themes and sub-themes.

The data was coded in-line with relevant themes in NVivo using the coding structure which can be seen in Appendix 14. This definitional analysis framework comprised two overarching themes – board and narrow – supplemented by a required theme to capture misconceptions of critical thinking as arguing/criticism not fitting in either category, as well as sub-themes which encapsulated specific emphases found within definitions provided. The sub-themes highlighted within the definitional data, included:

- analysis,
- assessing truth, knowledge and arguments,
- building arguments,
- creating or offering solutions,
- evidence and sources,
- questioning, and
- reflection.

This analysis of and engagement with qualitative data in the form of definitions acted as additional preparation for my analysis of the interview data, beginning with interviewees' conceptions of critical thinking. Resultantly the conceptions gathered are reported in brief providing an overview of this data and the themes arising out of its analysis. Generally, there were many vague, short and poorly articulated definitions offered which were coded as narrow in terms of conceptualisations of critical thinking. This was justified given expectations specifically of master's students from policy (SCQF, 2019; QAA, 2015; 2020) that students could possess a level of competency here, and hence a supporting comprehension and conceptualisation would be expected. Some broad definitions were provided though substantially less so than narrow, micro-focussed conceptions. As the preceding quantitative analysis suggests - and which qualitative data presented in the next chapter explores – this discrepancy may be due to the demographic make-up of the sample and the majority of Chinese students who, as literature suggests (Huang, 2008; Fakunle, *et al.*, 2016; Zhang, 2020), may be less familiar with critical thinking as a concept generally and as an academic practice due to experiencing previous schooling in different contexts and "cultures of learning" (Jin & Cortazzi, 2008). However, there were clear exceptions to this with some Chinese students demonstrating comprehensive conceptions of critical thinking.

4.6.1 Comprehensive Conceptions

The broad or macro theme (and its sub-theme 'criticality') encapsulated definitions emphasising a comprehensive notion of critical thinking, and its suggested application,

which were macro in focus moving toward criticality in viewing critical thinking as not purely an academic competency or as a technical skill considering the bigger picture. Within this theme, there were emphases on the need to *"question everything"*, suggestions of no absolute truth and that not all expert knowledge is *"right"* and should be challenged. These definitions also note critical thinking as an ability over a skill, seeing it as dispositional with an impetus to challenge the *"status quo and think differently"*. For example,

> [critical thinking is] *The ability to think, to question, to challenge something. The courage to think differently.* (Female, Education, China, 24)

These wider views saw critical thinking on a macro level for questioning, evaluating society and power structures within *"[in] seeing the larger picture of issues"* and events. In doing so, there was a link to Barnett's (1997) domains of 'world' and 'self', in addition to 'knowledge', apparent within these views with respondents relating such thought about subjects or issues to themselves and the wider world in a holistic fashion. For example:

> *It means examining your knowledge and that which you read in a way that makes you aware of backgrounds and biases and alternative ideas and theories. You consciously examine your sources and shape your own ideas based on different sources, that you question, while recognising your own positionality.* (Female, Social Science Student, Europe, 21)

Some of these definitions showed clear linkages to Barnett's (1997) view of criticality or critical being with reference to applying critical thinking to the self and considering the world as well as the need to challenge knowledge – however, application and action based on this is less discernible. Criticality was coded as a sub-theme within the "broad" theme to capture the few definitions seen as applicable to critical being. Such definitions illustrated concern with having a motivation and capability to engage in critical thoughts, reflection and applying criticality by taking action within the world, whilst suggesting transfer between these domains. Some of the few examples included:

> *Questioning, analysing and critiquing the world around you.* (Female, Education Student, UK, 33)

Where critical thinking involves:

> *Engaging with topic/subject, being able to argument* [sic] *and analyse in a way that shows understanding and arguments. Capability to apply the topic/subject to other studies/real-life.* (Female, Social Science, Guatemala, 24)

As above, these definitions show understanding in the breadth of and possible application of critical thinking and are suggestive of criticality in its transformational potential within the world (Barnett, 1997). Additionally, one Asian student described elements of criticality and appends their view with the Chinese translation of critical thinking within their response highlighting their criticality, for example:

> *Be reflective, think in different contexts before accepting one thing. In Chinese, critical thinking is translated as 'criticising and evaluating' meaning finding problems unsolved and try to think of solution.* (Male, Education, Taiwan, 29)

4.6.2 Constricted Conceptions

Contrastingly, the narrow or micro theme captured those definitions seen as constricted in scope in their view and understanding of critical thinking. They included vague conceptualisations and those focussing on skills and analysis. Predominant amongst these was the view toward and focus on the utility of critical thinking as a technical skill for study, in evaluating sources or articles, rather than having a broader utility or application. For example:

> *The skill to critically (closely) analyse and evaluate a document/piece of literature.* (Female, Education, UK, 22)

Many also referred to opinion, whether using critical thinking to inform or create opinion from the analysis and evaluation of literature, evidence or sources – this resonates with the explicit citation of "analysis" and "evaluation" throughout these responses. For example,

> *The ability to compare and contrast the views of others through literature and explain/describe your own opinion using these.* (Female, Health & Social Care, UK, 33)

However, whilst limited in scope to use in study and focus on evaluation, reference is often made to reflection, though this is slightly restricted in scope to knowledge and the professional self.

> *Reflecting and evaluating on my practice with insight and reference to policies, research and theory.* (Female, Health & Social Care, UK, 23)

Additional patterns coded here included reference to dialectic thinking, for example:

> *Similar to dialectical thoughts* (Female, Education, China, 23)

> *How much something true? Dialetical* [sic]. (Male, Education, China, 23)

There were additional responses which implicitly cited dialectical thinking or conflated critical thinking with aspects of this or binary thinking, or "weighing up pros and cons" in line with the Chinese philosophy of dialectics (Chen, 2017: 147). For example:

> *Trying to think both sides of one question and find out my opinion.* (Female, Education, China, 25)

And,

> *Critical thinking means thinking in different sides and aspects. For example, everything has their own positive and negative effects.* (Female, Education, China, 23)

Due to the volume of these responses, "two-sides" developed as a sub-theme under the narrow theme. Additionally, sub-themes were created "for study or research" for those definitions which viewed critical thinking as purposeful for HE study or research, and "think independently" for views which focus on critical thinking as independent thought. For example, "for study or research" included definitions such as:

> *The ability to be able to analyse a theory/argument put forward by an author and be able to determine its validity.* (Male, Social Science, UK, 27)

4.6.3 Misconceptions

As noted above, a third core theme was needed to capture misconceptions of critical thinking which were most evident in views interpreting this as a negative concept that denoted or assisted in arguing or criticism. Here, for example, are some of the few student conceptions coded here:

> *Arguing opinions.* (Female, Health & Social Care, UK, 42)

> *It means criticizing or evaluating the idea from different aspects.* (Female, Education, China, 23)

More troubling were the scarce views of critical thinking as dangerous or potentially damaging, for example:

> *[It is] Extremely important. Regardless of who is hurt or affected by it.* (Male, Social Science, Nigeria, 31)

And more eyebrow-raising, considering critical thinking as:

> *Being a dissedent* [sic]. (Male, Social Science, China, 23)

Beyond these core themes, additional sub-themes which capture key components cited within student definitions, are summarised in Table 4-6 below.

Table 4-6 – Critical Thinking Conceptual Categories

Conceptual Category	Memo	Quote(s)
Analysis	Focused on analysis and evaluation as the scope of or related to critical thinking. These views included analysis and evaluation of opinion, information, findings, arguments events and phenomena.	*"Critical thinking is looking at evidence, reading and analysing the information"*. (Female, Health & Social Care, UK, 49) *"Being able to provide analysis and interpret information beyond simply understanding"*. (Male, Social Sciences, Europe, 24)
Evidence/ Sources	Addressed the use and examination of evidence and sources of data, and information. This featured beliefs that evidence is required to develop logical, supported arguments and to support ideas based on evidence.	*"...consciously examine your sources and shape your own ideas based on different sources"*. (Female, Social Science, Europe, 21) *"...about the evidence for any claims made, as well as thinking about how that evidence was produced and why"*. (Female, Education, UK, 48)
Building Arguments	Categorised those responses and part responses mentioning the use of critical thinking in constructing arguments, usually for assignments.	"[critical thinking as an ability to develop]:*strong logical arguments against claims that are not reliable"*. (Female, Education, China, 21) *"To be able to justify your opinion/argument with academic evidence and to be able to select appropriate material to back up your points of view, to have an informed opinion"*. (Female, Education, UK, 30)
Assessing Truth, Knowledge & Arguments	Covered definitions (and parts of definitions) which mentioned the need to assess knowledge, truth claims and arguments where critical thinking is seen as questioning or challenging these.	*"Not taking things, ideas and claims for granted"*. (Male, Education, Russia, 25) *"Do not believe all the knowledge or the points the book provides"* (Female, Education, China, 24)
Questioning	Captured responses suggesting questioning narratives, assumptions, existing	*"Never accepting something as a given without addressing questions to it"*. (Female, Education, UK, 29)

	knowledge or wisdom and the status quo	*"The ability to question those things that society generally takes for granted. Identify power structures and interests behind them".* (Male, Social Science, UK, 22)
Reflection	Identified definitions (and part ones) that viewed reflection as a focus, part of, or element of critical thinking relating to writing, professional practice, on knowledge, research and one's own thinking.	*"Being able to look at text, theories, practice reflectively".* (Female, Education, UK, 33) *"Ability to inquire deeper about subjects and their relatedness with the wider world, and further to reflect and adapt/consolidate understandings accordingly".* (Female, Education, UK, 35)
Offering Solutions	Captured definitions (and parts of definitions) highlighting the use of critical thinking to provide solutions to problems, new ideas or to create new offerings, knowledge, approaches etc	*"New knowledge,* [sic] *based on critical viewing previously known data".* (Male, Social Sciences, Europe, 22) *"[Critical thinking is the] Ability to think beyond known ideas and develop criticisms. Challenging the status quo".* (Female, Social Science, US, 25)

This analysis of the only qualitative data gathered in the questionnaire provides a relevant segue from reporting of the quantitative data results from this across the entire sample to the more focussed and detailed analysis of the qualitative data from interviews. Hence not only does the following chapter provide more depth and insight in relation to students' conceptualisations, but key aspects related to the quantitative survey findings are further explored with students following in-depth interviews with them.

4.7 Conclusion

As presented in this chapter, the quantitative data from the questionnaire provided a variety of findings and insights related to students' criticality development. The findings from those questions dominating the survey which I had developed highlighted the variation in students' motivation amongst the three nationality groupings established, where UK students appeared motivated by career and professional reasons to undertake their masters compared with the personal interest which dominated the Chinese and Other student grouping with career/employment the second highest reason. This finding of the importance to students of criticality for the workplace or careers was then carried through to the statistically significant importance students attached to critical thinking in the professional context over the personal context of daily life.

Additional notable findings were aided with the segmentation of the sample by the three-nationality grouping – UK, Chinese and Other – justified in Section 4.3. This included the majority of students sampled having experienced memorisation/rote learning previously, largely amongst the Chinese grouping. Amongst these findings were the notable differences observed between the national groupings, some predicted from findings in the literature with others contrary to expectations. For example, Chinese males being the respondents in greatest number selecting the complex critical thinking skills as essential, with UK students scoring lowest in this area. The selection of essential critical thinking skills also emphasised the technical, instrumental nature of those selected by students in how they relate directly to tasks they are likely to encounter in their study which require use of such skills, e.g. evaluating arguments and analysing claims. Additionally, students reported largely first encountering critical thinking in class discussions while rating class discussions/activities as the most important context and learning activity aiding their development of their critical thinking from their previous degree, after reading literature. This suggests a preference for active, participatory learning including class discussions as preferable for critical thinking development, as suggested in Section 2.7. This, like the differing importance attached to critical thinking contextually, will be further explored in the following chapter.

As described, the first scale instrument employed (Stupple, *et al.*, 2017) failed in factor validation with my complex, diverse sample, though did reveal that students more strongly valued critical thinking and its use within higher education, though have less confidence in their own critical thinking in comparison, where UK students again showed greatest discrepancy between the two factors. In contrast, Sosu's (2013) CTDS scale's dual factors were validated with my sample. This revealed UK students scoring the highest in terms of overall disposition scores, with Other and Chinese grouping near comparable within the high category. Further analysis showed additional significant difference between students' self-rating of their own critical thinking development against the CTDS group norms, therefore suggesting the self-devised question asking students to self-rate their critical thinking development had merit in the data it collected and the students' reporting of this.

The critical thinking conceptions students provided demonstrated an eclectic range amongst the diverse sample, as would likely be expected. A continuum of conceptions could be seen in moving from misconceived notions to far-reaching, comprehensive views reflective of criticality and critical being. For example, from *"Being a dissident* [sic]*"* to *"Questioning, analysing and critiquing the world around you"*.

The variations across the sample in terms of comprehensions of critical thinking and the extent of these were not as simply explained by nationality/regional differences as initially thought, instead there was abundant spread across nationalities. Many constricted and misconceptions were evident amongst home, UK students contrary to assumptions in the sector, and in research literature, that this was a nuanced difficulty faced by international, specifically Asian students. However, these findings suggest such limited or misconceptions of critical thinking are not restricted to international students. Rather, the findings suggest a more widespread lack of shared understanding and across students and within HE regarding critical thinking's meaning, scope and possible utility. Conceptions held amongst master's students are further explored in the following chapter reporting analysis of interview findings.

Chapter Five – Qualitative Findings and Analysis

5.1 Introduction

Advancing from the previous chapter presenting the quantitative questionnaire results, this chapter introduces the qualitative findings from the in-depth interviews conducted, presenting the key themes and findings from these. The interviews gathered detailed, rich data addressing students' views, experiences and opinions relating to their master's study and development of criticality. Following their analysis, the results considered here encapsulate the central themes arising from the data analysis, having also been informed by the questionnaire findings. As a result, each theme has its own section with sub-themes and the significant data from these featuring within each section as the chapter progressively proceeds to attempt to answer the central research question in exploring students' experience of criticality development. To recap, the central research question under which the four subsidiary research questions sit is:

How is criticality conceptualised, developed and applied by students in master's study?

5.2 Interviewee Sample

Eighteen students who had completed the survey were interviewed having opted-in to further discuss their experiences of criticality development in their master's study. These 18 interviewees were spread across seven of the thirteen master's programmes sampled for the questionnaire, representing two of the institutions involved. Appendix 7 provides a profile of the interview student sample. As noted in the methodology chapter, there may have been a degree of sampling bias due to self-selection, with participants appearing to have high confidence and being well-versed to speak on a potentially complex and challenging topic. This challenge would have been further compounded amongst those students to whom English is not their first language and where confidence in this area (as with critical thinking) may have been an impediment to participation. For such reasons, and while this was addressed with an intervention previously discussed, this may partly explain the contrasting results from interviews compared with questionnaires, specifically surrounding conceptions of critical thinking drawn upon latterly in the previous chapter.

5.2.1 Observations from Data Collection & Analysis

Due to the topic and its far-reaching nature, as well as the semi-structure of the interviews, the depth of discussion in interviews produced a great quantity of data (circa 155,000 words), covering more areas than anticipated. Owing to this depth and volume, the findings presented

and discussed below will concentrate on the core themes emanating from these with sub-themes directly relevant to answering the research question presented also. The remaining, high-quality data not discussed here or in the following chapter, is intended to be used in later publications. For example, the data from the staff interviews is not fully reported here due to its volume but is partly reported in the following chapter in contextualising and elaborating the claims and accounts provided by students in relation to the role of staff in fostering criticality development. The qualitative findings are now presented in a narrative style where I, the researcher, tell a story that arises from the accounts of the respondents and of their experiences while drawing on emergent themes in order to answer the research questions posed at the outset of the thesis.

5.3 Interview Data Analysis

Applying the thematic coding approach described in the Methodology chapter, *a priori* themes, categories and codes were developed having been informed by the literature, notably Bailin *et al.*'s (1999) intellectual resources model, Barnett's (1997) triadic conception, and Johnston *et al.*'s (2011) developmental criticality framework. Implementing Braun and Clarke's (2006; 2012; 2019) framework for reflexive thematic analysis, initial, *a priori* themes and codes were generated following my familiarisation with the data, some themes, categories and codes were then discarded and new *en vivo* codes generated as the analysis iteratively progressed through the six-stages, aided by reflection on the analysis and coding itself. Following Maguire and Delahunt's (2017) approach, the initial themes and codes began capturing data relevant to each theme and category in line with the research questions and interview schedule, acting to capture what students described in their accounts and experiences relevant to criticality development. Having familiarised myself with the data, created initial codes and searched for themes, phase four - *Reviewing Potential Themes* - called for a rationalisation and wholesale review of the growing themes adopted within the already coded data (Braun & Clarke, 2006).

Having condensed the coding structure, I felt it was still overly descriptive and lengthy. Gibbs (2010) highlights this where in early stages of coding codes can be too descriptive, voluminous and become "unwieldy". Following Maguire and Delahunt (2017), I reflected on the themes and coding structure revisiting the themes, categories and codes with the view to making these more analytical and representative of the dataset. The themes and categories in the pre-developed coding framework were then condensed to a four-page document including themes, categories and memos. This is available on request. Following this revision six key themes remained which were mapped directly to one or more of the four

research questions. These themes were: resources, conceptualisation, development, academic literacies, intercultural and, application. The coding template in NVivo was then updated to reflect this, and the pre-coded data then re-coded in line with the new themes and categories. Hence the revised themes and categories were more cogent and applicable to the thesis in addressing the research questions. Table 5-1, below, presents this revised framework.

Table 5-1 – Revised Themes and Coding Categories

Resources (RQ1/2)		Development (RQ2)		
- UG degree		**Enablers**		**Blockers**
- - L&T Mode		- -Teaching		- -Teaching
- - Study Trip		- -Feedback		- -Feedback
- Life/Work Experience		- -Support		- -Support
- Preparedness		- -Placement		- -Placement
- Motivation		- -Reading		- -Reading
- - Professional		- -Writing		- -Writing
- - Personal		- -Assignment		- -Assignment
- Knowledge		- -Confidence		- -Contact time
- Habits of Mind		- -Challenge		- -Confidence
- CT Concepts				- -Stress
- CT Standards		Development+		
Conceptualisation (RQ1)		**Intercultural (RQ2/3/4)**		
- Broad		- Diversity		
- Narrow		- Differing Perspectives		
- Misconception				
- Assumed		- Dialogue		
- HE Purpose		- Learning from Others (CoP)		
- Value of CT				
- Contradiction				
Academic Literacies (RQ2/3/4)		**Application (RQ4)**		
- Reading		- Domains		
- Writing		- Knowledge		
- - Experience		- World		
- Assessment		- Self		
- Cultural Distance		- Limited Application		
- Language		- Linking between domains		

Following Gibbs' (2010) approach, these more emanant themes and categories could take prominence being more analytical, representative of the data and emerging themes, as well as theoretical points from the literature. For example, academic literacies relating to conventions and processes within HE that impacted or facilitated students' criticality development were given greater prominence in the thematic coding structure. This exercise allowed me to be more methodical in focussing on analysing transcripts for relevant responses aligning to themes and categories, rather than coding for what existed within the raw data.

Due to the extensive coding structure initially utilised, and the fundamental revision of this, very few *en vivo* codes were created. The revision of the coding framework could be viewed as an amalgam of *a priori* and *en vivo* code generation. Figure 5-1 shown below illustrates the thematic coding hierarchy, highlighting the most prominent themes by comparing all of the coded references across all 18 student transcripts within NVivo with the greater the area, the more coding there is under this theme.
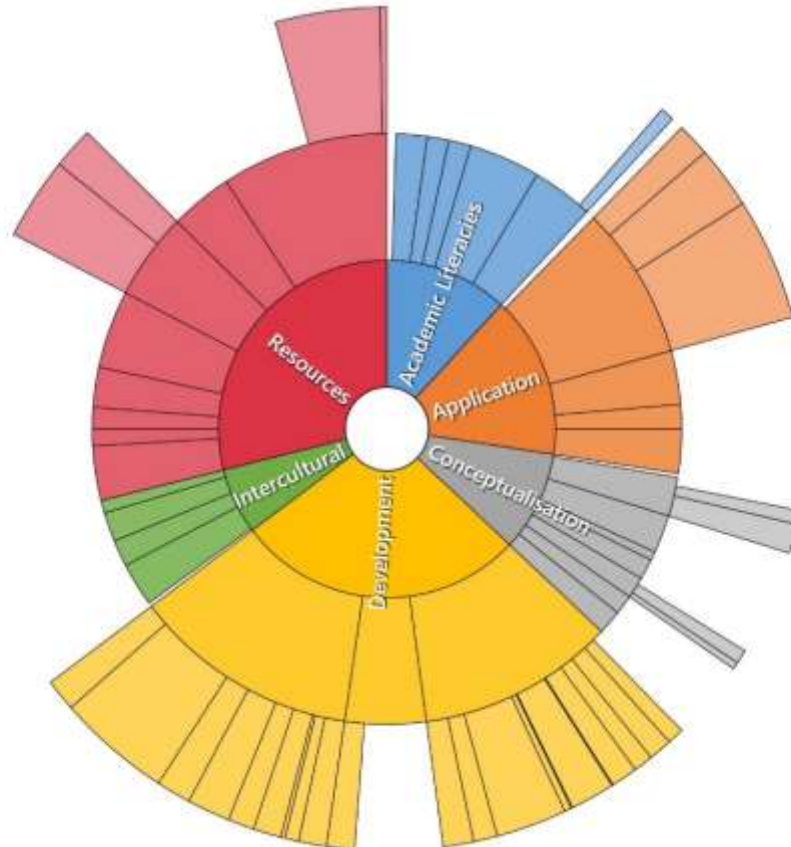
Figure 5-1 – Thematic Coding Hierarchy Coding Comparison

As will be detailed in the following sections, the overarching themes in terms of coverage throughout the interviews relate to development, resources and application followed by conceptualisation and academic literacies, with the emergent intercultural theme less prominent. Note, however, that this represents coding frequency and volume of data coded under each theme, not the importance of themes in terms of their relation to insight they provide in addressing the research question or answering the underpinning research questions, as will be explored below.

5.4 Findings - Student Interviews

The results from the analysis of the interview data are discussed here drawing on those themes which are directly relevant in helping address the research questions. Due to the volume and depth of data gathered and analysed, not all themes and sub-themes are discussed, with some reserved for the following discussion chapter which will supplement the findings presented here.

5.5 Resources

Prior to focussing on students' conceptualisation of criticality and development of it, the interviews began with background information to contextualise the present views and experiences of the student sample. This "resources" theme was intended to identify personal and intellectual resources students possessed on entry to their master's study, following Johnston *et al.*'s (2011) finding related to their significance for the criticality development of undergraduates. Students were asked about their preparedness for master's study. The sub-themes significant within the data related to the impact of students' undergraduate degree in facilitating their development of critical thinking, as well as their life and work experience and the students' habits of mind upon entering master's study.

5.5.1 Preparedness

Asked about their own preparedness for master's study, students' responses varied relative to the coherence of their previous context of study with their chosen context for postgraduate study. For example, Katy's *"main concerns were about managing time and balancing it between work and still having time for me"* (line.33). Like Katy, other students from western contexts felt more prepared than their colleagues from Eastern settings. Citing her undergraduate degree, teaching degree and then experience teaching, Sally felt well prepared for master's study, enhanced due to her informal activities:

> *I really, really enjoy like thinking critically about global issues and I really enjoy reading and having conversations about intellectual ideas and philosophical ideas where there is no right answer...I enjoy that...so I felt prepared.* (line.85)

Sadie felt similarly prepared due to her previous learning. Sadie cited high school as helping "*tease*" a critical stance out of students while claiming her undergraduate study *"was particularly rigorous...and I would say there were a lot of opportunities to experience challenges with very different subject matter"* (line.55). Amy described her undergraduate degree in anthropology as adequately preparing her for master's study as she, *"wasn't being*

taught in particular this philosopher or this school of thought". Instead, Amy describes: *"developing different types of antenna to see different things and to pick up on different things and the theorists"* (line.21) making her feel too prepared to the extent that she *"felt like the academic stuff was gonna be a breeze"* (line.32). Relatedly, Amy's peer, Susie, felt prepared generally from her undergraduate degree, citing her dissertation as formative in allowing her to pinpoint and learn exactly what critical thinking was, though she was concerned about her change of subject to midwifery. Comparable with Amy, Polly, explained her own preparedness for master's study:

> *To be completely honest I think I'm over prepared for it...but I don't think, I just think that my undergrad programme was very strong, and I learned a lot from that.* (line.50)

However, students from more divergent contexts felt less prepared, with some concerns understandably language related and others more profound. Aria and Karina had concerns over language, especially writing in English, while Karina sought to develop her criticality further by studying her masters in the UK where she believed she would get different perspectives than if studying in her home country. Lin also shared language concerns prior to her master's study in the UK, taking three attempts at the International English Language Testing System (IELTS) test (British Council, 2021) to achieve the 6.5 score required for her degree. Chun was also nervous ahead of her master's due to her English abilities particularly reading and writing, taking four attempts to achieve the required IELTS score.

This linked into a more profound concern highlighted by some students about their preparedness and need to think critically. For example, Andre described his undergraduate study as being connected with an *"Eastern notion of education"* (line. 38) where knowledge was not questioned. Andre suggested his preparedness and first steps in criticality came from volunteering, travelling and conversing with people *"from quite some different cultural, socio-economic backgrounds"* (line. 66). Due to this the master's presented a challenge to him in adapting and having to challenge his beliefs and himself. Chun recalled similar experiences of undergraduate study relating to her preparedness, contrasting from Susie's experience of her science degree (with biology) that enabled her critical thought, Chun experienced quite the opposite. She stated:

> *I did many experiments about biology, I think my undergraduate degree is more evidence based so actually I don't think it needed many critical thinking* [sic]*, we just follow the steps of our experiment and then we got the data and then analyse it.* (line.20)

5.5.2 Undergraduate Study

As above, previous degree study in terms of the subject and the context in which this took place was seen to both adequately prepare some students and leave others with gaps to bridge in their master's study. Undergraduate study appeared to play a significant role in students' preparedness, and their existing understanding and criticality development. Orla explained that undertaking a practitioner enquiry project in her undergraduate degree provided *"space for criticality because we were looking at inclusion which is a hugely diverse area that requires I think critical thinking* [sic]*"* (line. 17). Katy also noted that her dissertation was where she most engaged critically with a certain topic by asking questions and reflecting, though she stated this was partly "*because I knew it was such a significant part of my end grade"* (line. 31). Aria, who undertook two degrees, highlighted the difference between her two institutions. She described her first university as being *"very focussed on the development of critical viewers of their reality and also people who are very aware of what is happening in the country"* (line.43), while stating that her second university "*were really focussed on us to development procedimento* [procedures] [sic]*...learning skills basically"* (line. 47). These two undergraduate degrees – one in social policy and another in education and teaching – provided Aria with a very broad knowledge base ahead of her master's study. Likewise, Sadie who studied Government and Asian Studies in the US claimed her *"undergraduate experience was particularly rigorous, and I would say there were a lot of opportunities to experience challenges with very different subject matter"* (line.55), facilitating her criticality development.

Andre, however, studied for six years for his equivalent of an undergraduate degree under the Bologna process (QAA, 2007), considered comparable to a master's degree in Russia. In stark contrast to what Orla and Sadie described of their undergraduate study, Andre felt there was a lack of space or support to developing critically due to a lack of alternate perspectives and knowledge being presented, and encouragement to think critically, or have it defined or explained. He described:

> *...you cannot be critical if you don't know the perspectives, so once you know the perspectives you can start to be critical about things and being critical in one area affects the being* [sic] *critical in other area.* (line.102)

Andre also highlighted he had no access to contemporary literature in the form of journals with textbooks used instead, while additionally claiming the content taught was outdated and delivered in transmissive style. Dissimilarly, though citing differing disciplines in this case, Avery discussed her liberal arts degree enabling her to learn key aspects of many disciplines

from *"pre-law to philosophy"* where having to investigate and study different *"subjects and materials that challenged the accepted narrative"* (line. 97) aided her criticality and master's preparedness.

Summing this theme up, Chynna, whose undergraduate degree was in psychology, did not feel prepared for her master's in education, stating:

> *I will have critical thinking* [sic]*, there are times that you, when things, when, I guess not everyone is an expert in every area, so when you are not so familiar in certain areas you will start off being a follower and listening to instruction rather than to question.* (line. 394)

This suggests that these "field changers" face an initial challenge in developing criticality and adopting a critical stance in a subject area where they have less command of knowledge, key theories, concepts, and are thus less confident and with a limited knowledge base from which to be critical. This could arguably be compounded by their having to adapt to learning in a new language, educational context and disciplinary area.

Learning and Teaching Mode

Further related to undergraduate study, an emergent sub-theme was students' previous mode of learning and teaching, with an East/West divide apparent. Students from Eastern contexts including Eastern Europe, Russia and Asian countries reported experiencing rote-learning focussed on their recall and comprehension, with learning being exam oriented, arguably leaving these students less prepared for progression to master's study in the UK. Andre captures this:

> *in terms of teaching and learning it was maybe not the most fulfilling because it had a lot of...I remember myself memorising a lot of things...like rote memorisation.* (line.32)

Lin shared a similar experience in her undergraduate degree, explaining:

> *It's kind of you know, the teacher teaching and the student listen, write, recite then we have an exam.* (line.24)

She then went on to state:

> *The teacher don't* [sic] *ask us to write some essays to express our own ideas just memorise the content of the class and if you can get most of the content right you will get a higher score.* (Lin, line. 26)

On the contrary, UK, North (and South) American and European students largely noted their experience of active, inquiry-based learning which encouraged them to question, debate and discuss knowledge and theories. Findings from the questionnaire presented in the previous chapter also showed evidence of this, where students in the China and Other grouping reported rote memorisation contrasting with their peers from the UK.

Study Abroad

Some of those sampled had formative experiences of learning abroad during their undergraduate degrees. Chih went as far to say that his French degree in Taiwan was no help for preparing for master's study, but his experience of learning in France was preparatory in introducing critical concepts. Chih spoke of the significance of this experience in encouraging him to begin to think critically, *"because it is different I experience something, cultural conflict let's call it"* (line. 35). This conflict related to his observation of French students striking when unhappy, stating Taiwanese students would *"just have to tolerate it"* (line. 35). Moreover, Karina spent an exchange year in Italy, stating this inspired her to want to change academic practices in her home country to *"actually bring in more discussion"* (line.148) within her university. Further, while not abroad, Amy highlighted a study trip where the small student group and some teachers had a *"weekend of...kind of just doing critical thinking things...and like having discussions"* (line.18).

5.5.3 Life and Work Experience

Equally, if not more significant than previous degree study were students' experiences of life and work ahead of their master's degree. Orla spoke about both her professional experience as a teacher and her own social endeavours as influencing her critical thinking. Katy also spoke of professional teaching experience as helping her think critically, being able to *"see the difference between theory and practice"* (line. 8). Karina worked for an NGO in her home country which aided her research and evaluative skills. Polly noted that her work in Public Relations (PR) illustrated a lack of critical thinking in *"pushing a narrative"* (line. 40) which motivated her to undertake her master's in order to ask questions and *"try to get to the truth"* (line.46). She also noted extensive travel and her later work in diplomatic archives at Oxford and the influence of her undergraduate roommate in stimulating her to think critically about *"things from a sort of scientific point of view"* (line. 70).

Other aspects of life experience such as social groups, parents and family background appeared influential in prompting and/or supporting some students' critical thinking. Detailing her social endeavours, Orla described attending:

> *radical reading groups on feminist theory and stuff like...there's a mix of ways in which I was developing it* [criticality]*, it wasn't solely through my actual degree...not all through formal academic study.* (line. 15)

As well as having social groups that discuss politics and education and her own projects that involved critical reading and thinking, in between her undergraduate and postgraduate studies, Orla *"shifted focus from* [critical thinking] *being* [something] *to do with what I was studying into doing things I would just do in my social time"* (line. 29), crossing boundaries in her application of criticality pre-master's study. Orla also noted that as a teenager she *"bunked off school to go and protest against the war"* (line.139) partly influenced by the views of her parents and discussions about this at home. Parental influence on criticality was noted by several students, including Sally whose parents were both teachers who discussed ideas, current affairs and news at home. Sadie also explained the impact that her parents had upon her as a *"strong component"* in developing critical thinking, noting her mother was an attorney and that both parents were well-educated, engaging with the media where in her home *"that sort of* [critical] *thinking is promoted"* (line. 63). Sadie also worked for three years in China after graduating where she helped teach students critical thinking. Avery who also travelled and worked abroad in various jobs highlighted her parents as influencing her to think critically in making her feel different from others from a young age, Avery explains this:

> *my parents were both vegetarians in the '80s, so going to elementary school I was the only one with a packed lunch different from everyone else's, so someone would say, 'oh, why don't you eat meat?', and I had to think about what my answer was....is it the same as my parents, do I believe the same thing as them, is it just because of them?* (line.136)

There is significant weighting to accounts of students from western settings here in having life and work experiences that expressly introduced them to, or supported their development of, critical thinking, suggesting a regional disparity between experiences of the students and where critical thinking appears to develop as a result.

5.5.4 Critical Thinking Concepts and Standards

This sub-theme captures students' citation, conversance with and "possession of critical concepts" for critical thinking like assumptions, arguments and "relevant standards of critical assessment" like judging "intellectual products" (Bailin *et al.*, 1999a: 290). However, this sub-theme did not provide as much insight as other sub-themes but recorded some instances of students' citation of critical concepts and critical thinking standards during interview, which were sparse. However, understandably, what this did reveal was a greater conversance with such academic terminology amongst those from western contexts and amongst those with a greater understanding and perceived level of critical thinking development.

5.5.5 Habits of Mind

Seeking to capture students' habits of mind, this sub-theme focussed on "attitudes or habits of mind that dispose him or her to employ these resources in thinking critically", including "respect for reasons and truth, an inquiring attitude and open-mindedness" (Bailin *et al.*, 1999a: 295). Some of these habits of mind were challenged and adapted by students upon starting or during their master's learning. A critical awakening led Aria to develop questioning and critical thinking habits from a young age, questioning and *"always doubting everything in the world"* (139). Andre similarly described a disorientation that led to an awakening in recognising the conditionality of knowledge, stating *"[what] I have learned so far, is that ok there is no right and wrong"* (line.58). Relatedly, Karina's critical mindset was seen to be supported by her urge to seek knowledge and truth in describing her want to learn more and understand the political and social history of her country in wanting to investigate the Kosovo-Bosnia conflict in an undergraduate essay. Sally observed that *"there is no right answer"* (line.85) while noting the importance of *"historical context"* in establishing *"an objective understanding"* of the contemporary context.

In contrast, Chynna highlighted her previous immature thinking where she was accepting of knowledge and not yet *"looking at it* [knowledge] *in a critical perspective"* (line 192), as she was learning to in her master's course. Chun echoed this, stating her undergraduate education lacked critical thinking which she thought was emblematic of *"most Chinese students"* (line. 52) who are unable to challenge authoritative knowledge due to having been conditioned to think there is *"only one answer for a question"* (line. 54), and the need to memorise presented knowledge. Chun then claimed, *"this learning habit affects me a lot"* (line. 82). Lin shared this limitation in epistemological outlook, blaming her previous

education in China for this. She then explained the predicament this led to in commencing her master's study and the epistemic change process required:

> *The process is slow because you know actually you have a learning experience for your whole academic study experience and suddenly you need to change it, you need to change to another thinking style, so that's why I think most of the foreigner students do better than Asian students.* (line.55)

5.6 Conceptualisations

From the thematic coding framework, the "conceptualisation" theme aimed to capture students' definition or understanding of what critical thinking meant to them; having appeared in the survey this allowed for follow up in interviews. The conceptualisations presented by the interviewees were largely broader and more nuanced in their viewpoint and scope of what critical thinking is and how it was defined by them, than the larger questionnaire sample, as detailed in the previous chapter. Using the literature as the basis to establish a spectrum of conceptions of critical thinking, this started with instrumental, technically focussed skills-views at one end, labelled as "micro", through skills-plus-disposition interpretations, to emancipatory, transformative views representative of criticality as a social phenomenon (Wilson & Howitt, 2016) labelled as "macro", as the other pole. It was within this range of critical thinking conceptions that students' conceptualisations were considered and categorised (Davies, 2015).

5.6.1 Macro-conceptualisations

Participants were quoted their survey definition at interview as a reference point to discard or expand upon, where many expressed broad definitions of critical thinking when asked. These conceptions predominantly showed a broader, macro view of critical thinking and were largely criticality-related conceptions – for example, focusing on the dispositional and wider view of critical thinking as applicable for society and the world, not just within academia or for study. Sally, a Canadian student, provides one such definition exemplifying the breadth of her notion of critical thinking, and one which addresses conceptions of criticality found in the literature:

> *I think in terms of thinking critically in the world today, it's something that you have to be doing constantly because everything from ads to the people around you to politicians are trying to tell you how to think and how you should be interacting with the world, and I think that you need to know and develop your own understanding of the world and role in the world and some of those*

comments are going to agree with you and some of them are going to disagree
with you, but as long as you know that then you're going to be able to understand
different perspectives. (Sally, line.142)

Amongst these conceptualisations, students viewed critical thinking as *"an internal*
capability", a means of change and empowerment, a mindset – and a disposition that
permeated all thinking, to an extent. For example, Andre saw critical thinking as important
learning from university which has lots of implications *"not only on professional*
development but in all other various areas of life" (line.53). However, Orla's view expanded
further in seeing critical thinking as having varying levels of intensity, where as a disposition
or mindset it cannot be "turned off" but it can be attuned to contexts and needs, for example,
when viewing television for leisure. Orla explained critical thinking precipitated from
academic study into other areas of her life:

> *I think it kind of...changes the way that you do all of your thinking probably,*
> *like...engaging with it in a very formal structured way like you do at university,*
> *it sort of filters into the rest of your thought processes all the time.* (line.27)

Similarly, there was a focus on the wider, macro utility and applicability of critical thinking
for society, betterment and greater compassion. Ying, a Chinese student, noted the need to
contest authority, create new arguments and utilise critical thinking to solve complex societal
problems. She states:

> *...if everyone has critical thinking and they will put forward different questions*
> *to the government, yeah. To some degree it is a better way to help the country*
> *better...I mean instead of the country, for the country...but for individuals I think*
> *also it's helpful for you to think something differently for better life.* (line.50).

Ying's articulation may be hindered by language proficiency, but the essence of her view
emphasises a broad understanding of the scope and possibilities critical thinking may
provide. This breadth is further exemplified in interesting touches throughout the data.
Firstly, several students see the need for critical thinking to lead to change and taking action
resulting from critical thought and deliberation as key. For example, whilst citing reflection
within the critical thinking process, Andre, a Russian student, suggests the need for action
to result and poses the question – *"what's the point of reflecting if you are not acting*
afterwards?" (line.187). Furthermore, Aria sees action as an essential part of critical
thinking. Reflecting the key notion of critical action in views of criticality and critical being,

Aria shared a similar view in the need for action in taking critical thinking beyond the bounds of the academy to the benefit of helping tackle societal challenges.

Secondly, in discussing the depth of her conceptualisation in relation to notions of criticality, Orla distinguished the difference between her perception and her university's conception of criticality as more 'consumerist' and instrumentally, skills-focussed and not oriented to action or change (quoted in Section 6.2.1), similar to what Aria highlighted of her previous universities.

Thirdly, and notably, one student identified his previous misunderstanding of critical thinking as *"critiquing something and finding negatives"* (Peko, line.57), noting his development from this to a more nuanced understanding of critical thinking evolving *"from being a focus of study to what you need to live by more so"* (line.74).

5.6.2 Misconceptions

Occasionally within the data true misconceptions of critical thinking did appear, though partial misunderstandings were visible. The previous position (above) of critical thinking as a negative concept was held by a European student, and not an Asian student as the literature and survey results may have suggested (Huang, 2008). However, Chih, a Taiwanese student, raised translation issues relative to critical thinking in Mandarin, noting this in his survey response and interview. Chih states:

> *it* [critical thinking] *is translated into a term that is quite negative...but I think critical thinking also involve a part of criticise something because in Chinese when we say 'pi-pan' that really means that you are judging something, and I personally think that judging means that you are standing on total high ground.* (line. 69)

This observation links to some themes apparent in the survey responses and interview data relative to Asian students' view of critical thinking associated with criticism. Whilst not a misconception, this consideration of translation does highlight how misconceptions could arise, specifically among Asian members of the sample and those from cultures more distant from UK and European notions of what critical thinking is namely within an HE setting with language clearly a significant factor. For example, Chun also reflects on her initial conception of critical thinking, possibly related to translation, stating that *"[the] critical thinking in China I learned is just critique one thing and find the drawbacks"* (line.66). While both students show elementary critical thinking in highlighting the divergences between the contexts of their learning and their conceptions, they also show some

misunderstanding of the concept. Chih refers to critical thinking as having "two-sides", a dark and a bright side, as other survey respondents stated and the literature reports (Paton, 2011; Chen, 2017), exhibiting a truncated binary comprehension of critical thinking. Chun also demonstrates a limited and misconceived view in suggesting that critical thinking is less required in science than it is in social science, suggesting a less developed position related to disciplinary knowledge. Chun claims:

> [in science] *you need to learn formula…* [and in] *chemistry, for example,* [I] *don't need to think very critically because it has many scholars have developed the theories for chemistry.* (line. 222)

This statement touched on a notable observation about students' conceptions of critical thinking and their epistemological beliefs, highlighted in the "Resources" theme, where some previous education or contexts of learning promoted positivist views of knowledge as absolute and static. Moreover, Chun's claim of a vacuum of critical thought in science highlights a clear misconception of her previous discipline and arguably miscomprehension of how disciplinary knowledge develops and evolves through critical inquiry. A further nuance related to students' comprehensions, voiced by Asian students, was of individualism where critical thinking was viewed as making one different to others, appearing both in interview discussions and survey responses. Ying, for example, suggests critical thinking makes *"you become stronger than others which means you become more excellent than them"* (line. 185). Likewise, Genji also sees exercising critical thinking as making *"you somehow superior from other people"* (line.77). These statements allude to a nuance seen within the survey findings whereby being a critical thinker was perceived by some to equip an individual with uniqueness. However, rather than a genuine misconception, this does nonetheless demonstrate a less than complete understanding from some Asian students.

Chun illustrated her development of understanding during her studies from previous misconceptions of critical thinking as *"…critique one thing and find the drawbacks of, for example, a policy or project"* (Chun, line. 66), now viewing this as *"deepen*[ing] *our understanding for the world"* (line.226). Ying viewed critical thinking negatively as being helpful for arguing and to *"criticise someone else's opinion"* (line. 66). Ying's conception when probed had slightly developed from her initial position to become more holistic and personified. While she still associated critical thinking with making judgements, arguing and giving one strength, she expanded to suggest being a critical thinker provides a form of resilience to people in unfamiliar situations where the critical thinker knows *"how to protect himself* [sic]*"* (line. 181). Such misconceptions are most likely due to language and

translation issues, lack of experience of, and exposure to, critical thinking in their previous learning contexts. Chun explains that in her undergraduate degree she did not have a definition of critical thinking provided by a teacher or otherwise:

> *critical thinking for us is just like concept, we don't know a detailed or a definition of the critical thinking but...it's like you know what it is but you don't know who to express it.* (line.62)

5.6.3 Micro-conceptualisations

There was variation among respondents in their account of their conceptualisations of critical thinking, with some illustrating partially incomplete, narrow conceptions. For example, Lin, exhibits a narrow, technical view of critical thinking as required for academia:

> *you know, to take the whole information from the famous academic authors, you take some part of this good and some flaws...these have flaws and you need to recognise the flaw and point out it and if you want to do better you can even correct it...you use your own thoughts, your own knowledge based on your learning experience, but this might all build on some reference you have to back up your ideas.* (line.53)

While constrained within academic processes and perceived as finding "flaws", Lin does show a willingness to engage with and challenge authority in the form of publications whilst suggesting utilising one's knowledge, experience and thinking to advance a claim or argument. In direct contrast, a peer, Chun, whose limited view was highlighted, and its development noted, expressed a reluctance to challenge authority, suggesting a cultural phenomenon impacting many Chinese students whereby they do not think critically when reading published texts.

Lastly, a view shared amongst some Chinese respondents was that there is only one answer. Chun expresses this in relation to her experience in tutorials during her master's, which also links back to her epistemic views and previous educational experience:

> *...in the class sometimes I will be very afraid about giving a wrong answer because in China there are many courses, as I said, there is only one answer.* (line. 84)

As noted previously this reflects a habit of mind described by some participants which undoubtedly impacted their understanding and ability to develop criticality, while also supporting a correlation between critical thinking and epistemological belief.

5.7 Development

The focus of the interviews was to ascertain the views and experiences of the students in how they developed criticality during their postgraduate study, whether by staff in their teaching activities (feedback, facilitated discussion etc.) and independent learning activities (reading and assessment writing etc.), or through support services and extramural activities. Key themes and sub-themes emerged as fundamental to the development of criticality, as reported by the student respondents, falling largely under the "development" theme listed in Table 5-1.

This theme is categorised by those learning activities or related practices that students described as enabling their criticality development, though aspects that students perceived as negating their development are also discussed. Key factors included:

- the role tutors played in helping and facilitating students' criticality development,

- student's preference for active pedagogies over passive, formal teaching, and

- tutors challenging students to think critically in contesting knowledge, providing contrasting perspectives to students in topics, theories and readings.

5.7.1 Teaching

All students interviewed expressed a preference for tutorials and seminars over lectures in relation to their development of criticality, as the survey findings alluded to. Students favoured tutorials, firstly, and most notably, due to the opportunity they provided for discussion with their peers. Students also cited being presented with alternative viewpoints within tutorials/seminars provided both by the experiences and views of their peers and the topic of learning or theories discussed therein. A third reason the interviewees preferred seminars/tutorials was the opportunity to practise and discuss content from their course reading and lectures whilst also being able to ask staff questions to clarify their understanding. Lectures were viewed negatively by students when asked about their preference for teaching and learning activities that supported their development, again resonating with questionnaire observations.

Peko, for example, felt tutorials were better for fostering his critical thinking over what he termed *"passive lectures"* (line.78), as they were active with discussion and questioning requiring critical thinking to make choices and justify them. Sadie explained her preference:

I really enjoyed and felt challenged by seminar style classes where there are perhaps 15 students and the professor is there more to facilitate conversation than to lead it. (line.137)

She explained that two of her comparative modules' tutorials, where the format sometimes employed here – class debates and group presentations - enabled her and others to challenge specific theories and compare specific contexts. Other students also specifically cited how a flipped learning methodology with pre-reading prior to a small group tutorial/seminar helped them in developing their criticality. Aria also cited this *"flipped learning methodology"* where:

…we have to go to classes with all the materials, reading…and then we go to class to discuss and to have questions...so there were very well put questions about why, how we understand the concepts and we're trying to develop a lot of ideas. (line. 109)

Tutorials were also favoured due to the opportunity to question tutors and peers and due to the small class sizes which allowed students' own greater contribution as well as a space to question themselves and what was taught, and to seek clarity. Genji explained her preference for tutorials:

Because you can probably answer some of the questions confusing me for a while and even sometimes one word or just a single sentence [from the tutor] *and there is a moment of, 'Oh, wow, here's what I've been searching for'.* (line. 146)

However, students cited inhibiting aspects of didactic lectures. For example, Genji felt if *"some other perspectives besides from the references* [core reading]*"* were covered in lectures then *"I can feel that I really learn something from the lecture"* (line. 43). It is not without irony that Genji, as cited above, experiences confusion when not attending lectures for this only to be resolved in tutorial settings where others can be asked for clarity. However, Chun also details how she and some peers on the same course felt likewise:

some of us will think actually the lecture don't [sic] *give us any useful information…some of them will just attend the tutorial but don't go to the lecture.* (line.160)

Another course peer even when attending lectures also expressed confusion, as Katy describes:

> *I still have this overall feeling of you go to lectures but then after that you're just on your own to just work out what it is you're actually meant to do, and I mean don't get me wrong…I can email people and ask them questions and things like that, but I still feel it's more independent.* (line.83)

While reflective of master's level learning with independence and autonomy, dissatisfaction with lectures is evident across the sample. For example, Chih, from another programme, was most explicit in sharing his preference for tutorials/seminars over lectures before providing a detailed reasoning for this, which itself raised an important point which I pick up later in the chapter. Chih stated:

> *I certainly feel I learned a little bit more from our classmates and from the books I read than from our lectures. Please don't tell everyone.* (line. 383)

When reminded the interview was completely confidential, Chih described peers who expressed surprise and dissatisfaction with the amount of teaching and contact time, while valuing discussions in tutorial settings. Moreover, students from other courses shared similar concerns, with both Karina and Peko amongst others who expressed likeminded feelings. Peko details his view:

> *I sometimes struggle following along in lectures if it just repeats the readings you're told to do beforehand especially…I'd say lecturers often are more, they say you need to use these* [critical thinking skills] *and they remind you, if you don't know how to do it, to look it up more or less* [laughs]*, and in tutorials tutors are often giving you practical advice, how to actually do it.* (line. 80-82)

Andre reverberates this disappointment with lectures with a suggested strategy to replace lectures with small group teaching. Noting a lecture with other 100 students held in the gym, Andre described this as:

> *…a bit dehumanising experience* [sic] *because basically you are sitting there and they are repeating everything that they told you in the reading list. So basically, 'yeah, you know this is from the book', so they are just listing these things so you are not really engaging with this.* (line. 179)

Reflecting Andre's experience and view, Karina, on another course in the same institution, also had classes with more than 100 students per class. She stated:

> *So, first of all we do not have enough space for discussion and its mostly taught. So, that's first off, red alarms for me because I expected like master's should be smaller groups where you can discuss and where you even feel social pressure to read for each class and like this you do not need to read, like seriously!* (line. 104)

Karina emphasised the salience of tutorials for her:

> *…if we didn't have tutorials, we wouldn't have been able to learn anything from that subject, so that's how important it is.* (line. 106)

Karina went onto highlight this lack of opportunity to discuss with peers, exchange views and opinions on readings and topics led her to feel the course lacked challenge in regard to critical thinking, where her learning was lecture heavy.

There was evidently a significant preference amongst the student sample for group discussion in tutorial/seminar settings with smaller peer groups to enable their discussion, analysis and questioning of the subjects of their learning from readings or lectures. Students appeared to view tutorials/seminars as most conducive to their criticality development with a disregard held toward lectures as didactic and repetitive of weekly reading. However, several students commended their tutors and courses for challenging them, their understanding, knowledge and beliefs, and in developing their criticality.

5.7.2 Modelling

Students spoke of tutors challenging them and their understanding, whilst encouraging them to think critically and to challenge received knowledge with some tutors explicitly explaining criticality by modelling it in teaching. Genji, mentioned how one tutor used the lens of feminism to explain critical thinking and using alternative viewpoints:

> *she said because she's a feminist she's gonna see all things in a feminist way, so that's when it hit me, 'ok, that's critical thinking, it's about where you stand'.* (line.79)

Significant for Genji, and an entry into critical thinking with her conception arguably at a micro, developmental level, others also cited tutor modelling of critical thinking as supporting their own critical thought:

> *…they're* [tutors] *modelling it in their lectures and they're asking questions, like asking us to think critically about our own perspectives in class...like if you answer a question then they'll push you. Some of them push you to explain what you mean and to may be explain why you think that.* (Sally, line.185)

Katy also notes tutors explaining and modelling critical thinking as facilitative to her criticality development:

> *…the tutor kept saying about, 'but based on what evidence, think about things as based on what evidence' and* [to]*…always think back to, 'what was the evidence that proved that and make sure that if you're writing, you're not making any kind of big claims that are just assertions and aren't supported'.* (line. 45)

Like this, respondents spoke of tutors reinforcing the role of questioning, questioning students' themselves and asking for reasons and evidence for claims they may pose and challenging them to think critically. Aria captures this:

> *In the Public Policy course, the professor is very explicit about it, he's trying to make us question about this neo-liberal education movement and if accountability is good or bad and he presents some very deep questions about it that make you doubt about everything.* (line.70)

Yet, on the contrary other students spoke of instances where critical thinking was cited by staff and neither explained or modelled to students leaving those less familiar with the term or concept at a loss. Lin's comprehension and development of criticality was impacted by this:

> *It stops me when every people around you* [sic] *are saying that you must be critical thinking, but no-one tells you how to do it, it stops me.* (line. 185)

On the same course, Ying echoes this:

> *…the tutor advise us* [sic] *to write something critically but she didn't mention more about critical thinking.* (line. 75)

These instances appeared more prominent at the outset of master's study and amongst students from Asian contexts. Other inhibitors of criticality cited by students suggested not

all felt staff modelled critical thinking and challenged them and existing knowledge, prompting such critical observations made by some students. Polly describes one such observation:

> *I've one course in particular where it feels like the lecturer isn't critical thinking and he's telling us, especially as it's a political communication course, like how political communication works, and this is how it works and this is what politicians do and this is how voters receive information and it's very like...didactic and there's all these moments where he's saying things and I'm like, 'well what about?' and 'isn't it?' or 'how about?' and 'does it always?'.* (line. 95)

Polly then contends that this module:

> *...feels more like a training course about how to do PR and how to be working on political campaigns rather than thinking critically about political campaigns.* (line.101)

This observation links to a related issue highlighted by some students where they were not challenged enough in their study, with their expectations of rigor of master's study higher than they experienced. For example, Amy felt a lack of challenge, especially when compared to a Russell Group university she previously began master's study with, she stated:

> *...so far I haven't felt very masterly.* (line. 53)

Amy whose midwifery master's degree involved shared lectures and tutorials with undergraduate midwifery students, though with assessments and some teaching solely for master's students, explained she did not *"feel pushed enough"* (line. 57). Karina also complained of her course and some teaching on it as not having enough theoretical depth or challenge academically. Describing a political policy class, she demonstrated her own criticality in detailing a limited scope in topics discussed and how these were presented in relation to the macro-political context and developments, with the focus on contemporary events without broader context. As a result, Karina stated:

> *I felt that someone is* [sic] *selling me ideology.* (line.158)

While these are clear issues regarding students' learning generally and specifically their criticality at master's level, they appear to be outweighed by students' positive experiences of staff challenging them in class via modelling critical thinking and challenging students in doing so. Within this mix of experiences and observations there is a concern regarding the

need for staff to be explicit of the terms and concept to which they refer (such as critical thinking) when teaching and challenging students. Likewise, with some feeling less challenged by some staff and teaching, there is potentially a professional development need for staff and/or benchmarking or calibration of teaching approaches and materials for their alignment with the SCQF (2019) Level-11 descriptors as per master's level study.

5.7.3 Contrasting Perspectives

Related and overlapping here is students' testament to staff providing contrasting perspectives within the readings they select which some suggested challenged them, aiding their criticality. Avery describes this and shares how such practices can broaden the focus of students' learning:

> *…anytime they* [tutors] *give a lecture* [they are] *not only touching on classroom tools but saying, giving us reading or discussion topics that bring in a wider picture than just a classroom.* (line. 215)

Sally's experience replicates this:

> *…they're giving us readings that provide different perspectives, so starting from the beginning you have to know that there's different perspectives and what I am learning about academia is no matter what there is going to be an opposing perspective.* (line.185)

The 'epistemological development' which Sally cites suggests a link here between epistemic beliefs and criticality development in higher learning where contrasting perspectives function in challenging one's epistemological grounding. Sally detailed the impact contrasting perspectives can have in facilitating criticality development by emphasising a deliberative and critical approach to reading and writing practices in seeking out and engaging with perspectives that conflict with ones' own. This also suggests a relationship between criticality development and academic literacy in students' approach to reading and the practices or techniques they employ when reviewing literature. This approach contrasts significantly with the misunderstood method that some other students employed, as described later. Coming from quite a differing educational context to Sally, Andre describes a similar linkage between epistemic beliefs and criticality development:

> *…on the Psychology of Adult Learning course…so what is told by her* [sic] *and I really liked it, 'ok, all these things are social theories they cannot be like 100% proof, so it's up to you if you want to use them or not and it's up to you if you*

believe them or not'. And this was like, 'oh, that's interesting'. Like it means that not all the things that very smart people came up [with]*, 'who are like you should take this for granted'.* (line. 294)

Andre goes on to cite another module:

...in the Modern Educational Thought [class] *there are also a lot of theories, like social and sociocultural theory and these I won't say they explicit* [sic] *the fact that you should take this for granted or not, like it's up to you but we discuss it a lot and we see the applicability, so maybe it's implicitly being stated, but for some people they might not...so I find the explicit more helpful, especially for those who come from backgrounds like me, like you know, I was not like taught how to be critical.* (line. 305)

While re-affirming an association between epistemology and criticality, Andre also emphasises here that most assumed epistemological positioning expected of students is tacit, while for students like him to whom criticality is novel, he recommends an explicitness by tutors in communicating this expectation. What is notable is the function that engaging with contrasting perspectives plays in revealing ones' epistemological position and encouraging critical thought in the process.

5.7.4 Assessment and Feedback

Assessment also featured as an enabler among some students. Reasons for this were the need to apply theory and learning from their reading, having the freedom to tailor their assignments to questions or topics of interest (while applying this to real contexts), and challenging themselves in doing so. The master's dissertation was specifically cited as an enabler due to the deep and sustained engagement with a topic that this required and the need to *"to apply the critical thinking, writing, reading aspects"* (Sadie, line.159) already learned in engaging with research and data. Sadie described how she was able to undertake a collaborative dissertation on her course where she conducted research in collaboration with a local organisation. Sadie stated that this allowed her to gain:

...practical insight into the subject area and being able to sort of take the individual initiative to be following up with different people and asking them questions about their work and trying to understand that from the scope of our programme has been really helpful. (line.167)

Peko also highlighted the learning from his dissertation due to the depth of engagement:

> …[I] *did a big literature review...you had to go in such depth and sort of discuss the topic for such a long time, I think it was much more helpful than regular coursework stuff for engaging critically with a topic.* (line. 453)

Students also specifically mentioned the splitting of single summative assignments into several smaller weighted assignments as acting formatively, allowing them to feed-forward feedback from assignments to support their learning – and criticality - ahead of larger summative assessments, which literature supports (e.g. Reimann *et al.*, 2019). This was explicitly emphasised by Polly as *"making a big difference"* (line. 183) in developing her critical thinking and writing. Describing how assessments developed his criticality, Andre highlighted how the explicit critical, analytical and reflective nature of assessment focussed and challenged him. He specifically cited sequential learning on his course that feeds-forward from his previous learning – and how small-scale summative essays acted formatively where their set structure provided prompt to critique and compare.

> ...*coming from a background where I not have* [sic] *much knowledge about critical thinking basically they don't ask me to write 3,000 words essay, but it was small, like 1,000 word essay, it was a small one, two very simple articles and basically you grab the knowledge from other subjects, like for example, Introduction to Educational and Social Research and we take knowledge from there and apply this critically. This was actually quite helpful because it explicitly asked us to critically analyse.* (Andre, line.134)

Polly described a similar assessment format on one of her courses:

> ... [it was] *two graded essays that she* [the tutor] *split. She also, so she gave us those two essays and split them into the first half and second half of the semester so we had the feedback for the first one before* [we] *started writing the second one but she also gave us the chance to submit a formative essay for both of those which she would review or a formative outline of the essay...you know so she just gave us more chance to just talk to her about her ideas.* (line. 734)

This emphasises the influential role formative assessment and feedback (and forward) can play in students thought development and that of their criticality.

On feedback, students found detailed feedback helpful, some citing that receiving line-by-line or 'in-essay' feedback on their coursework assessments was most helpful in providing

context and detail to this making feedback more actionable. Interviewees also noted that feedback could also be helpful in providing viewpoints of different markers on their work, aiding their understanding. Susie said, *"detailed feedback* [was] *basically how I developed my critical thinking skills"* (line.275), when asked what detailed feedback 'looked like' she said:

> *Like not just...when markers say, 'you could expand on this in this way'* [or] *...' not just like, 'that's good, that's fine'.* (line. 280)

Avery described this frustration:

> *...their* [tutor] *expectations are almost too high, they're asking us to go deeper into certain ideas while sticking to a word count that we couldn't have gone any higher on, asking to expand more on this or look for more research on that...* (line.306)

Students were also proactively feeding forward. Andre was using feedback as a checklist to guide his writing in a following assessment, which Chynna also did:

> *the feedback is also a bit like the checklist, so it reminds me that I need to work on particular areas* (line.289)

Sadie similarly described the formative aspects feedback provided in helping her *"connect the dots on my own and understand what that* [feedback] *actually means"* (line.436). For some, feedback was fundamental to their criticality development. Ying stated that feedback was *"a good way to cultivate my critical thinking because I know what is right and what is wrong"* (line.126). Overall, most feedback students received was described as helpful with some limited in its utility due to vague comments, such as requests to expand and add more depth when students had submitted their assessment to a prescribed word count.

5.7.5 Support

Neary half of the students (n8) cited their access to supporting services, workshops or classes as aiding their criticality development; these were all international students. Karina spoke of seeking critical writing support from a Royal Literary Fellow, Peko attended a library database session which aided his critical reading practices, while Chynna also mentioned that feedback gained in a one-to-one tutor consultation helped her *"address some of your way of thoughts [sic] and give new perspectives"* (line. 281). Crucially for some of these international students their development of criticality began and was largely enabled by accessing support services prior to and during their master's studies. Lin and Ying both

undertook a pre-sessional preparatory course before their master's where critical thinking was explicitly addressed and explained in specific classes. Ying describes the impact of this:

> *in my pre-sessional courses, I think I just know what critical thinking means and just to use some critical thinking ways to read articles...but after I studying* [sic] *for my master's courses I started to learn about...well, the critical thinking because I have many essays to write and during the process I think, honestly I apply critical thinking into my essays.* (line. 52)

As seen in related research discussed in the literature review (Huang, 2008; Fakunle *et al.*, 2016), for some Asian students this was their entry into the critical process and introduction to critical thinking at the outset of their master's study. Arguably this would explain any misconception or miscomprehension of critical thinking they may have had, and which would still be at a developmental level, positioning these students at a disadvantage in having to learn and develop critical thinking at such an advanced level and during an intensive one-year of study, in a foreign country and language. This delayed introduction to criticality could be seen to explain many of the difficulties these students may face in adapting and transitioning to their new academic environment and context, and culture of learning.

Such exposure to and support in conceptualising and developing criticality was also sought by some students during their courses by accessing optional writing classes provided by university support services. Chun detailed receiving assignment feedback that her writing was descriptive and not critical, leading her to attend such a class about which she stated:

> [that class] *actually help[ed] me to get to know about what is critical thinking* [sic]*, actually now the feedback is less about to be more critical…tutors will give me other advice.* (line.36)

The impact of these classes in supporting students' criticality development is captured by Ying:

> *…without that I think if I didn't take part in the pre-sessional courses and LEADS* [academic support service]*, I think I have to study critical thinking by myself because at the start of the master's course the lecturer…I remember that, no, the tutor, advise us to write something critically but she didn't mention more about critical thinking.* (line.75)

This touches on a key factor identified in other research (Hammersley-Fletcher & Hanley, 2016; Fakunle, *et al.*, 2016) of the lack of explicitness regarding critical thinking and such

core concepts where institutions and/or their staff assume, incorrectly, that students are knowledgeable and conversant with and in such expected practices, and one which disproportionately affects international students, specifically from Asia (Durkin, 2011; Shaheen, 2016; Fakunle, *et al.*, 2016; Zhang, 2020). However, some other students, notably those with higher levels of criticality pre-entry, and a fuller conception of it, predominantly from western (UK, North American and European) contexts, viewed some of the support interventions on their course negatively. This negative view appeared to suggest a cultural divide related to criticality and related practices where these students felt by this level of study students should not have to be provided with entire lectures or workshops explaining what critical thinking is, how to write critically etc.

5.7.6 Placement

A final, noteworthy developmental enabler for some respondents was placement. Those vocational courses – Midwifery, Teaching Adults, and Adult Education and Social Change - with a placement were stated by all those to whom this applied as noticeably aiding their criticality development. The application of theory and classroom learning to real-world settings appeared a key factor here. Chih highlighted how conversations with his placement mentor and seeing in reality and context the issues he had learnt about in class pushed him to be more critical as a result. Chih's class peer, Avery, concurs with this in stating that the course built students' critical thinking and understanding while the placement provided criticality in action, allowing students to apply their learning in practice and act upon their thinking:

> *…the semester that we've just finished had kind of built a base of understanding and critical thinking but...and the placement has been some action…* (line. 461)

Andre similarly shared how his placement challenged his understanding and how *"it questions a lot of the beliefs which you have"* (line.147), which was confirmed by both midwifery students. Both cited their placements as specifically aiding their criticality development through the exposure to and immersion in a professional environment, practising their classroom learning and through their encounters with *"different types of people"* (Susie, line. 206). Here the professional focus and environment required students putting theory into practice whereas *"uni is a bit more removed…"* (Susie, line.333).

Amy's view corresponds regarding clinical placements:

> *…being on placement and going out there and having to be the clinician, like that's where you learn doing it and you got to practice and learn and think at the same time".* (line. 51)

These student accounts exemplify the empowering capacity of practical placements as learning opportunities for students in enacting their existing knowledge in thinking, reflecting and acting critically, putting their learning into practice. In doing so, students would be mediating between the domains of criticality – knowledge, self and world – as they take critical action within the world informed by their academic knowledge and empowered and regulated by their reflective selves, which in turn appear to aid their continued criticality development.

5.8 Intercultural

This theme notably captured how there was an international and intercultural dimension of students' criticality development which appeared to have a clear and additional impact upon this. The key factors within this theme relate to:

- the role of dialogue and group discussion,
- students' engagement with different perspectives and experiences, and
- the diversity of peers.

This theme, like "Development", also encapsulated the social element of students' learning capturing the diversity of their peers and the role of dialogue in developing their criticality, which is often discussed in critical thinking literature in an argument over individual versus social processes as supporting critical thinking development (Barnett, 1997; Johnston, *et al.*, 2011; Brookfield, 2015; Wilson & Howitt, 2016). Given the overlap and to avoid repetition this theme is briefly summarised here and discussed in greater depth in the next chapter.

5.8.1 Dialogue

Dialogue was the predominant activity within this theme, supported by the other factors of differing perspectives, diversity and learning from others, themselves prevalent within these dialogues.

The type of dialogue and the context these featured in were mainly tutorials, seminars and group tasks or projects. Corresponding with previous findings presented, students spoke of discussion allowing them to:

- hear the views of others,

- share and exchange ideas,

- learn from peers' experiences, knowledge and contexts,

- provide an opportunity to challenge their own views/opinions,

- practise and discuss learning from lectures and readings, and

- to critically discuss issues and alternative perspectives in a safe space.

Chih stated that his tutors and the course itself emphasised discussion and the importance of students bringing and sharing their own experience as adult learners and developing as teachers within their course, and how this allowed the cohort to *"grow as a group"* (line.149). Chih's description reflects much of what the QAA (2013; 2020) state as characteristic of master's study in the UK.

Several students noted discussion allowed the sharing and exchange of views, ideas and knowledge with others. Karina cited active discussion as crucial, explaining how this aided her development:

> *…when you are having certain discussion issue you say something, someone says something else, third person says something totally new, so you get more perspectives. So it's not just what you read and you think that it's right, but there are people who think differently and then it can challenge your opinion so you re-shape it or sometimes just approve your initial opinion when it happens…but then you're not left alone to think and have just your opinion, but you have different…because everyone has different background, different back knowledge, that pretty much help you with understanding because if you can't understand like the thing you can't go anywhere.* (line.140)

Karina's vignette described the kind of collaborative learning that took place within group/class discussions, as most students sampled did, which was both inclusive yet diverse in the views offered and the backgrounds, nationalities and experiences of students.

5.8.2 Differing Perspectives

Salient within these accounts of dialogue, and the intercultural theme itself, were the differing perspectives students encountered. These perspectives were highlighted as appearing in class discussion with peers as well as in teaching and readings, as discussed earlier.

Andre suggested that having classmates from Europe, Asia and African countries helped gather different opinions and highlighted the difference in thought amongst the cohort. He suggested that in sharing their different views, perspectives, thoughts and experiences, he viewed his international peers as a learning resource. These sentiments were felt by other respondents, if not articulated in terms of resource. Orla claimed:

> *the international nature of the master's course I think really helps have like a massively broad perspective on things.* (line. 87)

Sally echoed this feeling where peers sharing experiences from their home countries led to an *"exciting exchange of ideas"* (line. 189) and opportunity for learning and challenge in explaining and justifying one's views or position on a topic and providing *"examples which I was not maybe aware* [of]*"* (Karina, line. 88). However, while enabling learning and criticality, students highlighted the lack of engagement of others, whereas some Asian students testified to their difficulty contributing to certain discussions. However, while challenging for some students listening in on discussions was also *"really an eye opener"* (Chynna, line. 249) aiding the understanding of some.

5.8.3 Diversity

Relative to the use of, and confrontation with, differing perspectives, was diversity, and that specifically of the students within the courses of those interviewed. Diversity in this respect was largely within the cohort of those students at the host institution, as well as practice placements for others which confronted them with diversity, producing a similar impact.

Chih described the ability to view the world more broadly from exposure to differing perspectives:

> *People are coming from different backgrounds and experiences...it is so cheesy to say their broadening our horizons or something, but yeah, because we know so many things that we didn't know from different contexts...* (line. 153)

Avery, from the same course, reverberated this sentiment in stating the diversity of peers from over 20 different countries, and their varied backgrounds, brought a wider picture to discussions aiding awareness of other contexts and different practices. This view that appeared to value the diversity of student-peers was shared by others at the host institution. Peko stated *"no two people from the same nationality"* (line.114) were on his course, Sadie noted the very diverse group of students on her course in terms of ages, experiences and

nationalities, while Sally stated her class was one *"of the most diverse groups of people"* (line.183).

Genji, Ying and Chun all noted that the diversity in nationalities, experiences, knowledge and cultures of their peers provided them with different understandings, new knowledge on education and social factors from varying contexts, challenging them to think critically and differently. Chun describes such an experience:

> *...in the tutorials I remember once in our group there is a Chilean student and an Indian student and an Argentinian and they're from different countries and we talk...and because the course is international development and education...from the course they talk about the curriculums from their countries and their comment on the education in their countries and their living habits in their countries...I think...I have never known anything about this but when I know this I find it very interesting.* (line. 187)

While repeating much of the enabling factors of criticality development outlined in the "Development" theme, this theme exemplified a specific and distinct international, intercultural factor affecting students' learning and criticality in their experience of dialogue within a diverse cohort possessing and exchanging differing perspectives and experiences. This is discussed again in the following chapter.

5.9 Academic Literacies

The interviews and previous research suggest that academic literacies in terms of unspoken rules, understandings and customs relating to academic practices within HE (often associated with reading and writing) can impact student learning and criticality development (Bennett Moore, *et al.*, 2003; Tian & Low, 2011; Johnston, *et al.*, 2011; Maringe & Jenkins, 2015). One's awareness of these implicit conventions and conversance with the related practices which often equate to assessment criteria and tutor expectations are key to academic success, even though these conventions often remain tacit. This emergent theme grew in importance during analysis capturing students' congruence with the academic culture of HE within a UK context and their fit with this given prior experiences.

Captured at the top-level of this theme were factors that characterise and provide a rationale for this theme. These include: students' misconceived, inverted study processes (e.g. students finding evidence to support their beliefs); the challenge of academic language and vocabulary (e.g. research methods); a struggle or inability to challenge authority (e.g. academic authored texts and journals); and a possible disparity between students by

nationality/region whereby certain students knew the "rules of the game", positioning them at an advantage related to other peers. These findings and related sub-themes are presented below.

5.9.1 Language

Language, including English proficiency for those interviewees who were Non-Native English Speakers (NNES), and academic nomenclature were found to negatively impact students' development. Chinese and Spanish native speakers, amongst others, highlighted their difficulties with language relating to translation and grammar for reading and writing. Chun described not doing much deep reading, mainly skimming articles because she stated it took her *"more than five times* [for] *the same reading in Mandarin"* (line.100) which exhausted her. This language difficulty resulted in having to re-submit her dissertation research ethics application due to a wording error. Peko noted his slight struggle with language and writing, mainly due to differences between Finnish and English grammar. Notably, Aria identified a language-related habit of mind affecting her studies. She described:

> *I think in Spanish...it's like for me, I listen to something or read something and then I have to elaborate an answer and the first dot or ideas in my brain are in Spanish and then it's like, 'no, English', so I think I miss some time* [sic] *or some information when I actually write or speak in English but am trying to get my thoughts in order first in Spanish...so yes, it's a challenge.* (line.33)

This habit is challenging, tiring and results in possibly losing information, affecting Aria's written arguments and generally causing her difficulty and need for additional time. Additional time is also required for other NNES in translating and grappling with complex academic vocabulary. Genji identifies difficulties due to the language and vocabulary in journals where they *"express things in the most complexity"* (line. 128). Chynna concurs stating articles, specifically philosophical readings, are *"very hard to understand due to how written"* with the use of arcane language and a lack of context, in contrast to textbooks. Noting such struggle with language is not unique to NNES, Orla, notes:

> *If you've never done* [research] *paradigms before and like anything where you're going to experience the whole new realm of vocabulary and then try be critical* [sic] *about that, it becomes quite obvious quite fast that that's gonna be quite challenging.* (line.40)

Thus, engaging with specific language and terminology is not just a challenge to native speakers and likely to present greater challenge to those non-native speakers already experiencing difficulty with their academic reading in English. However, those coming from orthographically different languages from English, such as Mandarin, are likely to experience greater disadvantage in this regard (Floyd, 2011), often compounded by a lack of experience in writing in English, at an advanced academic level and in a critical way.

5.9.2 Assessment

As outlined in the preceding section, assessment practices had both facilitating and inhibiting effects on criticality development. Students highlighted a tension between demonstrating criticality while appropriately explaining their claims/ideas within a limited wordage. Sadie picks up on this suggesting a *"sweet spot"* with word length where if too short it limits the ability to express and elaborate on points and present an argument, and to critically analyse sources in short essays – like Chih and Avery suggest – as *"there's so much that you have to critically engage with"* (Sadie, line.127).

Aria described assessments having an explicit, critical focus and where having the freedom to choose topics for these and being able to relate this to real-life issues helped her criticality development. She stated:

> *the assessment, the style of the master's is very focussed on that* [criticality] *because they just give you this broad theme like, 'choose a topic in education and critically reflect on that from a public policy perspective'. Like that can be hundreds of things, so I think they are expecting us to make decisions to choose the topic, to choose which of the theories that we saw in class and then encourage us to see something in reality with these kind of new glasses that they are giving us. So, I think the assessments are having us develop our own thoughts but combine them with theory are the best tools.* (line.76)

Aria makes an implicit reference to her development of a "critical lens" here which she feels the course and tutors seek to develop further in students' writing and in being able to explore relevant topics of interest in a critical way.

Others also preferred the freedom to choose their topic but with some parameters and guidance provided, such as templates or suggested structures which acted to scaffold and aid students' critical development via assignments, as Andre highlighted. Additionally, as noted, having assessment approaches with multiple assessments which work formatively via feedback in supporting students in preparing for a large summative assessment. This was

noted as better aiding criticality development as well as being good academic practice (Biggs, 2003; Norton, 2009; Reimann, *et al.*, 2019).

An intriguing finding was Polly's assertion that it was *"such a formula to write the papers"* (line.52), and that she had learnt rules from her undergraduate study which she found to be benefitting her. Within this was a claim by Polly, quite observant and critical in nature, emphasising her development level, that academic assessments in written form are formulaic. Through this she suggested assessments can constrain critical thinking with students having to "fall into line" or conform with the rigid formats expected of essays.

5.9.3 Cultural Distance

Academic literacies appeared again where students' distance from the "culture of learning" (Jin & Cortazzi, 2008) of UK HE was seen to hinder their development. As discussed above, the differing educational experiences of interviewees and their peers from different cultures were in places inhibitive, as Polly noted in suggesting international peers *"haven't learned such precise rules* [of writing]*"* (line.52) as her. Other North American and European students noted they had encountered stylistic differences in writing and expected structural and bibliographical practices, though this did not significantly impact their learning or criticality. Orla made a similar observation, claiming that studying in the UK context and having to develop critically, while also needing to contribute to seminar discussions presented her international peers with *"a very radical shift in a way of learning"* (line. 46).

Several international students reported a lack of familiarity, knowledge and experience of critical thinking as a concept and expected practice, skill and ability within HE. Genji stated shock at the critical thinking focus and expectation in master's study and her introduction to this having *"never heard of it"* previously.

> *I never expected that the first thing I encountered in the university would be the terminology of critical thinking…I think it's probably quite important for the western, maybe higher education system.* (line.94)

This distance between "cultures of learning" (Jin & Cortazzi, 2008) and the expectations of master's study in the UK was a "radical shift" for some students who themselves attested to their struggle to this change in learning style which emphasised active, collaborative and often group-based learning. Chun explained the novelty of such collaborative learning:

> *…when I was in China, I don't have many group study, usually we focus on our individual tasks and maybe we will talk about the work but it's not like the group*

> *study in Glasgow....in the tutorial asks* [sic] *us into five or six groups and we discuss and answer the questions together...I think it's the first time for me to have such a tutorial, such a class.* (line.44)

Another Chinese student, Chynna, labelled her previous educational experiences and learning in a derogatory way as characterising *"Asian education"* (line.321), where the focus was on knowledge reproduction, memorisation, didactic teaching and the need for a correct answer. Andre also spoke of a perceived cultural or regional difference in educational approaches which he termed *"the western model"* ahead of his master's, which he then experienced emphasising the *"huge comparison between what I expected to be here and what I had back in Russia"* (line.32). Unable to recall any focus on critical thinking or mention of this in previous study, Andre observed other students in a similar position:

> *...one thing I also notice is that a lot of Asian students are also, let's say, kind of experiencing the things that I told about* [sic] *the...in their classes they were not really encouraged to think critically.* (line.83)

Additionally, Lin highlighted that in group discussions *"most of the Chinese students are quiet"* (line.153) while UK/US students talked and shared ideas. Both Lin's international peers and UK-based students shared this experience of Asian students' reluctance to speak, contribute and share their ideas in group discussion settings, as Chun explained above.

Lack of experience, language, and relatedly, confidence are likely key factors here. However, an interesting perception amongst some Asian respondents on this issue suggested deeper sociocultural factors may be at play. This highlighted a potential developmental tension between these students in assimilating to the target or foreign culture and academic context whilst maintaining their national, cultural identity and social harmony.

Such differences in experience and context-dependent expectations illuminate the cultural distance academic practice can present, creating an additional barrier for international students in relation to their learning. These barriers appeared in major differences in the philosophy and practices of learning and teaching and in more minor, stylistic differences which still had an impact.

5.9.4 Reading

In terms of reading, relevant to academic literacies were students' preference for journals rather than books or textbooks as well as the extent of their engagement with these materials, and students' strategies for preparing assessments and note-taking practices. Discovery of

some students' flawed study processes appeared a significant finding, where several students, rather than impartially reading and critically evaluating literature to identify and then inform and support an argument or position, were doing just the opposite. Genji describes such an inverse process:

> *Eh, in my case I think it's...the weird thing is it's the other way around, let's say I first research my own idea and then I find a reference to support my idea.* (line.136)

Karina similarly reports a contradictory process of sourcing evidence to support ideas or claims:

> *...if I found the core theories and the core books that I think are suitable, based on that I am searching evidence which is not good...because I could maybe even challenge the theory and not just supporting their ideas with the evidence.* (line. 82)

Karina does however exhibit some degree of criticality in recognising her error and the need to challenge theory, though for whatever reason she did not do so. Also struggling to challenge knowledge, Katy relays how academic language could go over her head whilst citing her struggle to critique articles as they have *"already been peer reviewed"* (line.33), questioning the merit and validity of her "opinion" due to this. Chun shared her view:

> *...maybe I think it's a problem of most Chinese students, we will think, for example, if we got a book and it's written by a doctor or a professor we will think it's an authority and we are just maybe undergraduate student or master's student... sometimes we will not think very critically when we read source items.* (line.52)

Such struggle for voice and to contest authority was described by others who found academic language overly complex and persuasive, notably among Asian students to whom criticality was new. Yet, Avery, contradicting other students, describes her reading practices stating, crucially:

> *I'm looking for anything that goes into ideas that I may have about the topic and then halfway through reading it I might change my idea and start reading a bunch of other things because one of the papers has brought something up.* (line.239)

Nevertheless, more of the students were able to describe their literature searching and note-taking strategies which demonstrated criticality in their textual engagement. Prior to this, students were asked about their reading preferences, with the majority stating journals were their preference due to their standardised format and structure, shorter length, and their more contemporary and critical nature. Students felt textbooks provided more foundational knowledge (in contrast to journals seen as requiring an existent knowledge within a field) which was helpful to some students unfamiliar with a subject as the language is less complex and more "popular".

Following journals and books were policy documents with several students noting these were easier to engage with, possibly due to their relevance to their practice and with more accessible, public-facing language. However, Susie, a midwifery student with a science undergraduate degree, felt challenged by the *"kind of ethical, moral, political kind...policy kind of thing"* (line.243) that this new discipline brought. So much so, she stated "*it's not my place to criticise that* [policy]*"* (line. 255).

As mentioned previously, both the change in discipline and the epistemology related to that area of study and the context of their previous learning could begin to explain this reluctance to challenge authority, publications and the knowledge they present. In facilitating criticality, students noted the importance of reading for developing both their writing style and structure and their argumentation within this activity where the literary practices of journals "brushed off" on them in *"how to write critically*…[and] *to build arguments"* (Peko, line.109). This aligns with findings from the questionnaire where reading academic literature was found to be the most important activity for developing criticality, just ahead of discussion and in-class activities.

Following reading, and prior to writing, the interview data showed that notetaking was another process that contributed to the criticality development of some students, while the practices of students who followed unconventional reading and study processes, noted at the outset of this section, would be unlikely to adopt or follow such processes.

5.9.5 Notetaking

Students suggested, implicitly and explicitly, that note-taking was one activity which aided criticality development, as a crucial stage in-between the reading and writing process. Chynna cited this as the best activity for her criticality development in thinking through what to write and in expressing her own views on issues, as well as questioning the readings and

claims within them for accuracy and truth. A course peer, Ying, describes difficulty in this process for her and other international students:

> *...we don't know how to capture the points from an article, we just read them from the beginning to the end and waste many time* [sic]*, and the teacher just told us how to read them quickly.* (line.33)

Others recalled similar difficulties though they cited tutor support as helping students with critical reading. In contrast, other students explained their self-taught note-taking processes which implicitly supported their criticality development. Several students described the innovative notetaking systems they had developed which included the use of charts, tables, and the mapping of keywords and concepts which ostensibly aided critical thinking.

The vignette below describes such a process which Polly follows subsequently aiding her in challenging authority in published articles, providing an example of criticality in regard to reading with a view to writing:

> *I like very actively read everything and underline like...what is their question, what's their argument and I have a code of like, I put a little star next to things that are remarkable, that make me...that are engaging, then I have a 'T' that I put next to the thesis, I put a 'Q' next to the question...you know I have a code that I started using in that high school class but that I developed throughout undergrad and until now, it's just sort of my...like I can after I've read an article I can look over it and it's mapped out, like my brain...it is mapped out with this code.* (line.143)

Such a coherent and systematic process supporting learning in universities is rather straightforward and assumed to be undertaken to a greater or lesser degree by students at undergraduate and higher levels. Yet it appears this practice and learning it may be contextual and novel to some as an academic practice.

5.9.6 Writing

Students' experience of writing varied considerably in line with their educational backgrounds and nationalities, with some having not written an essay in English prior to beginning their master's programmes. Chun had never written an essay before, only reports which were in Mandarin, and she had only ever written 300 words in English for her IELTS test ahead of her master's course. International students from other regions additionally

highlighted their lack of knowledge of the writing style in UK HE, noting differences in sentence style and structure and having to adapt to this.

While students detailed lack of experience and struggles in adapting to writing critically, at length (ca.4,000 words) and in English, they did describe writing as a key means of criticality development, supported by reading. Chun noted how she would write drafts in Mandarin before translating these into English, though she highlighted that *"if I don't know how to write I can translate from Google or other dictionaries"* (line. 114). It is likely translating from Mandarin into English via an automated translation service may result in grammatical and syntax errors in the student's work and could detract from the content and its comprehension by the reader. Similarly, Chih, a Taiwanese student, noted the specific *"barriers"* for NNES':

> *we cannot simply write, we have to think about the subject, verb and object* [of each sentence]. (line.137)

Chih suggests this focus on syntax averts from his critical thinking within his written work due to focussing on this and ensuring comprehension of his writing. Chynna, though developing her writing style, cited both language and change of subject from her undergraduate study as impacting factors on her criticality. Stylistic aspects were not isolated to NNES, where, as noted previously, Sally and others highlighted differences between the UK and North America, explaining the need to adapt writing styles. Sally suggests the style in the UK is more structured, with simpler sentences which list citations rather than expounding further.

5.10 Application

The crux of the overarching research question, following students' conceptualisation and development of critical thinking, was application. This theme sought to follow students who have developed criticality to discover if and how they apply it, and, if so, within which of Barnett's (1997) domains or contexts. The theme was spilt into three core sub-themes to capture the domains of criticality application among the students: in academia and to received information (knowledge), in their personal or professional lives and engaging with society (world) and/or, in relation to themselves in how they think and behave (self).

Students' application of criticality could be seen to be largely influenced by the breadth of their conceptualisation, the value they attach to it, and the perceived extent of their development. Students' confidence and perceived ability to engage their criticality or their strength of disposition also influenced their application of this in various contexts.

5.10.1 Knowledge

The most normative context for application, and relating to traditional critical thinking conceptions, was knowledge, where most students reported applying some degree of criticality. Orla did so in highlighting the need to critically engage with knowledge construction to avoid accepting claims at face value. Katy applied criticality in working to identify gaps between theory and practice, using her knowledge and critical abilities developed to critique theories and policies presented. Considering the feasibility of implementation in practice within the classroom, Katy highlighted inconsistencies in practice and policy rhetoric utilising both her academic and professional knowledge in doing so. Applying criticality directly to teaching on her course, Polly, as noted earlier, critiqued a tutor who "transmitted" knowledge and theory to students uncritically. She questioned what was professed, saying *"it feels like the lecturer isn't critical thinking and he's telling us"* (line.95).

Both Sadie and Karina took this application to another level in applying their criticality to conceptions of democracy. Sadie highlighted the importance for her that people are able or equipped to understand positions and information presented so as individuals develop their own perspective *"which isn't just what other people are telling you"* (line.223). Karina claimed everything is political and critiqued the legitimacy of democracy as a political system given contemporary populist world leaders and governments. She suggested:

> *...maybe we should challenge a little bit more democracy* [sic] *than...we are pretending it's an ideal system like we are living with that we need to accept it but then we should not take it for granted, all the time it should be questioned.* (line.158)

Karina exemplifies high levels of criticality in stepping outside a framework, democracy in this case, to problematise this and consider alternatives or new possibilities (Barnett, 1997). Demonstrating practical application of criticality to knowledge, Amy described *"thinking critically about what you are seeing"* to assess patients using knowledge learned from the course. Susie applied criticality to a degree to policies and procedures but had a fear of the National Health Service (NHS) as an organisation and her own authority to critique policy.

Providing a less articulate account of application to knowledge, possibly suggesting their lower levels of development and language proficiency were Lin and Ying. Lin spoke more generally than personally about the need to apply criticality to question knowledge and information presented, where critical thought allows one to not *"accept all the things just in*

front of her" (line.183). Ying also demonstrated limited application, stating the critical thought she developed was applied to essay writing *"because I think it is a little bit too tiring* [applying this in other contexts]*"* (line.133).

5.10.2 Self

As with knowledge, application of criticality to oneself varied across the sample. Sadie provided the strongest example in confronting her own experiences and sense of privilege during the course, showing clear application of critical self-reflection to higher levels of Barnett's (1997: 103) model, touching on "reconstruction of the self". She questioned her own benefit from privilege she experienced and the role of cultural capital in her life and mobility, motivated via course reading and assignments. In confronting this privilege, Sadie critically considered who she engages with, asking *"is my community diverse enough?"*, making effort to *"participate in conversations with friends or family with different perspectives"* (line.219), while also questioning one's ability to call a black friend a friend if not questioning race and how *"your experiences of the world are very different* [to theirs]*"* (line.207).

Amy provided another example of such application exhibiting critical self-reflection through self-monitoring, the lowest of Barnett's level. She stated, in relation to practice placements,

> *...you have to manage yourself in such a different way* [to think differently and] *...critically about how I might behave in a certain situation.* (line. 77)

Exhibiting higher level criticality, Amy stated, in relation to female circumcision, the need to:

> *...put into practice thinking about that or how you speak to someone about that or critiquing yourself about what judgements you make about someone.* (line.36)

Susie spoke less in relation to the self professionally, though she describes higher level 'development' or 'reconstruction of self' (Barnett, 1993: 103) related to her position on societal issues:

> *I feel like the critical thinking abilities that I've developed have basically made me...before I was very much for environmental...and absolutely still am but I feel like a lot of people have a very narrow view of it and critical thinking has kind of opened my mind to it...but then in a way it's kind of not good 'cause I'm sort of very much on the fence* [now]*".* (line.570)

Polly reflects on her previous lack of application of criticality to her "self" when working in Public Relations given her further criticality development. She presents an insightful example of criticality application during the interview, in acknowledging a paradox in the critical thinking self-rating question within the survey of asking students to reflect on and assess their own critical thinking development. She stated:

> *That was sort of a trap question though because you can't, even if you're a great critical thinker you can't put that you're a '10' because that's not really thinking critically about your critical thinking skills.* (line.62)

Aria also noted that her master's study was partly motivated by being constrained in her previous work where she *"wasn't even questioning or thinking* [critically]*"* (line.72), citing a lack of reflection due to limited time to do so, highlighting a possibly pertinent issue in HE for both students and staff in having the space and time for critical reflection (Berg and Seeber, 2016). Aria did demonstrate critical reflection and reflexivity in acknowledging her *"very strong opinions"* (line.74) and enjoyed opportunities to be challenged about them, as she was on her course, for example in relation to her views on gender and schooling. Peko described that he was now more deliberative about how he formed opinions based on a broader evidence base to be consciously more informed. In doing so he demonstrated a degree of reflexivity in acknowledging the need to be self-critical and to avoid snap judgements, as he stated, *"I consciously have to wheel myself back"* (line. 59).

Other students' examples of application to the "self" appeared more technical, possibly reflecting a lower level of criticality development. Lin indicated little or no application, viewing criticality as functioning to promote her career prospects while seeing it as unimportant in her daily life as thinking critically can be tiring. Genji described applying learning from a course assessment in now raising three reasons to support decision making, using the example of purchasing meals rather than cooking. Whilst relatively simple, this does signify critical skills in "self-monitoring to given standards and norms" (Barnett, 1997) which a previous assignment structure came to represent for Genji. Ying's application was limited, though she stated that critical thinking helps her *"think something in different ways"*, suggesting a level of "reflexivity". Yet she did not describe any application, reflecting her narrow conception of critical thinking as *"judging…*[making] *someone stronger"* (line.181) and the ability to argue with people. Chun meanwhile shows limited application to "self" in thinking about *"all the things around us in the world"*, though as an isolated personal act reflecting a lingering misconception of critical thinking evidencing her development of

critical thinking as individual, cognitive skill. She says, *"I think a lot about these things but actually I don't talk to any of my friends about my thinking, I just think about it"* (line.230).

5.10.3 World

Of most interest to this research in adopting a Barnettian conception of criticality which emphasises a more holistic, applied focus and the need for critical action, in addition to thought and reflection, this sub-theme is of particular salience. This sub-theme sought to capture students applying criticality in their engagement with the world. Application in this context considered academia, work and society more broadly, crossing the boundaries between personal and professional lives. This sub-theme linked to the final two survey questions on the importance participants placed on the use of critical thinking in their professional as well as their personal lives. Similar to the conceptualisations discussed earlier in the chapter, there were differences between the questionnaire findings and those from interviews.

Professional Application

Orla provided a strong example of such application and domain transfer (Johnston, *et al.*, 2011), the best example of this being her role as a Trade Union representative and application of criticality using writing techniques from her master's to put forward a motion at an annual general meeting. Critiquing what she termed a *"shockingly short sighted"* policy document, Orla argued that criticality is needed in her job:

> *…*[in] *pushing for that change* [in policy] *rather than just desperately going along with what we have or trying to adapt it slightly to make sense of it...so I will need this* [criticality] *such a lot for that.* (line. 125)

Orla described teaching her pupils about critical thinking, seeing the need for this due to the plethora of information, often unreliable, that children are increasingly exposed to – and which they need for *"being critical around images"* (line.125). Katy, on the other hand, can apply criticality to knowledge and information, in relation to funding and inclusion policy though she fails to turn this into action in the workplace. Instead, it remains as an internal dialogue, where she is reluctant to engage with colleagues to discuss and challenge these policies and their implications.

Aria alluded to her application in stating the importance of criticality when making decisions which affect people's lives, when in a policy-making role, as she was previously. While this

did appear to contradict her previous constraint in work, she described how she took critical actions within the world during her previous job in an education ministry. Aria stated:

> *it was very challenging for me to change that* [people's living situations]*, so I decided to take actions more for giving opportunities to people...but I think I can take actions doing that, that has a lot of impact because for all the kids in Peru, all the kids in secondary education.* (line.586)

Another student demonstrating cross-contextual application of this was Amy. She applied criticality professionally as a midwife in thinking theoretically and practically, noting the two are *"intertwined"* in her decision-making and self-regulation where she is *"putting those critical thinking skills into practice"* (line.75). Amy's criticality extended to the political spectrum where stated she was politically engaged having had previous *"anarchist tendencies"* (line.91). Criticality, she argues, *"arm*[s] *people with the tools to think for themselves"* and to engage critically, whereby working collaboratively *"people will change things and challenge things together, in terms of education policy or the environment or politics or whatever"* (line.83).

Personal Application

Some students also spoke of applying criticality in relation to the media, news and in their behaviour as consumers. Whilst not developing this perspective as highly as Amy or applying it on the same scale, Susie stated she applied criticality when *"reading the news and reading social media"* (line.357), specifically questioning information for an evidence base. Extending from this, Susie stated that developing criticality *"makes you question everything about the world"* and opens your eyes to ask, *"what is truth?"* (line.561). However, in contrast, to Amy, Susie's application in the same context was limited. She sees applying criticality in practice in terms of seeking to identify improvements in care and policy as a means to *"get promoted and that's how you make a name for yourself"* (line.534) – denoting individual over wider-societal interest.

Other students also noted the transference and application of criticality developed in academia to other contexts and towards socio-political issues. Peko, for example, noted how criticality now motivates involvement in different social issues, and informs his consumer and media choices. In relation to the media, Polly employed her criticality (as per her subject) in a very comprehensive and deliberate reading strategy consisting of six broadsheet newspapers read on six-day rotations. Polly saw criticality as helping to make her a better

journalist in being curious and in checking power, though she did state she was *"not as dogged and angry"* (line.175) or sceptical as certain journalists.

Other students not studying media related courses, however, did exhibit criticality in this regard. Avery described how in the face of an omnipotent news media, she seeks alternative sources, paying subscriptions to small, independent media outlets to give *"unheard voices a platform"* (line.433). Also explicitly demonstrating criticality toward media was Sally, exhorting the importance of criticality to think objectively and to know how to interact, understand and engage in a world where ideological forces can be seen to influence one's thinking via the media. Similarly articulate about her effective use of criticality towards media was Karina who, as well as questioning democracy as an ideal political system, presented her sceptical view of the media. She stated, *"I know what they are going to sell me"* in relation to *"some ideology or promoting their ideas"* (line.94).

Beyond the media, criticality was applied by students to other socio-political concerns. Peko discussed how criticality had also affected his consumer choices. For example:

> *...like when I pick what I'm gonna eat, for example, that* [criticality] *has affected that because I have gone actually looked into what happens in the food production.* (line.155)

Similarly, Sadie described how criticality made her more conscious about her own role in the world. Describing an approach termed "buycotting" (Harrison, *et al.*, 2005), she highlighted how she was now more cognisant of "*where am I spending my money, what sorts of businesses am I promoting in terms of like 'power of the purse strings'*" (line.205). Sadie elaborates on this critical action which has an ethical element whereby she seeks to support diverse and independent businesses: *"if I'm going to buy a gift for someone trying to buy it through locally sourced organisations, as opposed to Amazon or a larger corporation"* (line.215). Additionally, Sadie described how she has become *"more cynical of international development"*, stating that when in the workplace she would:

> *...* [hope to] *be in a position where I would have the opportunity to voice concerns or questions and to be able to sort of apply criticality in terms of the programmes or activities that the organisation is carrying out.* (line.209)

Two of the students described applying their developed criticality as class representatives. Andre, made specific suggestions to staff for alternative approaches to teaching with a view to enhancing the learning of his peers. Avery, meanwhile, explained that being a class representative, was:

> *...one thing that's given me an ability to take critical thinking and make action of it...we talk about ideas among ourselves, survey the whole class, had a student-staff liaison to bring up things that we've thought about and suggestions that we have for how things could change for the better.* (line.481)

Those students who appeared to display lower levels of criticality development exhibited some application of criticality. Chynna suggested thinking critically would be applicable to her in teaching autistic children in China, to better engage pupils and support their learning, Chynna applied criticality in signing a petition to support animal welfare, while additionally noting a previous critical action in volunteering *"to help them* [children] *to fight for their rights"* (line.406) and a greater budget for social workers. Genji meanwhile noted her criticality application in a self-imposed duty to critically discuss the abolition of the death penalty by attempting "*to convince them* [friends/family] *that the abolishment of the death penalty represents the culture of a nation"* (line.88).

Other students, like Ying, viewed the development and potential application of criticality in a more instrumental way, as a qualifier for employability where such a capacity provides better career prospects. Whilst seeing critical thinking as allowing questions to be asked of government, Ying still articulated that critical thinking is for advancing opinions and strengthening one individual over another. Likewise, Lin saw critical thinking as benefitting one's career and life happiness. She suggested she could apply this to teaching when returning to China but highlights that actions such as protesting, as happened at the university during the interviews, would, she suggests, result in strikers being imprisoned, detracting from her possible application. Demonstrating the least application of all the sample was Chun, who detailed that she would be unable to apply criticality to her work in a high school in China and suggests she has not developed criticality, finding when asked, it *"very hard to answer, because it is very abstract"* (line.220). Moreover, she mentioned a news article relating to homosexuality in China, stating, *"I think a lot about these things but actually I don't talk to any of my friends about my thinking I just think about it"* (line.230).

This final theme, application, demonstrated varying degrees of the application of criticality amongst the students sampled and it could arguably be seen to correlate with the perceived levels to which students developed their criticality. All students exemplified a degree of criticality in the domain of "knowledge", as would be expected of students enrolled on a master's degree in engaging critically with knowledge in the form of claims, arguments and theories as part of their learning. Only some of the students demonstrated higher degrees of criticality in questioning frameworks on a macro level such as democracy. Likewise,

application within the "self" showed a spectrum in levels of application or action in this domain with most self-monitoring while others described more profound and transformative implications, like Sadie's questioning of her own privilege. "world" was the domain of most concern to me given my theoretical focus of criticality and interest in seeing critical action where students apply their learning to the betterment of society. As with other domains, there was variation between the students with those from western contexts illustrating the most far-reaching and outward-looking application of criticality toward societal progression, with others being more utilitarian and limited in their own critical action. Arguably, this could be explained in terms of confidence, context and familiarity with this form of thinking and acting.

5.11 Conclusion

This chapter presented the findings from the in-depth interviews with students, illuminating the collected data by addressing each of the themes from the coding framework in order, which also allowed for the findings to be outlined in the same format in which they were gained – from discussing conceptualisation to application of criticality. From the findings, key themes and sub-themes emerged in relation to students' criticality development. Most notable was the role of dialogue and challenge by staff, as well as conflicting and contrasting perspectives of readings and of peers within tutorial discussions, and assessment, which all acted to aid development, though hindered some students. In addition, the salience of an international, intercultural aspect was identified throughout, which also reflected variations in understanding and conceptualisation, and subsequent criticality development acting to both enable and block, as was seen within the academic literacies theme. Varying levels of criticality development were found amongst the sample, with an inference that development may reflect the resources and background students enter master's study with, and the role of both work and life experience, in addition to cultural factors such as distance from traditions and notions of criticality in the UK HE context. Divergence was also present among student accounts of their application of criticality, though all did, to an extent, demonstrate some degree of the criticality they had developed, often relative to the level of development and pre-entry level. The domains of this application were fascinating, with less emphasis on personal engagement and action in society and more on professional application, while outwith the knowledge and academic context personal application appeared largely socio-political, concentrated around political and media engagement, with genuine action limited to a few of the students sampled.

Chapter Six – Discussion

> "The philosophers have only *interpreted* the world in various ways; the point is to *change* it [emphasis original]".

<div align="right">(Marx, [1845/1924] 2010: 5)</div>

6.1 Introduction

Following the analysis of the quantitative and qualitative data in the two previous chapters, this chapter synthesises the key findings from both chapters, discussing them in relation to the literature evaluated in the literature review. In doing so, the chapter will address the three key components within the central research question – students' conception, development and application of criticality. Given the paradigm and design of the research outlined in the methodology chapter, the findings from the qualitative data take precedence in this discussion. However, the quantitative questionnaire data did represent a considerably larger number of students than the interview data and highlighted a number of important issues, for example, the differences between the three-nationality groupings – some contrary to expectations – and the context dependent difference in importance students attached to critical thinking. Furthermore, a lot of the qualitative insights noted previously arose from initial analysis of quantitative survey findings and were further explored in interviews. Data from both the questionnaire and interviews are then used to triangulate the key findings discussed in this chapter. In doing so, significant findings from the quantitative student data and staff qualitative data are incorporated in appending and supporting certain findings from the student interviews in answering the four research questions:

RQ1: How is critical thinking conceptualised among master's students?

RQ2: What learning activities promote critical thinking development?

RQ3: What approaches do staff use to foster critical thinking development?

RQ4: To what extent do students develop and apply criticality?

The chapter begins by revisiting student conceptualisations of critical thinking gathered *en masse* via the questionnaires, and in detail from the student interviews. From the analysis of this data, I present a proposed categorisation of student conceptions of critical thinking moving from "knowing" to "being". Themes identified in the qualitative findings on the role of dialogue and intercultural engagement in students' development of criticality are then discussed with reference to relevant literature to contextualise these key findings. Following this, another important finding from the interviews regarding academic literacies in enabling

or inhibiting critical thinking is critically discussed. A noteworthy finding was highlighted was how some perceive these literacies of academia as a set of rules to internalise and abide by. The discussion then proceeds to the fulcrum of the central research question in exploring students' development of criticality and the extent of this with reference to the related quantitative and qualitative findings, in consultation with the literature, namely Barnett (1997).

6.2 Conceptual Categories

The findings from both questionnaire and interviews demonstrated a range of students' conceptualisations of critical thinking from narrow, constricted conceptions that considered critical thinking as micro in scope, to conceptualisations that were comprehensive and broad viewing critical thinking (as criticality) as macro in terms of its purpose and possibilities. In addition, there were also misconceptions about critical thinking. These were largely offered by Asian students who may have less familiarity and exposure to critical thinking in their previous education.

As highlighted in the previous chapter, in contrast to the questionnaire findings, the conceptions shared by students in interviews were largely comprehensive, with fewer narrow, constricted views than returned in survey responses to the same question. Clearly the constituency of the respective samples was impactful here, and as noted previously the double self-selection of interview participants goes some way to explain this, as well as the diverse sample which formed the survey population where 58.8% were Non-native English Speakers, with 40 nationalities and 13 programmes represented.

6.2.1 From 'Being a dissident' to 'what you need to live by'

Based upon the range of students' conceptions across the dataset from both questionnaire responses and interviews, I propose four conceptual categories through which to catalogue the variety of nuances found within the views of students. Trends within the student definitions from both surveys and interviews included views of critical thinking that could be categorised as: technical, dialectical, practical, and enlightening. These are defined/explained below:

- **Dialectical**: prominent in this view is critical thinking as pertaining to "two-sides", or as a means to view or assess "both sides" of an argument and relates more to binary thinking rather than the more complex Hegelian concept of dialectical thinking,

- **Technical**: this category sees critical thinking as a technical skill with a focus on its application or perceived need within academia for assignments and/or reading in particular,

- **Practical**: here an emphasis is placed upon critical thinking's need and utility within professional practice settings where it is a required skill in self-monitoring, and problem solving etc.

- **Enlightening**: this most comprehensive view sees critical thinking as criticality in demonstrating a broad vision of its utility and transformative/emancipatory potential, and a depth of understanding, advancing beyond biases or false beliefs/claims toward acting in a socially just, ethical, and enlightened way.

In Figure 6-1 below, I present my conception of these four categories and how I envisage them as sitting on a spectrum of critical thinking conceptions moving from narrow, constricted views of critical thinking as a skill, to macro, comprehensive views. I have labelled these opposite axes as "knowing" and "being" following Barnett's (1997; 2009) consideration of student development as knowing, becoming and being. I borrow these headings and the related views behind them to conceptualise the range of students' own conceptualisations starting from their awareness, understanding and knowledge of critical thinking, though in a narrow, rudimentary way as a technical skill towards criticality as being. Here, as Barnett states, a distinction is made "between knowing as such as and *coming to* know [emphasis original]" (2009: 429) which is a process of development following "knowing" *en route* to "being". As Barnett (2009:435) states, "knowing has implications for becoming" and which may be "understood in terms of the formation of the dispositions and qualities characteristic of the practices in the different fields of knowledge". Barnett (2009 suggests such epistemological considerations of knowledge and knowing, "has ontological implications" (2009: 435), which move the narrative to consider being, in the same way he advocates critical being (1997). Thus, in this way, the spectrum can be seen to move from epistemological concerns surrounding critical thinking to ontological concerns whereby epistemology is supported by a critical disposition and a propensity to act, while viewing criticality as having macro, global possibilities for exercising change. Specifically relating to the core theory and text for the thesis, "being" in this spectrum, in the form of critical being, involves integration of the three forms of criticality – critical reason, critical self-reflection and critical action (Barnett, 1997). As Barnett states in regard to his concept, and which applies to my spectrum thus conceived, "it is the concept of the student as person, therefore, that supplies the conceptual glue in a higher education for critical being" (1997: 104).

Figure 6-1 – Spectrum of Critical Thinking Conceptions

It may be assumed that in devising such a categorisation and labelling the axes with terms related to student development more broadly, I am associating students' conceptualisation of critical thinking with its development. I do postulate an association here and will revisit it in the following section. From undergraduate student interviews, Phillips and Bond (2004: 283) identified "four qualitatively different experiences" of criticality as: "weighing up"; "looking at it from all angles"; "looking back on"; and "looking beyond what is there". Like me, Phillips and Bond argue that their four "different dimensions provide a 'continuum of criticality' that ranges from a simple act of comparison to one that is more relative, plural, and transformative" (2004: 292). This can also be seen to reflect Barnett's four levels of criticality that are progressively more sophisticated and broadly focussed, though it assumes, as I contend, that conception and development of critical thinking are correlated.

In terms of the categories, I briefly provide some examples to illustrate how these appear within the two student datasets. Examples of "dialectical" definitions can be seen within quotes presented in the previous findings from the survey and interviews in Sections 4.6.2 and 5.6.2. In general, these views saw critical thinking as constituting weighing-up, evaluating both sides of a claim or argument where a "dark" and a "light-side" existed, as Chih mentioned. As discussed in Section 2.5.2, educational and Confucian traditions in China can explain the presence of dialectical views of critical thinking which both Atkinson (2011) and Chirgwin and Huijser (2015) highlight is prevalent in Asian cultures and traceable to Confucian values such as collectivism and Daoism (Paton, 2011). Lun *et al.* (2010: 605) hypothesise that "dialectical thinking style mediates the differences in critical thinking skills between Asian and western students". Lun *et al.* (2010) propose this may cause Asian students to seek a "middle-way" between dialectical and critical thinking, as Durkin (2011) proposes from her findings is applied in UK HE to ease adaptation among Asian learners. Explaining the difference between western and Chinese indigenous philosophy, Nisbet states in contrast to the "aggressive" Hegelian dialectic:

> The Chinese dialectic instead uses contradiction to understand relations among objects or events. In the Chinese intellectual tradition there is no necessary incompatibility between the belief that A is the case and the belief that not-A is

the case…A can actually imply that not-A is also the case, or at any rate soon

will be the case…. (Nisbett, 2003 cited from Chen, 2017: 148)

However, given the brief definitions provided by students in the survey and the limited depth of discussion on this topic in interviews, it may be that students' understanding or use of dialectical thinking was not as sophisticated as the type Nisbet describes, but more straightforward. For example, survey respondents mentioned "think[ing] both sides" and weighing up "positive and negative aspects". However, Chih's explicit reference to a "light" and a "dark side" in his interview does seem an implicit reference to this philosophy whereby within "everything black, there is something white. In everything white, there is something black" as exemplified in the Yin-Yang symbol (Chen, 2017: 148), and where harmony in sought instead of contradictions. Phillips and Bond's (2004) "weighing up" category can be seen to map with my dialectical category where the focus is upon analysis of pros and cons and where knowledge is viewed as "a single, concrete truth" (Phillips & Bond, 2004: 290) – making a similar correlation as I, and others, do in relation to critical thinking and epistemological positioning/development. It is notable that both Chen (the original author, who is based in China and likely Chinese) and I are citing a westerner – Richard Nesbitt – in explaining what a particular Chinese concept is, and not a Chinese scholar. This possibly reflects the dominance of western authors in HE and the legacy left by western colonisation.

The "technical" category includes views predominantly offered by survey respondents rather than interviewees, which included:

> *Critical thinking is looking at evidence, reading and analysing the information*, and

> *Being able to look at text, theories, practice reflectively*.

These conceptions presented a limited view of critical thinking, as a technical skill for use instrumentally, e.g. in meeting assignment criteria. In her research with undergraduates, Danvers (2019) discovered two dominant student definitions of critical thinking as "instrumentalised" and "individualised". In the first conception, critical thinking was viewed as a tangible, technical skill which requires mastery for successful studentship. Seen this way, critical thinking was conceptualised as an instrumentalised, pedagogic performance indicator which "acts to domesticate and obfuscate critical thinking's potential disruptive power by instead seeing it as something to get 'right' within a practice of impermeable boundaries, rather than a practice of questioning or re-writing boundaries" (Danvers, 2019: 13). This can be seen to be reflective of my own categorisation of "technical", while possibly

also encapsulating my "practical" category. For example, Danvers' "instrumentalised" classification, like those of my own barring "enlightening", could be seen to encapsulate all of those findings, themes and conceptions discussed hitherto that view critical thinking as a skill very much seen through a neo-liberal lens of performativity and instrumentalism where it is an academic convention to be practised. Furthermore, the findings from the survey revealed students' significant preference towards the importance, and arguably, the utility and scope of critical thinking within professional settings. Arguably it would be from such an academic setting of performativity and instrumentalism focussed on employability and transferable skills that such views could develop. This then links to those conceptualisations categorised as "practical".

For the "practical" category an example is provided for clarity:

> *I think it should also be practised like a skill, the more you practice your critical thinking the more perspectives you gain, the better decisions you can make.* (Andre, line. 60)

Another angle of this category from a survey respondent from the Health & Social Care programme grouping (see Table 4-6) sees critical thinking as:

> *Reflecting and evaluating on my practice with insight and reference to policies, research and theory.*

Danvers' second classification of critical thinking as a means of self-improvement, overlaps with my "practical" category with the focus on management or monitoring of the self within given standards of practice or the profession and where critical thinking enables this self-reflexive capacity in line with guidance, policies, or potentially one's values and beliefs where critical thinking and critical reflection become entwined.

This view, Danvers states, sees critical thinking as "self-surveillance characteristic of the 'neoliberal' performative self" (2019: 13), an "individualised and psychologised passport to self-improvement" (2019: 10). The three categories discussed hitherto can be seen to reflect technical, instrumental views of critical thinking reported by survey respondents which linked to students' views that focused on its utility in academia and its importance in terms of employability, with critical thinking a key "transferable skill" required for this. Again, survey respondents viewed critical thinking in professional, work settings as overall more important than in the context of their personal, daily lives. Therefore, Danvers' contention of the "'neoliberal' performative self" (2019: 13), and my own categorisations, could present implications for students' transferability of critical thinking and/or the contexts in which

they view it as applicable. Mostly UK students viewed critical thinking in personal life as unimportant compared with other nationalities, as shown in Figure 4-13, which was admittedly expected to be of greater concern to students from the Chinese or Other nationality grouping. However, this suggestively reflects the neoliberal, employability narrative that permeates UK HE which could be seen to influence students' views of critical thinking as a transferable skill for the workplace.

For transparency, it is worth illustrating an example of what I consider an "enlightening" view of critical thinking. A particularly good example was provided by Orla when asked about her understanding of criticality:

> *I do not think that the university sells the idea of then taking action based on that as part of critical thought at all...like I don't think that that's a requisite...within the course I've done there's never been any discussion that critical…like that conceptualisation, criticality, is exactly what they mean, like it's still quite consumerist...cause like* [Host] *Uni is* [Host] *Uni, it provides…you can buy a degree from them if you do a bit of work...and yeah the idea is that you are developing your critical thought for you but that it's a...like I think that the way in which it is put across in a lot of university courses is very much more...like a skill I guess...like your difference between a skill and a way of being...it's like 'this a skill and if you come here you can practice that skill and learn and develop it' and then should you need it for job or etc. later you can like get it out and use it then. Yes, my understanding of criticality is more like your definition.* (line. 127)

This observation by Orla is perceptive, particularly as the cited university ironically advertises, "World Changers Welcome" to prospective students, whereas this appears to be in contention with the student's previous statement. Rather, as Barnett may contend, it is likely a benign form of "critical thought" promoted here where "world changers" who are welcomed are likely to be those who deliver "given ends with ever greater effectiveness" (1997: 3) or an "instrumental reflexivity likely to sustain economic change" (1997: 14). I would argue that this level of "enlightening" knowledge should be seen as conditional, backed by power and a site of challenge, which Barnett (1997: 124) notes in emphasising the significance of Foucault's insight into the "coupling of knowledge and power".

As the interview data revealed in [Section 5.6](#), an ethical, socially just aspect could be seen within this conception of criticality in the form of values. The role of ethics and values revealed in my interview findings is supported by Hammersley-Fletcher and Hanley (2016)

and Blakey (2011). In disputing neoliberal, instrumental notions of self-reflection, Barnett (1997: 100) argues that:

> We are in danger of moving, in higher education, into a valueless world, in that it is devoid of the student's own personal values.

Such a finding regarding ethics and values within criticality while brief in my findings (see Section 5.10.3) is also supported by Wilson and Howitt, who made a similar observation:

> it became evident that ethicality was intertwined with criticality, as [students'] judgments were made on ethical as well as rational and emotional grounds. (2016: 1170)

My "enlightening" categorisation can, therefore, be seen to incorporate an ethical, values-based component which can also be seen in Barnett's (1997) critical being.

Noticeable by its absence above is discussion of misconceptions held by some students. This category was omitted as these misconceptions were often far from reflective of even technical views of critical thinking, for example: "*being a dissedent* [sic]". My data discovered students who were unaware of critical thinking and with no conception of this until entering their master's study. For example, as well as misconceptions of critical thinking as negative, criticising and judging, some Chinese students stated they had no understanding of this ahead of their master's study. As one stated:

> *critical thinking for us is just like concept, we don't know a detailed or a definition of the critical thinking.* (Chun, line.62)

However, far from isolated to my sample, misconceptions like this and a lack of awareness of critical thinking amongst students have been found by other researchers investigating critical thinking in HE, such as Huang (2008), Fakunle *et al.* (2016) and Zhang (2017) who interviewed Chinese postgraduates. For example, Huang (2008: 6) found students feeling "confused and depressed" due to this "lack of knowledge or practise" in critical thinking. However, as Floyd (2011) and Manalo *et al.* (2015) highlight this is not isolated to Asian students who are hamstrung by issues of language and exposure to critical thinking and the pedagogies that promote it, as miscomprehensions around critical thinking are also seen amongst western students.

An additional nuance, outside of the spectrum of conceptions, was the view among some Chinese students that critical thinking equated to a sense of individualism or status of uniqueness held by the beholder; this was seen in both survey responses and in interviews.

For example, interviewees mentioned critical thinking as making one *"stronger"*, *"more excellent"* and *"superior from other people"*. Converging with one of Fakunle *et al.*'s (2016: 35) Chinese interviewees viewing critical thinking as meaning "your ideas are different from others". This sense of uniqueness and superiority could possibly be related to students' views of critical thinking as sitting within a prism of western culture and capitalism that foregrounds the importance of the individual and competition over community and collectivism, though this focus is outwith the remit of this research.

6.3 Developing via Dialogue: Critical Thinking as Discourse

One of the most significant findings from the 18 student interviews was the overwhelming preference for discussion with peers in tutorials, seminars or other settings over more formal, teacher-centred teaching, particularly in the form of lectures. In fact, some students, specifically those from China, noted that they and some peers actively elected not to attend lectures and instead only attended tutorials; while others noted they felt they learned significantly more from discussions with peers and in tutorials, and their reading, than they learnt in lectures. A common complaint regarding lectures was their passivity, transmissive delivery and that students felt they were being recited the contents of their weekly reading, and therefore not adding to their learning – strong charges levelled at the principal method of teaching in HE. One student – Andre – went as far to say he felt lectures were a *"dehumanising experience"* in having the reading repeated to him in lectures. This sentiment was also borne out in the questionnaire findings where only 7% of students ranked lectures as the most important learning activity for developing their critical thinking, while, when combined, 34.1% rated discussion with peers and in-class activities as their most important learning activity for this. This signified the primacy of discourse amongst both the survey and the interview sample – which supports claims by some theorists and researchers on critical thinking, such as Barnett (2015: 17) who asserts that through dialogue students are "testing their ideas in the critical company of each other". Freire declares the significance of dialogue in learning, stating:

> Only dialogue, which requires critical thinking, is also capable of generating critical thinking. Without dialogue there is no communication, and without communication there can be no true education. ([1970] 1996: 71-72)

The magnitude of dialogue's importance as portrayed by Freire can, to a large extent, be seen within the interview data, where, for example, Polly states this is *"conducive to opening*

doors in your own mind" (line. 179) allowing her to develop ideas as she discusses them. Polly's vignette describes such a conducive setting:

> *It's the same as this discussion right now, you just have the freedom to pursue what's interesting and just drop what's not and like question things without...I think it's nice in academic settings with some, most professors I think where you don't have to walk on eggshells at all and you can sort of...you can completely disagree with something without it being taken personally at all. You're in this space where you're only talking about the ideas and that's just like...it feels like a tennis match and you can, especially when you're talking to someone who is on the same page as you or who is also thinking critically about it*. (line.179)

This *"opening of doors"* exemplifies the salience of discussion to students' critical thinking across the sample with Chinese students though more challenged in keeping pace and contributing, found discussion, like Polly, to be *"an eye opener"* (Chynna, line.249). However, analysis of the qualitative data also revealed other student concerns about their education and expectations of master's study. As quoted in the previous chapter, Karina noted the lack of discussion time within her course had set off *"red alarms"* for her as she expected smaller student discussion groups in place of lectures which had an excess of 100 students present and were prohibitive of discussion. Several students, home and international, shared concerns about contact time which confounded their expectations of master's study. Polly expected a parity of contact time as experienced in her undergraduate degree, in relation to seminars, she "*thought it* [would] *be three hours a day not three hours a week"* (line. 85). Such lack of time for critical discussion and "substance" or challenge, reflects Amy's claim that she had not *"felt very masterly"* (line. 53) in her course. However, the QAA do state that master's study "include[s] a shift of responsibility from the teacher to the learner" where this level of study "is partly defined by this student capacity for self-learning", they also state that there "tends to be more interaction between staff and students and between students themselves" (2013:6). This is clearly something students are not satisfied with from their own experiences in master's study.

In relation to contact hours, Chih highlighted the frustration he and some peers on his course felt when comparing their teaching and contact hours here in the UK with master's study elsewhere. Chih stated that due to this his peers *"feel a little bit.... not worth it"* (line. 388). Chih alluded to values in terms of the fees students have paid to attend and study a master's degree at a UK university, which as international students costs anything between £8,880 to £47,200 per year (Audit Scotland, 2016: 23), an extraordinary amount of money in addition

to travel, accommodation and living costs. In relation to value and "quality" of educational provision the QAA explain how contact hours should be considered:

> Contact hours are one of a number of measures taken by some as a proxy for quality and thus an indicator of value for money. However, as has been set out in this document, contact time with staff forms one part of an overall approach to learning and teaching that is designed to fit the particular course and subject being studied. There is no evidence to suggest that, taken alone, contact hours offer a meaningful way in which to measure quality. (QAA, 2011: 9)

Regardless of this vague explanation of the expectation of study hours aligned with academic credits, students still maintain a sense of frustration and dissatisfaction in what they gain in return for their fees – a key issue where education is commoditised. Bennett Moore *et al.* (2003: 86) suggest international students are often used to "higher levels of class time, more continuous monitoring of learning and more controlled reading programmes", highlighting that some of their respondents also noted limited class contact time which condensed the opportunities for peer interaction and discussion among students.

This analysis echoes findings in related research that dialogue enabled postgraduate students' "transformation through critical linkages" (Greenman and Dieckmann, 2004: 251) due to exposure to new topics and perspectives. However, while dialogue was largely facilitative of criticality development and learning generally, not all students shared this experience. Some international students expressed anxiety and concerns related to confidence which hindered their participation in discussions and ultimately their learning as a result, something Durkin (2011) also found. This aspect is discussed later in the chapter.

6.4 Engaging with Contexts of Difference

Another and possibly the most significant developmental factor identified in interviews as assisting criticality development, was the intercultural, international dimension prominent in the accounts of all interviewees. Hence this, like the 'Critical Thinking as Discourse' theme, was a consensus theme mentioned by all students interviewed as largely positive, enabling their criticality development and their learning generally.

This sentiment came from all directions – UK students noting the varied, international cohort; Chinese students cognisant of the range of student nationalities and the volume of their compatriots; and Other international students acknowledging the diversity of their student groups. As suggested, it was seen as an enhancing component of their master's studies, if not the most impactful. From the data, I identified, as outlined in the previous

chapter, three core sub-themes making up this intercultural dimension: dialogue, diversity and differing perspectives. These sub-themes overlapped with one another in an evolving flux within students' accounts. Dialogue and differing perspectives were salient within interviews, as was cohort diversity, however this latter aspect is best illustrated by reference to Section 4.3 which shows the survey sample diversity, exemplified by its 40 nationalities. From this analysis, the interplay of these three related elements, as illustrated in the diagram below, provides the most favourable conditions for criticality development when all three elements (or sub-themes) intersect. Advancing from Burbules and Berk's (1999: 62) passing use of the phrase "contexts of difference", I have identified the three significant elements arising from the accounts of students as constituting contexts of difference which provide conditions for criticality development.
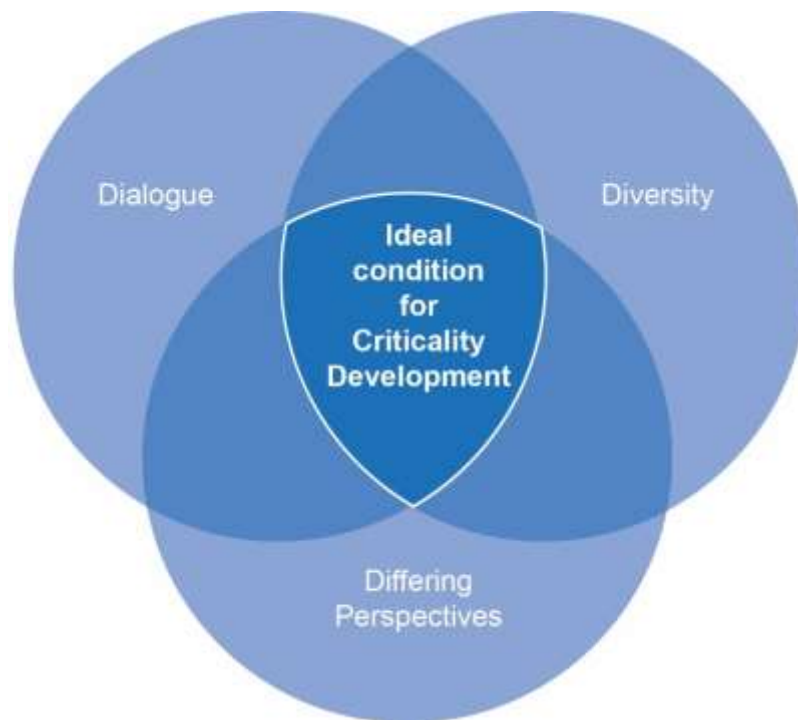
Figure 6-2 – Criticality Development through Engagement with Contexts of Difference

At the centre of the diagram in Figure 6-2 where these three elements coalesce, I propose provides the ideal means to support student criticality development. Both explicit and implicit here is social interaction in the form of dialogue, which as aforementioned was a major finding. As Wilson and Howitt (2016: 1162) contend from their research into criticality development:

> …criticality is itself a socially emergent phenomenon, constituted in interactions and relations between individuals, individuals and ideas, individuals and social structures, and so on.

6.4.1 Dialogue, Diversity and Differing Perspectives

At play within this theme, as mentioned in the quote above, is the salient role of dialogue and differing perspectives in supporting students' criticality, as was the case with each of these sub-themes seen in the previous chapter in terms of their enabling role. However, the significant difference in this theme is the united and evolving nature of each of the sub-themes interplaying and interacting with one another in a generative social phenomenon facilitative of criticality development. Key to this "live", interactive, evolving tripartite relationship is diversity, diversity of the student corpus within which this phenomenon takes place and comes to life, and within this, I contend, it is the contexts of difference as they interact and engage with one another through dialogue. It is at this point when these three elements interact in equivalence that I believe criticality development is most likely to occur. Thus, where true dialogue takes place and where differing perspectives are shared amongst a diverse group both differing perspectives and diversity work within the dialogue to present "difference", or "otherness", displacing one from their "comfort zone" through engagement with difference. As Wilson and Howitt (2016: 1162) propose, "It is by exposing oneself to the views and practices of others that one can trouble one's own assumptions", which thereby works to foreground criticality development. Differing perspectives included theories, perspectives and understandings from readings provided by staff, challenge from diverse peers with differing experiences, views and values, as well as challenge from tutors in tutorial discussions. Moreover, adaptation to the UK academic context and its pedagogy and expectations was for many international students itself a challenge and means for critical development through engaging with a "context of difference" on a macro scale.

Quoted in Section 5.8.1, Karina provided a good description of active discussion with peers as presenting challenges to her opinion through exposure to people from different backgrounds and experiences, which echoed elements of Polly's quote above (Section 6.3) of such dialogue resembling a "tennis match". Orla provided a similar account of how dialogue in class was with people she may not have normally spoken with in terms of her social group and how interacting with differing perspectives and diversity presented alternative views, allowing her to benchmark her own view and challenge or re-enforce this. Orla specifically mentioned taken-for-granted views she held being challenged, prompting her critical reflection and need to support her views. For example:

> *...some people really like support free market capitalism as a structure even though it facilitates that* [inequality] *in some ways so like...it's important to*

>*speak to people in classes about some of the issues just because I think it helps you think….* (line.87)

Genji shared similar acknowledgement in seeing seminars as an *"opportunity to interact with people from all over the world"* (line. 114) where she could gain insight into multiple perspectives. Additionally, Andre viewed international students as a "resource" for learning due to the different views and experiences, beliefs and thoughts they brought to the classroom. This resonates with Chih's comment quoted previously in Section 5.8.2, that the student peers with their differing nationalities, perspectives and experiences were broadening the horizons of himself and peers. Such exposure to other cultures and values being linked to learning ties back to the IoC literature cited in Section 2.4.1 and the findings of Parks (2020). In relation to the nexus of intercultural competency and criticality, Parks (2020) found that students' exposure to the target culture in language learning enabled criticality development. Yamada (2008) also found that through learning Japanese, students encountered "otherness" which prompted them to reflect on their own assumptions and beliefs, "comparing and contrasting between their own and Japanese language and culture" (Yamada, 2009: 18).

When asked about the diversity of her class cohort, Sally shone a light onto how these three elements fused together to help aid criticality development. She said students on her course were *"one of the most diverse groups of people that I can imagine could unintentionally end up in the same class"* stating the class was *"incredibly diverse"* which itself was *"incredibly positive"*, in providing insight into policy within the various countries students came from which, she stated, led to a *"really exciting exchange of ideas...almost entirely based on just our experiences"* (line. 189). Chun mirrored this facilitative, intercultural experience, she described that through talking with colleagues she gained an understanding of *"the cultural context,* [and] *political context of the*[ir] *country"* (line.189). And, lastly, Ying encapsulated the triadic functioning of dialogue, diversity and differing perspectives as they amalgamate within the classroom:

>*in our class we have different groups, in a group we will not only have international students, we also have some local students and the culture is different and thoughts are different and I think that's a good way to help, think differently.* (line. 194)

6.4.2 Intercultural Being

At this point, I make a correlation between my research findings, the work of Barnett and a development in the literature related to languages learning and the key concept of "intercultural competence", a concept mentioned in <u>Section 2.4.1</u>. Such a link between language, culture and criticality was made in <u>Section 2.8</u> and the work of both Parks (2020) and Yamada (2008; 2009) who each investigated criticality development amongst languages students. Crucial here are the convergence of findings which appear to support my contention related to the role of differing perspectives and diversity in enabling criticality development.

The work of Phipps and Gonzalez (2004: 90) is salient here, as they specifically connect two theories, Byram's (1997) intercultural communicative competence and Barnett's (1997) critical being. From this connection, Phipps and Gonzalez propose the term, "intercultural being" whereby students can develop "an understanding of the varied and multiple reality of which we are part" (2004: 3). Phipps and Gonzalez (2004), focus, like Barnett (1997), on moving from competence to embodiment. Within their view of "developing interculturally critical beings", Phipps and Gonzalez (2004: 90) "emphasise again the centrality of the idea of exchange". This view of intercultural critical being is very similar to the view I have of engaging with contexts of difference as described, and where I argue, like Phipps and Gonzalez (2004), that dialogue and the exchange of differing perspectives amongst diverse individuals catalyses critical being. Moreover, Phipps and Gonzalez (2004: 58), as I propose in relation to the perspectives brought by the diverse international student body described by participants, suggest that "'Abroad' is as much in the classroom or corner of the street as it is across some national border."

Phipps and Gonzalez, like me, appear to fully embrace Barnett's thesis in their proposal of intercultural being as their aim of language learning rather than pay credence to his theory, as others frequently do (e.g. Garcia, 2009). In stating this aim, Phipps and Gonzalez articulate the key argument I am positing in this section relating to difference and intercultural engagement, and holistically relative to criticality in HE, for example:

> We have suggested a response based on an idea of 'critical being'– and it is important to reiterate that we understand that as 'being in the world', as theory and practice. In the same sense, the knowledge of cultural otherness is bedded in the body and lived experience of the learner. Learning after all is not about the

absorption of pre-existing truths but about testing and exploring ideas in and against reality, and then reflecting upon the process. (2004: 124)

Reflecting my own findings here, Parks (2020: 33) discovered evidence of students developing as "interculturally critical beings".

Key to this, as I have suggested within my own data, Parks (2020: 33) identified that where "emphasis was placed on developing students' ability to critically reflect on beliefs and practices in both the target culture and their own" this contributed to students' criticality development. Andre stated that, *"the exposure to the culture, I think it really encourages you and sometimes really forces you to think different about things"* (line. 158). There is, I contend, a parallel between my own findings in this intercultural theme and those of Parks (2020) and Yamada (2008), and Phipps and Gonzalez's conception of intercultural critical beings where the encounter and engagement with difference or otherness in the form of culture and the diversity this provides in terms of the perspectives, experiences and beliefs of students similarly develops criticality.
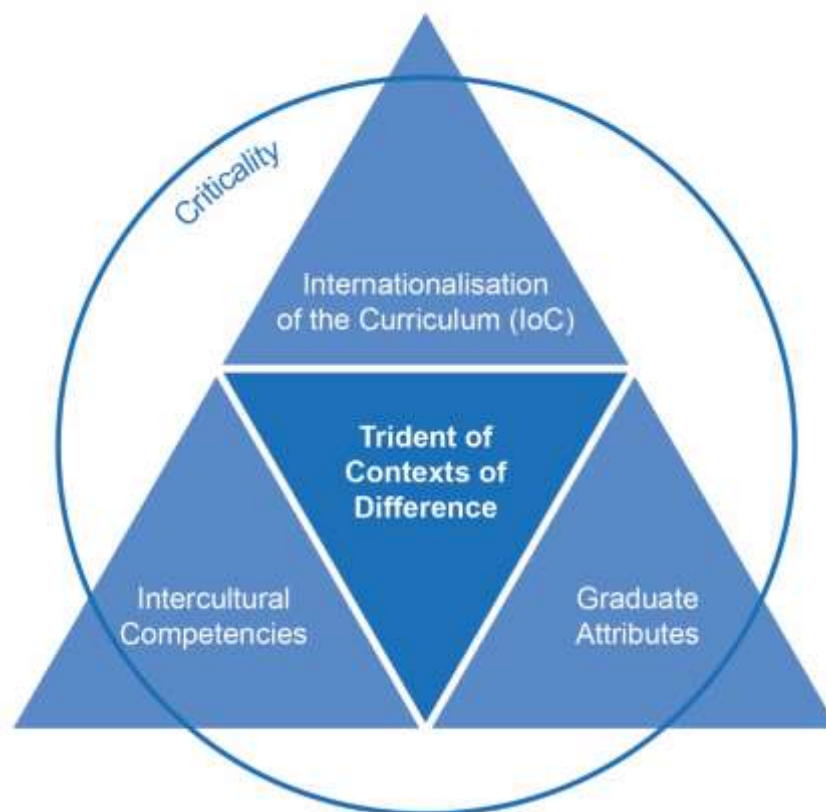

Figure 6-3 – Tripartite Pedagogical Synergy for Critical Being

The QAA, like Tian and Lowe (2009), present a similar suggestion supporting my contention, in suggesting that "structural internationalisation is not synonymous with an integrated community" (2016: 25) where having large numbers of international students does

not ensure "interaction or the development of intercultural competences or the global skills" equated with graduate attributes, such as critical thinking. Rather the QAA suggest universities should give "more consideration to internationalising the curriculum and the ways in which intercultural competences may be developed for both home and international students" (*ibid*).

I propose from this preceding discussion that various seemingly unconnected yet linked educational initiatives in HE could unify in working to support and realise students' criticality development. For example, as Figure 6-3 illustrates, I suggest that Internationalisation of the Curriculum (IoC), Intercultural Competencies and Graduate Attributes could be united in support of the development of student criticality where my "Trident of Contexts of Difference" sits at the centre as the philosophical and pedagogical linchpin providing synergy and coherence to student learning where in addition to advanced disciplinary knowledge, criticality is the broad educational aim coalescing these three outer elements.

At this juncture it seems appropriate to address another contemporary initiative within the HE sector and one which overlaps conceptually with both internationalisation of the curriculum and interculturalism, this being decolonisation. Decolonisation has gained prevalence recently having initially grown from student movements in South Africa in 2015 and 2016 (le Grange, 2018), including the #FeesMustFall protests (Griffiths, 2019), and the 'Rhodes Must Fall' campaign at the University of Oxford (Lumadi, 2021) where students claimed they are not represented in their predominantly Euro-centric curriculum and western knowledge is privileged over Indigenous or African knowledge.

Le Grange (2018: 8) describes decolonisation within HE as "the undoing of colonisation" which colonised "peoples' minds through disciplines such as education, science, economics and law". Lumadi (2021: 1) suggests decolonisation in this context "should be viewed as a process of defying and dismantling the colonial systems that swayed education in the past and that are still perpetuated today". He suggests that decolonisation may involve "liberating curricula and the wider university culture from selective narratives" (Lumadi, 2021: 1), specifically those western, universal narratives.

Instead, and revealing the link to interculturalism and IoC, Lumadi (2021: 1), citing Waghid and Hibbert (2018), describes the intention of decolonisation as equipping students with "diverse academic learning environments, curricula and approaches to research within which Indigenous cultures, histories, and knowledge are embedded". This quote reveals the connection to both curricular concerns and interculturalism, seen here in terms of diversity

of learning environments, though it also reveals the additional concern which decolonisation has related to knowledge and epistemology. While overlapping to an extent here with IoC in terms of authorship diversity within curricula, decolonisation presses this concern further, extending from curricular content to advocating, in its most hardcore form, that "African knowledge must replace western knowledge at the centre of the African curriculum" (Lumadi, 2021: 2).

However, such a wholesale revisionist view of decolonisation is opposed by Griffiths who suggests that "strictly speaking, 'decolonising' the university requires doing away with the university" yet contends that decolonising the curriculum does not mean replacing "Western philosophical content with African philosophical content", as the "entire social-institutional construction of curricula is part of the colonial heritage" (2019: 147). Both Rata (2012) and Horsthemke (2019) also reject such an extreme view that advocates alternative epistemologies and the legitimation of non-western knowledge systems. Rata (2012) addresses such concerns in what she describes as the "localisation of knowledge" where she sees students' "socio-cultural experiences as the source of knowledge in education" proceeding from constructivist pedagogies to become the curriculum itself. This, Rata argues, negates objectivity, criticality development and student agency. She contends that such "localised politics" related to socio-cultural knowledge - arguably similar to the specific localised context of South Africa related to the decolonisation debate – actually disempowers students' critical thinking (Rata, 2012: 120). Rata promotes disciplinary knowledge as the means to critical thinking development and achieving education's transformative goal, which, she argues:

> [is] dependent upon having the type of abstract objective knowledge that is at the heart of reasoning and that is developed when young people have access to the disciplines of the sciences, arts and humanities. (2012: 120)

Rata's point here echoes the stifling generalist vs field-specific debate within the CTM, encountered in Section 2.2.

Also arguing against the notion of separate epistemologies in response to postcolonial, postmodern and constructivist theories, Horsthemke (2019: 519) lists some of the diverse manifestations of epistemology now proliferating within educational research. Horsthemke (2019) critiques the view that specific cultural or ethnic groups possess their own "distinctive epistemologies", as implicit in decolonisation and demarcated by le Grange (2018). Rather, Horsthemke (2019) deconstructs postmodern arguments which he contends render "knowledge and truth relative", using the example of values which he argues are often

commonly or universally shared, such as ethical values. Horsthemke (2019: 523) maintains his position against the rise of relativist or localised knowledge seen in proliferating epistemologies:

> The philosophical spirit of scholarly disputation requires remaining faithful to the possibility of critical interrogation, discussion and argument about even the most difficult educational issues, as well as to some standard of good reasoning about ontological, epistemological and ethical matters in education, as in other areas of public concern and intellectual life.

Within the UK context, similar 'complicated conversations' (le Grange, 2018) are taking place in seeking to address the key concern of decolonisation by critically questioning what knowledge is privileged in HE and why, as well as how universities may better represent knowledge from different cultures and societies within the curriculum. Banda (2021) highlights the overlap between decolonisation of the curriculum and internationalisation of the curriculum (IoC). Emphasising the need for decolonisation to reconcile 'epistemic injustices', Banda (2021) highlights that IoC, rather than working to help such reconciliation from the legacy of 'hegemonic relations' created by British colonisation, actually adopts a hegemonic position itself in its prioritisation of western values and its genesis in the neoliberal logic of the market. IoC itself, therefore, is not a sufficient means through which to address concerns related to decolonisation and, as highlighted above, these calls for curricular upheaval and greater prioritisation of local and alternative knowledge systems are not as unproblematic as they are initially presented. However, this focus is outwith the remit of this thesis.

6.4.3 Difference and Developmental Tensions

Central to students' views of discussion as facilitative of criticality development was the need for neutrality and the safe space for such discussion which university provides, to which Polly's vignette in Section 6.3 alluded. Amy similarly outlined the need for such a space to accommodate challenge in a supportive environment for dialogue; she explained:

> *There's something about being challenged by your peers and by not being afraid to get things wrong and be able to hash those out...'ok, great, go and read something and make up your own mind'...but what I think that you can't...you've kind of gotta be, there's something really important about someone saying...'actually, I think differently' and that being safe, that being done in a supportive way...so I think that's why that was my number one* [in survey]. (line.49)

However, not all interviewees benefitted from these conditions and shared this experience. Some students were less prepared, familiar with or able to benefit from such group dialogue and participation. This was notable amongst Chinese students who arguably are at greater distance culturally from the UK in previous educational experiences and the related pedagogies of active learning and group discussion, or debate (Rear, 2017). Like Durkin (2011), Bennett Moore *et al.* (2003: 86) identified a "developmental tension" in relation to certain international students' experience of and engagement in dialogue with peers. Similar to Durkin's (2011), observation, reflected in my findings, this was not easily explained, while core issues of low confidence and embarrassment due to language were evident, more complex issues appeared such as peer-pressure and an avoidance of "westernisation", or cultural conflict.

Lin, Chun and Ying commented on their difficulty in group dialogue, highlighting their lack of engagement in discussion partly due to fear that someone steals their ideas and *"that they are ashamed to share ideas"* (line.147) in case they are "wrong" –linking with epistemic concerns where these students still perceived the need for a correct answer. Embarrassment was a factor in reluctance to share ideas in case they were incorrect and that disagreement ensued from this, possibly motivated by cultural norms of politeness and avoiding confrontation. Chun articulated this developmental tension, where she implicitly cited peer pressure within the group where cultural or identity factors may have been at play among students from China keen to maintain their national and cultural identity in fear of becoming "westernised" in indulging in perceived western behaviours, such as debate, argumentation and disagreement. I believe this links to Durkin's observation from her research with Chinese students where she identified that "disagreement from one's cultural group can act as another inhibitor to critical thinking and debate" (2011: 284). Therefore, while this reluctance to participate could simply be seen to be due to anxiety and confidence, I believe there are deeper tensions at play. It may be that some of Chun's peers were "suppressing individualistic public expression, exerting pressure to conform and not tolerating westernisation of her behaviour" (Durkin, 2011: 285).

Previous comments from Lin suggest language proficiency linked to confidence affects engagement in discussion as well as a strange, competitive notion that students may steal one another's ideas. This possibly reveals this cohort's lack of experience in group discussion as an active pedagogical method. Moreover, and linked to cultural norms highlighted by Dong (2015) and Zhang (2017), it suggests that Chinese students want to avoid disagreement and do not want to upset others in seeking to maintain harmony rather

than confrontation. Thus, Chinese students favoured harmony in place of perceived conflict which mediated their participation to discussion. Furthermore, and supporting findings of Floyd (2011) and others regarding the inhibiting role of language in this regard, Rear (2017: 12) found that language was "a considerable handicap" for Asian students in discussions, due to cognitive overload.

6.5 Rules of the Game

> *it feels a bit like a game actually, because there's such a specific rule that you have to do the lit review and then present the argument and then cite, you know.* (Polly, line.52)

Here Polly refers to learning and assessment in HE as a game whereby she has a distinct advantage in being conversant with its rules following her undergraduate study, while peers from differing educational contexts may not be, given the shift in context and often the subject of their learning. As mentioned in the previous chapter, Polly is referring to "academic literacies" as being the "rules of the game" (Maton, 2008) she learned in undergraduate study. For Polly, this provided her with an advantage over less experienced or knowledgeable peers which was reflected in the differential between their grades. Moreover, the interview data confirmed such unknowns and misunderstandings amongst international students about "academic literacies" of reading, note-taking and writing practices.

While several students struggled to grasp what these rules were in relation to writing and attempted to adapt and conform to them, Polly was able to push the boundaries and operate most effectively within these rules, seeing this reflected in her assessment grades while others suffered. Polly detailed how her familiarity with these unspoken "rules" provided her *"creative freedom"* to tailor essays allowing her to bend and push these rules:

> *I guess that's one of the advantages of learning the rules of how to write the academic articles and then yeah, then I know how to make them fit into what interests me.* (line.145)

This issue recalls that discussed in Section 2.6.2, 'Criticality as Conformity', whereby an increasingly diverse cohort must adapt and conform with academic customs and conventions that are largely intangible and tacit, seldom discussed in class, with students expected to have developed this knowledge from previous study, especially at master's level. In doing so, I refer the reader back to *Figure 2-4 - Dimensions of Student Diversity in HE* to re-iterate the diversity of students now entering UK HE and where in Scotland Chinese students make up the largest national cohort of international students (Audit Scotland, 2016; HESA, 2020). I also return to the literature on student transitions to contextualise this finding. The QAA's (2016) scoping study on international students' transitions in Scotland identified both the current practices within Scottish HEIs in relation to such transitions whilst also identifying

challenges the sector and students still face. Figure 6-4 below illustrates these practices and persisting challenges which some of my findings reverberate.
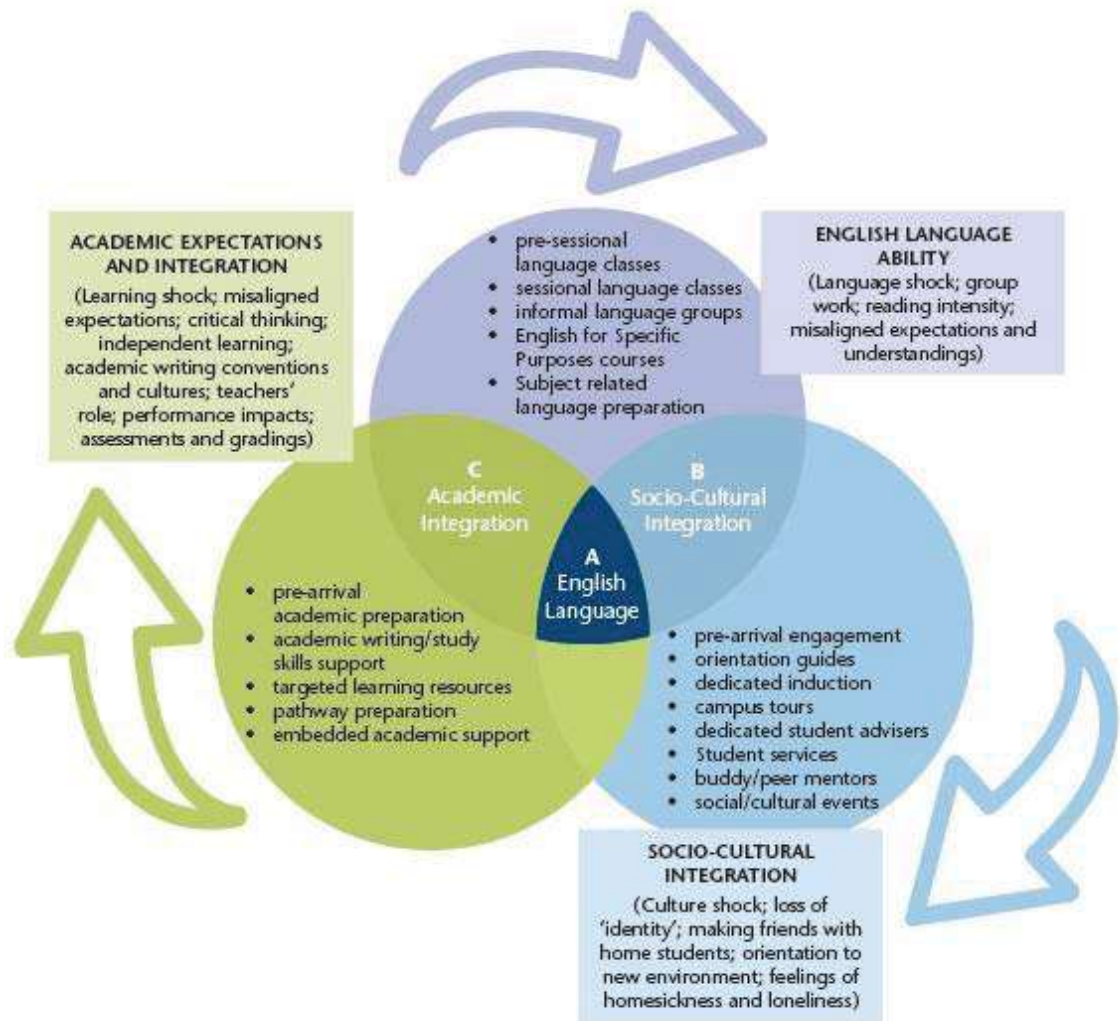

Figure 6-4 – Key challenges and practices in international students' transitions

© The Quality Assurance Agency for Higher Education [2016: 16]: International Students' Transitions into Scottish Higher Education: A Scoping Study.

Of particular interest is the third key challenge around "Academic Expectations and Integration". Amongst the challenges identified are essentially those discussed in the findings hitherto. For example, learning shock, unaligned expectations, critical thinking, independent learning, and academic writing conventions – are positioned by the QAA (2016) as the third set of practices and challenges for students to overcome and engage with after establishing the students' English language ability and socio-cultural integration. By implication this then suggests, as I have noted, that international students begin their studies positioned in deficit behind other non-international peers or those more aligned with the language, cultural aspect and the "rules of the game", or academic expectations and customs.
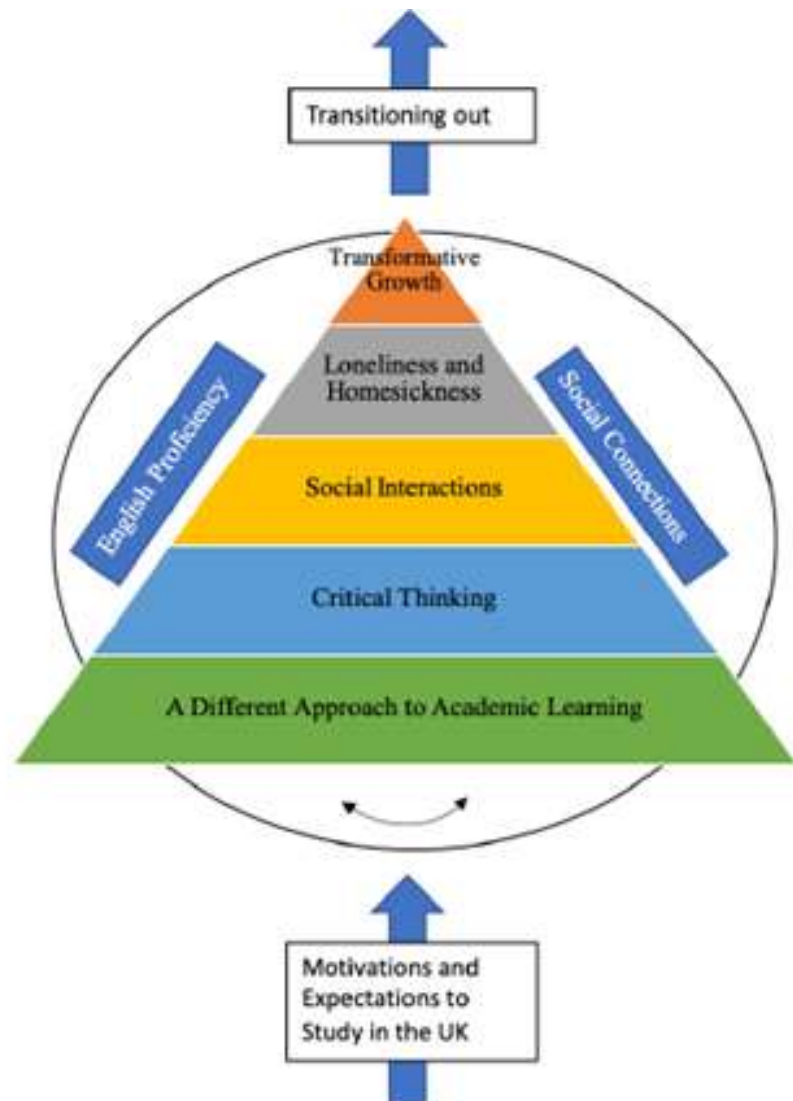
Figure 6-5 – Zhang's (2020) Model of Chinese Students' Transitional Experience at One-Year Master's Programmes in the UK

Furthermore, Zhang's research, specifically with Chinese Master's students, suggests a similar transition process and set of challenges which face this specific cohort. Illustrated in Figure 6-5 above, Zhang also suggests that students first have to adapt to their new context

and approach to learning before focussing on their critical thinking development as a distinct stage in their transition. Arguably, this would be challenging for most people undertaking a full-time master's degree in one year let alone an international student coming from a very different educational environment and mode of learning, having to learn, read and write in a foreign language while getting to grips with a concept that can still perplex home students who have studied in the UK (Fakunle, *et al.*, 2016), as the survey findings demonstrated. For example, students' self-rating reporting revealed UK students reporting lower critical thinking development than students from the Other nationality grouping, while the CTDS scores overall indicated UK students rating highest amongst the groups, they scored comparably with the other two groups in the "reflective scepticism" factor. Additionally, UK students provided constricted conceptions of criticality contrasting with some survey respondents and interviewees of other nationalities, highlighting this struggle with critical thinking was not exclusive to international students, though more overt and pronounced given the upheaval and unsettling adjustment Asian students specifically experience.

Haggis (2006) argues that these difficulties are often associated with students rather than with the institutions, structures and processes with which they have to conform often emanating from cultural assumptions which underpin aspects of our pedagogy, where critical thinking is evidently one. Unveiling these practices of academic literacy as complex and social, and contextually situated, academic literacies scholarship (e.g. Lea & Street, 1998; Lillis & Scott, 2007; Gourlay, 2009; and, Wingate & Tribble 2012) draws out the broader, structural issues influencing practice and custom in HE which can inhibit rather than promote students' learning. It provides a means through which to view the extremely complex challenges facing international students upon entering UK HE. As Barnett states:

> […] in academic life, the critical standards are seldom made explicit. Being tacit within the discipline, they are not known in any articulable form even to the initiated. (1997: 20)

6.5.1 Explicating Critical Thinking

Evidently, these literacies, conventions and practices are not limited to general academic or disciplinary specific elements of study but extend into criticality and link to the intellectual resources Bailin *et al.* (1999a) identify and which I borrow from theoretically. However, as seems to be practice in HE, noted by my interviewees and as Barnett points out, such critical standards expected or assumed of students, are rarely spoken about, let alone made explicit. The interviews revealed that the explicitness of critical thinking varied across students'

accounts and their programmes, with findings from the staff interviews helpful in exploring this. As was seen in the previous findings chapter, some students did experience explicit modelling of critical thinking and sessions dedicated to critical writing (or thinking), yet students articulated they felt this knowledge and competency was largely assumed of them, as identified in related research (Fakunle, *et al.* 2016; Zhang, 2020). Lin claimed *"they* [lecturers] *assume we know the definition of critical thinking"* (line, 179). Unfortunately, this experience was not isolated. Ying, Chun and Chih, and Avery, all described being told to "be critical" or undertake "critical analysis" while Chun recalled that, *"no teacher gave us a definition"* (line. 126). Fox, (1994: 125) who argues that critical thinking is culturally specific, suggests that "because it is learned intuitively" it is "not so easily defined and is not at all simple to explain". Thus, Fox argues, "This is why "critical analysis" is so hard for faculty members to talk about" (*ibid*) and could account for students' difficulty in this regard.

Such a claim was partially borne out in the response of one of the Programme Leaders interviewed, who said that critical thinking was implicit and not explained to students, stating:

> *I think you sort of spot critical thinking when you see it, but I wouldn't sort of...I'm not really clear about how to pin it down.* (Public Policy PL, line.54)

6.5.2 Cultural Distance

a very radical shift in a way of learning (Orla, line. 46)

As discussed in the preceding sections in this chapter, it was found from the questionnaire and interviews that there existed a cultural distance between some of the students and the context of their study, UK Higher Education. The survey findings revealed that the majority sampled reported that they had experienced memorisation/rote learning in their previous study; for both the Chinese students and those in the Other grouping this was their most selected response. Moreover, the interviews revealed that several of the Asian and Chinese students did experience rote learning during their schooling and to a large degree in their mainly exam driven undergraduate study, while a Russian student also attested to this experience showing, as the survey data did, that this was not exclusively a Chinese or Asian issue.

The opening quote above is an observation from Orla who was mainly surrounded by peers from China and other countries distant from Scotland on her programme. She empathised with these students, who she perceived to be struggling in adapting to the very different mode of learning, and the expectations upon them, specifically participatory, active learning

in the form of peer discussion, as well as experience and knowledge of critical thinking and academic writing.

As I postulated in the qualitative findings chapter, I believe that a salient part of this distance from the academic culture and/or context is linked to epistemological positioning and development, in which the pedagogies students experienced influence how they view knowledge and their position in relation to it. I suggest that through rote learning students come to adopt a habit of mind (Bailin, *et al.*, 1999a) whereby knowledge is seen as largely positivistic pertaining to finding, identifying or sharing the "correct answer". Meanwhile, active, inquiry-based learning could be seen to encourage a more interpretivist habit of mind that views knowledge as challengeable and malleable. The findings of Pu and Evans (2019; 60), who investigated critical thinking in the context of Chinese master's students' writing, appear to support this contention:

> […] our analysis revealed that the students' use of CT [critical thinking] skills was not exclusively a demonstration of competence, but was also a consequence of positioning. Each positioning revealed perceived rights and duties about knowledge and was directed by particular goals for personal development.

Pu and Evans argue that writing in HE "is essentially a manifestation of how one understands the nature of academic knowledge and how one defines one's role in relation to it – whether as a consumer or as a creator of knowledge" (2019: 52). This supports my suggested delineation above and is also seen in the qualitative data previously reported in Sections 5.5.5, 5.6.2 and 5.6.3. Several students reported that they entered master's study with the belief that there was one, single correct answer to a question, issue or argument whereby they appeared to believe knowledge was absolute.

The literature supports a need for "clear instruction, conceptualisation and explicit identification of desired forms of learning as part of learning and teaching and assessment practice" (Hammer & Griffiths, 2015: 262), with critical thinking particularly significant in requiring explicit instruction and/or discussion (Johnston, *et al.*, 2011; Quinn & Vorster, 2015). The account of the Educational Studies Programme Leader (PL) highlighted the dense make up of "field changers" - *"people who want to move into education or want to have a career in education"* (line.52) – amongst the cohort who often came from a different academic context. He acted to support students' adaptation to the novel epistemological approach of the course and the context of their learning. Noting the course often required a *"completely different way of thinking"* for many international students, he stated:

> *I think at the start, for most of them this* [thinking critically] *is a new idea, you know, and so you have to introduce it to them, you have to give them permission to do it...you have to, in a sense, tell them this is what we do here….* (line. 325)

This sense of giving students permission to think critically echoes Halx and Raybold's (2017) finding where undergraduate students had to be "permitted, prompted and pushed" by staff to develop criticality. Chun was one whose epistemological understanding was challenged by a tutor in utilising contrasting perspectives, that proved significant in her adaption to UK HE and critical thinking development. Chun highlighted her tutor's explanation that *"educational research, educational studies don't have* [sic] *a correct answer"* (line.84) assisting her to comprehend the need to build arguments based on evidence.

Recognising the challenge his students faced in their journey to adjust to the expectations and epistemological perspectives anticipated of them, the Educational Studies PL stated that:

> […] *for a lot of them it's quite de-stabilising because you move from an education system from which you are given credit for knowing knowledge, for correctly understanding and reproducing knowledge to one which there is uncertainty and multiple perspectives.* (line.35)

Fakunle *et al.* (2016: 33) found similar challenges facing their Chinese master's students where "studying in a new country and a new academic discipline could account for some adjustments in coping with the demands of their course" – though this did not appear as considerable a challenge as discussed herein. Furthermore, Wilson *et al.* (2015: 504) found a "correlation between criticality and confidence" which "provides a basis from which to put forward ideas and opinions that are valid within the disciplinary context, facilitating deployment of a critical approach". Therefore, knowledge of the discipline, the terminology used within this and in one's own subject expertise and ability is likely to aid students' confidence and critical thinking development, and thus likely to impact field changers significantly negatively. As exemplified above, the data from staff helped in triangulating and complementing students' accounts of these struggles, though space prevents further discussion of these findings within the thesis due to the central focus on students.

6.5.3 Student Resources

As suggested in Section 5.5, both educational and external social factors could be seen to influence students' conception and development of critical thinking.

Section 5.5.2 revealed that students' previous educational experiences had a significance relating to their existing understanding and comprehension of critical thinking, and its development. Johnston *et al.* (2011) claim students need a pre-requisite set of resources such as basic concepts, principles and practices in order to develop criticality and proceed through the levels of their framework. This includes "various types of knowledge and personal qualities necessary for critical processes" (Johnston, *et al.*, 2011: 93) converging with the resources required for critical thinking proposed by Bailin *et al.* (1999a). Furthermore, Johnston *et al.* (2011) air scepticism from their findings that many undergraduates may not develop to reach the transformatory level of criticality they and Barnett (1997) propose, partly due to circumstance and choice (Johnston, *et al.,* 2011). This prompts questions as to the possibility of postgraduates from diverse backgrounds also realising this level of criticality, though Baxter Magolda's (1996) findings present optimism in this regard for postgraduates attaining higher levels than achieved at undergraduate study.

A salient resource – knowledge – Bailin *et al.*'s (1999a) first "intellectual resource" (see Section 2.3.1) is where Johnston *et al.* (2011: 210) found gaps to exist leading to "much energy devoted [by students] to simply mastering the basic critical knowledge resources". Bailin *et al.* (1999a: 290) state crucially in relation to this resource – "background knowledge" – that:

> the depth of knowledge, understanding and experience persons have in a particular area of study or practice is a significant determinant of the degree to which they are capable of thinking critically in that area.

This certainly impacted some of the field changing students who, in having to adjust their epistemological position, also had to quickly develop a knowledge base in education. Studying a new field/subject means students "may operate at lower level of criticality than before as lacking necessary critical resources", including knowledge (Johnston, *et al.*, 2011: 226). Table 4-3 illustrates the plethora of undergraduate subjects studied by survey participants compared with their chosen master's subject seen in Table 4-4. Additionally, Appendix 7 showing the profile of interviewees, indicates their first-degree subject and their chosen master's subject, taken together this highlights the volume of field changers amongst the 293 students surveyed and 18 interviewed. In relation to transferring criticality to a

postgraduate context, Johnston *et al.* (2011: 226) argue that in moving to a new field of study or context, students "may likely operate at a lower level of criticality than before as they may lack some of the necessary critical resources", such as base knowledge. However, the authors argue that relevant resources such as knowledge and life experience and what it is to be critical can be transferred to a new setting/field, though this does not account for international students coming from a different educational context as NNES. This lack of initial base knowledge needed to develop a critical position in the subject could explain the uncertainty amongst most students sampled for the questionnaire about their own level of critical thinking, as seen in Section 4.4.2, with Chinese students reporting the highest level of doubt in this respect.

In addition to educational factors, there are social factors potentially affecting students' criticality and repertoire of intellectual and personal resources, as suggested in Section 5.5. These sections illustrated the divergent backgrounds and social experiences of the students interviewed which revealed how aspects of personal life can impact upon criticality, e.g. work experience, parental influence and social groups. The last three of Baxter Magolda's (1996: 302) themes are of particular significance due to the importance of work and professional environments in supporting students' critical thinking by becoming "knowledge constructors". As well having work experience prior to master's study like many interviewees did (see Appendix 7), two of the interviewees were full-time schoolteachers. Key to students' formative experiences in these contexts was the enactment of theory into practice (for teachers and those on placements) and exposure to individuals from different backgrounds, as well as in some cases having to teach critical thinking. Engagement in experiential learning, notably in workplace or vocational settings, has been found to aid students' criticality development (Carson & Fisher, 2006; Johnston, *et al.*, 2011; Danvers, 2016a, 2016b). Carson and Fisher (2006) researched students work placement internships, finding many students to be "potential critical beings" with some evidence of transformatory critique – Barnett's highest level of criticality. Moreover, Johnston et al. (2011: 94) revealed that modern languages students' experiences of studying abroad in different cultures and social work students' experiences in practical placements supported their criticality development respectively for the undergraduates they researched. This echoes my findings whereby students having studied abroad previously – Karina, Chih and Avery – highlighted the significant impact it had upon them and their worldview, and subsequent criticality through their immersion and engagement with difference, regarding the culture, language and customs they adapted to. Additionally, Avery explained that placements provided a balance between the vacuum of academia and reality outside of academia reminding her that

"there's a lot more uncertainty to plan for" and not to *"get too comfortable in the academic world and forget that the real world exists"* (line. 551). Thus, like Johnston *et al.*'s (2011) social work students, some of my participants engaged in placements as part of their study allowing them to engage in "critical action" following their critical thinking in academic settings.

6.6 Knowing, Becoming and Being

> *it* [criticality] *kind of becomes part of who you are...becomes part of how you think about things, how you do things.* (Orla, line.142)

Having focussed on addressing the first three research questions hitherto concentrating on students' conceptualisation, means of development of criticality, as well as how staff facilitate this development, this final section seeks to address the last research question - *To what extent do students develop and apply criticality?*

Linking from the previous research question's findings and the data presented in both of the preceding findings chapters, the extent of student's criticality development and its application appeared to relate to, and be significantly impacted by their first degree, where the influence of previous teaching and learning modes arose. It was suggested that these experiences of previous education, linked to students' habits of mind in relation to knowledge, accounted for the limited conceptualisations held by some international and field changing students, while also proposing that students' life and work experience prior to master's study impacted upon their conceptualisation and subsequent development of criticality. The means of students' continued criticality development has been detailed partially here and in greater detail in the previous two chapters where dialogue, engagement with difference, being challenged, having criticality modelled and cognisance of and competency in academic literacies appeared salient.

In discussing the extent of students' development of criticality, I follow an earlier categorisation from Section 6.2.1 for considering a conceptual spectrum. I borrow Barnett's (1997; 2009) terminology – "knowing", "becoming" and "being" – to also delineate between stages or levels of criticality development, which I find less complex than working with Barnett's (1997) four levels, as demonstrated below; and which I believe better incorporates Barnett's perceived development of the critical person moving from the lowest-level and knowledge domain to rise through the levels and operate in all three domains and forms of criticality.

Table 6-1 – Barnett's Levels, Domains and Forms of Critical Being (1997:103) mapped to colourisation in categorisation spectrum.

Table 6-1 has been removed due to Copyright restrictions.

Adapting these specific terms for the purposes of classifying and discussing students' level of criticality development I am cognisant that these do not entirely replicate Barnett's use of these same terms, I define these for my purposes as follows:

- *Knowing* – relates to Barnett's (1997: 103) first level of criticality – "critical skills"- and largely situated within the domain of knowledge.
- *Becoming* – encapsulates students' developing criticality though to Barnett's (1997) lower, intermediate levels – "reflexivity" and "refashioning of traditions"– in some, though not all domains simultaneously.
- *Being* – pertains to Barnett's (1997) vision of critical being where students are developing as critical persons across all three domains and to "transformatory critique", the highest level.

As with conceptualisations of critical thinking, there were differing degrees of development amongst the students, and I have aimed to illustrate this both by the descriptions above of the categorisations I have made and through the colour coding used in Table 6-1 to represent the classifications I am positing related to students' criticality development on a spectrum from knowing via becoming to being.

6.6.1 Knowing

Several students could be seen to be developing a comprehension and knowledge of critical thinking and what is required within the context of learning, where their conception and application of criticality is more likely to be narrow, constricted and technical. This category largely featured those international students termed "field changers" changing the context, language and subject of their study from their previous education. This therefore left these students in deficit in having to adapt to the new context, language, expectations of them and begin to comprehend, develop and apply critical thinking as part of their studies.

Several students understandably demonstrated low levels of criticality development from their master's study; these were all students on the very diverse Educational Studies course. Amongst these students were Chynna, Genji, Lin, Chun and Ying all of whom were from Asia, with each exhibiting limited development prior to and during their master's study. These students were younger with little or no professional experiences, little experience with

academic practices of UK HE - namely writing critically and in English – and elementary conceptions of critical thinking. Chynna, previously studying psychology in Singapore, noted the challenge writing presented and the divergence between learning and teaching styles experienced. She explicitly cited what she termed *"Asian education"* as affecting her development on the master's, due to rote learning in school where she was taught to:

> *study everything and then you try to vomit out everything during exam time, we just study the facts and then we write everything we can remember during exam.* (line.477)

However, in exemplifying a "technical" conception of criticality she described using a *"critical thinking guidebook…*[as] *a checklist"* (line. 129) and said she was *"definitely developing critical thinking, I feel that in terms of thinking wise...when it translates to writing as well, I have more of an improvement in critical thinking"* (line.185). Chynna did develop some understanding of critical thinking, but this was confined to technical, instrumental use in academia. Hammersley-Fletcher and Hanley (2016: 986) also found master's students they interviewed as holding *"an instrumental view of criticality as a tool to help provide an answer or a way through a difficulty"*. However, living and studying abroad in the UK context combined with her limited critical thinking development, provided Chynna with more resilience and ability to manage uncertainty.

Similarly demonstrating limited scope and application of the critical thinking she developed within academia, Lin evidenced her development of critical thinking on her course which she *"develop*[ed] *through my tasks and reading and writing"* (line. 89) by way of improved grades which feedback outlined. Although she showed no clear shift in conception, demonstrated in Lin's narrow, poorly articulated view of critical thinking as offering *"their own ideas"* rather than *"accept*[ing] *all the things just in front of her"* (line.183), there is a sense of preliminary development. Sharing this shift in thinking differently, though still possessing a limited conception of critical thinking, is Chun. Chun also started her masters with critical thinking a source of confusion which was only clarified during the course by accessing university support sessions. Her development, whilst limited, does show how her thinking habits had been challenged in previously perceiving knowledge as absolute, to acknowledging the contestability of knowledge. Given what Chun's programme leader (Educational Studies PL) described in his aim to develop students to view knowledge this way, rather than as given, Chun can be seen to be operating at Level 1 in Barnett's (1997: 103) table where she has developed "Discipline-specific critical thinking skills". Demonstrating a development from her previous misconception of critical thinking, Genji

explained her journey to her more advanced understanding, though in doing so she appeared to maintain a simplified "dialectical" view, as described in Section 6.2.1. Previously comprehending critical thinking as *"criticising things"* related to aggressive argumentation Genji then developed an understanding of critical thinking as *"not taking things for granted"* though she also related this to *"choosing sides"* (line.73), exemplifying limited development within the domain of knowledge.

Katy, the only Scottish student and native speaker among this sub-group had demonstrated a low level of criticality before the course while having contemporary experience as a primary teacher, contrasting with her Asian peers. Katy stated that she was now *"more qualified to question things and to be critical of things"* (line.157) having developed greater criticality which she applied in relation to her work as a teacher due to her enhanced knowledge, understanding and perceived authority. However, whilst showing some self-reflection, this appeared limited to a contemplative exercise rather than a critical action, as discussed in Section 5.10.

These students arguably demonstrated limited development and understanding of critical thinking, with the scope of both their view and its application being isolated to the domain of knowledge in relation to its use in their studies. This finding of low-level criticality amongst these students is however not without precedence. Hammersley-Fletcher and Hanley (2016) from their research with international master's students found students operating at Barnett's (1997) lower levels - Level 1 and 2 – where their students were "recognising basic level approaches where critical thinking enables the learner to solve problems defined in particular ways" (987). However, like Wilson and Howitt's (2016) students who experienced a shift in their stance towards "the status of scientific knowledge" due to their "exposure to other perspectives in class discussions", the same can be said of some of my interviewees discussed here. Thus, similarly limited to the domain of knowledge and the lowest level of criticality, some development is observed where there can be seen a shift in epistemological belief as a significant preliminary critical development.

6.6.2 Becoming

In advancing beyond the single-domain, stagnated development noted above, other students arguably developed to intermediate levels of Barnett's (1997) framework and in domains beyond knowledge.

Ying's understanding of critical thinking developed from *"judging other people's opinion"* to *"just an active way to think things"* (line.68). While still a limited conception, Ying later

stated that she applies the critical thinking she has developed into daily life in *"think*[ing] *something from different ways"* and questioning *"inherited information"* (line.128). While suggestive of extending critical thinking into the "world" and where she may be exercising some self-reflexivity also in reflection "upon her own understanding" (Barnett, 1997: 103), Ying's explanation of her development and application of critical thinking remains vague.

Avery, an American student, demonstrated further development ostensibly to Barnett's (*ibid*) Level 3 – "Refashioning of traditions". Avery described how her course aided her further development of criticality:

> *it has challenged a lot of my ideas to even look at things that I wouldn't...it's already challenged what I define as education....so just a single word that being so much broader than what I came in thinking it would be.* (line.207)

Having had her ideas challenged and then looking at the concept critically, she applied her learning on her teaching placement, showing her application of criticality within the world, as Johnston *et al.* (2011) found with their social work students' placements.

Contrastingly, some others, notably international students, had limited opportunities to take critical action in the world, though they did express a willingness to act, as Wilson and Howitt (2016) found. Peko, a Finnish student, who also developed criticality to an intermediate level but who had no previous work experience, did struggle to apply it outside academia, though he described his greater development of criticality from his master's that allowed him to apply critical thinking from his learning to the world in his engagement with politics, the media and in his consumer choices. Based on this heightened development, Peko described his development and its impact, for example:

> *On policy side you really had to be reflexive yourself, 'ok, why are you making these judgements?' for example, so it sort of broadened there and became from being a focus of study to what you need to live by more so - maybe that's the undergrad to postgrad jump?* (line. 74)

Peko demonstrates his reflexivity and his own self development within traditions, and thus operating partly at Barnett's (1997: 103) Level 3, in recognising his own development and developing himself in light of this.

Another international student, though from North America and who was a native English speaker and had developed a high initial level of criticality from her "*rigorous*" undergraduate degree was Polly. As stated in the last chapter, Polly believed she was

overprepared for master's study having so comprehensively developed critical thinking in her undergraduate degree in the US. She explained this high-level, pre-development as relating to her politics degree where she *"learned to think critically about a lot of basic assumptions"*. Polly specifically stated that having the concept of democracy problematised was a pivotal moment in her development, where *"[it] was like a door that opened in my head you know...like that* [sic] *democracy is a value judgement"* (line.78).

In terms of the master's course, Polly could only cite tutorial discussions and creative freedom in assignments as aiding further development, while regretting the lack of contact time on the course and challenge around criticality than she had experienced previously. Whilst ostensibly highly critical and able, to the extent of verging on arrogance about her own ability, Polly did seem to embody critical being throughout her interview until the conversation turned to her subject of political communication. Although articulate and knowledgeable about media, journalism and politics, Polly explicitly contradicted herself during interview, prompting questions regarding her true level of criticality. In discussing her engagement with media, she stated:

> *I have a lot of faith in specific mainstream media in a way that nobody else does...like I absolutely trust sort of established media and established like institutions.* (line.587)

When pressed on her trust in newspapers she further appeared to contradict herself suggesting her criticality development may not be as high as first thought. For example:

> *So, I mean I'm thinking critically about these...it's just everybody is just saying, 'journalists are so bias and you can't trust the media' and I really do trust them in that sense....* (line.623)

Such a strong statement from a *prima facie* highly critical master's student in political communication was unanticipated, especially as other students not studying media related courses, as discussed above, did exhibit criticality in this regard. Therefore, while Polly appeared to exhibit clear elements of critical being this blind spot suggests she did not fully embody critical being by selectively excluding journalism from her critical engagement with knowledge, self or the world related to this example.

6.6.3 Being

Developing as critical persons across domains was also witnessed in a select few of the student interviewees. One outlier who had not developed a high degree of criticality before

his course – and who was in fact unfamiliar with the concept prior to entering UK HE – and who subsequently developed a high-level of criticality from their studies - was Andre. He explicitly cited his master's study as developing his critical thinking and epistemological view recognising there is no right or wrong answer. Andre detailed how his course allowed him to practise applying criticality in class discussions and in placement, expanding his *"horizons and worldviews...and think, 'oh, things could be done completely differently'"*, which he felt he would not have experienced had he continued *"working back in Russia"* (line.156) which may have restricted his somewhat transformative experience.

Additionally, Andre took clear critical action in his role as a class representative in reporting to staff the *"dehumanising experience"* he and peers identified. In offering a sensible and progressive solution to the problem he highlighted, Andre appears to have reached Barnett's (1997: 103) fourth level of criticality development – "transformatory critique". His experience of international master's study in an unfamiliar context where exposure to different views and ways of thinking and being in the world has allowed him to transform his worldview and realise things are open to change, whilst motivating him to potentially act upon this on his return home after study.

Amy, one of the midwifery students, could also be seen to have further developed her criticality from her already high level upon entry to her master's course, for which she was well prepared. She explained her maturation in thinking and shift in conception of the world as related to her experience in placement and the *"very professional"* (line. 202) focus of her programme. Like some of the international students, including those from China, Amy revealed she previously held a more constricted view of critical thinking *"focussed on like criticism of ideas, people's research, everything"* explaining that *"now I have a more balanced view"* (line. 218). The practical, professional focus of the course and her development as a qualified midwife seemed pivotal to this development where she was able to act critically in the world:

> *I suppose conducting my own research and then now I suppose, I think especially this last four weeks being on placement and going out there and having to be the clinician, like that's where you learn doing it and you got to practice and learn and think at the same time.* (line. 51)

Amy's previous view of critical thinking was established from her engagement in research where knowledge critique was the focus, while detailing that her newly developed understanding of criticality has been specifically aided by her learning and placement experience where she transforms theory into practice. Furthermore, by exposure to different

types of people and the challenge to think critically in practice in making informed and accurate assessments of patients, Amy could be seen to embody criticality and operate at the highest level across each of the three domains of knowledge, self and world. For Amy, like Aria and Orla, yet to be discussed, the findings of Carson and Fisher (2006: 713) help to support my claim above, where they speculated:

> that the workplace experience itself facilitated students' movement up the ladder of criticality, providing them with greater opportunity for challenging assumptions than would have been possible in the university environment.

This finding is equally shared by Wilson and Howitt's student respondents – as well as most of my own – that as with Amy (discussed in Section 5.10), "exposure to other ideas and beliefs had led them to become more critical of their own thinking" (2016: 1175).

Another student of note who could be seen to begin to embody elements of critical being was Sadie. Sadie, an American, had a strong pre-development of criticality on entry to master's study though she noted further development through her studies. Specifically, Sadie spoke about questioning her own privilege in upbringing having been prompted by topics of her study, and conversations with peers, also considering the diversity of the community of friends she engages with, as well as engaging critically and purposefully with media and politics. Moreover, and significantly, Sadie mentioned how one core aspect of her criticality was critical action in the world in the form of making informed, ethical consumer choices whereby she carefully considered *"what sorts of businesses am I promoting in terms of like 'power of the purse strings'"*. Sadie's continued critical development echoes findings of Greenman and Deickmann (2004: 251) whereby their students developed a critical lens which then gave them the "'legs' to take action". The key finding here, as suggested earlier in Section 2.2.2 and noted in Sections 5.10.3 and 6.2.1, is the inclusion of an ethical, moral element to criticality which largely concurs with Barnett's (1997) account and appears within my "enlightening" categorisation. Furthermore, as seen above, Peko also exercised ethical consumption in terms of the food he purchased, considering animal welfare amongst other considerations. Such "buycotting" indicates that an ethical, moral and value-based component exists within criticality. Such a postulation is made by Blakey (2011: 123) in her research into criticality development where she viewed values as missing from Barnett's conception and where she proposes that "critical being is driven by realising own values and re-evaluating one's values". However, I contend that within Barnett's (1997) thesis values are implicit within his transformational, social justice view of education and criticality.

Across the sample, two students stood apart from others as specifically and fully embodying Barnett's holistic concept of the critical person; these were Aria and Orla. Aria was one of those starting from a high level of criticality, notably developed from her previous degrees and experiences of life and professional work prior to master's study where, as noted, she worked in the ministry of education, in a social enterprise and as a teacher in Peru. However, she cited her further development of critical expression and verbal argumentation through the course, notably from the debate and expert panel assignments where she had to work with peers to present a policy review and respond to questions, as well as general discussions during the course. As highlighted in the previous chapter, Aria demonstrated her application of criticality in stating the importance of criticality when making decisions when working in government or a policy-making role where she could make changes that positively affect people's lives. She stated that she uses criticality *"everywhere"* (line.125) which is needed to establish better positions when engaging with news, media and politics, and to understand situations from your own position. She applied this in reading news across the political spectrum and aims to understand agendas and positions of authors and publishers – also with academic material. Previously politically active and engaging with political and societal issues, she suggested her criticality is now further developed and refined. So much so, her previous quote of her view of HE (Section 6.2.3) as being to create *"critical person*[s] *who can challenge and change society and not only be reproducing what is going on"* (line. 137), demonstrates her Barnettian view of criticality and its global scope where action is imperative.

Furthermore, her view of the applicability of criticality beyond the academic context further reinforces her critical being:

> *I think it's very important, I always think it's important to link that* [critical thought and action] *because if you develop critical people and they don't take actions about what they are critical about, you're just gonna create this bubble of academical people who read their article between them and that's what they do and the world's gonna be on fire and burning and no one says nothing about it so….* (line. 598)

Having both contemporary professional experience as a primary teacher and a well-developed level of critical thinking prior to her master's, Orla demonstrated an equally developed, if not the highest development of criticality among the sample. Orla spoke of criticality in a sense of being and becoming, where she appeared to embody criticality. By stating that she applied criticality *"all the time"* she began to uncover how she personifies

critical being. As was highlighted in <u>Section 5.10</u>, Orla cited examples of her application of criticality across all three domains and to the extent that she can be seen to reconstruct herself, her knowledge and attempt to transform elements of the world she engages with. For example, she put forward a motion at her Trade Union's AGM, where she applied her learning about educational attainment and policy to *"put forward a motion that challenged standardised testing in Scottish schools"* (line.93). She also stated in relation to strike action, that criticality *"helps you articulate your thought and like making that link between things that are happening in public spaces and things that are happening in the news"* (line.109) – actively crossing domains and reflecting critically. Orla's criticality and her critical action reflects Greenman and Dieckmann's (2004; 252) findings related to what they termed student "awakenings", whilst not quite an awakening for Orla, these authors described their students being similarly prompted "to act on their critically constructed commitments to equity and social justice, enabling their human agency in their work environments" *(ibid)*.

Looking more widely, Orla aspired to a senior role where she could make organisational changes within education to keep up with societal changes, she engaged with community projects, was politically active, viewed *"no neutral way to present news"* (contrasting with Polly, who studied the media though demonstrated her blind spot here) and argued that education is politically motivated. Orla provides an exemplar of criticality in the breadth and depth of her conception and her application of this across domains simultaneously, and in contexts other than work and education. In stating, *"I can't really think when I wouldn't use it* [criticality]*"* (line.125) and that it is *"imperative"* and an essential capacity to work in education, she appears to embody a sense of critical being. Orla expanded on how criticality permeates her being precipitating across domains and contexts of her life, beyond work and education.

> *I suppose that's like an application of that same way of thinking about things, that same way of processing relationships or structures in the world and maybe like slightly less to do with education...I do it so much with education all the time that it's hard to distance it from that.* (line.139)

Finally, in revisiting the opening quote to this section, Orla explicitly details her development and personification of Barnett's (1997) notion of critical being:

> *it* [criticality] *kind of becomes part of who you are...becomes part of how you think about things, how you do things.* (line.142)

As identified in the qualitative findings chapter and in this final section, both education and social, personal factors impacted students' pre-criticality level and understanding while affecting continued development, as seen with both Aria and Orla. Similarly, Blakey (2011) argues from her research that critical being requires both education and life experience - as my data from mature, home and international students show. In largely reflecting some of my key findings discussed here, Greenman and Dieckmann (2004: 250) summarise their own findings:

> The intersection of guided critical exploration of educational processes in myriad cultures (making the strange familiar), student construction of personal histories (making the familiar strange/metacognitive), and the critical questioning of sociocultural workplace contexts and institutional constructs set the stage for the development of a critical lens.

In reworking Barnett's notions of knowing, becoming and being for the purposes of considering the contended link between one's conceptualisation of criticality and their level of criticality development , I am aware that this idea and supposed symmetrical correlation between conception and development requires further investigation and support beyond my research in establishing this association and the use of this heuristic device. However, as Barnett suggests:

> Knowing and being (and becoming) are linked – but in ways that we have barely begun to comprehend. (2009: 440)

6.7 Conclusion

Revisiting the first section of the chapter, and the first research question - How is critical thinking conceptualised among master's students? – students were seen to express a range of conceptions as demonstrated in my findings and the subsequent spectrum of conceptions and its four categories. From the surveys it was clear a large variety of conceptions were offered both in terms of breadth, depth with the majority narrow in scope. The complex conceptions bordering on criticality and critical being were evident in the surveys though in smaller number, while in the interviews these broader views were more prevalent than the misconceived and narrow views. A key finding here was the lack of any understanding of critical thinking pre-master's study, notably for some Asian students contrasting with those students from other nationalities whose notion of criticality was well and clearly articulated. These findings, as shown, reflected some of those in cognate research in various ways, e.g. in terms of themes and similar conceptions emergent from students' view of critical thinking (e.g. Phillips & Bond, 2004; Huang, 2008; Blakey, 2011 and Danvers, 2019). What was evident was the experience of students in establishing comprehensive conceptualisations of critical thinking and where context was a key factor facilitating or negating it. At this juncture in the thesis and supporting Baxter Magolda's (1996) findings, I claimed an apparent association between students' conceptualisation of critical thinking to both their epistemological beliefs and their level of criticality development.

Linking the epistemological connection to criticality, the next section discussed the salient finding of discussion, a participative, socially constructive pedagogy, as the overarching means by which all student interviewees emphasised as supporting and enabling their criticality development. This endorsed the findings of Fakunle *et al.* (2016), Wilson and Howitt (2016), and Danvers (2016b: 294) whereby criticality "is a relation of entanglement with the material, social and discursive". The survey results also supported this overwhelming preference amongst interviewees for dialogue and discourse as the learning and teaching activity facilitating their development, over passive pedagogies such as lectures, which students complained about, and which drove some to truancy on this basis. In-class dialogue was seen to *"open doors"* and provide a safe and supportive space for an exciting exchange of ideas, experiences and contrasting perspectives. However, some Chinese students were found to experience a developmental dilemma as Durkin (2011) also identified, requiring further investigation, but which appeared linked to peer pressure and cultural conformity and which negatively impacted their criticality development in this context. Additionally, several students noted their dissatisfaction with the amount of class

contact time they experienced versus their expectations of the learning and teaching they would experience in their master's study abroad, as Bennett-Moore *et al.* (2003) also identified.

Elaborating on the social constructivist element of dialogue, the following section analysed another significant finding related to a unique international, intercultural element witnessed in the accounts and experiences of interviewees. I presented a diagram that synergises the three constituent components I identified within this phenomenon – dialogue, diversity and differing perspectives – suggesting that where these intersect and coalesce this provides ideal conditions to support students' criticality development. Such a finding related to engagement with difference confirms the findings of many authors related to interaction with peers where they act as "critical mirrors" (Brookfield, 2015) to one another and where engagement with "otherness" in terms of experiences, beliefs and perspectives stimulated criticality development (Yamada, 2008; Johnston, *et al.*, 2011; Wilson & Howitt, 2016; Fakunle, *et al.*, 2016; Parks, 2020). Following this a correlation was made to associated research which proposed a concept of intercultural being, as an amalgamation of Byram's (1997) intercultural competence and Barnett's (1997) critical being (Phipps & Gonzalez, 2004). I then posited in Figure 6-3 that combining convergent HE initiatives in this sphere could be a means to better operationalise the international, intercultural learning that universities profess their students experience, where criticality acts as the "conceptual glue" (Barnett, 1997).

Academic literacies were then the focus, having been found to enable and inhibit engagement in the critical practices of the university, and hence criticality development. Notable was that those conversant with this tacit knowledge of customs and processes were at advantage to peers, commonly from distant social and educational contexts who had yet to adapt to this new context and its expected practices. Crucially, rather than cultural factors as some literature suggests is the case (Fox, 1994; Atkinson, 1997; Chen, 2017), my findings tended to show this was a result of previous educational experiences and contexts of study, while being impacted by both language and epistemological positioning, as identified by Floyd (2011), Tian and Low (2011), and Pu and Evans (2019). The explicitness of critical thinking in teaching and its modelling by staff was seen to positively impact students' adaptation and initial criticality development. Additionally, specific intellectual resources – background knowledge (Bailin, *et al.*, 1999a) – and personal resources such as prior life and work experience and family background were observed to impact students and their criticality development prior to and resulting from their master's study. This confirms Bailin

et al.'s (1999a) assertion and Johnston *et al.*'s (2011) finding related to knowledge, as well as Cheung *et al.* (2001), Arslan *et al.* (2014), Bali (2015) and Moeti *et al.* (2016) related to the influence of social and familial background.

The final theme and section discussed my contribution to Barnett's (1997) conceptualisation of critical being with its four levels, three domains and forms of criticality which I contended could be considered through a developmental construct/lens of "knowing", "becoming" and "being". Linking this in relation to students' criticality development and application within the domains and levels, I colourised Barnett's (1997) table to illustrate my conceptualisation of this, which I correlated with the spectrum of categorisations of criticality posited in the first section. Following this construct, students were found across the three stages of this spectrum demonstrating the variation in levels of criticality development and application across the sample – contrasting with the dispersal of students within their nationality grouping across the three levels of critical thinking dispositions (CTDS) of low, moderate and high. "Knowing" was found to be dominated by Asian students, with "becoming" comprising mostly international students from other regions having an intermediate level of development with application in at least two of the domains. This finding reflects that of Hamersley-Fletcher and Hanley's (2015: 987) research with master's students where most students were found to be operating at levels one and two of Barnett's framework and were thereby "recognising basic level approaches where critical thinking enables the learner to solve problems defined in particular ways". "Being" as the pinnacle of the spectrum and Barnett's thesis saw few students operating at the highest level of criticality and in all three domains, where an ethical, values-based component was evident and linked to notions of social justice and seen within these students' critical actions upon the world. While focussed on undergraduates in contrast to the postgraduates of my research, my findings mirror those of Wilson and Howitt (2016: 1160) where they witnessed students developing in all three domains and to the highest level. They concluded that criticality development like this was facilitated via learning and teaching that emphasises "social dimensions of both the exercise and nature of criticality" where "the contribution of social forms of learning [leads] to the development of high levels of criticality".

The findings discussed in this chapter, and specifically in the previous section, demonstrate continued support (Blakey, 2011; Johnston, *et al.*, 2011; Parks, 2020) for Barnett's (1997) complex conception of criticality within HE as critical being. The penultimate section through discussion of the phases of criticality development specifically supported this

triadic, interdependent theory as unique and distinct from other conceptions of critical thinking discussed throughout the thesis. Dunne articulates this finding:

> criticality, in contrast to critical thinking is not something that is simply 'switched on' or engaged, when a specific topic that requires critical thinking emerges. Rather, criticality as critical being, is inexorably embedded in our everyday activities and experiences, regardless of how mundane they may appear. (2015: 92)

In revisiting the opening quote by Marx, I maintain that rather than practising an innocuous form of critical thinking that produces competent and compliant, and conformant graduates who are disciplinary specialists, university education should be working to enable and support the development of critical persons in the broadest sense able and driven to change their reality and world. After all, as Marx suggests, "the point is to *change* it".

Chapter Seven – Conclusion

7.1 Introduction

This study aimed to investigate the experiences of master's students in their development of criticality in contemporary UK Higher Education set within the present context of uncertainty facing society. It sought to investigate how students conceptualised and developed criticality within their master's studies and applied it within and outwith academia. This final chapter concludes the thesis beginning by revisiting the research questions set out in the introductory chapter. I then present what I contend to be my contribution to knowledge in relation to advancing Barnett's theorisation of critical being and my creation of a spectrum of criticality conceptions and development. The thesis then discusses implications arising from the findings with respect to the aims and practices of higher education. Limitations of my research are presented before postulating recommendations for practice and future research.

The central research question underpinning the four subsidiary questions was:

> How is criticality conceptualised, developed and applied by students in master's study?

7.2 Answering the Research Questions

As stated previously, the research questions devised at the outset of the project were deliberately general rather than specific to particular programmes, disciplines and universities. While this provided flexibility when sampling students due to the breadth of the questions, it does however require the qualifier than the findings and conclusions presented in answering these questions have limitations and cannot be generalised beyond the cohort sampled to reflect the experiences of all master's students within the UK context. These conclusions and findings are specific to the sampled students, their programmes and institutions, though they may provide insight into experiences of master's students in other universities and discipline areas. The findings of the research which do have implications for practice related to teaching and supporting learning in master's study related specifically supporting student criticality development and facilitating the engagement of students from distant contexts of learning into the practices of UK HE.

RQ1: How is critical thinking conceptualised among master's students?

Conclusion 1: Students' conception of criticality is dependent upon their previous educational experiences, exposure to critical thinking, and their view of the importance of critical thinking.

Students expressed a range of conceptions as demonstrated in both my questionnaire and interview findings. From the surveys it is clear a large variety of conceptions were offered both in terms of breadth and depth though with the majority narrow in scope. Complex conceptions bordering on criticality and critical being were evident in the surveys in smaller numbers, while in the interviews these broader views were more prevalent. I subsequently developed a spectrum of conceptions resulting from these analyses.

A key finding here was the limited understanding of critical thinking pre-master's study notably for some Asian students; this contrasted with students from other nationalities whose notion of criticality was more clearly articulated. What was evident was the exposure and experience of students in establishing comprehensive conceptualisations of critical thinking, where context was a key factor in facilitating or negating this. Therefore, while some students expressed weaker, constricted views than expected of a master's student, others exemplified a considered and well-established conceptualisation of criticality commensurate with this level of academic study.

With narrow views mainly among the Chinese respondents as the largest cohort in the survey, my research, backed by other studies, suggested this is largely due to limited language proficiency (Floyd, 2011), lack of familiarity with the pedagogies of critical thinking (Tian & Low, 2011), and experience of thinking critically (Fakunle, *et al.,* 2016). Furthermore, as the survey and interviews illustrated students held varying views as to the importance of critical thinking across personal and professional contexts which could be seen to link to students' depth/breadth of conception.

Arguably, if understanding of critical thinking is lacking, then this is likely to have a significant impact on a student's likelihood of developing the type of criticality Barnett proposes across the three domains and to higher levels, even in postgraduate study. Returning to my initial contention discussed in Section 6.2, I contend that how an individual comprehends and conceptualises critical thinking is the preliminary stage of their criticality development and - like Baxter Magolda (1993; 1994; 1996) - that this is entwined with one's epistemological perspective. My findings did suggest a possible association between

students' epistemic beliefs and their conception of criticality, demonstrated in how those participants at opposite ends of the criticality spectrum viewed knowledge, as either static or fluid.

RQ2: What learning activities promote critical thinking development?

Conclusion 2: Master's students prefer participatory, active pedagogy with peer interaction which facilitates and better supports criticality development over passive pedagogy.

Throughout the interviews students demonstrated an overwhelming preference for dialogue as the core means to promote their criticality development. This preference was also seen within the survey responses as in-class activities and discussion were the most selected as facilitating critical thinking following reading literature. In contrast, students – in both survey and interviews – dismissed lectures as a learning activity overall, not just in relation to criticality development, with some choosing not to attend them. Thus, the sampled students showed clear favour for participatory, active pedagogies that enabled their discussion and related critical development, addressing Fakunle *et al.*'s (2016) query posed in the introductory chapter. This prompts questions about whether more appropriate pedagogical strategies could be adopted that permit and promote students' participation and interaction with one another as a particular means of developing criticality and supporting student learning.

Conclusion 3: Diversity of peers and perspectives can enable criticality development, with potentially transformative possibilities for some, particularly where students engage with (and within) contexts of difference.

In addition to dialogue, difference - in the form of differing perspectives and diversity of the student cohorts - was another significant facilitator of criticality development cited by all student interviewees. I encapsulated these within a trident of contexts of difference – dialogue, differing perspectives and diversity – and argued that where these three elements coalesce offers the ideal conditions for student criticality development through engagement with diverse peers who present, share and discuss their differing perspectives. Through engaging with difference in the form of the "other", my participants related to the divergent perspectives, experiences, values, beliefs and views of their peers. As the work of Phipps and Gonzalez (2004) suggests and the findings of Yamada (2008) and Parks (2020) demonstrate, this ignited and encouraged students' criticality development in prompting them to critically examine their own beliefs, values and perspectives. My findings

demonstrate that this occurs, intercultural communication between students was one, if not the most significant factor facilitating criticality development, especially when students were appropriately supported and inducted into the academic context, its practices and expectations.

Consequently, dichotomies in the literature regarding criticality and culture as exclusive and bounded do not hold; rather students extend their perceived cultural boundaries unconstrained by culture, relative to their learning and ability to develop critically. As Barnett claims, "Real critical being runs against the grain" (Barnett, 1997: 177). I assert that the trident of contexts of difference which I identify as enabling criticality development align with Barnett's (1997: 167) three conditions for criticality: exposure to multiple discourses, exposure to wider understanding, questioning and with society, engagement with other perspectives to view our own world from theirs.

> *Conclusion 4: Academic literacy is a prerequisite to higher levels of criticality and is not a threshold achievement but a developmental process like criticality itself.*

As the interviews revealed, such standards or academic literacies were seen in the form of "rules of the game" which govern or mediate customs, norms and practice within academia. Those students experienced and familiar with academic practices and processes commonplace within western academia appeared conversant and competent operators within these "rules" which assisted their demonstration of criticality; while amongst some of those where lower development was observed the use of inverted study processes was evident particularly within reading, note-taking and writing strategies, running against academic convention, and therefore affecting criticality development. However, from the accounts of those students comfortably operating within these rules their comprehension and practice of academic literacy was very much a longitudinal development process taking place over several years and levels of academic study, rather than a threshold concept to grasp. Thus, while it may not be a threshold concept, academic literacies may, as Gourlay (2009: 189) contends be considered a "threshold practice" of becoming a student which in turn "could open up discussion of tacit practices" supporting the development of criticality.

RQ3: What approaches do staff use to foster critical thinking development?

> *Conclusion 5: Academic staff use modelling approaches to foster students' criticality development supported by the use of differing perspectives within their own teaching,*

> *while also challenging students' views encouraging their critical thinking development.*

Students described their tutors modelling their own criticality in seeking to make critical thinking explicit, helping induct students into the critical process. Tutors aimed to foster students' critical thinking development through incorporating different perspectives within their teaching, whilst challenging students' own contentions. Some of the programme leaders interviewed described their own modelling to explicate and demystify critical thinking and associated terms for students unfamiliar with this. Staff themselves noted how they sought to permit students to think critically and challenge received wisdom through emphasising the contestability of knowledge in social sciences and in western academic settings, linking with Halx and Reybold's (2017) finding of the need to "permit, prompt and push" students to think critically. As such these findings address the key suggestions of authors considering the teaching of critical thinking (Baxter Magolda, 1996; Browne, *et al.*, 2009; Brookfield, 2015; Hammer & Griffiths, 2015; Halx & Reybold, 2017).

RQ4: To what extent do students develop and apply criticality?

Conclusion 6: Master's students develop criticality to varying levels and apply criticality across different contexts relative to their level of development where students' background, personal and intellectual resources significantly impact criticality development.

International students - specifically those from countries distant from the UK and Scotland, such as Chinese students - were found to struggle in their criticality development, only reaching the lower levels mainly in "knowing" though also in "becoming", as previous research suggested (Bennett Moore, *et al.*, 2003; Tian & Low, 2011; Shaheen, 2016; Hammersley-Fletcher & Hanley, 2016). However, rather than a cultural difference in relation to criticality, my datasets – both qualitative and quantitative - suggested there were stark issues surrounding *all* students' critical thinking. The impact on Asian students was especially challenging as they had to adapt to a new country, context and language of learning, while also developing critical thinking to a level expected as master's students.

A key part of this observation was the effect that students' previous education, work and life experiences had upon their initial and subsequent levels of criticality development. In addition, the findings explored students' personal and intellectual resources, some of which linked to academic literacies and therefore placed some international students – notably those from Asian countries – at a deficit in relation to their peers from western contexts whose academic context was more comparable. As a result, intermediate levels of development, "becoming", were largely witnessed among international students from North America and Europe who were likely to have resources and educational experiences more cognate with the UK setting. This then enabled these students to reach these intermediate levels of criticality development which they were able to apply within the domains of self and world, in addition to knowledge.

Those interviewees attaining the highest level of Barnett's framework – "being" – included three international students who were seen to adapt to their context and develop criticality to the level of transformatory critique, able to exercise this across all three domains. They were aided by their previous experiences of working and/or studying abroad, benefitting from their engagement with difference during their studies. Two British students also developed as critical beings aided by their undergraduate study, pre-existing levels of criticality, social engagements outside academia and experience working in professional environments where they could apply their criticality in practice, taking critical actions in

attempting to "reconstruct their world", while being capable of "knowledge critique" and "reconstruction of the self" (Barnett, 1997: 103).

Whilst for some, professional contexts and the workplace were sites for their exercise of criticality and critical action, such as Orla and Aria, for others their criticality in the workplace was more restricted, lacking critical engagement or action. Here I revisit the concern aired in the introductory chapter around the constriction of criticality in the academy and by extension, the workplace. The two midwifery students illustrate this dichotomy and tension in their views and enactment of criticality in the workplace. For example, Susie detailed being reluctant to challenge policy, stating it was not her place to do so, sharing a fear of the authority of the NHS as an organisation – a behemoth which students do not contend with. Susie shared her fear of the organisation and her limited ability and confidence to criticise policies and procedures, stating "*it's not my place to criticise that* [policy]...*I mean I do obviously, but not too much*" (line. 253). In contrast, Susie's peer Amy was eager to challenge policy to improve services and outcomes for patients and enhance the organisation of the NHS. She also stated she was seeking a leadership position in the future so that she may make more fundamental, transformative change. Amy detailed her drive for critical engagement and action in the workplace:

> *you can take policy and find ways of getting around things that are stupid or like certain tick box exercises or certain ways of you know best practice that are bollocks and that you know aren't going to help anyone...and I think that was totally what made me wanna do midwifery rather than working in policy because when you're an autonomous practitioner you are unto yourself, you know you work with your colleagues and with the women you work for to create the best care for them, you are not having to fulfil some NHS England form because they've told you.* (line. 441)

Amy exhibits critical engagement here and highlights performative elements of practice which Susie seems reluctant to engage critically with, suggesting critical thinking in the workplace, for her, is more a technical, instrumental skill for self-regulation and problem-solving. Such a tension in these views and experiences of criticality in the workplace are possibly a reflection of the narrow conceptions of criticality seen within the academy, its limited scope outside the academy, and the limited development of criticality within it.

This dichotomy between the two midwifery students is also seen between two of the Educational Studies students who were both primary school teachers. Orla, who I identified as a critical being, quite explicitly spoke of taking critical action within her professional life in pushing for change to educational policy by tabling a motion at a Trade Union AGM. Orla

described challenging policy, transferring criticality developed in university by applying this in her professional workplace. In contrast, Katy, who I suggest experienced a more constricted development of criticality to the category of 'Knowing', could not extend the critical thinking developed from her master's into the workplace. Katy herself described her lack of critical action where critical thinking within her professional context was limited to internal critique and not externalised to the world, remaining within the domains of knowledge and self. Yet, arguably, extending her critical thinking in that setting to become critical action may have helped transform and enhance both the context in which she works and the policy which governs her work as a teacher.

These contrasting examples from students whose practice directly related to their master's studies illustrate the variations in criticality development but also emphasise that critical beings, as identified in Amy and Orla, 'walk the walk' of criticality in sustaining "high-level critical practices" (Barnett, 1997: 177) in the world. By contrast, Susie and Katy, demonstrate the development of critical competences reflective of "low-level critical being" (*ibid*). Denouncing HE for producing such limiting 'critical competences' in students, Barnett (1997: 177) suggests that as a result "everyone speaks the language of critical competence, *and* they end up practising it. Real critical being is nowhere to be seen". This observation reflects the demonstration of critical competencies practised in the workplace by Susie and Katy.

This restriction in the scope of criticality within and outwith the academy is also seen in the views of those without the professional experience or practice to reflect upon. For example, narrow conceptions of critical thinking and its scope both inside and outside the academy, and in the world, can be evidenced in the views of Chinese participants. As detailed in Sections 5.10 and 6.2, Chinese students mainly developed their critical thinking within the knowledge domain with little application in the world, largely due to their younger age and limited life and work experience; however, their conceptions of critical thinking illustrated how these were limited in scope (see Section 5.6.3). Many held views of critical thinking which I categorised as 'dialectical' and 'technical', spoke of criticality as 'tiring' and shared a reluctance to potentially apply their critical thinking within their workplace when returning to China. Whilst illustrative of these students' limited criticality development, it also suggests the critical thinking they were exposed to, or which was promoted to them, was a narrow, technical skill for use in evaluating texts and formulating academic arguments – not transforming their reality, and with it their world.

In contrast to the interviews which suggested that most Chinese students demonstrated lower levels of criticality development, the questionnaire findings from a far larger sample contradicted this to a degree seen in students' self-rating of critical thinking and their critical thinking disposition scoring on the CTDS scale. These findings showed students possessed greater confidence in their own critical thinking development, while also indicating that Chinese and other international students, attained lower levels in critical thinking disposition scores compared to their UK peers though the difference was not as stark as the qualitative data suggested. Furthermore, the questionnaire revealed a statistically significant preference amongst the sample for the importance they assigned to critical thinking: students viewed it as more important in their professional, work life than within their personal, daily life. This was highest amongst UK students. This preference may have impacted interviewees' conception of critical thinking and its potential application in domains beyond knowledge, influencing their desired and actual level of criticality development.

> *Conclusion 7: Critical being is both realisable and evident at master's level in contemporary higher education, when certain conditions are present.*

As demonstrated, some students appeared to embody and personify critical being in unavoidably integrating criticality within their personal and professional lives. As a result, I contend there is merit in applying Barnett's thesis in HE from an empirical perspective which supports its abstract, philosophical foundations and development. Key to this endorsement is the sociocultural dimension seen within my findings, which Barnett himself notes as conditions for criticality (1997), and which is emphasised by others (Bennett Moore, *et al.*, 2003; Phipps & Gonzalez; Fakunle, *et al.*, 2016; Hammersley-Fletcher & Hanley, 2016, and Wilson & Howitt, 2016; Parks, 2020).

7.3 Contribution

My research demonstrated varying conceptualisations of critical thinking from both datasets revealing the diversity in understanding amongst master's student regarding critical thinking. From this I produced a spectrum of conceptions from "dialectical" to "enlightening". Comparing my own categorisations of students' critical thinking with other researcher's classifications my spectrum parallels those from similar studies that revealed varying conceptualisations (Phillips & Bond, 2004; Huang, 2008; Danvers, 2019). From these I found support both for the spectrum itself as a device and for the categorisations I presented within this. Investigating students' experiences of criticality development revealed dialogue and students' engagement with difference as key facilitators of this, as expressed

by them in interviews. I termed the three key components at play here – dialogue, diversity and differing perspectives – as "contexts of difference". As a result, I labelled these as a "trident of contexts of difference" and proposed a "tripartite pedagogical synergy for critical being" (Figure 6-3), which I contend can work pedagogically towards students' development as critical persons, with this "trident of contexts of difference" – at its centre.

My findings also underscored the importance of previous and present experiences relating to the formative role these play within criticality development, where the personal and intellectual resources connected to them become salient for such development in the academic context, which can be supported by experiences and knowledge from one's professional and personal lives, as Johnston *et al.* (2011) discovered. Furthermore, my research verified several key findings from related studies in regards to the facilitation of criticality development, for example, the sociocultural, dialogic dimension (Bennett Moore *et al.*, 2003; Wilson *et al.*, 2015; Wilson & Howitt, 2016) modelling (Brookfield, 2015; Quinn & Vorster, 2015), prompting and permitting criticality (Halx & Reybold, 2017), academic literacies (Johnston, *et al.*, 2011); international students' adaptation/transitions to UK master's study (O'Donnell, *et al.*, 2009; Maringe & Jenkins, 2015; Zhang, 2020), work experience (Baxter Magolda, 1996; Carson & Fisher, 2006) and the influence of students' background/family demographics on their criticality development (Cheung, *et al.* 2001; Arslan, *et al.*, 2014; Moeti, *et al.*, 2016). Consequently, my research has cast additional insight into how students conceived of themselves as citizens through their engagement in Barnett's domains and the importance which they attached to criticality across contexts where criticality appeared more pertinent to economic citizenship over broader societal application. Considering the extent of students' development, I recast Barnett's (1997: 103) framework to capture a spectrum of development which mirrors the spectrum of conceptions in running from "knowing", through "becoming", to "being". From this I propose staff teaching at master's level can utilise my development of Barnett's framework to plan learning in relation to the levels and domains they intend students to achieve and consider relevant teaching and learning activities to achieve these aims. This enhanced framework may also function as a reflective tool for use by students, following the co-ordinated colour-coding I suggest, areas of strength and improvement may be indicated in working towards critical being. Furthermore, such use of the table in this way by teachers and students can more effectively emphasise the domains of self and world in supporting students' development in these forms of criticality and in their application. This would arguably support those highly internationalised cohorts of students in explicating critical thinking and its development toward critical being.

Following a similarly progressive sequence like that of the key concepts of the thesis – critical thinking, criticality and critical being – in moving to "ever higher alternative forms of understanding" (Barnett, 1997: 103), my recasting of Barnett's framework using the language and concepts of 'knowing', 'becoming' and 'being' may also be seen to present a tension in further advocating a developmental, hierarchical framework. Such frameworks may be viewed as a potential barrier to some students in being perceived as relevant to or accessible only by high performing students due to the participation and engagement with the critical practices of HE these require. Arguably this could represent a form of academic elitism where entry to and progression through such frameworks is via conversance with the structure and practices of HE and social/cultural capital (much like the academic literacies being perceived as tacit rules of the game), and could therefore threaten to negate the empowering, emancipatory potential, I contend, frameworks such as Barnett's can provide. However, to the contrary, I argue that my reworking of Barnett's framework can be viewed as an enhancement and in using the terms and concepts 'knowing', 'becoming' and 'being' actually simplifies this framework and its accessibility to students, and staff. By incorporating these terms and linking these to the associated conceptions of critical thinking I propose they relate to - as seen in the spectrum of conceptions - I envisage that engagement with and understanding of Barnett's originally conceived framework becomes less intimidating and hierarchical allowing students to better consider and take ownership of their own criticality development.

As a result of my research, I therefore endorse Barnett's view of critical being and support – as I suggested in the thesis introduction - the displacement of "critical thinking as a core concept of higher education" to be replaced with "the wider concept of critical being" (Barnett, 1997: 7). However, for operationalisation in higher education I suggest the use of the spectrum of conceptions of criticality coupled with the terminology of "knowing", "becoming" and "being" in relation to my development of Barnett's table. On a macro level the table considered this way could inform curriculum design in ensuring opportunities for such learning within the domains and to required academic level, while prompting thinking around meaningful assessment that both encourages learning and criticality development in all three domains and to its highest levels, while also supporting its effective evaluation.

Significantly, my research has provided a voice to international students who urgently require far more adequate support in HE. In championing the stories and struggles of international students it has emphasised the need for greater diversity in pedagogical methods, support and content to be realised in mirroring the increasing diversity of students

and their backgrounds and experiences. As intended from the introduction, my research further revealed the complexity of the challenges facing these students relating to critical thinking as largely distinct from home students, suggesting means to address this. The research confirmed anecdotal observations regarding some international students' low language competency on entering master's study; findings showed several Asian students struggled to meet the required IELTS score, repeatedly taking tests until gaining the necessary score. This suggests universities in setting low IELTS scores are accepting students for study where they may struggle due to a lack of language proficiency, yet they are still accepted given the substantial fees they pay. This then presents moral and ethical questions regarding universities' priorities, where financial incentive overrides academic considerations intended to recruit students based on their alignment to entry requirements for effective and successful study.

An additional contribution my thesis makes, is in highlighting the issue of the quantitative measurement of criticality. As I discovered, it is very difficult to measure sociological and psychological factors using quantitative methods, especially when argued, as I do, that criticality is largely a social phenomenon which, in line with my ontological and epistemological positions, ideally this requires investigation via qualitative means wherein criticality is enacted and developed. However, while Stupple *et al.*'s (2017) scale did not validate with my complex sample, Sosu's (2013) scale did and identified differences between the students and their groupings at a high-level in relation to their critical dispositions. The questionnaire also helped identify issues to explore at interview (e.g., students' favouring of critical thinking for work life over personal life) while working to complement the qualitative data in providing an overview of critical thinking development which represented a significantly larger group than those interviewed. Thus, I have revealed how one psychometric scale seeking to measure critical thinking dispositions can work, while another failed to validate prompting further consideration as to how (and if) criticality can indeed be measured quantitatively.

7.4 Limitations

As with any research there were limitations to my own research for this thesis. Time was a key factor which initially prompted the amendment of my research design from a quasi-longitudinal design incorporating follow up interviews with respondents due to the scarcity of my own time working full-time, tutoring part-time and commuting, as well as the limited availability of students due to day and evening classes and the demands of their intensive master's study.

Another limitation, as noted in Chapter Three, could be seen in terms of the interview sample, where students were doubly self-selecting, having participated in the survey and then electing to undertake interview following this. A key concern I identified was possible over representation of confident critical thinkers amongst those interviewees, as unexpected from my professional experience detailed in the introduction. However, I resolved this issue in my intervention with a doctoral colleague in reaching and recruiting students who were less confident that those initial interviewees. Additionally, it is worth noting that in contrast to those authors and findings noted above, my sample was complex and very diverse, especially in the survey sample encapsulating 293 students from 40 different countries, studying across 13 master's programmes at three Scottish universities. Therefore, my findings may not be replicated in other studies due to this, or rather, my sample may more accurately reflect the current constituency of students studying in the UK given the context of internationalisation and neo-liberalism in HE, specifically in regard to Chinese students. Seen this way, the intricacies of my sample can be seen positively as well as negatively. I would argue my sample provided a valuable insight into the complex, contingent experiences, challenges and successes of students in their learning. However, while potentially representative of master's cohorts in the UK, my sample cannot be seen to represent the experiences of all master's students across the UK related to their criticality development. Instead, my findings and contribution from the research are representative of a specific selection of master's students, notably those from social science and health and social care disciplines, as reflected in my survey and interview samples. However, my findings do provide valuable insights into the nuanced experiences of Chinese students in UK master's study and in relation to their engagement in critical thinking and development of criticality. Moreover, the results do, as discussed in the following section, present more general implications for academic practice in postgraduate taught provision in the UK context, with a specific focus on engaging students in critical practices of academia and supporting broader criticality development.

Additionally, the lack of generalisability of my survey findings provides a limitation due to both the questions which I devised, and again, the complex sample also plays a part. However, I contend from my professional experience as an academic and my own learning and research that these questions were largely valid and reliable, if not too voluminous. These questions provided a fascinating insight in relation to the conceptions of students, their self-assessment of their own critical thinking and how they perceived critical thinking as more important in professional over personal contexts. As noted above, another limitation is the failure to validate Stupple *et al.*'s (2017) CriTT scale, though I believe this more

reflects the challenges of evaluating criticality quantitively and provides an opportunity for further learning and research, rather than being seen as a failure.

7.5 Implications

There are various implications resulting from the findings of my research, as already emphasised above. There is a need for effective, explicit and inclusive support for students (notably international students) clarifying key concepts and terms (such as criticality, paradigms, etc) and attempting to establish and/or co-construct meaning and understanding with students in relation to the core concepts and tenets of UK HE and master's study to create a transparent, fair and equitable starting point. In addition, and possibly as part of this endeavour, is the need to better utilise participative pedagogy favouring discussion, in-class activities that promote sharing, interaction and debate, which students value and evidently enables their criticality development and broader learning, over traditional transmissive lectures which largely constrain dialogue and exchange. Heeding such a suggestion could also address the concern some students shared in relation to the need for greater contact time with peers and tutors and their perception of value for their fees paid.

Relating to another key finding in promoting students' development, there arguably needs to be work undertaken in synergising concurrent and overlapping HE initiatives, such as internationalisation, intercultural learning, and graduate attributes (discussed in Section 2.4) to address, some of the issues highlighted herein and support the broader learning of students, specifically in master's study. Through such tripartite integration, I would envisage that criticality as an overarching tacit, social practice dominant in western HE could be discussed explicitly between students of all nationalities and backgrounds. Consequently, this intervention could work to support both of these significant findings.

Moreover, in realising a truly internationalised curricula (Tian & Lowe, 2009) this curricular and pedagogical intervention could address some traditional practices in HE: for example, the dominance of western, often male, authors within academia even when discussing cultures outwith their own as seen in Section 6.5.2, with Chen (2017) and I both quoting Nisbet (2003) to elucidate a Chinese concept. Arguably academic staff could play an active part in both instigating and enacting change at the local level in relation to this, by utilising contrasting perspectives within their teaching to foster criticality through making greater use of academic texts, research and theories from those beyond the normal Northern Hemisphere, western scholars and publications which dominate texts and reading lists. Such

a curricular enhancement could support students' international, intercultural learning informed by global perspectives, literature and knowledge – as seen in my findings.

What the international, intercultural finding shows is that while a neo-liberal agenda does commodify and narrow critical competences, it also holds possibilities for criticality development towards the critical life and learning society Barnett (1997) envisages in the form of critical beings by means of harnessing the experiences, perspectives and values of students which now comprise an incredibly diverse student cohort, in the UK specifically. As participants suggest, in this instance students themselves should be seen as "learning resources", or as "capable peers" or "critical mirrors", that can support and advance the development of one another's criticality. This vision becomes more feasible when combined with the theoretical and practical directions provided from literature in interculturalism and internationalisation of the curriculum, taken as a key and effective means to students' holistic learning, and not a "tickbox" exercise relative to module descriptors and reading list heterogeneity, as is often the case in practice.

From my research and engagement with Barnett's (1997) sophisticated theorising, I contend that contemporary higher education should strive to promote students' development as critical persons across all three domains and forms of criticality – critical reason, critical self-reflection and critical action – and to the level of "transformatory critique" in relation to students' wider development of disciplinary subject knowledge and competencies. Within the societal context outlined in the introductory chapter of uncertainty, crises and conflict, a higher education that seeks to support students to develop as critical persons able to critically engage and act upon their world is arguably of more value to society than graduates who are critical yet compliant, with their critical thoughts and reflections constricted to the realms of academia and professions, and personal philosophising. By unleashing the full potential of critical thought within the academy in the form of "transformatory critique", higher education can become the "formative agency" in society that Barnett (1997) proposes, rather than simply reverberating among disciplinary specialists and within closed academic circles.

7.6 Recommendations and Future Research

A key interest of this thesis in addition to students' development of criticality was their application of it, specifically whether they applied it outside of academia and the domain of knowledge. While insights were gained here, additional research focused on students' criticality application during and/or after, or indeed in their extra-mural activities, would be of interest in evaluating the extent to which students developed higher levels of criticality to

operate across domains, but also in assessing which domains are most utilised in students' application of criticality. As already noted, my participants favoured criticality's application in their work lives over their personal, daily lives.

In order to further confirm or indeed deny my findings and those of others regarding the salience of social, interactive learning favoured by students, further research via longitudinal tracking, participant observation and/or reflective diaries and photo elicitation could help to shed more light into social versus individual means of criticality development as most conducive in working toward the realisation of critical being. As stated, embracing participative pedagogical activities within the curriculum maybe most advantageous in working to achieve this and support students' learning – given these findings, significant consideration needs to be given to the purpose of lectures as the dominant pedagogy of 21st Century higher education.

7.7 Closing Reflections

In an era where free citizens can be arrested for simply seeking to organise and promote peaceful protests - against racism (Gayle, 2020), environmental disaster (BBC News, 2019), coronavirus lockdown measures (Bedigan, 2020) and political demonstrations aiming to improve political representation and self-determination (The Herald, 2020), as well as the human rights of asylum seekers (Gupta, 2021) - and while journalists also face threats and arrest for reporting and photographing protests (The Guardian, 2020; Gupta, 2021), critical thinking and, more importantly, critical action are required more than ever to engage citizens collectively in a democratic society to work toward protecting and progressing their rights, environment, health and wellbeing, and those of others. Otherwise, as a society we are headed towards a paradoxical position where, as Barnett highlights:

> …we might produce students who are adept at critically evaluating, say, literary texts or other works of humanistic culture in one way, but who adopt quite different powers of critical evaluation in relation to the world. (1997: 102)

Citing Steiner (1984), Barnett suggests, quite powerfully, though significant given contemporary global developments, that this is the "nightmare" whereby "the Nazis might [have] appreciate[d] Schubert or Picasso and then turn to their critique of the Jewish community in the Final Solution" (1997: 102).

Given this warning and contemporaneous developments of lack of public trust in the media, authority and politicians, political corruption, populism and nepotism, the persecution of minority groups and political dissenters, as well as global pandemics and impending

catastrophic climate change; it is incumbent, therefore, on academics, if not universities, to take up this mission to promote the development of critical persons as Barnett (1997) suggests, even amidst neo-liberal impositions that promote an anodyne form of critical thinking (or "critical competency") and constrains true criticality in seeking to maintain the status quo, which is paradoxically on course to damage, if not destroy, humanity through these global retrograde events. Barnett (1997: 164) contends we should strive "for the highest forms of human development" as without practising such an education in the midst of uncertainty and global crises, HE will be co-opted by those intent on its use for "instrumental ends of human capital, rather than a genuinely open society, keeping its cognitive options open and its possibilities for action infinite".

Therefore:

> …as instrumentality and performativity tighten their grip, so a higher education for critical being becomes a necessary counter and a means of injecting a creative and transformatory element into society. (Barnett, 1997: 170)

As such, genuine critical being holds radical possibilities to positively impact the world, though to do so "it has to be in the world" (Barnett, 1997: 177) where it contributes and garners trust for its potential contribution. However, to achieve this critical being must be both present in the world yet maintain and exercise a reflexive distance from the world to ensure its effective critique and action upon it. Such reflexivity and ontological considerations are required to realise the promise which true criticality holds in terms of the kind of personal transformation I experienced: being able to stand outside of knowledge frameworks and question my own worldview, transforming my view of knowledge, myself and my engagement in the world, enabling my development as a critical person not subject to the world but able to act upon it in critical ways - as some of these master's students also achieved. It is therefore incumbent upon us as educators to support the development of true criticality – critical persons working to contribute to the sustainment of our democratic societies, way of life and wellbeing, as economic competency and instrumentalised critical thinking are likely to be insufficient in overcoming the existential threats human civilisation faces. Rather, this requires true criticality – critical beings committed to the critical life for the benefit of the many, not the few.

Appendix 1 – A Developmental Framework for Criticality in HE

		Levels of Criticality		
		Early criticality	*Guided criticality*	*Late criticality*
		1. Tenuous engagement with and control over strategies and knowledge *2. Working within understandings of others.*	*1.More secure control over strategies and knowledge* *2. Partial challenges to the understandings of others*	*1. Mastery over strategies and knowledge.* *2. Where appropriate able to challenge orthodoxies*
Entry into the critical process	*1.Nature and degree of engagement with critical tasks*	Active engagement with critical tasks, but other people shape tasks	More active engagement e.g. in understanding purpose of tasks, but within others' understandings	Engages in critical tasks in terms of own understandings
	2.Control over definition of topic, question and action	Works within other people's questions and conceptions of possible actions	Some ability to pose own minor questions and limited autonomy of action	Locates/defines significant problems and actions
Solution-searching process	*1.Information location and management*	Locates and manages information with guidance	Minimal guidance required	Locates and manages information independently
	2.Use of explanatory frameworks/theory	Uses explanatory frameworks in limited aspects only	Contrasts, synthesises and integrates theory, limited challenges	Challenges and constructs explanatory frameworks
	3.Use of data/evidence/other voices in the field	Tentative recognition and use of evidence and organising concepts	More confident use of evidence and organising concepts, but within	Challenges principles and frameworks of evidence

			recognised parameters	
	4.Linking between domains of formal knowledge and/or the self and/or action	Limited ability to link between domains	More confident linking, some pushing of boundaries	Makes links creatively and confidently, redefines understanding and actions
	5.Reflection (on formal knowledge, self and action)	Limited reflection on e.g. immediate competence	Reflection on thoughts, self and action, including underlying purposes	Extensive reflection on thoughts, actions and self, including underlying direction and values
	6.Constructing a case (process)	Building of a case uncertain, limited skills and understanding of purposes	More control over case construction, some autonomy	Challenges and shapes rules of case construction where appropriate
Rationale building	*Representation of the case / of knowledge (spoken and/or written) (product)*	Tenuous, emerging control over forms of representation	Control over rules of representation, ability to build rationale, some pushing at boundaries of established practice	Challenges and shapes rules of case representation where appropriate
Understanding of territory, including power relationships	*Understanding of territory, including power relationships*	Locating legitimacy, authority and rules for action	More confident working within established power relationships and some challenges to status quo	Engagement as active protagonist, ability to reshape the rules of action

(Source: Johnston, et al, 2011:84-85)

Appendix 2 – Research Questions, Methods & Expected Data Yield

Research Questions	Data Sources & Methods	Data expected to yield
1. How is critical thinking conceptualised among master's students?	Survey (Q7 - open question); Student interviews	Textual definition or understanding of critical thinking; Verbalised comprehension of critical thinking and discussion explaining context and factors influencing understanding and/or textual definition provided in survey.
2. What learning activities promote critical thinking development?	Survey (Q14); Student interviews; Staff interviews	Rank selection of activities participants perceive to have supported critical thinking development in previous education; identification and explanation of learning activities within master's study perceived to aid criticality development; staff perceptions (and experiences) of learning activities supporting student criticality development.
3. What approaches do staff use to foster critical thinking development?	Student interviews; Staff interviews	Discursive account of staff participants experiences relating to student criticality development in teaching and other activities/factors perceived as supporting student learning where specific techniques and/or pedagogic methods are identified as helping/hindering criticality development, and how staff utilise these and/or the approaches they take in doing so.
4. To what extent to students develop and apply criticality?	Student interviews; Staff interviews	Personal, reflective accounts of students related to experiences of postgraduate study specifically relating to their development of criticality in various aspects of their learning; also reflective accounts from staff of their perceptions of students' criticality development and extent of this viewed from their own experiences teaching and marking work of students sampled, and more generally.

		Personal views and experiences of students as they relate to their engagement and application of criticality, relating to (and extending the focus from) academic study environments to other aspects of their lives; Staff accounts and descriptions of how and where they have experienced students applying criticality.

Adapted from: Mason (2018: 26)

Appendix 3 – Student Questionnaire

QUESTIONNAIRE

Critical Thinking in Masters Study

Participant Information

As part of my doctoral degree at the University of Glasgow, I am looking at masters students' perceptions and current level of critical thinking in relation to their previous degree studies and forthcoming course of masters study, as well as their understanding of what being 'critical' or a 'critical thinker' means. The main focus of my research is exploring students' development of criticality and their expression of criticality in their studies (e.g. through academic writing in essays, dissertations etc.) and in relation to their own life experiences and choices, and in professional practice – e.g. in contexts extending from academia/formal study. It is thought that staff and students may have differing interpretations and understandings of what criticality is, how students develop this and how it should be developed and expressed through various teaching and learning activities.

You are invited to complete a short questionnaire about your previous learning experiences in relation to critical thinking and your views relating to developing and demonstrating critical thought during your masters course. From this questionnaire, I hope to learn of students' awareness, preparedness and confidence in meeting the expectations of masters study in relation to the development and application of critical thinking. I also plan to interview students twice, at the start of their masters study and toward the end of this study; I would be very grateful if you would also be willing to consent to participate interviews further exploring your experiences of masters study at Glasgow and your views in relation to critical thinking and criticality at a later date.

If you have any questions about this research please feel free to contact me: Cameron Graham – email: c.graham.2@research.gla.ac.uk

Informed Consent

I confirm that I have read and understand the above participant information for this research and have had the opportunity to ask any questions. I understand that my data will be treated as confidential and kept in secure storage at all times and that other authenticated researchers may have access to this data upon request, though only upon agreement to preserve the confidentiality of the information as requested in this form, and the data material may be used in future publications. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

I understand I only need to provide my personal details if I:

wish to be included in the prize draw for a £50 Amazon voucher; and/or

wish to participate in follow-up interviews.

And, that these details will be destroyed after the draw has taken place; or, once I have participated in the interview stages.

1. Previous Education (Please complete all that apply)

Level   Subject Area/Major

Undergraduate degree   (Y)   (N)   _____

Post-graduate degree   (Y)   (N)   _____

Other qualifications   (Y)   (N)   _____

Current Masters

  2. Nationality   _____

  3. Age (years)   _____

  4. Sex

     Male   (Y)   Female   (Y)   Intersex   (Y)

  5. Is English first (native) language?   (Y)   (N)

  6. Why did you choose to study this Masters degree? Please select top 3 where ① = most important

Personal Interest   ① ② ③   Career/employment   ① ② ③

Current job requirement   ① ② ③   University reputation   ① ② ③

Location   ① ② ③   ContProfDevelopment   ① ② ③

Expand Knowledge   ① ② ③   Programme reputation   ① ② ③

Other (Please specify)

Critical Thinking

  7. Critical thinking, is a very commonly used term within higher education. It is a concept which is often associated with what is 'higher' about higher education and the hallmark or speciality of university study.

In your own words, what does critical thinking mean to you?

  8. As a university graduate, you are expected to have developed a range of graduate attributes such as demonstrating a degree of critical thinking. *Select One*

How well developed do you feel your critical thinking skills and abilities are? Where ⑤ = Highly Developed; and,   ① ② ③ ④ ⑤

① = Not Well Developed

Answer Selection: Correct = ●   Incorrect = X ✔ ⊖

9. Recalling your previous study, how would you describe the mode of learning and teaching you experienced?   *Select One*

Independent Learning	①	Active Learning	③
Memorisation/Rote Learning	②	Inquiry-Based Learning	④

10. Recalling your previous study, did you encounter the following terms related to critical thinking?

a) Critical analysis	Ⓨ	Ⓝ
b) Critical reflection	Ⓨ	Ⓝ
c) Critical evaluation	Ⓨ	Ⓝ
d) Critical awareness	Ⓨ	Ⓝ

11. At what point during your learning did you first encounter critical thinking? *Select One*

High School	①	First Year Uni	②
Second Year Uni	③	Third or Final year	④
Don't recall	⑤	Not applicable	⑨

12. Where did you encounter critical thinking *Select all that apply*

Lectures	①	Class discussions	②
Assignment criteria	③	Module/course handbook	④
Assignment feedback	⑤	Independent study tasks	⑥
Don't know	⑦	Not applicable	⑨

13. From your understanding, which definition below best defines critical thinking: *Select one*

"Reflective and reasonable thinking that is focused on deciding what to believe or do" (Ennis, 1985:45)	①
"to be more discerning in recognising faulty arguments, hasty generalisations, assertions lacking evidence, truth claims based on unreliable authority [and] ambiguous or obscure concepts" (Burbules & Berk, 1999:46).	②
"the propensity and skills to engage in an activity and 'mental activity' with reflective scepticism focussed on deciding what to believe or do" (Fasko, 2003:8).	③

14. **Which contexts/activities do you feel helped develop your critical thinking in your previous degree study? While you may consider all of the contexts/activities important, please select the *top three* from the list below**
    (PLEASE SELECT THREE AND ORDER IN TERMS OF IMPORTANCE) 1, 2, 3

Reading academic literature (textbooks, journal articles, book chapters, reports etc.)	①	②	③
From lectures.	①	②	③
Discussing topics, concepts/theories and issues with peers or classmates.	①	②	③
Reading/viewing other sources of information (e.g. newspapers, websites, social media etc.)	①	②	③
In-class activities (workshops, tutorials, debates, discussions, seminars, presentations etc.)	①	②	③
Participating in online discussion forums, blogs or groups.	①	②	③
Conducting research (e.g. primary research for dissertation [interviews etc.], analysis of literature/documentation, etc.)	①	②	③
Writing assignments (e.g. essays, reports, dissertations, etc.)	①	②	③
Activity outside classes (e.g. discussion with friends, family, colleagues, peers etc.)	①	②	③

15. **Which of the following skills do you consider to be essential for good/effective critical thinking?**
    Please select the FOUR most important to your understanding of critical thinking

Interpreting	Ⓨ
Asking questions for clarification	Ⓨ
Synthesizing claims	Ⓨ
Analysing claims	Ⓨ
Predicting	Ⓨ
Reasoning verbally	Ⓨ
Identifying assumptions	Ⓨ
Evaluating arguments	Ⓨ
Inference making	Ⓨ
Recognising theories and concepts	Ⓨ
Problem solving	Ⓨ
Constructing an argument	Ⓨ

16. CRITICAL THINKING DISPOSITIONS   ① = *Strongly Agree* and ⑤ = *Strongly Disagree*

		①	②	③	④	⑤
a)	I usually try to think about the bigger picture during a discussion	①	②	③	④	⑤
b)	I often re-evaluate my experiences so that I can learn from them	①	②	③	④	⑤
c)	I use more than one source to find out information for myself	①	②	③	④	⑤
d)	I usually think about the wider implications of a decision before taking action	①	②	③	④	⑤
e)	I sometimes find a good argument that challenges some of my firmly held beliefs	①	②	③	④	⑤
f)	It's important to understand other people's viewpoint on an issue	①	②	③	④	⑤
g)	I usually check the credibility of the source of information before making judgements	①	②	③	④	⑤
h)	I often use new ideas to shape (modify) the way I do things	①	②	③	④	⑤
i)	It is important to justify the choices I make	①	②	③	④	⑤
j)	I am often on the lookout for new ideas	①	②	③	④	⑤
k)	I often think about my actions to see whether I could improve them	①	②	③	④	⑤

17. CRITICAL THINKING IN MASTERS STUDY ① = *Strongly Agree* and ⑤ = *Strongly Disagree*

	①	②	③	④	⑤
I can detect the use of inappropriate emotional language in scientific arguments	①	②	③	④	⑤
I have a well-defined goal in mind when I am critical	①	②	③	④	⑤
I can identify the structure of arguments without being distracted by their content	①	②	③	④	⑤
Critically thinking is particularly important in masters study	①	②	③	④	⑤
Critical thinking is essential in higher education	①	②	③	④	⑤
When there is a very strong relationship between two variables we can claim that one causes the other	①	②	③	④	⑤
Critical thinking develops as you progress through your degree	①	②	③	④	⑤
I can express my critical thinking well in my written work	①	②	③	④	⑤
You cannot get a good degree without good critical thinking skills	①	②	③	④	⑤
I prefer to do things where there is a quick answer	①	②	③	④	⑤
I have a focused and systematic way of thinking	①	②	③	④	⑤

Answer Selection: Correct = ●	Incorrect = ✗ ✓ ⊖

	①	②	③	④	⑤
All relevant information should be presented in lecture slides	①	②	③	④	⑤
Generally I am a good critical thinker	①	②	③	④	⑤
I do well in assessments that ask for critical evaluation	①	②	③	④	⑤
I think critically while working on my assignments	①	②	③	④	⑤
All my lecturers expect me to think critically	①	②	③	④	⑤
I know how to approach complex issues in a variety of ways	①	②	③	④	⑤
I will get higher grades if I think critically	①	②	③	④	⑤
I have the ability to judge the value of new information or evidence presented to me	①	②	③	④	⑤
I can evaluate the arguments of others well	①	②	③	④	⑤
Critical thinking is when you describe what is wrong with something	①	②	③	④	⑤
I am good at weighing up both sides of an argument	①	②	③	④	⑤
I can identify similarities between theories	①	②	③	④	⑤
I think critically while reading	①	②	③	④	⑤
When designing experiments I can readily eliminate extraneous variables	①	②	③	④	⑤
I can rephrase the arguments of others in my own words easily	①	②	③	④	⑤
I think critically in lectures	①	②	③	④	⑤

18. **How important do you think that critical thinking is (or is likely to be) in your professional life/work, career, future career or profession?** Where ① = *Very Important* and ⑤ = *Completely unimportant*

   ①   ②   ③   ④   ⑤

19. **How important is critical thinking to you in your daily life?** (*scoring as above*)

   ①   ②   ③   ④   ⑤

If you would be happy to participate in a later one-to-one, **individual interview** to further explore and discuss criticality in relation to masters studies, please write your email address below:

Email:

If you would like to be entered into the Prize Draw to win **a £50 Amazon voucher**, please enter your email address. (To retain confidentiality, details of your email address will be destroyed once drawn):

Email:

Sosu, E. (2013) The development and psychometric validation of a Critical Thinking Disposition Scale. Thinking Skills and Creativity, Vol. 9, pp. 107-119.
Stupple, E.J.N., Maratos, F.A., Elander, J., Hunt, T.E., Cheung, Y.F. and Aubeeluck, A.V. (2017) Development of the Critical Thinking Toolkit (CriTT): A measure of student attitudes and beliefs about critical thinking. Thinking Skills and Creativity, Vol. 23, pp. 91-100

Appendix 4 – Justification of Questionnaire Questions

The concept of 'graduateness' became a starting point for both the questionnaires and interviews, prompting students to recall their first degree and their development of graduate-level attributes, namely critical thinking. This topic was a preamble before moving to focus on critical thinking itself and their conceptualisations of this, helping to ground participants by beginning with questions on demographics before asking them about their first degree and reasons for pursing a master's degree. The survey asked students, to offer their own conceptualisation of critical thinking. This open question on the respondent's understanding of critical thinking was purposefully situated at the start of the survey prior to allow them to engage with the concept with more clarity than if placed further within the survey. As with other created questions, the wording of this one was drafted in consultation with those developed by Duro et al. (2013) in their exploratory research of students' understanding of critical thinking. The questionnaire developed, finalised and utilised in the research can be seen in Appendix 3.

Before moving to completion of two validated instruments utilising Likert-type scales, participants were asked select a critical thinking definition which best defined their understanding of the term. Three definitions were selected for inclusion on the basis of their increasing complexity and breadth in regard to their conceptualisation of critical thinking; moving from Ennis' (1985) cognitively focussed definition to Burbules and Berk's (1999) more detailed explanation incorporating scepticism and specific activities associated with critical thinking, to Fasko's (2003) definition which encapsulates both the skills and dispositions aspect of critical thinking, but also the active element alluding to action ('activity') not just thought and reflection. This final definition was viewed as more in keeping with the focus of the research and the concept of criticality, whilst not introducing novel or less familiar terms such as criticality.

Research identified various learning and teaching activities found to support critical thinking development, such as group discussion (Wilson and Howitt, 2016; Brookfield, 2012), research activity (Wilson, et al, 2015) and writing (Pu and Evans, 2019). To ascertain the sample's view, participants were asked which particular contexts of learning and activities helped their critical thinking development during their previous study (e.g. literature, lectures, research). Ranking scales were used with the view to determine the level of importance of contexts and activities students saw as important for their critical thinking development from previous academic experiences.

Scales were also used to ask students to select the skills related to their own preceding learning that they view as important to good or effective critical thinking. Duro et al.'s (2013) questions were consulted and adapted for this, specifically their open question addressing resources was viewed useful in developing critical thinking, linking to Bailin et al.'s (1999b) stance. These questions aimed to establish not only which activities related to learning which students perceive as helping critical thinking development, but also to try to establish if such development is viewed as individual or social in character. The selected skills to populate the list for Q15 were informed by a taxonomy of critical thinking skills presented in Davies (2015: 54) and adapted from Wales and Nardi (1984) and Halonen (1995), which classifies cognitive critical thinking skills into four categories – lower-level thinking skills, higher-level thinking skills, complex thinking skills and thinking about thinking. Only 'recognising theories and concepts' and 'constructing an argument' were inserted due to their salience for effective critical thinking within HE. In hindsight, this question (Q15) is possibly of less utility for the present research focus but does allude to one's conception of critical thinking and its focus and scope.

Appendix 5 - Profile of Survey Sample

Sample	*293 master's students*	*3 universities*	*13 master's courses*
	Total	**Females**	**Males**
Age	Mean = 26.64	Min age = 19; Max age = 52	Std Deviation = 6.405
	19-23 = 128 (44.1%) 24-30 = 109 (37.6%) 31-52 = 53 (18.1%) 3 missing cases	19-23 = 107 (47.3%) 24-30 = 79 (35.0%) 31-52 = 40 (17.5%)	19-23 = 21 (32.8%) 24-30 = 30 (46.9%) 31-52 = 13 (20.3%)
Sex	M = 64; F = 226	Min age = 19; Max age = 52; Std Deviation = 6.696. Mean age = 26.54	Min age = 22; Max age = 49; Std Deviation = 5.284. Mean age = 26.98
Nationality	40 nationalities Africa = 6 (2.1%) Asia = 137 (46.9%) Central & South America = 5 (1.7%) Europe = 131 (44.9%) North America = 13 (4.5%) 1 missing case	Africa = 1 (0.4%) Asia = 117 (51.3%) Central & South America = 2 (0.9%) Europe = 100 (43.9%) North America = 8 (3.5%)	Africa = 5 (7.8%) Asia = 20 (31.3%) Central & South America = 3 (4.7%) Europe = 31 (48.4%) North America = 5 (7.8%)
English as First Language	English = 105 (41.2%) Not English = 150 (58.8%) 38 missing cases	English = 78 (40.0%) Not English = 117 (60.0%)	English = 27 (45.0%) Not English = 33 (55.0%)

Master's Degree	Education = 189 (64.5%) Social sciences = 72 (24.6%) Health and social care = 32 (10.9%) 0 missing cases	Education = 160 Social sciences = 37 Health and social care = 32	Education = 29 Social sciences = 35 Health and social care = 0
Undergraduate Degree	Arts & Humanities = 53 (20.6%) Business = 43 (16.7%) Creative = 16 (6.2%) Social Science = 70 (27.2%) Education = 47 (18.3%) Science = 28 (10.9%) 36 missing cases	Arts & Humanities = 38 (18.5%) Business = 38 (18.5%) Creative = 14 (6.8%) Social Science = 47 (22.9%) Education = 45 (22.0%) Science = 23 (11.2%) 24 missing cases	Arts & Humanities = 15 (28.8%) Business = 5 (9.6%) Creative = 2 (3.8%) Social Science = 23 (44.2%) Education = 2 (3.8%) Science = 5 (9.6%) 12 missing cases
Postgraduate Degree	**35** different postgraduate degree types, confusion with current master's course evident in responses. 217 missing cases	Social Science = 18 (32.7%) Education = 34 (14.8%) Arts = 3 (5.5%) 174 missing cases	Social Science = 14 (66.7%) Education = 6 (28.6%) Arts = 1 (4.8%) 43 missing cases
Other Qualifications	17 other qualification types provided by respondents. 275 missing cases	Included: HNCs, PGCE, PgCert, Prince2, Grad Law Diploma, ESOL Teaching, PgDip (n1 for each) 216 missing cases	Included: CELTA, HNC, PGCE, Initial Teacher Training & ParaProfessional (n1 for each) 59 missing cases

Appendix 6 – Student Interview Schedule

<u>*Welcome & Information on study*</u>:

> *Just to remind you, I am looking at master's students' experiences at university and how they develop critical thinking as part of their studies and what impact this has on them at an academic level and a personal and professional level.*

- Ensure voluntary consent and confidentiality, and ask permission to begin recording.

Background

(Previous education / level of qualifications / life experience)

- What motivated you to enrol on the NAMED masters course
    - o Did you have a specific aim in undertaking the degree?
      (job, qualification, personal fulfilment)

- What other education have you undertaken before starting your course?
    - o Which subject was undergrad degree and any formal learning or qualifications?
    - o Reflections of undergraduate experience?
        - Do you feel you sufficiently developed knowledge of the subject and critical thinking ability?

- Are familiar with you with the concept of graduate attributes?
    - o Are there any from your last university which you can identify/remember and which you feel you possess?

- Have you worked professionally prior to this study which is related and/or an influence towards your master's study?
    - o If not worked, have you had any major life experiences which have influenced your choice to study this master's? If so, why?

- Did you feel prepared for master's study – e.g. in terms of knowledge, reading, writing, adapting to independent study/different academic practices, English, socialisation etc.?

CONCEPTUALISATION OF CT: **Graduateness - Graduate Attributes**

- What is your view or understanding of critical thinking from previous study/undergrad degree?
    - o *What is your understanding of being critical or your conception of criticality?*
    - o Do you feel you developed this and to what degree?
        - How and what way do you feel this was facilitated?
        - Was this explicitly explained by staff?

- ▪ Was it modelled or just resources and explanations?
- What role, if any, did critical thinking (and your development of it) have within that course?
  - o Where in the course was this evident (teaching, documents, assessments etc.)?
  - o Do have any specific memories or instances related to critical thinking that stand out?

- Moving to consider your current master's study, what were your expectations of masters study in relation to the need to develop and exercise/demonstrate critical thinking?

DEVELOPMENT OF CT AND METHODS (Teaching/Discussion/Reading etc.)

  - o The UoG Graduate School site states that master's students in the College of Social Sciences will *"discover a way of learning that develops your critical thinking, analytical abilities and curiosity".*[4]
    - ▪ Is this something you feel you are learning to or can do?
    - ▪ How are lecturers/tutors helping you develop your critical thinking skills?

- Reading & Writing
  - o What kind of literature/information do you use for studying on your course (e.g. journal articles, blogs, videos, newspapers, forums, books, student essays, websites etc.)?
    - ▪ How do you locate and source this literature/information?
    - ▪ How do you engage with this information/literature, e.g. to what level, do you just read and consume this information and knowledge or do you actively analyse, interrogate and question this, looking for an evidence base, purpose, assumptions etc.?

  - o Can you tell me about your essay writing and how you find this?
    - • Are you able to critically analyse, effectively express your point and build arguments?

  - o Where do you source your information for, on day to day basis for news etc., and for academic knowledge/information and literature?

- Teaching
  - o Which teaching method or activity do you think best helps you to develop critical thinking?
    - ▪ Lectures, Tutorials, VLE/Online Activities,

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[4] https://www.gla.ac.uk/colleges/socialsciences/graduateschool/taughtcourses/

- Group work / Discussion helpful in develop criticality?
- Independent study – e.g. reading, writing etc.?

- <u>Feedback</u>
    o How does feedback help you in your writing and to develop your critical thinking, if at all?
- <u>Placement – if have/had any</u> – e.g. MSc Teaching Adults
    o Can you tell me about any placements you have or have had, and how your placement helped you develop your critical thinking/criticality, if it did?
        - Did you have any critical-reflective assignments for this placement?

- <u>Personal Development</u>
    o Do you feel you are developing personally during this master's course?
        - If so, what is helping you to develop? And, in what ways are you developing?

- <u>Living/Studying Abroad</u> (in Scotland)
    o If you have/are living or studying abroad, has this had any impact on your own personal development and your development of critical thinking?

CRITICAL THINKING IN MASTERS STUDY

- *Do you think that critical thinking is important for master's students?*
    o *If so, why? If not, why?*

- *What do you think prevents your critical thinking development during study?*

- *Can you think in what contexts/situations (outside academia), that you might use the critical thinking which you continue to develop during your master's study?*

CRITICALITY - CONTEXTS & APPLICATION (linking between domains and ability to apply outwith HE)

An increasingly used term in education to describe a broader concept than critical thinking, which incorporates thinking, reflecting and acting critically, is criticality. Criticality expands critical thinking from a focus on the individual and their skills and dispositions to thinking critically, to a state of being which considers individuals' place in the world and their social relations, and places emphasis on taking actions resulting from thinking and reflecting critically (Davies, 2015).

- What is your understanding of this? Do you feel you are developing criticality? And, to what degree?

- Do you think critical thinking or criticality will be important, useful or required in your current or future professional job/career? Why?

- Can you provide examples of how you use critical thinking in daily/everyday life (link between domains), for example, Indy Ref, Brexit, Climate Change, etc.?

- What in your view is the purpose of Higher Education or University study?

Wrap Up Interview and Thank for Participation and Time

Appendix 7 – Profile of Student Interviewees

Gender	Pseudonym	Age	Course	Nationality	Undergraduate degree	Work experience
Male	Chih	29	Education	Taiwanese	French Language	Educational materials business
Female	Sally	27	Education/Social Sciences	Canadian	BA History & BEd Education (Secondary)	High school teacher
Female	Chynna	27	Education	Singaporean	Psychology	N/A
Female	Penny	23	Social Science	American	Political Science	Worked in political public relations
Female	Ling	27	Educational	Chinese	Applied English	No. Parental leave
Female	Amy	25	Midwifery	British	Anthropology, PGDip Health Humanities	Worked in policy administration - NHS
Female	Susie	23	Midwifery	British	Environmental Geoscience	Worked briefly in oil and gas industry
Female	Chun	22	Education	Chinese	Biology Education.	Half year work experience in a high school
Female	Ying	23	Education	Chinese	International Business.	Two years as teaching assistant in private English language school
Female	Olive	28	Education	British	Bachelor of Education (Primary)	Primary school teacher – full-time
Female	Katy	27	Education	British	Primary Education	Primary school teacher – full time
Female	Genji	25	Education	Chinese	Material Physics	Editor of Manga Comic
Female	Aria	29	Ed/Social Sciences	Peruvian	Political Science and Education	Worked in Peruvian ministry of education
Female	Sadie	25	Ed/Social Sciences	American	Government, Asian Studies	N/A
Male	Andre	25	Education	Russian	Computer Engineering	Worked in IT and volunteered as tutor
Female	Karina	27	Social Sciences	Montenegrin	Political Science – spent year abroad in Rome.	Worked in social policy in Montenegro.
Male	Peko	25	Social Sciences	Finnish	MA Psychology and MSc in Education, Public Policy & Equity	N/A
Female	Avery	38	Education	American	Business Administration & Marketing	Multiple roles and work experience

Appendix 8 – Participant Information Sheet – Questionnaire

Critical Thinking in Master's Study

Participant Information

As part of my doctoral degree at the University of Glasgow, I am looking at master's students' perceptions and current level of critical thinking, as well as their understanding of what being 'critical' or a 'critical thinker' means. The main focus of my research is exploring students' development of criticality and their expression of criticality in their studies (e.g. through academic writing in essays, dissertations etc.) and in relation to their own life experiences and choices, and in professional practice – e.g. in contexts extending from academic study. It is thought that staff and students may have differing interpretations and understandings of what criticality is, how students develop this and how it should be developed and expressed through various teaching and learning activities.

You are invited to complete a short questionnaire about your previous learning experiences in relation to critical thinking and your views relating to developing and demonstrating critical thought during your master's course. From this questionnaire, I hope to learn of students' awareness, preparedness and confidence in meeting the expectations of master's study in relation to the development and application of critical thinking. I also plan to interview a sample of students twice, at the start of their master's study and toward the end of this study; I would be very grateful if you would also be willing to consent to participate in interviews further exploring your experiences of master's study at Glasgow and your views in relation to critical thinking and criticality, at a later date.

If you have any questions about this research please feel free to contact me: Cameron Graham – email: c.graham.2@research.gla.ac.uk

Informed Consent

I confirm that I have read and understand the above participant information for this research and have had the opportunity to ask any questions. I understand that my data will be treated as confidential and kept in secure storage at all times and that other authenticated researchers may have access to this data upon request (though only upon agreement to preserve the confidentiality of the information as requested in this form) and the data material may be used in future publications. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

I understand I only need to provide my personal details if I:

wish to be included in the prize draw for a **£50 Amazon voucher**; **and/or**

wish to participate in follow-up **interviews**.

And, that these details will be destroyed after the draw has taken place; or, once I have participated in the interview stages.

Appendix 9 – Participant Information Sheet – Interview

University of Glasgow

College of Social Sciences

Participant Information Sheet - Students

The development of criticality in higher education: a case study of master's students in a Russell Group university.

Researcher: Cameron Graham

c.graham.2@research.gla.ac.uk

Supervisor: Dr M. Houston / Prof P. Enslin

Course: Doctor of Philosophy (Education)

You are invited to participate in a small research study looking at the learning experiences of master's students at university and the extent to which current learning and teaching practices support students in their development of criticality. The main focus of my research is an exploration of the views of staff and students relating to criticality during master's degree study, and in particular academic reading and writing; which it is thought may differ and subsequently impact on students' development and demonstration of criticality throughout their course of study. The main method for achieving this is through two separate, informal interviews with students, where I would hope to interview students near the start of their course and towards the end of their course. This research is being conducted as part of my doctoral degree in education at the University of Glasgow.

I would very much appreciate your participation in my research, though before deciding if you would like to take part it is important that you read and are able to fully understand the purpose of the research and what it involves.

Please take time to read the information below carefully, discussing this with others if you like. If there is anything which is not clear or you would like clarification on please contact me with your queries. It is important that you take time to read this information and decide if you would like to participate in the project.

Thank you for reading this.

What is the purpose of the study?

The main focus of the research is students' development of criticality and their expression of criticality in their studies (e.g. through their academic writing in essays, dissertations etc.) and in relation to their own life experiences and choices, and in their professional practice – e.g. in contexts extending from academia/formal knowledge study.

It is thought that staff and students may have differing interpretations and understandings of what criticality is, how students best develop this and how it is and should be best developed through various teaching and learning activities/practices, and expressed by students during their course (e.g. academic writing, verbal discussion/debate).

Why have I been chosen?

As a student at the University of Glasgow in a taught master's programme within the College of Social Sciences, you have been selected to take part in the research due to your status as

a graduate having already developed a degree of criticality, the relevance of criticality to your current master's programme as well as its role and requirement in any possible future profession. I think your experiences, views and feeling relating to developing and demonstrating critical thought during your course, and your experience of master's study generally, will provide a good insight into how postgraduate students can, and do, develop criticality through their studies/course and what their learning experiences consist of.

Do I have to take part?

No, you do not need to participate in the research if you do not want to. No-one other than the researcher (me) will know whether you agreed or refused to take part in this study. If you do choose to take part and later change your mind, you may at any point withdraw from the research and retract any data already collected.

If I was to take part how much of my time would be required and what would I be required to do?

Taking part in the research would require around 45-60 minutes of your time in two interview situations (approx. two hours in total) where you would be asked various questions about your experiences on your course of study and your views on critical thinking, your knowledge and experiences of critical thinking as well as your development of critical thought through your own learning (e.g. reading and writing).

If you participate, you may also be asked about your use of critical thinking in everyday life and to provide your views or position on a particular topic during two interviews (one in semester one and another in semester two) as a way to gauge your level of criticality development and your application of criticality.

Will my taking part in this study be kept confidential?

Yes, interview recordings will be recorded and transcribed with personal identifiers in the transcripts, narratives and essays replaced with a code which I retain the key to in a secure location, ensuring anonymity for participants, with non-identifiable pseudonyms used in the written results. Recordings and transcripts will be kept locked and secure, with digital copies stored on an encrypted hard drive and every made to ensure your confidentiality is maintained. All research data will only be accessed by myself, my supervisors and examiners unless personally requested by other authenticated researchers. As other authenticated researchers may have access to the data it may be used in future publications, though only upon agreement to preserve the confidentiality of the information as requested in this Participant Information Sheet and the Consent form.

Please note that assurances on confidentiality will be strictly adhered to unless evidence of wrongdoing or potential harm is uncovered. In such cases the University may be obliged to contact relevant statutory bodies/agencies.
What will happen to the results of the research study?

The results of the research will be presented and submitted as part of a thesis to the University of Glasgow in fulfilment of my Doctor of Philosophy doctoral studies. The findings may later be published as a journal article and elsewhere if the data is requested by authenticated researchers, as noted above. You may also request a copy of the results and a written summary to be sent to you.

Who has reviewed the study?

This research has been reviewed by the College of Social Sciences Education Ethics Committee at the University of Glasgow.

Contact for Further Information:

Cameron Graham

c.graham.2@research.gla.ac.uk

If you have any concerns regarding the conduct of this research project, you can contact the college Ethics Administrator, Terri Hume (terri.hume@glasgow.ac.uk), mailto:**or socsci-ethics@glasgow.ac.uk**

Appendix 10 – Interview Consent Form

University of Glasgow

College of Social Sciences

Consent Form - Students

Title of Project: *The development of criticality in higher education: a case study of master's students in a Russell Group university.*

Name of Researcher: Cameron Graham

1. I confirm that I have read and understand the Plain Language Statement for the above study and have had the opportunity to ask questions.

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason.

3. I consent to interviews being audio-recorded.

4. I understand that I may be asked after interview to provide a reflective account of my learning journey, which I consent to.

5. I understand that my participation or non-participation in the research will have no effect on my assessment grades or degree results at the University.

6. I understand that the data collected from me will be anonymised, that I may be referred to by pseudonym in any publication arising from the research and that every effort will be made in ensuring my confidentiality.

7. I understand that my data will be treated as confidential and kept in secure storage at all times and that other authenticated researchers may have access to this data upon request and that the data may be used in future publications, though only upon agreement to preserve the confidentiality of the information as requested in this form,

8. I acknowledge that I may request the return of the transcription of data for my approval, and also request its removal from the study if I chose to withdraw from the study.

_____   _____   _____
Name of Participant   Date   Signature

Cameron Graham

_____   _____   _____
Researcher   Date   Signature

Appendix 11 – Ethical Approval

University of Glasgow

College of Social Sciences

Friday, 15 September 2017

Dear **Cameron Graham**

College of Social Sciences Research Ethics Committee

Project Title: The development of criticality in higher education: a case study of Masters students in a Russell Group university.

Application No: 400170020

The College Research Ethics Committee has reviewed your application and has agreed that there is no objection on ethical grounds to the proposed study. It is happy therefore to approve the project, subject to the following conditions:

- Start date of ethical approval: ___05/10/2017_____
- Project end date: ___04/10/2021___
- Any outstanding permissions needed from third parties in order to recruit research participants or to access facilities or venues for research purposes must be obtained in writing and submitted to the CoSS Research Ethics Administrator before research commences. Permissions you must provide are shown in the *College Ethics Review Feedback* document that has been sent to you.
- The data should be held securely for a period of ten years after the completion of the research project, or for longer if specified by the research funder or sponsor, in accordance with the University's Code of Good Practice in Research:(http://www.gla.ac.uk/media/media_227599_en.pdf) (Unless there is an agreed exemption to this, noted here).
- The research should be carried out only on the sites, and/or with the groups and using the methods defined in the application.
- Any proposed changes in the protocol should be submitted for reassessment as an amendment to the original application. The *Request for Amendments to an Approved Application* form should be used: http://www.gla.ac.uk/colleges/socialsciences/students/ethics/forms/staffandpostgraduateresearchstudents/

Yours sincerely,

Muir Houston, Senior Lecturer
College of Social Sciences Ethics Officer
Social Justice, Place and Lifelong Education Research
University of Glasgow
School of Education, St Andrew's Building, 11 Eldon Street
Glasgow G3 6NH
0044+141-330-4699   Muir.Houston@glasgow.ac.uk

Dr Muir Houston
College Ethics Officer

Edinburgh Napier
UNIVERSITY

Edinburgh Napier University
School of Health and Social Care
Research Integrity Ethical Approvals Committee
9 Sighthill Court
Edinburgh
EH11 4BN

Date of letter: 8/11/2017

Dear Cameron

Project title: The development of criticality in high education: a case study of masters students in a Russell Group university (version 2, 1/11/2017)
External application reference number: Universty of Glasgow 400170020
Project start date: 18/9/2017 (Amendment: 24/10/2017)
Project end date: 4/10/2021
ENU project reference: SHSC/0004 (please *use this reference in all correspondence)*

Further to your application for ethical approval to undertake a research study with students on the MSc Midwifery at Edinburgh Napier University, I am pleased to inform you that the committee has approved your application subject to the following conditions:

- Please send the updated version of the application with correct dates and version number for our records
- Permissions from programme leader must be forwarded to SHSC ethics prior to data collection
- All data collected from ENU should be stored as per University Data Management Policy i.e. researchers must ensure that active research data are stored securely and protected from loss. University approved systems such as the University networked storage system must be used for storing research data in both original and processed format. Please clarify that no identifiable research data will be stored at home address (see section 8b)
- Data from your study should be held securely for a period of ten years after the completion of the research project or longer if specified by the funder as per the data management policy: http://staff.napier.ac.uk/services/research-innovation-office/Documents/Research%20Data%20Management%20Policy.pdf

May I also remind you of the need to apply to the SHSC Research Integrity Committee prior to making any amendments to this study or of any changes to the duration of the project. Any proposed changes in the protocol should be submitted for reassessment as an amendment to the original application (this will include inclusion of any other SHSC MSc taught programmes). If required please request the Amendments to an Approved Application Form (contact: ethics.shsc@napier.ac.uk). All documents related to the research should be maintained throughout the life of the project, and kept up to date at all times.

Please bear in mind that your study could be audited for adherence to research governance and research ethics. It is your responsibility to inform the SHSC ethics when you study has completed.

I wish you all the best with your study.

Yours sincerely,

Dr. Anne Rowat
Chair

Cameron Graham (PGR)

From:	Donald Gillies
Sent:	30 October 2017 09:49
To:	Cameron Graham
Cc:	Beth Cross; Khadija Mohammed
Subject:	RE: PhD Research - Ethical Approval

Dear Cameron

Happy with this. I hope it goes well.

Donald

From: Cameron Graham
Sent: 30 October 2017 09:37
To: Donald Gillies <Donald.Gillies@uws.ac.uk>
Cc: Beth Cross <Beth.Cross@uws.ac.uk>; Khadija Mohammed <Khadija.Mohammed@uws.ac.uk>
Subject: PhD Research - Ethical Approval

Hi Donald,

As I mentioned to you in the café earlier today, here is my approved ethics application for my research at Glasgow along with the original approval letter and additional approval letter for amendments to extend my study to participants beyond Glasgow.

If you give me your permission I will speak to Khadija (who has given me permission to speak with her MEd students) to see when I can arrange to access the students.

Your help is much appreciated!

Thanks again
Cameron

Cameron Graham
Learning Developer
BA (Hons), MSc, PgCert TLHE, FHEA

UWS Academy
University of the West of Scotland
University Avenue
Ayr
KA8 0SX

T: 01292 886 381

Ext: 6381

E: cameron.graham@uws.ac.uk

Cameron Graham (PGR)

From:	Khadija Mohammed
Sent:	16 October 2017 15:56
To:	Cameron Graham
Subject:	RE: MEd Early Years

Follow Up Flag:	Follow up
Flag Status:	Flagged

Dear Cameron,

Yes, no problem at all. I see them fact-to-face tmrw and one more time in November. Let me know...

Khadija

From: Cameron Graham
Sent: 16 October 2017 14:54
To: Khadija Mohammed <Khadija.Mohammed@uws.ac.uk>
Subject: MEd Early Years

Hi Khadija,

I hope you're well! Long time, no see.

Wondering if you can help, I'm looking for masters students as respondents for my survey on critical thinking as part of my PhD. I only just started data collection a few weeks ago and I'm keen to get as many returns as possible. Do you think, when I got ethical approval here, I could speak with your students and ask them to do the survey?

Would be good to meet for a coffee and chat!

Cheers
Cameron

Cameron Graham
Learning Developer
BA (Hons), MSc, PgCert TLHE, FHEA

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T: 01292 886 381

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E: cameron.graham@uws.ac.uk

Appendix 12 – Survey Participant Nationality Grouping

European students (n131)	107 British, 4 German, 4 Greek, 2 Spanish, 2 Russian, 1 Dutch, 1 Finnish, 1 Irish, 1 Luxembourgish, 1 Swede, 1 Swiss, 1 Romanian, 1 Lithuanian, 1 Ukrainian, 1 Belarusian, 1 Bulgarian and 1 Montenegrin.
Asian students (n137)	123 Chinese, 1 Mongolian, 2 Syrian, 1 Singaporean, 2 Indonesian, 2 Kazakhs, 2 Taiwanese, 1 Malaysian, 2 Japanese and 1 Pakistani
North American students (n13)	12 American and 1 Canadian
African students (n6)	3 Nigerian, 1 Mauritian, 1 Oman and 1 Ivorian
Central and South America students (n5)	1 Peruvian, 1 Chilean, 1 Brazilian, 1 Guatemalan and 1 Dominican

Appendix 13 – Rotated Structure Matrix

Structure Matrix

	Factor		
	1	2	3
CT in Masters Study 13	.774		
CT in Masters Study 15	.751		
CT in Masters Study 14	.746		
CT in Masters Study 20	.739		
CT in Masters Study 17	.701		
CT in Masters Study 27	.681		
CT in Masters Study 24	.680		
CT in Masters Study 19	.660		
CT in Masters Study 8	.624		
CT in Masters Study 26	.615		
CT in Masters Study 23	.587		
CT in Masters Study 22	.577		
CT in Masters Study 3	.567		
CT in Masters Study 11	.558		
CT in Masters Study 2	.549		
CT in Masters Study 1			
CT in Masters Study 25			
CT in Masters Study 5		.792	
CT in Masters Study 4		.784	
CT in Masters Study 18		.659	
CT in Masters Study 16		.590	
CT in Masters Study 7		.574	
CT in Masters Study 9			
CT in Masters Study 21			
CT in Masters Study 10			
CT in Masters Study 12			
CT in Masters Study 6			

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.

Appendix 14 – Critical Thinking Definitions from Questionnaire – Themes, Coding Structure & Memos

Name	Memo Link
CT Concept	This covers all of the sub-nodes and groups all the data from the open-text survey question – 'In your own words, what does critical thinking mean to you?'
Broad (Macro) - Criticality	This theme addresses those definitions which show a broad understanding of the conception, utility and application of critical thinking – beyond skills and toward social, world view and impact. - Criticality aims to capture definitions which mention action or application in line with Barnett's view which can change/impact the world/society etc.
Narrow (Micro) - For study or research - Think independently - Two-sides	This theme captures the definitions which are narrow in scope in their view and understanding of critical thinking – includes vague conceptualisations and those focussing on skills, analysis et. - Definitions which isolate CT as only purposeful for HE study or research - Those views which focus on independent thought as CT - Those definitions which emphasise CT as weighing up two-sides in a argument, topic, claim etc,
Analysis	Covers definitions (and parts of definitions) focussing on analysis and evaluation of topics, data, information etc. to record the extent to which analysis frames views of CT.
Assessing Truth-Know-Arguments	Covers definitions (and parts of definitions) focussing on knowledge, truth and arguments where CT is seen as assessing or questioning or challenging these.
Building Arguments	Captures definitions (and parts of definitions) mentioning the use or purpose of CT in building arguments – for various purposes.
Creating or offering solutions	Identifies definitions (and parts of definitions) highlighting the use of CT to offer solutions to problems, new ideas or to create new offerings, knowledge, approaches etc.
Evidence-Sources	Captures definitions (and parts of definitions) that address the use of, interrogation of evidence and sources of data/information/evidence.
Misconception - CT as Arguing - CT as Critique	This code records misconceptions around the definition, meaning and purpose of CT either in full or part definitions. - Codes views that see CT as a means, method or incentive to argue or argumentation. - Codes views seeing CT as a negative concept, as critique only.
Questioning	Code captures definitions (and parts of definitions) that outline the role of questioning (sources, wisdom, status quo, information etc,) within CT or key part of it.
Reflection	Identifies captures definitions (and parts of definitions) that view reflection as a part or focus, or element of CT – any form of reflection or mention of it as constituent of CT.

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