

SCHOOL OF HISTORIES, LANGUAGES AND CULTURES

UNIVERSITY OF LIVERPOOL

**POSTGRADUATE WRITING ASSESSMENTS: A TASK-BASED ANALYSIS
FOR UNDERSTANDING POSTGRADUATE STUDENTS' ACADEMIC
WRITING NEEDS**

Thesis submitted in accordance with the requirements of the University of
Liverpool for the degree of Doctor of Education by Layla Nichole Shelmerdine

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Abstract

This study researched the writing needs of postgraduate (PG) students at an English medium, Sino-British University in China. This warrants research attention for several reasons. Firstly, while the population of PG English as a second language (L2) students continues to increase (Altbach & Knight, 2007; British Council 2014; HESA, 2015), many struggle with English language related problems (Barthel, 2008; Bayliss & Ingram, 2006; Bergey, et. al, 2018; Schoepp, 2018; Yen & Kuzma, 2009). Secondly, writing is often the principle mode of assessment in higher education (Goodfellow, 2006, p. 481), and although writing tasks in PG degree programmes are assessed, these tasks are rarely explicitly taught in degree specific courses (Goldsmith & Willey, 2016). This situation has resulted in a growing number of English for Academic Purposes (EAP) courses (e.g. Melles et al., 2005) and other writing support mechanisms at English medium institutions (EMIs) (Fenton-Smith & Humphreys, 2015); however, these support mechanisms are not always appropriate for students' degree specific needs (e.g. Lax, 2002; Ma, 2018).

Within this context, the overall purpose of this study was to identify PG students' writing needs in order to inform improvements to writing support mechanisms (e.g. PG EAP courses). The students' writing needs were considered by taking into account both the importance of writing tasks and student perceptions in terms of their perceived understanding of these writing tasks (i.e. self-efficacy) and of their perceptions of the current writing support mechanisms. This was achieved by using a sequential mixed methods approach where data was collected from a content analysis of PG writing task sheets to inform the development a PG student questionnaire used to obtain their perceptions. These two sets of data (the content analysis and questionnaire) were triangulated to allow input from multiple stakeholders (i.e. academic lecturers and PG students).

Previous research into students' writing needs have also used a content analysis of writing task sheets (e.g. Cho, 2014; Dunworth, 2008). However, this study has built upon previous

research in three important ways. Firstly, the content analysis determined writing task type importance more thoroughly by taking into account multiple variables (*word count, value and occurrence*). Secondly, this was the first study to explore writing needs for all PG programmes at a single international university, demonstrating how writing needs can differ *across* various programmes. Finally, this was the first study to triangulate student perceptions with writing importance in order to provide new insights into PG students' writing needs.

The Sino-British University where the study took place offers a single PG EAP course. However, the results show that students from different PG degree programmes have very different writing requirements. Given these widely varying writing needs, if possible (i.e. the resources allow it), the findings suggest the University should provide support via the PG EAP course for individual PG degree programmes. An alternative is to increase the Writing Centre's workshop provision, providing more degree specific workshops. However, if the University continues its current practice of a single PG English EAP course, then the *overall* most important writing task types identified by this study should be covered.

This research will be of particular interest to institutions with a large L2 English student body and the wider research community with an interest in needs analyses. It is suggested that other institutions perform a similar content analysis to determine writing importance and consider taking into account students' perceptions to inform their own writing support. However, regarding student perceptions, this study was only able to differentiate the students' writing needs for a limited number of programmes. Accordingly, recommendations for future research which may further illuminate writing needs are also provided.

The inspiration for this study was my own experience teaching PG EAP and the lack of research of degree specific writing. As the international PG student population continues to increase, it is important that teachers, academic lecturers and universities are prepared to support these students on multiple fronts and I hope this thesis can contribute to that growing body of research.

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Chapter 1. Introduction

One of the effects of the internationalization of higher education is the increase in international postgraduate (PG) students (British Council, 2014). The vast majority of these students are L2 learners (English as a Second Language) and are studying at English medium institutions (EMI) that are not in their home country (Altbach & Knight, 2007; British Council 2014; HESA, 2015). EMIs are institutions where English is the primary language of instruction. Additionally, a growing number of these students are also studying at transnational EMIs (Altbach, 2006; Dearden, 2014; HESA, 2015), which are partnerships between a local and 'foreign' university (Bennett et al., 2010). Indeed, at the transnational, English medium Sino-British University where this study took place, from the 2014-15 to the 2016-17 academic year the PG student body grew from 120 to 312 students; a 151% increase (Sino-British University Registry Office, 2017). However, although PG students must meet the English language entry requirements for their university of choice (e.g. IELTS, TOEFL, etc.), when they enter university many still struggle with English language related issues (Barthel, 2008; Bayliss & Ingram, 2006; Bergey, et. al, 2018; Schoepp, 2018; Yen & Kuzma, 2009). Consequently, many in higher education research argue that supporting the increasing international PG student population, particularly in terms of English language, should become an integral function of higher education institutions (Briguglio & Watson, 2014).

As a teacher at the Sino-British University, I was tasked with designing the curriculum for and teaching on a PG English for Academic Purposes (EAP) course. However, building an appropriate PG EAP curriculum for students proved difficult, mainly, because there was little specific information on what writing tasks students were required to complete in their PG degree programmes. Additionally, many students complained that the PG EAP course, along with other support mechanisms, such as the University's Writing Centre, did not provide degree programme-specific writing support (from the researcher's own experience analyzing student feedback while module convenor of the PG EAP course, e.g. via module questionnaires).

For any support mechanism or service to be effective for PG students, the curriculum and materials for these should include information on current writing assessments (Flowerdew & Peacock, 2001). Indeed, writing assessments are the most common form of assessments (Lea & Street, 2006) and the successful completion of writing assessments demonstrates students' mastery of skills fundamental for success at the postgraduate level. Additionally, assessment can "...define what students regard as important" (Brown & Knight, 2012, p.14) and are a fundamental 'driver' of student learning (Schwartz & Webb, 2002). However, the studies that have investigated PG discipline or degree specific writing task types were limited in the scope of PG degrees or disciplines covered. This limitation was surprising considering that many international PG students have little to no previous exposure or understanding of their discipline's or degree programme's writing requirements (Schmitt, 2005; Zhao & Yu, 2015). The impetus for this study, therefore, relates to my positionality (Maxwell, 2007) as a PG EAP tutor and course developer.

1.1 Positioning of the Thesis

The following section explains the position of the thesis in the research canon of both international higher education research and EAP writing research. Altbach (2007) defines the internationalization of education as "...the specific policies and programmes undertaken by governments, academic systems and institutions, and even individual departments to support students or faculty exchanges, encourage collaborative research overseas, set up joint teaching programmes in other countries or a myriad of other initiatives" (p. 123). One important consequence of the internationalization of higher education is the solidification of English as the *lingua franca* of higher education (Altbach, 2007). It is not surprising therefore, that there has been a concomitant growth in the number of universities offering both undergraduate and postgraduate EAP courses (e.g. Melles, Millar, Morton & Fegan, 2005). Therefore, this thesis is relevant to research in both international higher education and EAP.

1.1.1 Positioning of the Thesis in Higher Education Research

Recently, there has been growing interest in PG support as higher education institutions seek to support the increasing in the number of postgraduates studying internationally and at EMIs in their home countries (Altbach, 2007; Dearden, 2014; HESA, 2015). This could be because PG degrees and certificates are most affected by the ‘rise of English as the main language of scientific communication’ and the ‘internationalization of curriculums’ (Altbach, Reisberg and Rumbley, 2009, p. 18).

This has led to an increasing interest and emphasis on English language issues at the tertiary level in higher education literature (Macaro, et al., 2018); specifically, supporting the increasing number of international PG students, particularly in terms of English language. Briguglio and Watson (2014) argue this should become an integral function of higher education institutions. Here, EAP research can contribute to higher education research as the aim EAP is to “... offer systematic, locally managed, solution-oriented approaches that address the pervasive and endemic challenges posed by academic study to a diverse student body by focusing on student needs and discipline-specific communication skills” (Hyland, 2001, p. 9).

In terms of where to specifically position my research in higher education, I referred to Bedenlier, Kondakci, and Zawacki-Richter’s (2018) meta-analysis of two decades of research in international higher education. They highlight several clear divisions within the research canon. My thesis falls within their “consequences of internationalization: student needs and support structures” (p. 122) division of higher education research as I sought to understand PG students’ degree specific writing needs and use this information to suggest improvements to support structures.

1.1.2 Positioning in EAP Research

Hyland and Hamp-Lyon (2002) note that the current state of EAP research focuses on questions of relevance and feasibility in a changing international higher education environment. Specifically, how can EAP writing instructions be both relevant to a multitude of distinct degree programmes, while simultaneously producing an EAP curriculum feasibly applicable to students from a variety of degree programmes (ibid, p. 7). Within the EAP research cannon, this thesis seeks to contribute to understanding these issues; particularly, for PG writing support. Therefore, it is important to discuss the current methodologies employed in teaching writing in an international tertiary context; specifically, the intellectual/rhetorical approach, the social/genre approach and the academic literacies approach. Although the academic literacies approach is currently more theoretical research than applicable pedagogy, it has gained some traction in the UK (Wingate & Tribble, 2012), and it offers important criticisms of the other two approaches.

1.1.2.1 Intellectual/Rhetorical Approach

Within the intellectual/rhetorical approach (predominate in US tertiary English language education) students' writing needs are addressed in terms of the rhetorical modes of written text, and organization at the paragraph and discourse level (John, 1997 cited in Tribble, 2009, p. 403). Jenkins (2013) defines the intellectual/rhetorical approach as 'generic, that is, not discipline oriented' (p. 45). Similarly, Tribble (2009) states that the intellectual/rhetorical approach does not cater to specific disciplines and instead students are presented with 'generalisable' patterns of common rhetorical patterns and discourse (e.g. essay introductions are structured from general to specific). However, as students begin to recognize distinct discourse patterns, they can then apply this knowledge to their own discipline or subject area. As a result, this approach can address the writing needs of large and diverse groups of students (Tribble, 2009, p. 402).

A drawback of this approach is students might consider the generalized examples as 'distant from their immediate needs or interested' (Tribble, 2009). Indeed, the introduction to the

Literature Review chapter (2.1), highlights how some PG students perceive the usefulness of an EAP course as directly correlated to the amount of discipline or degree specific writing taught (e.g. Chahkandi, 2014; Fenton-Smith & Humphreys, 2015; Ma, 2018).

1.1.2.2 Social Genre Approach

The social/genre approach (Tribble, 2009) recognizes ‘... the linguistic requirements of the different academic disciplines’ (Jenkins, 2013, p.46), and is predominate in UK tertiary EAP courses (Tribble, 2009). Swales (1990), whose seminal work on genre-based approaches laid the foundation for the social/genre approach, states that the end goal of a genre based approach is ‘academic communicative competence’ (p. 9). However, in contrast to the intellectual/rhetorical approach, within a genre based approach communicative competence is manifested in understanding the ‘textual features’ (e.g. Hyland, 2004) for a specific ‘discourse community’ (Flowerdew, 2015, p. 103). For instance, students might study the forms of text required for a business report. In summary, the social/genre approach teaches students to produce writing that is a distinct genre, for specific discourse communities, and this production is considered a ‘task’ (Flowerdew, 2015, p. 103).

Perhaps because of its focus on different discourse communities and academic disciplines, the social/genre approach acknowledges that when designing an EAP writing or other support course, input from experts from the disciplinary community (or degree programme) is necessary (Tribble, 2015, p. 442). Indeed, this thesis relied heavily on academic lecturers agreeing to share their assessment documents. One possible drawback is the social/genre approach might only be relevant to smaller groups of learners.

1.1.2.3 Academic literacies approach

Academic Literacies is another approach to writing instruction, where writing is understood as a social practice that can ‘vary with context, culture, and genre’ (Lea & Street, 2007). Students are asked to:

“switch their writing styles and genres between one setting and another, to deploy a repertoire of literacy practices appropriate to each setting, and to handle the social meanings and identities that each evokes” (Lea & Street, 2010, p. 368).

For instance, a student’s understanding of what constitutes a ‘business report’ could adapt and change based on i) the university’s business department where the genre is taught and practiced; ii) the larger business culture of the community outside the university setting; or iii) a specific company within that same community where a business report might be produced.

Academic literacies stand in contrast to both methods expounded above (1.1.2.1 and 1.1.2.2) for two important reasons. Firstly, the proponents of this method are highly critical of the ‘focus on discipline-specific texts’ in EAP (Lillis & Scott, 2007, p. 45), or ‘academic socialization’ (Lea & Street, 2006). Secondly, Lea and Street (2006) argue writing should not be taught as a ‘study skills’ completely divorced from disciplines-specific writing (p. 10). However, Tribble and Wingate (2012) note that this method, though well researched, has not made a significant impact on writing pedagogy. Additionally, although this approach offers valid criticism of the methods discussed above, it offers little in the way of actionable alternatives (Tribble & Wingate, 2012, p. 482).

1.1.3 Summary

In summary, as previously discussed (see section 1.0), my own experience of the weak writing support mechanisms for PG students at the Sino-British University led me to position my research within higher education research in a pragmatic way (Morgan, 2007). Specifically, the thesis does not focus on any one writing teaching methodology; instead it addresses how the language support mechanisms (e.g. PG EAP) could operate better within my current context’s (i.e. the Sino-British University Language Centre) approach to EAP teaching. At the British-Sino university where the study takes place, the Language Centre’s predominant approach to EAP teaching is rooted in the social/genre approach (Tribble, 2009) as discussed

in section 1.1.2.2 above. Following on from the studies reviewed in the literature review (see chapter 3), the thesis achieves this objective by using a task-based approach (e.g. Dunworth, 2008) to identify the PG students' writing needs. Finally, I hope this research helps EAP teachers better understand what students are writing in their PG degree programme courses, thereby improving EAP writing instruction, while also contributing to higher education research by helping to improve the quality of education for international postgraduates.

1.2 Purpose of the study

This study has investigated the writing needs of PG students studying in an international English medium environment at a Sino-British University in China. The overall purpose of this study is to identify PG students' writing needs and demonstrate how this information could be used to make recommendations for PG writing support mechanisms (e.g. PG EAP courses). As discussed in section 1.1, the scope of this study concerns how to identify writing needs, and how these needs could be better met within the Language Centre's social/genre approach to teaching. To achieve this purpose, the study has used a sequential mixed methods approach. First, data was collected from instructional documents (specifically writing task sheets created by academic lecturers who taught the PG students in the study) from all PG programmes at the University. This data was analyzed to determine the importance of writing task types in terms of their *word count*, *value* and *occurrence*. This analysis helped inform the creation of another method; specifically, a student questionnaire. The questionnaire was used to collect data on PG students' perceptions of their understanding of important writing task types, and their perceptions of the usefulness of the writing support mechanisms (primarily a PG EAP course and the University's Writing Centre). These data sets (the content analysis and questionnaire data) were triangulated to allow input from multiple stakeholders (i.e. academic lecturers and PG students). In doing so, this study has investigated how data taken from multiple sources can offer new insights into PG students' writing needs. Writing needs are explored *overall* (i.e. the most important writing needs when considering all PG programmes); however, in this study, there is also a strong

focus on exploring the writing needs individual to PG each programme. The processes and procedures used for the data collection and analysis are covered in depth in the Methodology chapter. This research will be of particular interest to institutions with a large L2 English student body and the wider research community with an interest in needs analyses.

This study will show that some effective proposed changes to support mechanisms could derive from data taken solely from academic lecturers (via writing task sheets). However, important information for decision making is missed if student derived data (e.g. via a student questionnaire) is not also incorporated into a writing needs analysis. The importance of using multiple variables (*word count, value and occurrence*) to determine writing importance is also emphasized.

1.3 Outline of the thesis

The thesis is outlined as follows. Definitions for key terminology are presented to provide clarity for the research discussed in the Literature Review. The Literature Review chapter provides a detailed review of studies that have investigated the writing task types required for PG degree level programmes, and a summary of the significant aspects is presented. After introducing the study's research questions, the Methodology chapter explains the methodological approach and justifies the sampling procedures. Additionally, the Methodology details both the data collection and data analysis processes, and the ethical considerations. The Results and Analysis chapter describes the findings from the study. The Discussion chapter discusses the relevant findings and their implications in answering the research questions. The final chapter presents conclusions drawn from the study, as well as the limitations and suggestions for future research.

1.4 Definitions

In the studies reviewed in the Literature Review chapter, multiple terms are utilized to refer to the same phenomenon. Therefore, for consistency and clarity, the following definitions are used throughout the thesis when referring to a writing assessment.

- **Task:** Task refers to an assignment in which a student is required to produce a written response. In the task-based studies reviewed in the Literature Review chapter they have been referred to as *writing tasks* (e.g. Horowitz, 1989; Hale, et al., 1996; Zhu, 2004; Moore & Morton, 2005; Cooper & Bikowski 2007; Cho, 2014; Shi & Dong, 2015), *tasks* (e.g. Braine, 1989; Dunworth, 2008; Graves, Hyland & Samuels, 2010), or *types of writing assignments* (e.g. Canseco & Byrd, 1989).
- **Task types:** Task type is the name assigned to a specific writing task. Essentially the name is assigned to the writing task utilizing whatever method the author deemed appropriate for their research (e.g. genre, rhetorical or discourse analysis). In the Literature Review chapter, task type has been referred to as *task categories* (e.g. Horowitz, 1986; Braine 1989), *types of writing assignments* (Canseco & Byrd, 1989; Hale, et al., 1996), *task* (Cho, 2014; Moore & Morton, 2005; Zhu, 2004), *categories of task* (Cooper & Bikowski, 2007; Dunworth, 2008), *text-type or genre categories* (e.g. Graves, Hyland & Samuels, 2010), and *task type* (Shi & Dong, 2015).
- **Academic lecturer:** In higher education literature, individuals who teach courses for graduate or postgraduate courses are referred to with a variety of terms (e.g. lecturer, academic, teacher, professor, tutor). For clarity and consistency in this thesis, these individuals are referred to as *academic lecturers*.
- **Task sheets:** A task sheet is a document created by an academic lecturer that provides instruction on how to complete the writing task to certain specifications (i.e. *task type*). In the literature these task sheets are sometimes termed *handouts* (Zhu, 2004), or *description of assignment* (Shi & Dong, 2015).
- **Discipline specific writing:** In the literature review, what constitutes a *discipline* varies by study. For instance, some studies in the Literature Review group task sheets by *discipline* such as Science and Humanities (e.g. Moore & Morton, 2005). Other studies have used less parsimony, defining *discipline* as single academic subject, i.e. English department or Business department (e.g. Braine, 1989). The term *discipline* is also used when comparing UG to PG writing tasks, and to distinguish PG EAP writing tasks

from academic courses. Therefore, for clarity in the Literature Review, *discipline* will be used in studies where tasks are analyzed by field of study (e.g. Humanities, Social Science); *department* will refer to smaller divisions (e.g. Business department) of a *discipline* (e.g. Humanities). Finally, *degree* is used in studies where tasks are divided or studied by individual degree programmes (e.g. MA TESOL) that could be grouped into departments.

Chapter 2. Literature Review

2.1 Introduction

As noted in the previous chapter, the purpose of this study is to research PG students' writing needs, especially their degree specific writing. Recent studies have illustrated that English language support course teachers, PG academic lecturers and PG students agree there is a need for discipline-specific or degree specific writing support. For instance, Lax (2002) reviewed the development of a writing support course for an engineering department in Hong Kong. The findings demonstrated that the impetus for the course was academic lecturers' observation that PG students needed writing practice specific to engineering. Furthermore, in Schulze and Lemmer's (2017) study, academic lecturers argued that PG students need to engage with the 'core competencies' of their discipline, and, therefore, students need discipline-specific writing instruction. Although writing support was available where both of these studies took place (an EAP course and writing workshop, respectively), it was concluded that these did not address discipline-specific writing; they only taught what Lax (2012) termed 'general EAP' (i.e. academic writing not specific to any discipline or degree programme).

Research has also illustrated that at EMIs, PG students', academic lecturers' and support course teachers' perceived usefulness of writing support programmes is related to how much PG discipline or degree specific writing is taught. For instance, Fenton-Smith and Humphreys (2015) surveyed English language support teachers (e.g. EAP and English as an additional language teachers) concerning academic writing support for international PG students in Australia and the UK. They concluded one of the best support mechanisms is discipline-specific writing workshops (Fenton-Smith & Humphreys, 2015). Conversely, Chahkandi's (2014) needs analysis of MA TESOL students' writing needs indicated that, overall, PG students' did not think their writing support course provided adequate degree specific writing instruction or practice (p. 268).

This could be a result of a lack of explicit instruction of PG writing tasks in students' degree courses (Goldsmith & Willey, 2016) and/or rooted in the assumption that PG students already have the knowledge necessary for writing at the PG level (Odena & Burgess, 2015). Indeed, Goldsmith and Willey's (2016) study revealed that academic lecturers believe that they should not have to teach writing. As a result, many universities have developed PG EAP courses to address PG writing instruction (e.g. Lax, 2002; Melles, et al., 2005; Terraschke & Wahid, 2011). However, although EAP teachers specialize in teaching English within an academic context, they may not have specialized knowledge of their PG students' degree programme(s) (Hyland, 2005). For instance, Ma's (2018) study demonstrated that although the students were generally positive about their PG EAP course, criticism originated from what students saw as EAP teachers' lack of degree specific knowledge of writing assessments.

There is, however, not always agreement between the stakeholders involved concerning PG students' discipline or degree specific writing needs. For instance, both Dehnad, et al. (2010) and Chahkandi (2014) found a discrepancy between what students reported were their discipline-specific writing needs, and what the writing support course syllabus indicated was covered in class. Dehnad, et al.'s (2014) study also illuminated a difference between what teachers of PG writing support programmes and PG students state are students' needs in terms of discipline-specific writing. Moreover, as Al Hashemi, Al Subaeie and Shukri's (2017) study illustrated, when writing tasks are identified, there is not always agreement between academic lecturers and PG students concerning what writing task types and skills should be prioritized in terms of explicit discipline or degree specific writing instruction. Finally, as previously discussed (Introduction chapter, section 1.1), the social/genre approach to writing instruction in the UK is distinctive from the intellectual/rhetorical approach prominent in North American EAP, which could impact degree programme writing, especially in a PG EAP writing course (Tribble, 2009; 2015).

To conclude, this section has demonstrated that discipline or degree specific writing is important for PG students and has highlighted the importance of identifying PG writing needs; specifically, in terms of discipline or degree specific task types. However, the studies presented above illustrate that there can be differences in understanding and priorities between writing support course teachers, PG students and academic lecturers when identifying PG students' writing needs. Therefore, it is important to consider a more objective means of identifying PG students' discipline or degree specific writing task types. It is equally important, after identifying discipline specific writing task types, to determine their importance for inclusion in a writing support curriculum.

Therefore, the Literature Review chapter focuses on the methodological approaches employed by previous studies to both identify and determine the importance of PG task types for inclusion in writing support mechanisms. This chapter also highlights the limitations of these approaches. A review of these studies will demonstrate that the method used to determine task type importance (e.g. *value*, *occurrence*, *word count*, or students' self-reported understanding) impacts which task types are recommended for inclusion in a PG support course.

2.2 Review of relevant literature

This chapter reviews studies that have focused on, or included a focus on, PG students' discipline or degree specific writing tasks. These studies are viewed through the lens of a pragmatic paradigm (see Creswell, 2003; 2013; 2014). Within this paradigm, the focus is on the best way to answer the research questions as opposed to using methods considered appropriate within the confines of any particular paradigm (Creswell, 2014). Therefore, although this chapter reviews the purpose and context of each study, the focus is predominately on evaluating the methods, limitations, and results. As discussed in the previous section, there is a strong focus on the methods used to identify task types and how their importance has been determined. This is important because the choice of method may affect the outcome (e.g. suggested improvements to writing support mechanisms). The

synthesis section (2.5) at the end of this chapter highlights gaps in the current research, and briefly explains how the current study has used a pragmatic, mixed-methods approach to address the methodological issues highlighted in the studies reviewed here.

In terms of methodological approach, studies reviewed here fall into one of two groups: *needs analyses* and *task-based analyses*. These studies are differentiated based on the methodological approaches taken.

In the ESP, ESOL and EAP research literature, needs analyses identified writing tasks from ‘domain experts’ (Chaudron, et al., 2005; Evans, 2013; Huh, 2006; Long, 2005; Long, 2015; Martin & Adrada-Rafeal, 2017; Serafini & Torres, 2015) and postgraduate students. ‘Domain experts’ (Long 2005; Serafini & Torres, 2015) are individuals with experience or expertise in a particular field or discipline. In the needs analyses reviewed below, domain experts are identified and questioned to identify the writing tasks that students need to engage in when participating in a particular field or discipline (e.g. Chaudron, et al. 2005; Evans, 2013; Huh, 2006; Oliver, et al., 2014; Martin & Adrada-Rafael, 2017; Serafini & Torres, 2015).

The PG writing needs analyses section (2.3) includes studies that utilized self-reported data from questionnaires and/or interviews to identify and prioritize PG writing task types for the development or improvement of PG writing support (e.g. Cai, 2017; Chahkandi, 2014; Dehnad, et al., 2014). The second group, termed task-based studies (section 2.4), analyzed writing assessment task sheets and syllabi to identify writing task types (e.g. Braine, 1989; Canseco & Byrd, 1989; Cho, 2014; Hale et al., 1996; Horowitz, 1986; Moore & Morton, 2005; Shi & Dong, 2015; Zhu, 2004). The review of these studies will illustrate the limitations of relying solely on methods that collect self-reported data (see Silverman, 2006).

The Literature Review chapter will illustrate how these task-based studies determined the importance of discipline and degree specific writing task types in terms of *occurrence*, *value* (i.e. grade) and *word count* (as stated on task sheets and syllabi). This is in contrast to the *needs analyses* studies which relied mainly on data derived from students and/or teachers to

determine writing task type importance. Although many of the task-based studies have the methodological goal of overcoming the limitations of self-reported data, the Literature Review chapter also highlights issues with a solely task-based approach.

Because the goal of both the needs analysis and task based studies was understanding PG students' writing needs to inform writing support mechanisms, they often are rooted in research for EAP. However, as discussed in the Introduction chapter (section 1.1), understanding and supporting international PG students falls within the purview of international higher education research and should be considered in that context.

2.3 Writing needs analysis studies

This section reviews writing needs analysis studies, specifically those that utilized self-reported data from questionnaires and/or interviews, with postgraduate students and/or academic lecturers, to identify and evaluate the importance of writing task types. The first section (2.3.1) evaluates a study where the data was only collected from PG students. The subsequent section (2.3.2) evaluates studies where data was collected from both PG students and academic lecturers. The final section (2.3.3), summarizes the key findings and limitations in the context of the wider Literature Review chapter.

2.3.1 Writing needs analysis: PG students' perceptions

Cai (2017) conducted a needs analysis for the development of a PG EAP course at an EMI in Hong Kong. Utilizing a quantitative questionnaire, PG students were asked to prioritize the task types by perceived importance. *Research papers* and *reports* ranked highest. A subsequent focus group with a small segment of students who took the questionnaire indicated that *research papers* were the most preferred task type. This could be because they were the most "...widely assessed text type for [students] graduate studies" (p. 132).

However, the task types choices provided in the questionnaire were based on another questionnaire developed for separate study. Therefore, some task types might not have been

relevant to Cai's (2017) context. Conversely, the questionnaire could have excluded other relevant task types. Additionally, the PG students were only asked one general question about their understanding of task types, but not about their understanding of specific task types (e.g. *essays, reports*). Therefore, it is not possible to tell if different task types were understood differently.

Furthermore, the author notes that for PG EAP course development, a limitation was the small sample size of only 50 PG students (a small sample of the degree programme). Additionally, what task types and skills academic lecturers consider important for PG students could be different from those that students perceive as important. As previously discussed (see section 2.1), stakeholders do not always agree on writing needs (Al Hashemi, Al Subaeie & Shukri, 2017; Chahkandi, 2014; Dehnad, et al., 2010; Dehnad, et al., 2014). This could lead to a disconnect between what academic lecturers assign, and where students and writing support courses focus their attention.

2.3.2 Writing needs analysis: PG students' and academic lecturers' perceptions

While Cai's (2017) study only utilized data from students' perceptions (as discussed in the previous section), other recent needs analyses collected information on task type importance from both students and academic lecturers. The first two studies, Chahkandi (2014) and Dehnad, et al. (2014), asked PG students and academic lecturers to identify and then rank task types in terms of students' understanding and in terms of perceived importance to their context. Al Hashemi, Al Subaeie and Shukri's (2017) study was the only PG needs analysis to ask students and academic lecturers to report on the *occurrence* of each task type as a way to measure task type importance. These studies are discussed in detail below.

Chahkandi's (2014) study sought to identify PG students' writing needs in terms of task types and skills. Using interviews with current and former Applied Linguistics (AL) students from various international EMIs, a total of 11 task types (e.g. *theses*) were identified for a questionnaire. The questionnaire then asked PG students and academic lecturers to rank the

importance of each task type. Additionally, the questionnaire asked students to assess their own ability (e.g. self-efficacy), and also for academic lecturers to assess these students' ability, in writing different task types. The results of the two groups were then compared. There was agreement between academic lecturers and PG students on the importance of almost all task types¹. Additionally, of all the task types, students reported having the least ability to write *theses* and *term papers*; similarly, academic lecturers also ranked students' ability with these writing tasks as low.

Chahkandi's (2014) study has two important implications. First of all, it shows that PG students and academic lecturers are largely able to agree on students' writing ability. Moreover, it further emphasizes the need for discipline specific writing support. To that end, Chahkandi (2014) recommended that writing support should focus on important task types which are least understood by students. However, there are two main limitations of this study. Firstly, eliciting task types from academic lecturers and students relies on their accurate recall (Silverman, 2006). Therefore, the task types that fed into the questionnaire might not be comprehensive, nor accurate. Secondly, the author noted that the small sample size was another limitation of the study.

Similar to Chahkandi's (2014) study, Dehnad, et al. (2014) utilized a questionnaire developed from interviews. Specifically, the authors interviewed PG students and academic lecturers at an Iranian EMI medical college (Dehnad, 2014, p. 408). The questionnaire was subsequently given to another group of PG students from six different degree programmes, as well as five English language teachers, five Heads of departments and one government official. They were asked to rank the task types (e.g. *reports*) identified from the interviews by perceived importance at an educational level (i.e. tasks assigned in class) compared to an occupational setting (i.e. written tasks for employment). A number of differences were found between how the four groups perceived the usefulness of the task types.

¹ The only exception was the task type of 'emails'. Academic lecturers ranked *emails* to be of more value than PG students.

Dehnad, et al.'s (2014) findings are similar to Chahkandi's (2014) and add further weight to the need for discipline or degree specific writing support. However, this study has several limitations. Firstly, although the study was intended to inform the syllabus design for an English for specific purposes (ESP) course, the authors note this was not possible because the participant population was small. Secondly, the data from the six PG degree programmes was grouped together. However, it should not be assumed that all PG degree programmes have the same writing task types or prioritize those task types at the same level of importance. Finally, like Chahkandi's (2014) study, because the task types were identified from interviews, the accuracy of the task types could be called into question (Silverman, 2006). Therefore, as noted above, some task types relevant to the context of the study might not have been included.

The studies covered so far in this section determined writing importance by having the participants rank writing tasks. Of the needs analyses in the context of this Literature Review, Al Hashemi, Al Subaeie and Shukri's (2017) study was the only one to argue that the frequency of *occurrence* of a task type was indicative of writing importance. The authors investigated MA TESOL students' writing needs at an EMI in Saudi Arabia. A questionnaire was sent to academic lecturers and PG students. The first section asked these two groups to indicate the frequency of a pre-determined set of eight writing tasks (e.g. *long research papers, exams with essay questions*). The task type with the highest *occurrence* was *long research papers*, and the least *value* was *case studies* and *take-home exams*. Like Chahkandi (2014), the authors recommended a 'bridging course' be developed focusing on the task types and skills that both academic lecturers and PG students indicated were important to them.

There are several limitations to this study for understanding students' needs in terms of task types. Firstly, task types were taken from a previously developed questionnaire, so it is not clear how relevant these task types were to the PG students in the study. Additionally, the academic lecturers were not consulted about the appropriateness of the task types. Finally,

as this study only investigated MA TESOL, the findings might not be generalizable for writing support in other degree programmes.

2.3.3 Summary of writing needs analysis studies

The studies reviewed here took place at EMIs in countries where English is not the first language. This could be indicative of the need for a better understanding of PG writing needs in the international EMI, higher education context. Additionally, because of the different contexts and methods, a direct comparison of the results of these studies is not possible. However, it does indicate that different PG degree programmes often have different discipline and degree specific writings needs in terms of task types. The need to support a growing international student population indicates the need for similar research to cover multiple degree programmes. However, the studies reviewed above all focused on a single PG degree programme, with the exception of Dehnad et al. (2014).

Secondly, the studies reviewed here also illustrate possible different means to determine the importance of task types for inclusion in university writing support mechanisms. For instance, Al Hashemi, Al Subaeie and Shukri (2017) determined the importance of PG task types by frequency of *occurrence*. However, as the next section demonstrates, *occurrence* is not always indicative of how much a task type is *valued* in PG degree programmes. Furthermore, Chahkandi (2014) determined task type importance by how the task types were ranked by students and academic lecturers. However, both Dehnad, et al. (2010) and Chahkandi (2014) found a discrepancy between writing support course syllabi and what students reported were their discipline or degree specific writing needs, highlighting a potential drawback of relying solely on self-reported data.

Third, although eliciting task types has drawbacks, utilizing students' self-reported understanding, or self-efficacy, has been shown to be a reliable measure of ability (Pajares, 2003). Chahkandi (2014) was the only study to consider PG students' self-reported ability to write task types. His study demonstrated PG students and academic lecturers generally agree

on students' ability to write tasks relevant to their degree programme. Indeed, students' self-efficacy has been shown to be an accurate predictor of L2 English students' writing ability and success (Hetthong & Teo, 2013).

Finally, the needs analyses relied on either pre-supposed task types for the development of PG student questionnaires, or eliciting task types from domain experts (e.g. PG academic lecturers) for the development of student questionnaires. However, it has been highlighted in this section how asking students and/or academic lecturers to identify task types, via questionnaire or interviews, could provide biased or unreliable information. Serafini, Lake and Long (2015) argue that "[t]o identify valid tasks, consulting learners....is insufficient and unlikely to produce a reliable inventory of the tasks that are consistently required of them to function successfully on a daily basis in their target discourse domain" (p. 12). Indeed, eliciting task types from academic lecturers and students relies on their accurate recall (Silverman, 2006); therefore, utilizing task type information from interviews or questionnaires (e.g. Chahkandi, 2014; Dehnad, 2014) could exclude relevant task types, or include task types that are not relevant to student degree programmes.

The next section reviews task-based studies, highlighting how they have attempted to overcome some of the methodological shortcomings of the needs analyses studies reviewed above. Additionally, the task-based studies reviewed below illustrate different ways to determine the importance of PG discipline or degree specific writing task types. The determination of the writing importance informs improvements or the development of writing support mechanisms.

2.4 Task-based studies of writing need

The previous section examined writing needs analyses studies. This section now turns to task-based studies of student which relied mainly on the collection of task sheets. These studies are differentiated from the needs analyses above in two ways.

First, this approach avoids making *a priori* assumption about task types (Braine, 1989; Dunworth, 2008; Horowitz, 1986; Moore & Morton, 2005). Indeed, Horowitz's (1989) goal of 'authenticity' and to avoid presupposing tasks is a common motivation for task-based studies. For instance, Braine (1989) analyzed task sheets arguing that it was logical to "analyze assignments before determining writing tasks" (p.3). Additionally, Dunworth (2008) argued that any analysis of writing task types should use the task sheets the students encounter rather than a description of the tasks filtered through respondents (p.316).

The second reason was based on the information that syllabi and/or task sheets were seen to provide (Canseco & Byrd, 1989; Dunworth, 2008; Hale, et al., 1996; Zhu, 2004). For example, Canseco and Byrd (1989) analyzed syllabi arguing that for students, syllabi are a key source of information about writing assessments. Hale, et al. (1996) also argued that task sheets should be the focus of analysis because the information that task sheets provide allows the researchers to understand the difference between task types in the "...actual writing situation in which students find themselves" (p. 3). Furthermore, Graves, Hyland and Samuels (2010) argued that syllabi and tasks sheet are a principle mode for academic lecturers to communicate information about assignments to students (see Eberly, Newton, & Wiggin, 2001; Parks, Fix & Harris, 2003). Additionally, Zhu (2004) analyzed syllabi arguing this allowed for a 'systematic analysis of writing tasks' (p.114). Finally, Moore and Morton (2005) argued that task sheets provide information on the various requirements of university writing task types.

Finally, it could be argued this method, used to identify writing tasks, avoids two pitfalls of the needs analyses studies previously discussed (section 2.3). Firstly, it avoids the need to illicit, possibly inaccurate, task types from students and academic lecturers (e.g. Chahkandi, 2014; see Silverman, 2006).

This section is also largely organized by, and puts a strong emphasis on, how studies have identified and determined writing importance, as this ultimately affects what is recommended for EAP curricula and other writing support services; for example, the

suggested improvements to these services. This is important to discuss here because developing a methodology that informs improvements to support mechanisms was a main goal of the present study.

The studies reviewed below all utilized a qualitative content analysis (either inductive or deductive) to identify task types. A qualitative content analysis is an "... interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005, p.1278). The Literature Review chapter will demonstrate that, generally, there were two main methodological justifications for opting to utilize a task-based analysis.

Another important dichotomy in the task-based research is how the importance of writing task types is determined. For instance, some studies only considered the *occurrence* (i.e. the frequency) of different task types, while other studies also considered the *value* (i.e. grade) and *word count*. To better illustrate how these different considerations were applied and their different outcomes, older task-based studies are included. For instance, Horowitz (1986) simply recommended the University's ESL courses teach the tasks (and skills) he identified from the task sheets. However, Dunworth (2008) recommended that an EAP syllabus should prioritize the most frequent tasks weighted against the most relevant tasks, based on the overall grade. This stands in contrast to the majority of needs analysis studies (see section 2.3), that relied on students and/or academic lecturers to determine the importance of writing task types (e.g. Cai, 2017; Chankandi, 2014). Finally, there are only three task-based analyses that focused solely on PG students (e.g. Canseco & Byrd, 1989; Cho, 2014, Shi & Dong, 2015). Therefore, studies that analyzed UG task types, or PG and UG task types together (Horowitz, 1986; Moore & Morton, 2005; Zhu, 2004) are included to better illustrate the different means to determine task type importance, and the different implications for writing support course improvement and development.

This section reviews these task-based studies from two perspectives. First, studies that utilized a single measure for evaluating task type importance; specifically, the *occurrence* of

task types (*within* a single discipline or degree programme, or *across* multiple disciplines or degree programmes). Second, studies that used multiple measures, specifically *occurrence*, *value* (i.e. grade) and/or *word count* to evaluate task type importance. Additionally, in each section these studies are explored in terms of their: (i) purpose, (ii) context, (iii) methods and justification for methods, (iv) results and (v) limitations. The methods are of particular focus, particularly in terms of how they measured task type importance when making suggestions for writing support. The final section then frames these studies in the context of this study, exploring how a sequential mixed method approach can be utilized to better identify task types and highlight further considerations to determine task type importance.

2.4.1 Task-based studies: task type importance by occurrence

Horowitz's (1986) seminal task-based study was the first to collect and analyze task sheets to identify task types and skills. In terms of method, Horowitz (1986) justified his approach noting that previous studies that sought to understand which "skills were most vital and which tasks most common" (p. 448) used questionnaires for students and academic lecturers that *a priori* presupposed the task types. However, it could be argued that because qualitative content analyses are subjective, the same task sheets could reveal different task types to another researcher. Task-based analyses that attempted to overcome this issue are discussed in the next section.

Horowitz (1986) collected UG and PG task sheets from 17 departments (it is not clear which ones) at an American university. These task sheets were for any written, take home assignments. From these task sheets, Horowitz (1986) identified seven categories of task types (e.g. *annotated bibliography* and *case study*). Based on his findings, Horowitz (1986) recommended ESL students be assigned writing task types similar to the ones identified in his study to expose them to 'authentic' writing tasks. However, Horowitz (1986) noted that a limitation of his study was the low response rate from academic lecturers. Therefore, some task types might not have been identified. Additionally, he did not compare the task types between different degree programmes. As other studies reviewed here demonstrate, there

can be differences between task types assigned at the UG and PG levels, and between different degree programmes. Taken together, this could impact what task types are recommended for inclusion in writing support mechanisms.

In overcoming what he saw as a shortcoming of Horowitz's (1986) study, Braine (1989) only focused on a single department arguing the task types have similar discourse conventions, i.e. that "...each discipline is a separate discourse community" (p. 3). The goal was the development of a writing course for 'limited English-speaking students.' Therefore, the task sheets were collected from 12 UG degree programmes from the business department at a university in America; specifically, from programmes and courses that were popular with international students.

Additionally, whereas Horowitz (1986) simply recommended writing support courses include the task types he identified, Braine (1989) calculated how often a task type *occurred*. Based on their *occurrence*, Braine (1989) recommended that in a writing course certain task types be de-emphasized (e.g. *research papers*) and more emphasis put on other writing activities (e.g. *paraphrasing*). However, as other studies reviewed here will demonstrate, when determining the importance of task type, particularly for inclusion in a support curriculum, factors other than *occurrence* should be considered. Braine (1989) also noted that a limitation was the small number of courses included in the study. Finally, this study claims that the degree programmes chosen constitute a single discipline. If 'business discipline' were defined differently (i.e. include or exclude different degree programmes), this could impact the variety of task types identified and their *occurrence*.

Like Braine (1989), Canseco and Byrd (1989) argued that because writing requirements might differ *across* departments, the starting point should be a detailed study of a single 'discipline area' (p. 307). Theirs was the first task-based study to focus on PG tasks, arguing that PG students could not expect the same amount of ESL writing support as UG students. Syllabi were collected from six PG degree programmes (48 courses) from the Business department at an American university. Task types were identified as stated on the syllabi and then

simplified to a 'general' task type. For example, *final exam* and *written examination* were both included in the task type category of *exam*.

Whereas Braine (1989) only identified task types and calculated their *occurrence* in a single department (i.e. the total *occurrence* of a task type *across* all degree programmes in the department), Canseco and Byrd (1989) compared the *occurrence* of task types *within* and *across* degree programmes within a single PG department. Their study highlighted significant differences *across* degree programmes. For example, *case studies* occurred most frequently in the Business Administration degree programme but did not *occur* at all in the Marketing degree programme. This could have implications for the writing support for different PG degree programmes; specifically, how to cater for a department with degree programmes with diverse tasks in an ESL course. The authors also highlighted limitations with their study noting some syllabi offer limited information about tasks, and in some cases did not provide enough information to classify the task type.

Whereas Canseco and Byrd (1989) compared task type *occurrence* *within* and *across* degree programmes in a single department, Zhu (2004) compared the *occurrence* of tasks types between the UG and PG level. The goal of the study was to understand what writing task types and skills were required for 'business-related' degree programmes. Undergraduate and PG syllabi and task sheets were collected from the business department (from six degree programmes) from a university in America. To supplement the content analysis of the task sheets, interviews with six academic lecturers were also conducted.

After identifying task type, Zhu (2004) calculated the *occurrence* to determine the importance of task types. Zhu's (2004) findings indicate a difference between the frequency of task types at the UG and PG levels. *Case studies* were the most common task type *overall*, and for both UG and PG students. However, the most significant difference was *book reviews*, which *occurred* only 13 times at the UG level, but 43 times at the PG level. In terms of how his results apply to EAP, Zhu (2004) concluded there was a dichotomy between the task types taught in

EAP and those required in degree courses. However, this comparison did not seem to be based on any particular EAP curriculum.

There are several limitations to this study. First, the number of separate syllabi and task sheets was not made clear in the study, nor is it clear if every task sheet was supplemented with a corresponding syllabi. A further limitation was that only 'take-home' assignments were included but "...homework, exercises and problems sets were excluded as these did not seem to demand as much writing or the same type of writing as the other assignments" (p. 4). This exclusion could have eliminated some important task types from consideration. Additionally, only one academic lecturer from each department was interviewed meaning only task types that these academic lecturers assigned, or were familiar with, could be used to supplement the data. Zhu (2004) also highlighted a further pertinent limitation of his study. Unlike Braine (1989) and Canseco and Byrd (1989), Zhu (2004) argued that only analyzing task sheets from a single department at one university is a limitation because, he speculated, that courses and assignments might differ across universities.

With a slightly different focus from the studies above, Moore and Morton (2005) identified task types that students are required to use for both the IELTS exams and students' PG degree courses. Their goal was to make improvements to university pre-sessionals²; therefore, the study targeted degree programmes with a large number of international students. They collected both PG and UG task sheets from 28 degree programmes (from different departments) at two universities in Australia. Twenty publicly available IELTS Task 2 rubrics were also collected.

Moore and Morton (2005) identified task types by the name on the task sheets (i.e. if the task sheet said *business report*, the task was considered a *report*). The idea of utilizing the task name as stated on the task sheet could address issues highlighted in the needs analysis studies. As previously discussed (see section 2.3), many of the needs analysis studies

² Pre-sessionals are EAP or general English courses for students whose first language is not English and who have a conditional offer to study for a PG degree.

presupposed task type *a priori*. Consequently, when students were given a questionnaire with the task types listed (e.g. Cai, 2017), some task types might not have applied or have been relevant to all students, thereby affecting the results. Arguably, the names of tasks used on the task sheets are the ones students would be familiar with as they are the intended audience of those task sheets.

Moore and Morton (2005) identified 11 task types including *essays* and *case studies*. These task types were compared to task types on the IELTS documents. The results were grouped by discipline. *Essays occurred* most frequently overall, accounting for 60% of all tasks (p. 50) and *occurred* most frequently both in the Humanities and Social Science disciplines. The authors noted that the diversity of writing task types found in their study could be challenge for students, EAP teachers and support course developers. As a result, the authors recommended that IELTS preparation should be a separate course and not part of a pre-sessional course. Moore and Morton (2005) noted that a limitation of their study was that it only considered Task 2 of the IELTS writing tests.

Like Moore and Morton (2005), Cooper and Bikowski (2007) also grouped the results by discipline (e.g. Humanities and Science). However, Cooper and Bikowski (2007) focused solely on PG degree programmes. The goal of Cooper and Bikowski's (2007) study was to inform the design of graduate writing classes that prepare international students for writing tasks specific to their discipline. The authors analyzed syllabi from two PG disciplines (20 PG degree programmes) at a university in America. For those tasks that did not clearly fit into a category, the authors used follow up interviews with academic lecturers. However, it is not stated if an interview with an academic lecturer was possible for every task where the task type was unclear. If not, this could have impacted the task types identified.

Cooper and Bikowski's (2007) study determined task type importance by calculating the total *occurrence* of each task type *within* and *across* both discipline areas. *Library research papers occurred* most frequently *across* both disciplines; however, *book reviews occurred* 30 times (second highest) in the Social Science/Humanities discipline, but only five times in the

Science/Math/Engineering discipline. Additionally, the authors found statistically significant differences between the two disciplines for almost all task types. Cooper and Bikowski (2007) concluded their findings indicate that PG writing support courses should be divided by discipline. However, they also noted that this is not often feasible; therefore, it might be better to “...focus on those tasks that are most common across disciplines at the graduate level” (p. 218). However, subsequent studies, as discussed in the next section, demonstrate that *occurrence* is not the only way to determine task type importance.

Cooper and Bikowski (2007) also noted several limitations of their study. Firstly, the analysis of syllabi was predicated on the idea that academic lecturers consistently follow their course syllabi. Secondly, tasks do not always fit into ‘neat exclusive categories’ (p. 219) and some subjective judgment is involved in categorizing tasks into task types. Additionally, Cooper and Bikowski (2007) stated they achieved a “...relatively even spread of syllabi across departments” and from a minimum of three academic lecturers from each department (p. 212). However, as noted with other studies here, the inclusion or exclusion of certain task sheets could impact the type and the number of writing tasks identified.

2.4.2 Task-based studies: importance of task types by value, occurrence and/or word count

The previous section explored task-based studies that determined writing importance only by *occurrence*. This section is divided by the method task-based studies have used to determine writing importance using other means.

2.4.2.1 Task-based studies: value only

Nicolas and Annous (2013) identified the task type and the *value* of the task type (e.g. grade as a percentage of the overall course) arguing a task’s *value* ‘signaled’ its importance in a curriculum (p.8). Nicolas and Annous’ (2013) study investigated if and how the principles of Writing Across the Curriculum (WAC) and Writing in the Disciplines (WID) had been integrated into courses at an EMI in a ‘non-English speaking country’ (p.1). Specifically, the authors identified task types from an UG business department to determine if they differed

across degree programmes (e.g. Economics versus Accounting). The authors collected task sheets from five degree programmes. Similar to Moore and Morton (2005), Nicolas and Annous (2013) identified task types by the label assigned to each task by the academic lecturer in the syllabi.

Like Canseco and Byrd (1989), Nicolas and Annous' (2013) study demonstrated that task types can vary *across* degree programmes. For instance, *case study* was the only task type to *occur* in more than one degree programme; however, the authors did not calculate the total *occurrence* of each task type *by degree programme*. Nicolas and Annous' (2013) study did, however, calculate the *value* of task types *within* specific degree programmes. The results demonstrated different task types were *valued* differently. However, the authors only presented the *total value* for all task types in a specific course for a specific degree programme. For example, *essays, reports* and *research projects* were together worth 10% of the overall grade in one course in the Accounting degree programme. In a different Accounting degree course, *reports* were worth 30% of the overall course grade. Therefore, from this study it is not possible to ascertain if *individual* task types are *valued* differently *within* a degree programme. Perhaps because this study was centered around WAC, looking at the *value* of individual task types in different degree programmes was not pertinent.

2.4.2.2 Task-based studies: word count and occurrence

In contrast to Nicolas and Annous' study (2013) that only considered value, Hale, et al. (1996) utilized *word count* and *occurrence* to determine task type importance. The purpose of Hale, et al.'s (1996) study was to identify writing tasks types, skills necessary to complete the tasks and additional task requirements in order to inform the development of the TOEFL language proficiency test. Hale, et al. (1996) collected task sheets from five PG degree programmes and eight UG programmes from seven American and one Canadian university. These universities were chosen because, according to the authors, they had a high enrollment of international students. Additionally, within these universities, task sheets were collected

from courses with the highest enrollment of international students. In addition to collecting and analyzing task sheets, Hale, et al. (1996) utilized a quantitative questionnaire.

The authors compared task types *across* disciplines and found significant differences between Physical/Mathematical Sciences and Engineering, and Social Sciences and Humanities. However, the task types were not compared between the individual degree programmes. *Research papers* and *reports* were the most frequent task type *overall*, and Social Science and Humanities had longer assignments than Physical/Mathematics Science and Engineering. Finally, postgraduates had, on average, longer writing assignments than undergraduates. Based on their findings, Hale, et al. (1996) made several suggestions for possible revisions for the TOEFL test. For instance, the results demonstrated *essays* were the most common task type and short writing tasks of less than a page were the most common length. Taken together, the authors suggested integrating a shorter *essay* test in the TOEFL exam. These findings demonstrate that *word count* and *occurrence* could be complimentary considerations when making specific task type recommendations for writing support. However, Hale, et al. (1996) noted that a limitation of their study was that the identification and classification of task type requires some interpretation and inference on the part of the researchers.

In contrast to Annous and Nicolas (2013) and Hale, et. al (1996), the goal of Dunworth's (2008) study was focused on improving pre-tertiary EAP. She argued there was a paucity of information concerning the writing task types that students encounter in UG degree programmes. Dunworth (2008) collected task sheets³ from 32 'disciplinary areas'⁴, with high international student enrollment, at a university in Australia. Dunworth (2008) was the first to specifically state that she collected only compulsory, summatively assessed task sheets, arguing they motivate learning. This is an interesting contrast to Cooper and Bikowski (2007),

³ Dunworth (2008) did not limit her study to written task sheets. She also included speaking and listening task sheets.

⁴ This includes four disciplines (Humanities, Health Science, Engineering and Science and Business), but it is not clear how many degree programmes this includes.

who noted that a limitation of their study was that academic lecturers might not follow the syllabi and/or assign writing tasks spontaneously; therefore, some important writing tasks could have been excluded. Here, Dunworth (2008) is essentially prioritizing tasks before the analysis. However, it could be argued that writing tasks not included on a syllabus would most likely not be assessed.

Dunworth (2008) advocated what she termed a 'pragmatic approach.' This includes calculating the frequency of *occurrence* and also the *value* (i.e. grade) for task types *within*, and *across* departments to determine the importance of those task types for the EAP course. To that end, all degree programmes were stratified by department for analysis, i.e. Business, Engineering and Science, Health Sciences, and Humanities. The results showed a variation of task types and their *occurrence across* the four departments. For instance, the Business department had four times the number of *case studies* as Humanities. This lends evidence to the argument, demonstrated in other studies here, that different departments or degree programmes might require degree, department or discipline specific writing support. However, it is not clear if a complete set of task sheets were collected for each department. If not, this could affect the 'pragmatic calculus' of determining which task types an EAP course should focus on.

Dunworth (2008) also demonstrated why considering both the *value* and *occurrence* of a task type is important. For instance, although in most departments, the more a task type *occurred* the higher *value* it had, there were instances where this trend did not hold. For instance, a task type might *occur* only once or twice but count for the majority of the grade in a course or degree programme. For instance, *annotated bibliographies* occurred 20 times in the Business department (the 4th highest *occurrence* of any task type in the division) but only accounted for 1% of the grade. *Timed essays* occurred as often as *short answers*, but *short answers* were *valued* almost twice as much.

Dunworth (2008) noted a limitation of her approach was that certain task types could be prioritized at the expense of others, potentially depriving students of exposure to a range of writing task types. However, it could be argued that Dunworth's (2008) pragmatic recommendations for curriculum design are in the context of an EAP course so students would still be exposed to the various task types in their degree courses. This is, of course, not a guarantee that students would not need help with those 'deprioritized task types.'

Like Dunworth, Cho (2014) also used *occurrence* and *value* to determine task type importance. Additionally, Cho (2014) was also the first study to focus on a single PG degree programme (MA TESOL). Cho (2014) noted previous PG task-based studies had covered multiple departments and degree programmes, but no previous study identified all task types for an individual PG degree programme. The stated purpose of Cho's (2014) study was "...to suggest how EAP in TESOL programs can prepare students more effectively" (p.248). To that end, the author collected syllabi, totaling 148 assignments, from 14 different universities in the United States. Cho (2014) then utilized a content analysis supplemented with a questionnaire for academic lecturers.

Cho (2014) used the description of the tasks on the syllabus, defining task types with reference to the skills needed to complete those tasks (e.g. *synthesizing multiple sources, analyzing*) (e.g. Cooper & Bikowski, 2007). However, some syllabi were collected from academic lecturers who also completed a questionnaire designed to supplement information on the syllabi. Other syllabi were collected from university websites. As a consequence, having additional information (or less information) on some of the writing assignments in the syllabi could have affected how some task types were defined and subsequently categorized.

The results showed that the task type, *research paper*, occurred the most frequently, and was valued the highest (i.e. mean percentage of overall grade) in comparison to other task types in the MA TESOL degree programme. Cho (2014) compared MA TESOL degree programme task types to those found in 'Social Science, Humanities and Arts (SSHS)' from Cooper and Bikowski's (2007) study, concluding that the most frequently assigned task types in MA TESOL

were consistent with those in SSHS (only one task type was significantly different between the two groups). However, although the task type analysis scheme was developed from Cooper and Bikowski (2007), who developed theirs from Horowitz (1986) and Hale, et al. (1996), a comparison is tenuous because the categories of analysis were not completely the same between the two studies. Based on the findings, Cho (2014) recommended EAP courses for MA TESOL focus on the integration of reading and writing, a skill repeatedly identified in task types with the highest *occurrence*. Although Cho (2014) calculated the *value* of task types by individual class this did not factor into his recommendations, seemingly because the task types that *occurred* most frequently also had the highest *value*.

2.4.2.3 Task-based studies: value, occurrence and word count

Shi and Dong (2015) focused solely on PG degree programmes, analyzing task sheets and syllabi from 12 PG degree programmes from a university in Canada. The authors identified graduate writing tasks, both for the development of EAP programmes that specifically target PG students, and to further the body of research on graduate writing assignments.

To identify task type, Shi and Dong (2014) utilized the terms ‘frequently used’ by the academic lecturers in the description of the task types on the task sheets and/or syllabi. However, the authors did not define what constitutes ‘frequently’, nor do they make it clear how these terms were amalgamated into the distinctive categories of task type. Based on their analysis, Shi and Dong (2015) identified nine task types (e.g. *literature reviews* and *scholarly essays*). Additionally, the authors identified the *value* (i.e. final grade in the course) and the *word count* for each task.

The tasks were analyzed by discipline – Art and Social Science, and Applied Science and Science. The most common task type *across* the two disciplines (Arts and Social Science, Applied Science and Science together) was *scholarly essays* followed by *summary and response*. *Within* disciplines, *scholar essays* were the most frequently assigned task type in Arts and Social Science, and *literature reviews* were the most common in Applied Science and

Science. However, the *value* and *word count* were given by task type for an entire discipline, and not by task type in each individual degree programme. For instance, a *scholarly essay* ranged between 10% to 80% of the overall grade, and ranged between 600–4000 words per essay in Arts and Social Science (p. 134).

There are some limitations of this study. For instance, only task sheets from 12 PG degree programmes (two discipline areas) were analyzed. If task sheets from more (or fewer) degree programmes had been included in the study, then the task types identified, their *occurrence* and *value* could have been different. In turn, this could have impacted how writing importance was determined. Additionally, the comparison of task types between disciplines indicates there is a difference between common task types found in Education/Art, and Science/Medicine. This seemingly supports the idea, highlighted in other studies reviewed in this Literature Review (Braine, 1989; Canseco & Byrd, 1989; Cho, 2014; Cooper & Bikowski, 2007; Zhu, 2009), that different PG disciplines, departments and/or degree programmes have distinctive task types. However, because of the different analysis scheme between these studies, a direct comparison is not possible.

Additionally, whereas Dunworth (2008) demonstrated the utility of including *value* (i.e. as a task type could have a high *occurrence* in a degree programme but a low *value*), Shi and Dong (2015) demonstrated *word count* could also indicate importance. For instance, a task type with a high *value* that only *occurs* once in a degree programme, but has a low *word count*, could be prioritized lower in comparison to a task type with a high *value*, and high *word count*, but again only *occurs* once.

Based on their findings, Shi and Dong (2015) made recommendations for textbook development and for academic lecturers. They argued that task type categories could inform the development of writing textbooks, noting that few textbooks provide PG discipline specific writing practice (Tribble, 2009 cited in Shi & Dong, 2015). Shi and Dong (2015) also noted that information on task types *within* and *across* disciplines is utile for academic lecturers because it can impact how they label, define and describe task types on task sheets

or syllabi. Indeed, Gardner and Nesi (2013) note that understanding different task types can assist academic lecturers in explaining the requirements of individual task types to students. However, Shi and Dong (2015) noted one limitation of their study is that it was based on a small number of assignments from a single university. Previous studies have noted that courses and writing tasks could vary *by degree programme*.

2.4.3 Summary of task-based studies

Two important elements of the task-based studies reviewed here were (i) why and what disciplines, departments or degree programmes were included, and (ii) how they each proposed ways to prioritize the importance of those task types for writing support. These are summarized below.

2.4.3.1 Discipline, department or degree programme

The studies reviewed covered multiple departments or disciplines at a single university (e.g. Braine, 1986; Canseco & Byrd, 1989; Carson, 2001; Cooper & Bikowski, 2007; Dunworth, 2008; Horowitz, 1986; Shi & Dong, 2015), multiple degree programmes *across* multiple universities (Hale, et al., 1996; Moore & Morton, 2005), a single degree programme at a single university (Zhu, 2004), or a single degree programmes *across* multiple universities (Cho, 2014). However, no study covered all degree programmes at a single university.

Only three task-based analyses focused on PG degree programmes but were limited in scope. Canseco and Byrd (1989) focused on PG writing tasks arguing these tasks are different from UG writing tasks. However, Canseco and Byrd's (1989) study only included six degree programmes in one department at a single university because, they argued, writing task types could differ *across* disciplines. Cho (2014), seeming to agree with Canseco and Byrd (1989), argued that UG and PG tasks were different, and desired to develop an EAP course for a specific PG degree programme, i.e. MA TESOL. Therefore, Cho (2014) only analyzed writing tasks from MA TESOL degree programmes *across* multiple universities. Shi and Dong (2015)

focused solely on PG writing tasks stating there was a lack of knowledge on PG writing tasks *across* multiple disciplines, but they did not cover all PG degree programmes.

As will be demonstrated in the Methodology Chapter, the current study has overcome the above limitations as it covered summative writing tasks for all PG degree programmes at the British-Sino University where it took place.

2.4.3.2 Task sheets and syllabi

The studies reviewed above provide many justifications for the analysis of task sheets. Dunworth (2008) argued that any analysis of writing task types should use the task sheets the students encounter rather than a description of the tasks filtered through respondents (e.g. questionnaires or interviews) (p.316). Indeed, the choice to analyze task sheets (e.g. Braine, 1989; Dunworth, 2008; Hale, et al., 1996; Horowitz, 1986), syllabi (Canseco & Byrd, 1989) or both (e.g. Graves, Hyland & Samuels, 2010) seems to have been based on the authors' judgment as to where the most data about the writing task could be procured. Several recent studies on classroom syllabi illustrate that a large amount of information concerning various aspects of writing task sheets are detailed in course syllabi (e.g. Jones 2018; Parks & Harris, 2002).

The task-based studies reviewed here reveal that task sheets and syllabi contain a great deal of information about writing assignments: task types, skills required to complete the task, *word count, occurrence, value* (i.e. grade), purpose, time allowed, etc. These highlight what Dunworth (2008) notes are important 'practical demands' that support services and EAP course designers need to consider because students need to directly address these requirements (p. 321).

2.4.3.3 Determining writing importance

Finally, many studies recommended changes to their writing support mechanisms based on how writing importance was determined. For instance, Braine (1989) and Moore and Morton (2005) relied solely on *occurrence*. Al Hashemi, Al Subaeie and Shukri (2017) used *occurrence* as reported by students and academic lecturers. Chahkandi (2014) asked academic lecturers and students to prioritize students' writing needs in terms of task type. Annous and Nicolas (2013) only considered *value* (e.g. grade). Hale, et al. (1996) and Dunworth (2009) considered both *value* and *occurrence* when determining which writing task types to focus on in TOEFL and EAP courses respectively. Shi and Dong (2015) considered *value* and *word count*. Another category not considered, perhaps because of the different approach to identifying task type, was PG students' understanding of the task types identified, and how this could impact recommendations for writing support.

2.5 Synthesis of the literature and relevance to the current study

Two main types of study have been identified in the literature review: task-based studies and needs analyses. The task-based studies determined the importance of writing task types with 'pragmatic considerations' such as *value*, *occurrence* and *word count* (e.g. Shi & Dong, 2015), while the needs analyses identified writing importance by either, (i) asking students and/or academic lecturers to identify task types and then prioritize these task types (e.g. Cai, 2017); or (ii) or asking students to indicate their self-reported understanding of task types (i.e. self-efficacy, e.g. Chakhandi, 2014). However, these studies have not considered PG students' perceived understanding of task types (i.e. writing self-efficacy) in addition to writing importance (in terms of *value*, *occurrence* and *word count*) to determine writing support needs. Researching all these variables in order to identify students' writing needs, as the present study has done, are important for many reasons, as detailed in the remainder of this section. Secondly, the current study identified task types from the task sheets and did not rely on PG students or PG academic lecturers to recall PG tasks. This helped ensure that all task types are relevant to the context under study (see section 2.3.3). Finally, while

researching writing importance a number of these studies (e.g. Chahkandi, 2014; Ma, 2018) have also demonstrated that their findings can be supported by obtaining the participants' perceptions of writing support mechanisms. Therefore, the current study also collected students' perceptions of support mechanisms.

It is also important, as the present study has done, to take into account multiple measures of writing importance (*value, occurrence* and *word count*) for several reasons. As detailed in the literature review, some studies only considered *occurrence*, while other only considered *value*. However, Dunworth (2008) demonstrated why considering, for instance, both *value* and *occurrence* of a task type is important, primarily because there is not always a correlation between them. Furthermore, the importance of using students' self-efficacy has been widely researched. Indeed, studies of writing task type self-efficacy (Pajares, 2003) have shown that students writing self-efficacy is indicative of writing outcomes (e.g. if students report they can or understand how to write something, this tends to be born out in their grades for that writing task).

Therefore, these studies clearly show why it is advisable to determine writing importance with multiple variables; specifically, *value, occurrence, word count* and writing self-efficacy (e.g. in terms of self-reported/perceived understanding of task types). The finding, as discussed above, that writing self-efficacy has been shown to correlate positively to writing outcomes, is also true for L2 students (Hetthong & Teo, 2013). Therefore, if a L2 student reports low or high understanding of a certain task type, and that task type has either low or high writing importance, this could indicate an area to focus on (or not focus on) in a writing support course.

In the next chapter, the methodological approach for this study is explained. The research questions are presented and it is explained how they were used to build upon previous studies by conducting a task-based analysis utilizing a mixed methods methodology to investigate both writing importance (in terms of *occurrence, word count* and *value*), perceived understanding of task types (i.e. writing self-efficacy), and students' perceptions

of the usefulness of writing support mechanisms. It will also show how this combination of data can be used to inform improvements to writing support mechanisms, thereby bridging the gap in the current literature, as detailed above.

Chapter 3. Methodology

3.1 Introduction

In the Literature Review chapter (see section 2.5) the purpose for the current study was justified. This chapter demonstrates how this study has built upon previous research by taking into account both student perceptions (of writing self-efficacy and of support mechanisms available to them) and writing importance. Additionally, unlike previous studies, this thesis takes into account multiple variables (*occurrence, word count, value*) to determine writing importance. It also the first study to consider all PG programmes at a transnational university.

The study utilized a sequential mixed methods approach. Specifically, a content analysis of writing task types (as stated on the task sheets created by academic lecturers) was used to determine writing importance. This data was subsequently utilized to inform the development a student questionnaire, thereby avoiding presupposing task types (e.g. Chankhandi, 2014). These data sets (i.e. the content analysis and questionnaire) were triangulated to allow input from multiple stakeholders (academic lecturers and students). The overall purpose of this study is to identify PG students' writing needs in order to inform improvements to writing support mechanisms (e.g. PG EAP courses). These writing needs are explored *overall* (i.e. the most important writing needs when considering all PG programmes), and *by degree programme* (i.e. writing needs individual to each PG programme).

In order to meet this purpose, the research questions used in the study are given below. How they are used to meet the purpose, as described above, is detailed in the subsequent Methodological approach section. Then, the sampling procedure, and data collection and analysis procedures are presented. Finally, ethical considerations are discussed.

Research Question 1: What are the writing support needs that are indicated by comparing a content of analysis of postgraduate (PG) writing task sheets to PG students' perceived understanding of writing task types?

Research Question 2: What do PG students' perceptions of the usefulness of writing support mechanisms indicate concerning their writing support needs?

After answering these research questions, this thesis subsequently explores the practical implications of the data and findings, specifically concerning possible improvements to the PG writing support mechanisms.

3.2 Methodological approach

The methodological approach illustrates how a pragmatic paradigm informs the research design. In this section, the methodological approach is given and justified within the context of the research questions as detailed in the previous section. Particular emphasis is also given to how these questions deal with the study's purpose and gaps in prior research.

There are two parts to the methodology, a content analysis of task sheets and a predominately quantitative questionnaire. A content analysis is a "...subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns" (Hsieh & Shannon, 2005, p.1278). Therefore, while content analysis as a method of inquiry is rooted in a naturalistic paradigm (Hsieh & Shannon, 2005), a quantitative questionnaire falls within the post-positivist paradigm. However, as this study is mixing methods, neither paradigm encompasses the methodology of the study. Mix-methods are defined as both qualitative and quantitative methods in different combinations integrated in a single study (Creswell, 2008; Johnson & Onwuegbuzie, 2004; Johnson et al., 2007; Morgan, 2007). Morgan (2014) argues that a pragmatic paradigm is suitable for mixed methods because research methods are combined without the constrain of a "...forced choice dichotomy between post-positivism and constructivism" (Creswell & Plano Clark, 2007, p. 27). The focus is on the best way to answer the research questions (Creswell, 2003).

The following section explains how data from both the content analysis and the questionnaire are utile in answering research questions. Additionally, it justifies the need for using mixed methods, specifically a sequential exploratory mixed methods approach, within a pragmatic framework. Further justification of this approach is also provided as part of the 'Data collection and analysis procedure' section (see 3.4.5.3).

3.2.1 Sequential exploratory mixed methods: research questions

The mixed methods approach utilized in this study is sequential exploratory, where qualitative data is collected and analyzed, followed by a phase of quantitative data collection analysis. In the current study, the initial qualitative phase, a content analysis of writing task sheets, was used to inform the development of a research instrument for the quantitative phase (i.e. a PG student questionnaire). A third phase involved the triangulation of data from the first two phases (see Creswell, 2003; Teddlie & Tashakkori, 2003). This type of data triangulation incorporates insights from multiple and diverse perspectives in order to provide more 'pragmatic solutions' (Johnson, 2009). The remainder of this section gives an overview of how this sequential exploratory mixed methods approach was used to answer the research questions (see section 3.1). More detailed information about the how data is used in the study can be found in the 'Data collection and analysis procedure' section (3.4.5).

Research question 1 seeks to understand writing support needs by relating the results from the content analysis of writing task sheets to students' perceived understanding of writing task types. The content analysis was used to find the importance of the writing tasks for every PG programme. Writing importance was determined in terms of *occurrence*, *word count* and *value*. Writing task types of high importance were then used to inform the creation of the quantitative PG student questionnaire. Data was collected from academic lecturers in the form of task sheets. As noted in sections 2.3.3 and 2.4.3.2, this study analyzed writing assessment task sheets for several reasons: (i) these are the documents PG students encounter (e.g. Dunworth, 2008); (ii) this avoids issues with using self-reported data on task types to design a PG student questionnaire; (iii) all writing assessment task sheets from all PG

degree programmes were collected; (iv) a questionnaire and/or interviews for PG students or academic lecturers, to gather data on task types, would most likely not have had a 100% return rate, which means some important task types could have been excluded, and (v) finally, the task sheets contain all data required to answer the research questions (see section 3.1).

This questionnaire was used to find students' perceived understanding (i.e. writing self-efficacy) of these writing task types. Self-efficacy is a 'domain-specific construct' (Schrodt, Turman & Soliz, 2006). Therefore, following Hashemnejad, Zoghi, and Amini's (2014) definition, in this study, writing self-efficacy is treated as "...students' beliefs in their ability to perform written English tasks successfully" (p. 1046). Furthermore, as noted in the Literature Review chapter (see section 2.5), perceived understanding (i.e. writing self-efficacy), has been shown to be a reliable indicator of actual writing ability (Pajares, 2003) and it correlates positively to their graded performance with writing task types (Hetthong & Teo, 2013). Therefore, it can be used as a gauge of writing support needs.

Writing support needs are indicated by triangulating writing importance (via the content analysis) and perceived understanding (via the questionnaire), addressing the weaknesses of other studies which did not incorporate both (e.g. Dunworth, 2008; Cho, 2014). For instance, students may need more support with important task types where they have relatively low perceived understanding. Statistical differences were used in this study a way of differentiating the students by their perceived understanding, and therefore, can be linked to their writing needs. These differences were explored *overall* (i.e. the most important writing needs when considering all PG programmes) and *by degree programme*. How these terms are defined and how the data was analyzed is covered in depth in section 3.4.5. Therefore, this triangulation takes into account multiple stakeholders' views (Cohen, Marion & Morrison, 2000) to identify writing support needs.

The purpose of research question 2 is to further explore the students' writing needs by investigating their perceptions of the usefulness of writing support mechanisms. Indeed, the importance of ascertaining PG students' perceptions of writing support mechanisms has been

demonstrated in the literature (e.g. Chahkandi, 2014; Ma, 2018) as a way of better understanding students' writing needs, and to inform improvements to support mechanisms. They are, for instance, commonly used in course evaluations at universities for this purpose (BrckaLorenz, McCormick & Peck, 2014). In this study, data for this research question also derived from the student questionnaire. As with research question 1, certain parts of the questionnaire data were triangulated with the content analysis to explore connections between perceived usefulness of support mechanisms and writing importance. At the same time, other aspects of the questionnaire data were used to give a wider understanding of the students' writing needs. These finding, where relevant, are also used when discussing the implications for the writing support mechanisms. Similarly, the data was also explored *overall* and *by degree programme*. Other demographic data (e.g. first language) collected in the questionnaire was also analyzed to find out if differences in perceived usefulness could be explained by this data.

The ultimate goal of this study is to use its findings to inform suggested improvements to writing support mechanisms. This is achieved by triangulating data and findings from all parts of the study. In addition to utilizing the findings from research question 1 and 2, this triangulation also draws on information from two other sources: (i) the current writing support mechanisms at the Sino-British University; and (ii) a thematic analysis of PG students' suggested improvements to the writing support mechanisms (qualitative data from the questionnaire). Connecting the data and findings in this way has provided insights into the students' writing support needs that are made possible by the sequential mixed methods approach employed in this study.

3.3 Sampling procedure

This section provides justification for the choice of PG writing coursework task sheets, and target population for the pilot and final questionnaire.

3.3.1 Sampling procedure for selecting writing task sheets

Only summatively assessed writing tasks for core courses (*by degree programme*) were considered. Core refers to courses that students must take in order to complete their degree programme. One of the main goals of this study is to identify how writing needs vary *by degree programme*. Therefore, only considering core courses provides a standardized way of identifying writing needs (i.e. the task types students are assigned on optional courses vary depending on the course(s) they choose⁵). Furthermore, assessments for Additional Learning Activities (ALAs⁶) were excluded for several reasons. Firstly, they are not consistent from year to year nor regulated through the partner university in the UK. Secondly, assessments on ALAs are formative, not summative. Studies have shown that summative coursework can motivate student learning (Birenbaum, 1997; Birenbaum et al., 2006; Dochy & McDowell, 1997) and assessments on academic programmes are an important catalyst for learning (Heeneman et al., 2015); therefore, the study chose to focus on tasks that students could perceive as important compared to formative coursework on ALAs.

The main aim of the study is to provide recommendations for improving writing support mechanisms which are intended for students from all PG programmes. Therefore, it was important to have task sheets from core courses for all PG degree programmes. However, task sheets for final projects (i.e. *dissertations*) were not included because they take place during the summer when the support mechanisms which are the main focus of this study (the PG EAP course and Writing Centre) are not in place. During this time, different support mechanisms are used, namely (i) in departments with final year projects there is departmental support in terms of academic advisors, and (ii) in some departments summer courses for dissertations are offered (e.g. MA TESOL).

⁵ Only four of the 22 PG programmes with summatively assessed writing tasks included in the content analysis had optional courses.

⁶ PG students must complete 400 to 600 hours of ALAs.

Applying the above criteria, as of the 2016-2017 academic year, there were 114 PG summative, written assignments over the 22 PG degree programmes.⁷

3.3.2 Sampling procedure for the final questionnaire

The final questionnaire used non-probability, convenience sampling (see Dörnyei 2003; Dörnyei & Csizér, 2012). Stratified, probabilistic sampling was not possible in the current study because the response rate to the questionnaire was dependent on access to PG students, and their willingness to respond (Etikan, Musa & Alkassim, 2015). Additionally, Etikan, Musa and Alkassim (2015) state convenience sampling is useful in situations where stratified, probabilistic sampling is not possible.

This non-probability, convenience sampling was applied in the following way. All academic lecturers who taught in the 22 degree programmes included in the content analysis (see the above section) were emailed to request if the researcher could visit their classes to ask their students to complete the questionnaire. However, only 14 lecturers (from 14 different degree programmes) responded and agreed to the request. After applying the procedure to administer the final questionnaire (see section 3.4.4.3), a total of 162 questionnaires were completed.

⁷ Although there were 25 PG courses when the data was collected, only 22 PG degree programmes had summatively assessed writing coursework during the academic year in their core courses. Therefore, the remaining three PG programmes (without writing tasks) were not included in the content analysis as there is no relevant data.

3.3.3 Sampling procedure for the pilot questionnaire

The pilot questionnaire used a stratified sampling procedure (Fowler, 2009). A total of four different Year 2 (Y2) EAP classes, from four different UG degree programmes (totaling 55 students), were chosen for the pilot study. This pilot sample size is sufficient according to relevant advice found in the literature. While Dörnyei and Csizér (2012) suggest 50 to 100 participants, others have suggested a lower number. For example, Hertzog (2008) stated 30 to 40 'per group for pilot studies comparing groups' (p.185), and Hill (1998) suggests between 10 and 30 participants.

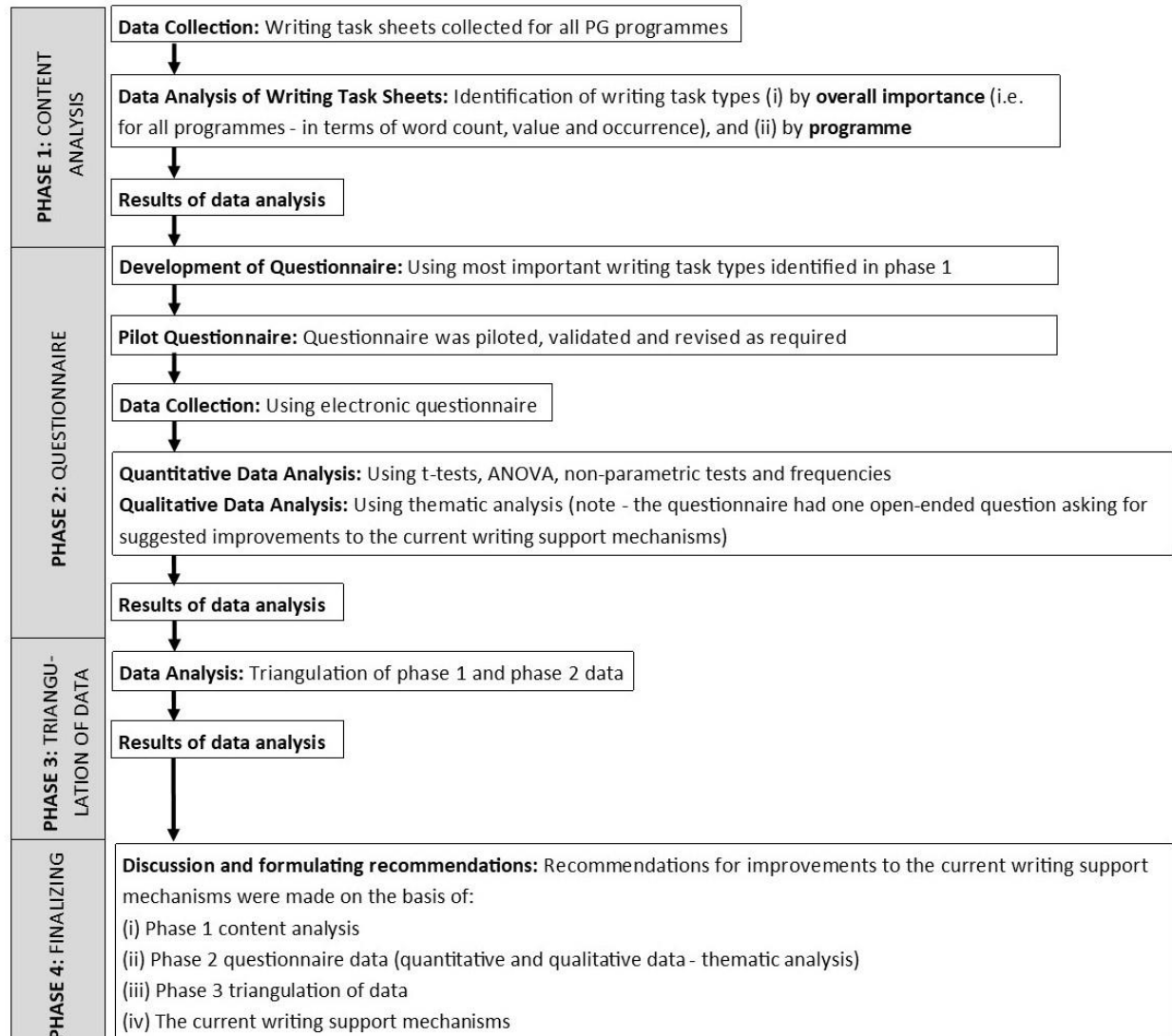
Dörnyei and Taguchi (2010) state that the pilot participants should be as similar as possible to the final questionnaire target population (p. 51). To that end, Year 2 students at the Sino-British University were suitable for the pilot for several reasons. First, all Y2 students are required to take an EAP course and these courses are *grouped by degree programme* – this is called streaming (University Handbook, 2016-17). As noted above, the Y2 classes who participated in the pilot were from four different UG degree programmes. This is important as the final questionnaire was later administered to PG students from different degree programmes. Secondly, PG programmes have a minimum language entry requirement of IELTS 6.5. This is equivalent to CEFR B2+ (Common European Framework of Reference for Languages), the same as the exit level for Y2. Therefore, as the questionnaire was given to the Y2 students at the end of the academic year, they had a similar language level to the target population. Lastly, Year 2 is the final year that UG students are required to take an EAP course. Similarly, PG students have the option of (and some degree programmes require them to take) a PG EAP course. This is important because the instructions on the questionnaire instruct PG students that the tasks on the questionnaire refer only to their degree specific tasks and not tasks for the EAP course. Year 2 students were chosen to see if they could make this distinction, as the PG students would also need to do this.

Finally, it is important to consider the researcher's relationship to the participants. AERA (2011) states that a researcher should ideally select participants "with whom they have no relationship (e.g. teacher, supervisor, mentor, or employer)" (p. 152). Therefore, the Year 2 classes selected did not have any of the researcher's current or former students.

3.4 Data collection and analysis procedure

As this study used sequential exploratory mixed-methods, data was collected in two phases (Creswell, 2014). Therefore, this section is organized to reflect the order of the data collection and analysis to make it clear how the data from phase 1 (content analysis) informed the development of the data collection instrument for phase 2 (questionnaire). This is illustrated in Figure 1 below.

Figure 1. Visual summary of mixed methods procedure



The first two sections below (3.4.1 – 3.4.2) explain the data collection and analysis procedure for phase 1 (the content analysis). The following section (3.4.3) explains how the questionnaire (phase 2) was designed by considering data from the phase 1 content analysis. Section 3.4.4 then covers the data collection, validation and administration procedures for both the pilot and final questionnaire, as well as the ethical considerations associated with this part of the study. The last section (3.4.5) explains how the final questionnaire data was analyzed, and how this analysis relates to the research questions. This also includes an

explanation of how the data collected in the study was triangulated (phase 3 of the study). A visual representation (Figure 2, section 3.4.5.4) of how the data was used is also provided.

3.4.1 Data collection: task sheets

This section outlines the collection of the task sheets and the ethical implications of handling this information. Collecting the task sheets required gaining ethics approval from both the University of Liverpool and the Sino-British University in China where the study took place (Appendix A). The Sino-British University's ethics committee determined that the only 'gatekeepers' (Oliver, 2003) that the researcher needed approval from were the Programme Directors for each PG department. Access to data can be a challenge for researchers (Cohen, Manion & Morrison, 2011) and for this study the researcher was asking PG academic lecturers for access to their programme's intellectual property. However, there is no specific policy at the Sino-British University regarding ownership of these documents produced for academic programmes.

The procedure to obtain the task sheets was in keeping with the American Educational Research Association (AERA) which states, "[e]ducation researchers conducting research obtain and document written or oral consent from research participants or their legally authorized representatives" (AERA, 2011, p. 120). Therefore, emails were sent to all PG Directors explaining the current study. The AERA code (2015) also states that informed consent is necessary when research involves human beings (p. 151). Therefore, although the PG Programme directors were only involved on the periphery of the study, the researcher included the Participant Information Sheet (PIS) (Appendix B) in the email, explaining the purpose of the study, and what the task sheets would be used for. After each PG Programme Director provided their approval, via email, the researcher collected all the tasks sheets from the University's Registry department for the 2016-2017 academic year. These were stored on a secure, password protected cloud drive.

3.4.2 Data analysis: content analysis of task sheets

This section explains the data analysis of the writing task sheets in phase 1 (the content analysis). This data was subsequently used to inform the creation of the questionnaire (see section 3.4.3) and triangulated with the questionnaire data (section 3.4.5.3) for use in answering the research questions.

A qualitative content analysis is a “...subjective interpretation of the content of text data through the systematic classification process of coding and identifying themes or patterns” (Hsieh & Shannon, 2005, p.1278). Hsieh and Shannon (2005) state that when engaging in a content analysis “[c]reating and adhering to or a coding scheme” increases the validity of the study (p. 1286). The following section explains the coding scheme and how these developed into categories.

The task sheets were first coded with a letter combination that indicates the PG degree programme (e.g. MSc Professional Accounting = MSAC, MRes Management = MRMA). The first two letters indicate the degree type, science or research, and the second set indicates the specific degree programme. For those task sheets that contained more than one writing task, a number followed the coding to indicate the number of tasks on the task sheets (e.g. MSAC2). Once complete, as already noted in the sampling section (3.3.1), a total of 114 separate writing tasks were identified (see Table 10, section 4.2.3, in the Results and Analysis chapter) over the 22 PG degree programmes included in the content analysis.

As a research method, a content analysis usually categorizes data and then determines the frequency of those categories (Bryman, 2001). Therefore, once the coding was completed, the results were transferred to a spreadsheet. The spreadsheet was divided *by degree programme*. This allowed the researcher to calculate the: (i) *value*, (ii) *word count*, and (iii) number of *occurrences*, for every task type *by degree programme*. As there was only one researcher coding the data, a week after the initial coding was complete the researcher recoded randomly selected task sheets to test the validity of the coding scheme (Mackey &

Gass, 2005). The recoded data was then compared to the initial results. No differences were observed, and therefore, this gave the researcher confidence in the validity of the coding scheme.

3.4.2.1 Categories of analysis

Two categories (task types and writing skills⁸) emerged (i.e. inductive) from the data and two categories of analysis (*value* and *word count*) were deductively applied. Task types were an inductive category as these emerged, i.e. the researcher did not have a predefined understanding of task types. However, the *value* and *word count* of the writing tasks are deductive because the researcher defined and specifically sought to identify them. Additionally, it should be noted that task type *occurrence* is not a category *per se* because it involves simply counting identified task types. Therefore, the qualitative content analysis in this study is a deductive-dominant content analysis as defined by Armat, et al. (2018). Qualitative content analyses (QCA) are generally understood to be either inductive or deductive (e.g. Hsieh & Shannon, 2005). However, with perhaps the exception of Horowitz (1986), most task-based studies are what Armat, et al. (2018) termed ‘inductive-dominant QCA or deductive-dominant QCA’ (p. 220). For instance, when certain coded sections of the text do not fit into the per-determined categories, new categories can inductively emerge (Elo & Kyngäs, 2008). Alternatively, certain categories can be inductively developed, and others deductively applied in the same analysis (Armat, et al., 2018).

3.4.2.1.1 Category: task type

As discussed in the previous section, task type is the first category that emerged from the writing task sheet content analysis. Therefore, the task sheets were then coded for task type *by degree programme*. Almost all task sheets indicated the task type with instructions such as ‘you will write a report’, or ‘you will research and write a case study.’ Therefore, the task types were identified by the terms assigned to them by the academic lecturers (e.g. Moore

⁸ The study initially included the category ‘writing skills’. However, it was later removed (also see section 3.4.3).

& Morton, 2005; Shi & Dong, 2015). There were some instances where two task types were assigned to the same task; for instance, a task was deemed a *case study* and a *report*. However, the actual 'action' instructed was 'write a report'; therefore, this task was counted as a *report* and not a *case study*. Additionally, there were five instances where the task sheet instructions provided no obvious task designation. The syllabi, available online, were therefore consulted; however, they were found to only provide very basic information about the assessment type, e.g. coursework. In order to deal with this missing information, the Heads of Department for those PG degree programmes were emailed, and they reviewed the task sheets and indicated what task type label they would assign. As noted by the American Educational Research Association (2011, p. 149), it is paramount research data remain confidential, accessible only to members of the research team and the finding be presented "consonant with any consent agreement" (p. 153). Sharing initial findings with PG Heads of Department (HoD) as part of the content analysis process does not violate either code.

Once all task types were identified, they were then simplified to a 'general' task type *within* each degree programme. For example, in the MBA degree programme, one course required students to write a *business report* and another course required an *executive business report*. These were simplified to *report* when transferred to the spreadsheet. Then the total *occurrence* of each task type *within* every degree programme was calculated. Over the 22 degree programmes in the content analysis, a total of 14 task types were identified (see Table 1 below).

Table 1. Task types

Report	Essay	Proposal	Case study	Term paper	Annotated bibliography	Pilot study
Research paper	Written evaluation	Business memorandum	Mini qualitative research	Review of test	Book review	Marketing plan

3.4.2.1.2 Category: value and word count

The two remaining categories identified in the content analysis of the writing task sheets were the *value* and *word count*. *Occurrence* (discussed in the previous section) is also referred to here where relevant.

Dunworth (2008) notes that the inclusion of *value*, *word count* and *occurrence* could provide an “overall impression of the relevance of the task helping to determine areas of focus when teaching EAP” (p. 318) or other support mechanisms for PG students. For example, the task type *essay* might only *occur* five times in a degree programme, compared to a *report occurring* ten times; however, five *essays* might constitute a larger percentage of the course grade.

Therefore, the task sheets were coded to indicate *word count* (i.e. the number of words per assignment) and *value* (i.e. percentage of the final course grade). As noted in the previous section, *occurrence* was not coded for but calculated after coding was complete. There were five instances where the instructions asked for a certain number of pages (e.g. write 10 to 12 pages) instead of a *word count* (e.g. write 1000 words). Every instance where this happened, font size and spacing instructions were included (e.g. 5 to 10 pages, size 12 font, Times New Rome, single-spaced). Based on this information the *word count* was calculated (e.g. 1 page, size 12 font, Times New Rome = approximately 500 words). When the task sheet gave a range, i.e. between 5 to 10 pages, or between 2000 to 4000 words, the maximum amount (i.e. ten pages or 4000 words) was counted.

Furthermore, there are some core courses that had to be taken by students from different degree programmes. Therefore, the *word count*, *occurrence* and *value* were added to the content analysis for all degree programmes they appear in. Additionally, there were three instances where the same task type was part of the assessment for two or more courses in the same degree programme. For instance, MAN 408 and MAN 417 shared assessments where the first part of the coursework was graded for MAN 408 and the second part of the

coursework was graded for MAN 417. However, as only a single task would be produced, the task was only counted once and added to the content analysis for the course with the larger proportion of the grade (in this case, MAN 408).

In addition to identifying the *word count*, *value* and *occurrence* for all *individual writing tasks*, for every task type (e.g. *reports*) the *word count* and *programme value* (i.e. the *programme value* that is assessed by each task type) is also included in the content analysis for every programme. However, in order to calculate the *programme value* for each task type, the number of course credits had to be taken into account. Most PG courses at the Sino-British University are worth 5 credits; however, this is not always the case. The content analysis also shows the *total word count* and *total programme value* for *all writing tasks* on every individual programme (see Appendix I). Further commentary on how to interpret this data is in the Results and Analysis chapter (section 4.2.1).

It should also be noted that the number of *occurrences*, *value* and *word count* for the task types over all the PG programmes were used to determine the most important task types for use in the questionnaire (phase 2 of the study). This is discussed as part of the ‘Questionnaire development and design’ section below.

3.4.3 Questionnaire development and design⁹

This section outlines the questionnaire design, and explains how the content analysis data helped inform the task type questions. The questionnaire (Appendix D) is divided into four sections. Each covers a different set of data; factual and attitudinal (Dörnyei & Taguchi, 2010).

Section 1 consists of five demographic questions concerning students’ first language and current degree programme (factual). Section 2 (Q1 to Q3) asked students about certain aspects of their undergraduate degree (e.g. what type of university they attended) (factual). Cohen, Manion and Morrison (2000) note that the larger the sample size of respondents

⁹ Ordinarily data would not be included in the Methodology. However, as this study uses sequential mixed methods (data collection, then analysis, for the development of a second data collection instrument), it is necessary.

“...the more structured, closed and numerical the questionnaire may have to be” (p. 247). As discussed in the Introduction chapter (section 1.0) the PG student body is quite large (e.g. 312 students in the 2016-17 academic year). Therefore, the questions in Sections 3 and 4 are closed-response, five point Likert-scale questions (strongly agree to strongly disagree).

Section 3 (Q4 to Q6) asked students about the task sheets and aspects of PG writing task types and skills (Q7 to Q15) (attitudinal). Section 4 (Q16 to Q18) consists of three questions about the usefulness of the writing support mechanisms (e.g. how EAP tutors, the Writing Centre and academic lecturers can help with PG students’ academic writing) (attitudinal). It should be noted that the question concerning the Writing Centre (Q16) has a different emphasis to the PG EAP course questions. The question about the Writing Centre is about the usefulness of support with coursework; while the questions about the PG EAP course are about the usefulness of teaching in terms of task types (Q17) and writing skills (Q18). Writing skills, in addition to task types, has formed part of the research in other studies (e.g. Cai, 2017; Dunworth, 2008; Hale, et al., 1996) and was therefore included here to give a wider understanding of students’ perceptions of writing support mechanisms. The final question in Section 4 (Q19) asked students for their suggestions regarding improvements to the writing support mechanisms (attitudinal).

There are four other important points to note. Firstly, following Dörnyei and Taguchi’s (2010) outline of ‘general instructions,’ the questionnaire briefly explained the purpose and provided instructions for each section, with examples of how to complete them. Secondly, Dörnyei and Csizér (2012) argue that a questionnaire in a target population’s first language (L1) improves the quality of data obtained in the questionnaire (p. 79). However, the questionnaire was only offered in English for the following reasons as discussed below.

First, the Sino-British university has an international PG student body, with students from various countries¹⁰. Most of these are non-English speaking countries (some of which speak multiple languages), and therefore a translated version would have been required for all of these languages. In practical terms, it would not have been possible for the researcher to find translators for all of these languages. However, even if it were possible, Weinreb and Sana's (2007) study demonstrates that the advantages and disadvantages of translating a questionnaire into participants' L1 depends on the 'ultimate purpose of the data collection' (p. 429). Therefore, translating a document that asks students questions in Mandarin, Cantonese (for Hong Kong and Macau PG students) and other languages (for the international PG students) about L2 language task sheets, could cause more confusion than the translations would provide clarity (Griffie, 2001). Additionally, a translated questionnaire would likely have caused even more confusion since the PG students are familiar with routinely taking questionnaires in English at the Sino-British University, including those that use the same Likert-scale as the present study (e.g. through module questionnaires). Therefore, having an English only version avoids issues of 'equivalence' (in translations, data collection and analysis) between an English and other language version of the questionnaire (Hall, Zaragoza Domingo, Hamdache, Manchiaiah, Thammaiah, &, Evans, 2018). Secondly, the PG students at the Sino-British university are subject to a minimum English language level, normally IELTS 6.5 or equivalent. However, it does vary from IELTS 6.0-7.0 depending on the programme. This ensures that all the PG students have a high level of English, making an English only questionnaire appropriate. Section (3.3.3) further explains how the pilot of the questionnaire addressed issues of language and the English language level of the PG students.

Finally, it should be noted that because the study's emphasis changed slightly from the original proposal (in consultation with the researcher's advisors), some of these questions (e.g. writing skills, Q11-15) did not form part of the data analysis (see section 3.4.5). Finally,

¹⁰ Students from 20 different nations completed the questionnaire.

as detailed in this section, the questionnaire uses Likert-scale questions. The validation of the Likert-scale and the appropriateness of using this scale is presented in section 3.4.4.2.

3.4.3.1 Task types for use in the questionnaire

This section explains and justifies the choice of which of the 14 task types, identified in the content analysis, were included in the questionnaire (Appendix D).

As noted in the content analysis, for each degree programme the task types were simplified to a 'general' task type (e.g. *business report* and *executive report* were just recorded on the spreadsheet as *report*). See the Results and Analysis chapter (Table 11, section 4.2.3) for the final list of task types. Once this was done, there were several factors to consider when determining which of the 14 task types to include on the student questionnaire. Dörnyei and Taguchi (2010) note that limiting the number of questions can simplify a topic too much and risk 'superficiality of answers' (p. 7), while at the same time long questionnaires have a lower rate of completion and accuracy from respondents (p. 14). Therefore, it was decided to only include the most important task types. As previously discussed (section 3.4.2.1), importance was determined by considering the *occurrence*, *value* and *word count* for all PG programmes. It was found that 10 of the 14 task types only *occurred* in one degree programme. For example, the task type *business memo* (see Table 2) only *occurred* once in the MBA degree programme, and it did not *occur* in any other programme. These 10 task types also were much less important in terms of the *total word count* and *average value* associated with them over all the degree programmes in the study (these calculations are presented in the Results and Analysis chapter, section 4.2.3). Therefore, these 10 task types were not included in the questionnaire. The remaining four task types included in the questionnaire were *reports*, *essays*, *case studies* and *proposals* (see Appendix E for an example task sheet from the MBA programme).

Table 2. MBA (task type occurrence)

Type	Number of Tasks
Report	5
Essay	2
Business Memorandum	1
Case Study	1

Instead of having multiple questions asking about different versions of the task type *report* (e.g. *business report*, *marketing plan report*, etc.), or a bespoke questionnaire for each PG degree programme, only the term *report* was used in the questionnaire. Section 3 of the questionnaire presents the questions concerning task types (Q7-10); for instance, question 7:

Q7) I understand how to write a *report*.

This allowed the questionnaire to be applicable to students from multiple PG degree programmes, covering the most important task types as discussed above. Table 3 provides an example of how section 3 of the questionnaire would apply to some of the different PG degree programmes.

Table 3. Questionnaire section 3 answer analysis

Degree Programme	Question 7: Report	Question 8: Essay	Question 9: Case Study	Question 10: Proposal
MBA	Applicable	Applicable	Applicable	N/A
MSc Media and Communications	N/A	Applicable	N/A	Applicable
MSc Sustainable Construction	Applicable	Applicable	N/A	N/A
MSc Urban Planning	Applicable	Applicable	N/A	Applicable

The instructions for section 3 asked students to interpret each task in their own context; for example, to interpret *report* in their specific degree programme. In terms of the reliability of the responses, this method does assume that task types are similar *within* degree programmes (e.g. in the MBA degree programme a *business report* and *executive report* are similar). However, several task-based studies in the Literature Review chapter (Braine, 1989;

Canseco & Byrd, 1989; Cho, 2014; Shi & Dong, 2015; Zhu, 2004) indicate that writing task types can be similar *within* degree programmes. Additionally, at the Sino-British University all summative assessment tasks are moderated by: (i) an internal moderator (IM) within the same department; (ii) the Sino-British University's partner university in the UK; and (iii) another UK university external to the Sino-British University. Part of the moderation process is to check that the assessments (i.e. tasks) have validity (i.e. that they test what they are intended to test). Therefore, if for example, it was described as a *report*, but did not fit that task type, this should be highlighted and amended during the moderation process (Moderation Policy Document, Sino-British University).

In summary, when utilizing sequential exploratory mixed methods, the “weakness in one method [can be] offset by the strength of another” (Azorin & Cameron, 2010, p. 97). In the case of the current study, the content analysis allows the questionnaire to avoid unclear or unfamiliar phraseology; therefore, promoting validity by reducing ambiguity (Cohen, Manion & Morrison, 2011). For instance, instead of a generic list of task types, or tasks types inferred by the researcher from the data, the questionnaire used the tasks types that students are familiar with from the task sheets. Indeed, Dunworth (2008) argued that any analysis of writing assignments should use the task sheets the students encounter rather than a description of the tasks filtered through respondents (p.316).

3.4.4 Data collection procedure for the pilot and final questionnaire

The first section below describes and justifies the pilot questionnaire procedure. The validation of the questionnaire is then detailed. Finally, it is explained how the final questionnaire was administered to the target population.

3.4.4.1 Pilot questionnaire procedure

A participatory pilot of the questionnaire was conducted to check the respondents' understanding of the questions and optimize the question arrangement (Dörnyei & Csizér, 2012). Year 2 tutors (i.e. faculty who teach only EAP) were emailed to ask if the researcher

could come to their class and ask if their students would be willing to participate in a short pilot of the questionnaire. Based on the tutors' responses, four classes, each class from a different stream were chosen (see section 3.3.3). The researcher presented an explanation of the study with an accompanying PPT and the PIS (Appendix B) to the students. The researcher explained the purpose of the pilot, and that the students were not required to participate. Finally, the students that agreed to participate were asked to sign a participant consent form (PCF) (Appendix C). The researcher left the room while the students completed the questionnaire.

3.4.4.2 Questionnaire validation and reliability

This section focuses on the validation of the questionnaire; however, it also includes a more general discussion of the use of triangulation of multiple data sources used in the study to increase validity.

During the pilot study, as discussed in the previous section, the researcher checked with the participants that they understood all of the questions. No issues in understanding were reported with the attitudinal (Likert-scale questions); however, a few minor issues were raised with the wording of the factual (demographic) questions, and these were subsequently amended. This procedure gives the questionnaire 'face validity' (Cohen, Manion & Morrison, 2000).

In terms of the construct validity, there are two important points. First of all, after analyzing the pilot questionnaires, all questions were answered as expected, based on the researcher's knowledge of Y2 coursework task sheets (Dörnyei & Taguchi, 2010). For example, all students put 'n/a' where appropriate indicating they understood that the questionnaire was asking about degree specific tasks, and not EAP writing tasks. The second issue with construct validity lies with the question types. As previously discussed (section 3.4.3), the questionnaire collected both factual and attitudinal data (Dörnyei & Taguchi, 2010), specifically, demographic information, PG students' perceived understanding of writing task types (i.e.

self-efficacy, as defined in section 3.2.1) and their perceptions of the usefulness of writing support mechanisms. Except for the qualitative question (question 19) which asked students for suggested improvements to the writing support mechanisms, the attitudinal data was collected via Likert-scale questions. Schrodt, Turman and Soliz (2006) state “[s]elf-efficacy is a domain-specific construct, which means that there can be no all-purpose measure of self-efficacy” (Schrodt, Turman & Soliz, 2006); therefore, scales of self-efficacy, “must be tailored to the particular domain of functioning that is the object of interest” (Bandura, 2006, p. 308). Maurer and Pierce (1998) stated a Likert-scale is reliable for measuring self-efficacy and according to Gliem and Gliem (2003) they are commonly used in a variety of fields in order to gather data concerning participants’ attitudes and opinions. Similarly, in the present study, they were primarily used to obtain data regarding the PG students’ perceptions of their understanding of task types (in order to provide an indication of their writing self-efficacy) and their perceptions of the usefulness of writing support mechanisms.

However, many state the need for data validation to ensure the accuracy of the findings (e.g. Cohen, Manion & Morrison, 2000; Creswell, 2014), and this need is further emphasized in terms of the validation of Likert-scale questions (Gliem & Gliem, 2003). Therefore, after the pilot questionnaire was conducted, further steps were taken to ensure validity. Gliem and Gliem’s (2003) study strongly recommends the use of Cronbach’s Alpha Reliability Coefficient for Likert-scale questions. Accordingly, the data collected for the questionnaire questions (Appendix D) that were used to determine the PG students’ perceived understanding of task types (Q7-10) for use in research question 1, and data pertaining to questions that relate to perceived usefulness of the PG EAP course (Q17-18) for use in research question 2 were subjected to the Cronbach’s Alpha Reliability Coefficient test. The alpha coefficient was above 0.80 for Q17 and Q18 which is regarded as demonstrating good internal consistency and above 0.70 for Q7-10 which shows acceptable internal consistency (see George & Mallery, 2003). The test was later repeated for the data collected for the final questionnaire, and test was again above 0.80 for Q7-10, and it was 0.93 (indicating ‘excellent’ internal consistency) for Q17 and Q18. See Appendix H for the full results.

However, questionnaire Q7-10 (as discussed above) may not be fully appropriate for the Cronbach's Alpha Reliability Coefficient test because one of this study's objectives was to find differences between the students' perceived understanding of task types (the focus of these questions). For instance, if there is a difference in the students' perceived understanding of how to write *reports* (Q7) and *essays* (Q8). Essentially, Q7-10 are single-item measures. That said, while this study goes on to show that certain differences in perceived understanding do exist, this is not always the case and it is expected that students who perceive themselves to be a good writer would generally give relatively high scores for questions about understanding of task types, and the opposite would be true for students who generally perceive themselves to have weak understanding of writing task types. The results of the Cronbach's Alpha Reliability Coefficient test appear to validate this assumption. The same issue does not exist for Q17-18 (students' perceptions of the PG EAP course). While the emphasis of these questions differs slightly, it was expected that the students would give similar answers, and therefore, they can be treated as multiple-item measures.

Furthermore, Q16, which is about the other main writing support mechanism (the Writing Centre), could not be validated using this test because it is the only question about the Writing Centre and it has a different emphasis to the other questions used in the study (it is specifically about support with writing coursework). However, as this question is on the same scale as the other Likert-scale questions, and the wording is understandable for L2 English students at the B2+ level (i.e. the minimum language entry requirement, see section 3.3.3), as confirmed by the 'face validity' procedure as described above, some steps have been taken to ensure the validity and reliability of this question. How validation is further dealt with is discussed as part of the remainder of this section.

There is also the question of why specifically this study used a five point Likert-scale to measure the students' perceptions and why most of the questions use single rather than multiple-item measures. Firstly, a five-point scale was chosen because students at the Sino-British University regularly use the exact same scale as part of course evaluations. As they are

familiar with this scale and category labels, using the same one is a way of improving the reliability of the responses (Weijters, Geuens & Baumgartner, 2013). Secondly, multiple-item measures were not considered to be practical for most questions because the study collected data about numerous aspects (task types, demographic information etc.) and therefore using multiple-item measures would have resulted in a very long questionnaire. According to Dörnyei and Taguchi (2010), this in turn would likely have reduced the reliability of the responses (p. 14). Also, as the questions are seeking very specific information (e.g. understanding of specific writing task types), attempting to frame them multiple times in a different way would likely have led to what Drolet and Morrison (2001) described as 'mindless response behavior', and led to an increased error rate. Indeed, according to Sacket and Larson (1990), when there is a specific construct, as in the present study, single-item measures may be preferable.

The validation issues highlighted above were also mitigated in two other ways. Firstly, according to Nunnally and Bernstein (1994, p.67), "[m]easurement error averages out when individual scores are summed to obtain a total score". Indeed, in this study, individual scores were combined both *overall* and *by degree programme* (see section 3.4.5 for a definition of these terms) in order to find differences in perceptions. Secondly, another important part of the data validation is that this study triangulated data from multiple sources (discussed further in section 3.4.5.3) which many researchers identify as an important part of adding validity (Cohen, Manion & Morrison, 2000; Creswell, 2014). Indeed, the ultimate goal of this study is to use data from multiple sources (e.g. the content analysis and questionnaire) to suggest improvements to writing support mechanisms (covered as part of the implications for writing support mechanisms, Discussion chapter, section 5.5). For this purpose, no single source of data, including the Likert scale data, is used.

In summary, the above steps have given the researcher confidence that the data collected in the questionnaire, including data concerning the students' perceptions, do provide accurate measurements to an acceptable degree required for this study. Some issues with data

validation were highlighted; however, the study's main objective of making suggested improvements to writing support mechanisms is supported by multiple data sources. Therefore, it is not believed that these issues compromise the study's ability to achieve its main purpose.

3.4.4.3 Final questionnaire administration

As discussed in the final questionnaire sampling section (3.3.2), 14 academic lecturers from 14 different degree programmes agreed to allow the researcher to come to their class. They all provided the researcher 10 minutes at the end of each class to deliver a short presentation to PG students explaining the research objectives and the purpose of the questionnaire. This was done to ensure that the researcher had the informed consent of the students (BERA, 2011; Dörnyei, 2007), and to explain the steps taken to ensure participants' confidentiality (Cohen, Manion & Morrison, 2000, p. 19). The questionnaire was uploaded to the Sino-British University's online survey platform. It was explained to the PG students that it was not possible to link individual students to specific questionnaires on this online survey platform, and that the researcher would leave the room. Additionally, several studies have noted that the anonymity of internet questionnaires produce more complete (Gosling et al., 2004) and honest responses (Dörnyei, 2007). Therefore, participating students were told about this anonymity in hopes that this would result in honest responses. Finally, it was explained to the students that the demographic information they provided on the questionnaire (Appendix D) is not enough to identify them.

After the presentation, the students were instructed to use their phones or laptops to access the link to the questionnaire. However, before students could begin the questionnaire, they had to read the PIS (Appendix B) and electronically sign the PCF (Appendix C) indicating that they had read and understood the study, what information they would be providing and what that information would be used for (Cohen, Manion & Morrison, 2011). This was done to ensure that students who participated were informed concerning the nature of the study by seeking 'voluntary informed consent' (BERA, 2011). In addition, the PIS and PCF explained

that participation was voluntary and therefore, participants could withdraw consent at any time before submitting the questionnaire. The researcher left the room and the students were then left to complete the questionnaire in the classroom in their own time at the end of class. As detailed in the final questionnaire sampling section (3.3.2), this resulted in 162 questionnaires being completed.

Finally, another point to note is that the AERA Code of Ethics states that “[r]esearchers recognize the possibility of undue influence or subtle pressures on research participants that may derive from researchers’ expertise or authority, and they take this into account in designing informed consent procedures” (p. 151). However, this is not an issue in the current study as the researcher had not been part of the PG EAP team since May 2016, and like the pilot study, none of participants were the researcher’s present or former students.

3.4.5 Data analysis: questionnaire data and triangulation of data

The section begins by justifying and explaining the data analysis methods used in this study for the qualitative and quantitative questionnaire data. How and why data was triangulated throughout this study is then explained. Finally, a summary of how data was used and analyzed in all parts of the study is presented. These analyses are always related to the context of the research questions (see section 3.1).

However, before discussing these data analysis methods, it is important to define the terms for data groupings used in the analyses. As previously discussed, analyses in this study are *overall* and *by degree programme*:

Overall: This refers to instances where data for all PG students (who completed the questionnaire) was grouped together. For writing task types, this is in terms of their combined (i.e. *overall*) writing importance (by *occurrence*, *value* and *word count*) for all 22 programmes included in the content analysis. Writing importance was defined in more detail as part of the content analysis (see section 3.4.2.1).

By degree programme: Used for any data that refers to individual degree programmes. The student data from the questionnaire was analyzed separately by individual programmes. In terms of task types, *by degree programme* refers to task type importance (by *occurrence*, *value* and *word count*) for individual programmes. This is further subdivided into:

- **Within programmes:** Data where comparisons have been made *within* individual programmes. For example, MA TESOL students' perceived understanding of task types, e.g. *reports* versus *essays*.
- **Across programmes:** Data where comparisons were made between programmes. For example, for research question 1, MA TESOL versus MRes Computer Science students' perceived understanding of task types, e.g. *essays*. For research question 2, this is in terms of differences in perceived usefulness of the writing support *across* programmes.

3.4.5.1 Questionnaire: quantitative data

The quantitative questionnaire data was imported into Microsoft Excel. It was then transferred to PSPS and SPSS (computer programs for statistical analysis) for analysis. This section explains and justifies the use of the different statistical methods employed to analyze the data.

3.4.5.1.1 Comparative analyses

As discussed in section 3.2.1, one of the goals of this research is to differentiate the students by their writing needs in various ways. In research question 1, this is in terms of differences in perceived understanding of important task types (as identified by the content analysis, see 3.4.3.1) *overall* and *by degree programme*. Similarly, one of the aims of research question 2 is to find out if differences in perceived usefulness can be explained by demographic data and if students *across* the various PG programmes find the support more or less useful.

In order to differentiate the students in these areas, tests for statistical significance were required for the quantitative questionnaire data. However, as the questionnaire uses Likert-

scale questions, it was first important to choose the appropriate statistical tests to ascertain any differences. In order to choose the suitable tests, it was necessary to consider how Likert-scale data should be treated, while taking into account the sample sizes in the study.

In terms of how to analyze Likert-scale data, there has been some debate as to whether parametric (e.g. t-tests, ANOVA) or non-parametric (e.g. Mann-Whitney U) tests should be used to test for significant differences (De Winter & Dodou, 2010). There are a number of reasons for this debate; chiefly, as argued by Gardner and Martin (2007), Likert-scale data is ordinal, and as such should be analyzed with non-parametric tests. However, others (e.g. De Winter & Dodou, 2010; Murray, 2013) contend that the choice of parametric or non-parametric does not significantly affect the outcome, and, indeed, according to research by Clason and Dormody (1994), parametric tests are more widely used for Likert-scale data in research, while others (e.g. Clark-Carter, 2005; Rasmussen, 1989) have demonstrated that parametric tests have more statistical power (e.g. they have a lower Type II, 'false-negative', error rate).

However, there is also the issue of sample size and choice of test. As discussed above, some comparisons in this study were made *by degree programme*. As discussed in section 3.3.1, the content analysis includes 22 degree programmes. However, as detailed in the Results and Analysis chapter (section 4.3.1), data was only obtained for 14 of these programmes, the results of which had varying, and relatively small ($N < 30$), sample sizes. As highlighted by De Winter (2013), researchers sometimes have to work with small sample sizes, and he found that parametric tests (specifically the t-test) can be used when sample sizes are small (even as low as $N \leq 5$). Statistical tests are designed to take sample size into account, and while small sample sizes could prevent statistical differences from being found, they should not indicate the presence of statistical significance when one does not exist. However, other researchers (e.g. Elliott & Woodward, 2007), suggest that when sample sizes are small, non-parametric tests should be used.

Another issue is whether the data being tested is normally distributed as this is one of the assumptions of parametric tests (e.g. Verma & Abdel-Salam, 2019). To test for normality, Ghasemi and Zahediasl (2012) recommend testing the data visually (e.g. with histograms, Q-Q plots and box plots) and with significance tests (the authors highly recommend the Shapiro-Wilk test). Therefore, to ascertain if the quantitative questionnaire data to be utilized in the study (see Tables 6 & 7 below) is normally distributed, the data was tested using histograms, Q-Q plots, box plots and the Shapiro-Wilk test.

In total, 52 data sets were used in the thesis for comparative analyses. A summary (Table 4 below) of the analyses on whether or not the data sets are normal is given below. However, as this analysis required 3 graphs (normal distribution, QQ-plot and box plot) for all 52 data sets, plus other data tables, it was not practical to include all of these graphs and tables in the appendices. Therefore, Table 4 below also indicates which data sets are included in the appendices. These samples were chosen to give a range of data sets (e.g. *overall* and *by degree programme*) and to illustrate different reasons why the researcher accepted or rejected visual normality. However, Table 4 does include the Shapiro-Wilk p-value result for all data sets. In terms of this visual analysis, the researcher's judgement was required to determine if the data is normally distributed. In order to make these determinations, advice from Ghasemi and Zahediasl (2012), as well as a practical SPSS guide by Marshall and Samuels (2017) was utilized. The following criteria was applied to determine visual normality (the samples and accompanying commentary can be found in Appendix F):

- All three visual measures (histogram, QQ-Plot & box plot) must indicate normality.
- At least 4 data points are required, i.e. data sets with 3 or fewer different answers on the 5-point Likert scale would not be considered to be normally distributed.
- **Histograms** must show a bell curve with an obvious central peak.
- **QQ-plots** must show a diagonal line with no obvious trend showing divergence from the line.
- **Box plots** must be approximately symmetrical.

The data sets could potentially be divided into three separate groups. For the purpose of discussion and coding, they are divided into Groups A, B and C:

- **Group A (strong evidence of normality):** Data sets that are normal both visually, and through significance testing (according to the Shapiro-Wilk test).
- **Group B (limited evidence of normality):** Data sets that are either normal visually, or normal through significance testing (according to the Shapiro-Wilk test), but are not shown to be normal by both measures.
- **Group C (no evidence of normality):** Data sets that are neither normal visually, nor normal through significance testing (according to the Shapiro-Wilk test).

After performing the analysis as described above, it was found that none of the data sets had strong evidence of normality (Group A), 34 had limited evidence of normality (Group B), and 18 had no evidence of normality (Group C).

Table 4. Summary of normality analyses

Data Set	Appears normal visually (histogram, QQ-Plot & box plot) – (Y/N)*	Shapiro-Wilk shows normality (p>0.05) (Y/N)	Group	Included as example in Appendix F (Y/N)
Overall – Report (Q7)	Y	N (p=0.000)	B	N
Overall – Essay (Q8)	Y	N (p=0.000)	B	N
Overall – Case Study (Q9)	Y	N (p=0.000)	B	Y
Overall – Proposal (Q10)	Y	N (p=0.000)	B	N
Operations and Supply Chain Management – Report (Q7)	Y	N (p=0.011)	B	N
Operations and Supply Chain Management – Case Study (Q9)	Y	N (p=0.038)	B	Y
Operations and Supply Chain Management – Writing Centre usefulness (Q16)	N	Y (p=0.073)	B	N
Operations and Supply Chain Management – PG EAP Support: Task Types (Q17)	N	Y (p=0.077)	B	N
Operations and Supply Chain Management – PG EAP Support: Writing Skills (Q18)	N	Y (p=0.105)	B	N
TESOL – Report (Q7)	N	N (p=0.004)	C	Y
TESOL – Essay (Q8)	N	N (p=0.000)	C	N
TESOL – Proposal (Q10)	Y	N (p=0.030)	B	N
TESOL – Writing Centre usefulness (Q16)	N	N (p=0.010)	C	N
TESOL – PG EAP Support: Task Types (Q17)	N	N (p=0.002)	C	N
TESOL – PG EAP Support: Writing Skills (Q18)	N	N (p=0.000)	C	N
Business Analytics – Report (Q7)	N	Y (p=0.095)	B	Y
Business Analytics – Essays (Q8)	N	N (p=0.001)	C	N
Business Analytics – Case Study (Q9)	N	N (p=0.001)	C	N
Business Analytics – Writing Centre usefulness (Q16)	N	N (p=0.000)	C	N

Data Set	Appears normal visually (histogram, QQ-Plot & box plot) – (Y/N)*	Shapiro-Wilk shows normality (p>0.05) (Y/N)	Group	Included as example in Appendix F (Y/N)
Business Analytics – PG EAP Support: Task Types (Q17)	N	Y (p=0.325)	B	N
Business Analytics – PG EAP Support: Writing Skills (Q18)	N	N (p=0.046)	C	N
Urban Planning – Report (Q7)	N	N (p=0.000)	C	N
Urban Planning – Essay (Q8)	N	N (p=0.000)	C	N
Urban Planning – Proposal (Q10)	N	Y (p=0.120)	B	N
Urban Planning – Writing Centre usefulness (Q16)	N	Y (p=0.197)	B	Y
Urban Planning – PG EAP Support: Task Types (Q17)	N	N (p=0.006)	C	N
Urban Planning – PG EAP Support: Writing Skills (Q18)	N	Y (p=0.099)	B	N
Architectural Design – Report (Q7)	N	N (p=0.08)	C	Y
Architectural Design – Essay (Q8)	N	N (p=0.020)	C	N
Architectural Design – Writing Centre usefulness (Q16)	N	Y (p=0.294)	B	N
Media & Communication – Essay (Q8)	N	Y (p=0.062)	B	N
Media & Communication – Proposal (Q10)	N	Y (p=0.062)	B	N
Media and Communication – Writing Centre usefulness (Q16)	N	N (p=0.000)	C	N
Media and Communication – PG EAP Support: Task Types (Q17)	N	Y (p=0.473)	B	N
Media and Communication – PG EAP Support: Writing Skills (Q18)	N	Y (p=0.473)	B	N
Computer Science – Report (Q7)	N	Y (p=0.212)	B	N
Computer Science – Essay (Q8)	N	Y (p=0.421)	B	N
Computer Science – Proposal (Q10)	N	Y (p=0.820)	B	N
Economics and Finance – Report (Q7)	N	Y (p=0.091)	B	N
Economics and Finance – Essay (Q8)	N	Y (p=0.212)	B	N

Data Set	Appears normal visually (histogram, QQ-Plot & box plot) – (Y/N)*	Shapiro-Wilk shows normality (p>0.05) (Y/N)	Group	Included as example in Appendix F (Y/N)
Economics and Finance – Proposal (Q10)	N	Y (p=0.091)	B	N
Economics and Finance – Writing Centre usefulness (Q16)	N	Y (p=0.814)	B	N
Professional Accounting – Report (Q7)	Y	N (p=0.012)	B	N
Professional Accounting – Writing Centre usefulness (Q16)	N	Y (p=0.080)	B	N
Professional Accounting – PG EAP Support: Task Types (Q17)	N	Y (p=0.073)	B	N
Professional Accounting – PG EAP Support: Writing Skills (Q18)	N	Y (p=0.118)	B	N
Chinese Education – Writing Centre usefulness (Q16)	Y	N (p=0.000)	B	N
Chinese Education – PG EAP Support: Task Type (Q17)	N	N (p=0.000)	C	N
Chinese Education – PG EAP Support: Writing Skills (Q18)	N	N (p=0.000)	C	N
Non-Chinese Education – Writing Centre usefulness (Q16)	Y	N (p=0.036)	B	N
Non-Chinese Education – PG EAP Support: Task Type (Q17)	N	Y (p=0.051)	B	N
Non-Chinese Education – PG EAP Support: Writing Skills (Q18)	N	N (p=0.027)	C	N

As the findings, as discussed above, do not conclusively show normality for any of the 52 data sets, it is also worth noting that with Likert-type data, according to Norman (2010), the correct conclusions can be obtained using parametric tests with non-normal distributions:

“Parametric statistics can be used with Likert data, with small sample sizes, with unequal variances, and with non-normal distributions, with no fear of “coming to the wrong conclusion”” (p.7).

This is similar to Murray’s (2013) conclusion:

“It is concluded that parametric and non-parametric tests such as Pearson and Spearman rho conducted on Likert scale data do not affect the conclusions drawn from the results.” (p.262).

Given the above concerns about which kind of hypothesis test to use (parametric or non-parametric), especially considering normality cannot be assumed for any of the data sets, this study takes a two-pronged approach. Firstly, in accordance with De Winter’s (2013) findings, only programmes with a minimum sample size of five were included in analyses *by degree programme* (sample size is discussed further in the limitations, see Conclusion chapter, section 6.2). Secondly, as parametric tests have been shown to have greater statistical power than non-parametric tests (Clark-Carter, 2005; Rasmussen, 1989), and there is strong evidence that they can be used with non-normal distributions and small sample sizes (Lensvelt & Steenbekkers, 2014; Murray, 2013; Norman, 2010), they were used in the first instance to test for statistical significance. However, all significant differences were then confirmed with the equivalent non-parametric test. If the non-parametric test showed any as insignificant, then this would override the parametric finding (i.e. they would be treated as insignificant). Otherwise, the parametric test findings would be treated as being correct. This is a very similar approach adopted by Lensvelt and Steenbekkers (2014) because it provides a compromise between the completing views about parametric and non-parametric tests illustrated above. Table 5 below shows the equivalent parametric and non-parametric tests that were selected.

Table 5. Parametric and non-parametric tests applied

	Parametric	Non-parametric
Paired	Paired t-test (2 groups)	Wilcoxon signed-rank test
Independent	<ul style="list-style-type: none"> • ANOVA test (for 3 or more groups) • Independent samples t-test (for 2 groups) 	Mann–Whitney U test

The appropriate choice of statistical test used in Table 5 above depends on the groups being tested. Specifically, whether the groups are paired or independent, and the number of groups involved. These tests were used in research question 1 and 2. Table 6 and 7 below summarize the groupings and provide example tests used for these research questions, along with the data input and purpose of these analyses.

Table 6. Research question 1 data usage and analysis methods

Data			
Groupings	No. of groups for each test/example	Scope*	Hypothesis Test
Overall	Two groups (paired). E.g. Group 1 (students' perceived understanding of <i>essays</i>) vs. Group 2 (students' perceived understanding of <i>reports</i>).	All important task types.	Paired t-tests/ Wilcoxon signed-rank tests.
Within	Two groups (paired). E.g. Group 1 (MA TESOL students' perceived understanding of <i>reports</i>) vs. Group 2 (MA TESOL students' perceived understanding of <i>essays</i>).	All programmes that write at least two of the important task types (**).	Paired t-tests/ Wilcoxon signed-rank tests.
Across	Multiple independent groups. E.g. students' perceived understanding of <i>proposals</i> . Group 1 (MA TESOL) vs. Group 2 (MRes Computer Science) vs. Group 3 (MSc Urban Planning).	All programmes that write the same important task type (**). Run for all important task types.	ANOVA tests/ Mann–Whitney U tests.

**for inclusion in the analysis, groups must meet the minimum sample size (as discussed in this section)*
***as identified in the content analysis (see Table 10, Results and Analysis chapter, section 4.2.2)*

<p>Data input. Questionnaire questions concerning perceived understanding of important task types (identified by the content analysis, section 3.4.3.1): Q7: <i>reports</i>, Q8: <i>essays</i>, Q9: <i>case studies</i>, Q10: <i>proposals</i></p> <p>Purpose of analyses. Indicates writing support needs by finding differences in perceived understanding of task types</p>
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Table 7. Research question 2 data usage and analysis methods

Data Groupings	No. of groups for each test/example	Scope*	Hypothesis Test
Demographic data	Two groups (independent). E.g. students' perceived understanding of the Writing Centre. Group 1 (Students who hold a Chinese UG degree) vs. Group 2 (students who hold an international UG degree).	All demographic groups (identified on questionnaire). Run for Q16, Q17 and Q18 (see below).	Independent samples t-tests/ Mann–Whitney U test.
Across Programmes	Multiple independent groups. E.g. students' perceived usefulness of the Writing Centre. Group 1 (MA TESOL) vs. Group 2 (MSc Business Analytics) vs. Group 3 (MSc Urban Planning).	All programmes included in the content analysis (for Q16, Q17 and Q18).	ANOVA tests/ Mann–Whitney U tests.

**for inclusion in the analysis, groups must meet the minimum sample size (as discussed in this section)*

Data input. Questionnaire questions concerning perceptions of usefulness of PG writing support mechanisms: Q16: Writing Centre, Q17: PG EAP (Task Types), Q18: PG EAP (Writing Skills)

Purpose of analyses. (i) Demographic data (to find if differences in perceived usefulness could be explained by demographic data), (ii) Across programmes (to find differences in perceived usefulness of writing support. E.g. if certain programmes find the support more or less useful).

Another important point is where ANOVA tests (as shown in 6 and 7 above) were required to identify significant differences, the test only shows if there is a significant difference between two or more of the groups. However, in order to see which of the groups are significantly different, a post-hoc test must be run. However, many different post-hoc tests can be used. The Tukey HSD (Honest Significant Difference) test was selected. According to Geaghan (2013) it is a suitable choice for most situations and is more conservative than some other tests, e.g. the LSD (Least Significant Difference) test. At the same time, according to Huck (2000), the Tukey test is known to have substantial control over type I statistical errors (false positives).

3.4.5.1.2 Simple descriptive data and frequencies

In addition to the statistical tests to find significant differences, as described in the previous section, in some cases, the study also used simple descriptive data and frequencies (on a five point Likert-scale) to provide another means of understanding the spread of responses. This was done with the analysis *overall* for research questions 1 and 2; however, it was not carried out for the *within* and *across* degree programme analyses as the sample sizes were often too small (see Table 12, Results and Analysis chapter, section 4.3.1) for these analyses to show a

useful spread of responses. For research question 2, this analysis is specifically used to gain a wider *overall* understanding of the students' perceptions of the support mechanisms.

3.4.5.2 Questionnaire: qualitative data - thematic analysis

Questionnaire Q19 asked students to provide written suggestions as to how the PG writing support mechanisms could be improved. The results were analyzed using a thematic analysis (e.g. Braun & Clarke, 2006). A content analysis usually involves analyzing large quantities of textual data for information such as the frequency of certain words (Mayring, 2000). In contrast, a thematic analysis is "...a method for identifying, analyzing and reporting patterns (themes) within data" (Braun & Clarke, 2006, p. 79). As Q19 resulted in a relatively small amount of textual data, and reflected a student narrative concerning suggested improvements, a thematic analysis was appropriate for this set of data. Of the 162 respondents (see section 3.3.3), 113 provided an answer to this question. They were analyzed and coded twice. In the first coding, they were split into 27 quite specific categories (e.g. "ALA¹¹ does not relate to major"), with 'n/a' where students commented they had not used the available support services, and "Unclear" if the meaning could not be discerned (e.g. due to poor language use) and therefore it was not possible to assign a category. Some students wrote multiple comments that were assigned different categories, yielding 130 coded comments in total. They then underwent a second coding where they were combined into 10 broader categories (e.g. 'Help with references' and 'How to analyze data' were grouped into a wider 'More instruction/practice' category). These then were grouped into four even broader categories (e.g. 'More Instruction/practice' and 'Help with assignment' fell under 'Teaching Methods'). In order to validate this data, two weeks after the initial coding, the researcher repeated the process, leading to very similar results. Mackey and Gass (2005) state when there is one researcher, as in the present study, this procedure can be used to validate data.

¹¹ The course 'PG EAP ALA' is abbreviated to 'PG EAP' in this study. The term PG EAP ALA was used on the questionnaire as this is the official title of the course.

3.4.5.3 Data analysis: triangulation of data

As previously discussed, this study triangulated various data sources to answer the research questions (e.g. section 3.2.1). This section explains the benefits of data triangulation and the specific type of triangulation utilized. Within the context of the sequential mixed methods approach used in this study, triangulation refers to the integration of qualitative and quantitative methods in a single study (Creswell, 2003; Teddlie & Tashakkori, 2003). Specifically, the type of triangulation used is known as ‘methods triangulation’ (Patton, 1999). Triangulation of methods is important because a single method might not adequately reflect all the data has to reveal about a given phenomenon (Blaxter, Hughes & Tight, 2006). To that end, this study used multiple methods, collecting data from different participants (primarily PG academic lecturers and their students). This produced a more complete understanding of writing support needs. Finally, as discussed as part of the questionnaire validation (section 3.4.4.2) triangulating data can improve the validity of a study (e.g. see Cohen, Manion & Morrison, 2000; Creswell, 2014). Data in this study was triangulated in three main ways as detailed below.

Triangulation 1: Writing support needs are indicated by finding ‘gaps’ between significant differences in perceived understanding (Table 6, section 3.4.5.1.1) and writing importance (as identified by the content analysis, section 3.4.3.1). For example, PG programmes with significantly lower perceived understanding than other programmes for task types that are important for their programme may require more writing support. This triangulation is primarily used to answer research question 1; however, it also feeds into the study’s discussion of the implications for writing support mechanisms.

Triangulation 2: Indicates writing support needs by relating significant differences in perceived usefulness (Table 7, section 3.4.5.1.1) to writing importance (as identified by the content analysis). For example, students from programmes that do more writing may find the support more useful. Like triangulation 1, while this is chiefly used for research question 2, it also forms part of the implications for the writing support mechanism discussion.

For triangulation 1 and 2, tables which summarize *all* significant results are first shown. Then the results for *each type* of significant difference (e.g. differences in perceived understanding of task types *across* programmes) are shown in separate tables. For these significant differences, summarized data from the content analysis (e.g. the *word count* and *programme value* of relevant task types for programmes with significant differences) which is relevant to these differences is displayed in another table next to them. This allowed the results to be compared. Mean differences (on a five point Likert-scale) were also compared between the significant results so that the extent of the differences could be seen.

Triangulation 3: This draws on all data in the study in order to suggest changes to PG writing support mechanisms. This is included as part of the implications for writing support mechanisms (Discussion Chapter, section 5.5) which follows the discussion of research questions 1 and 2 in the Discussion chapter. The following data sources were used to make recommendations:

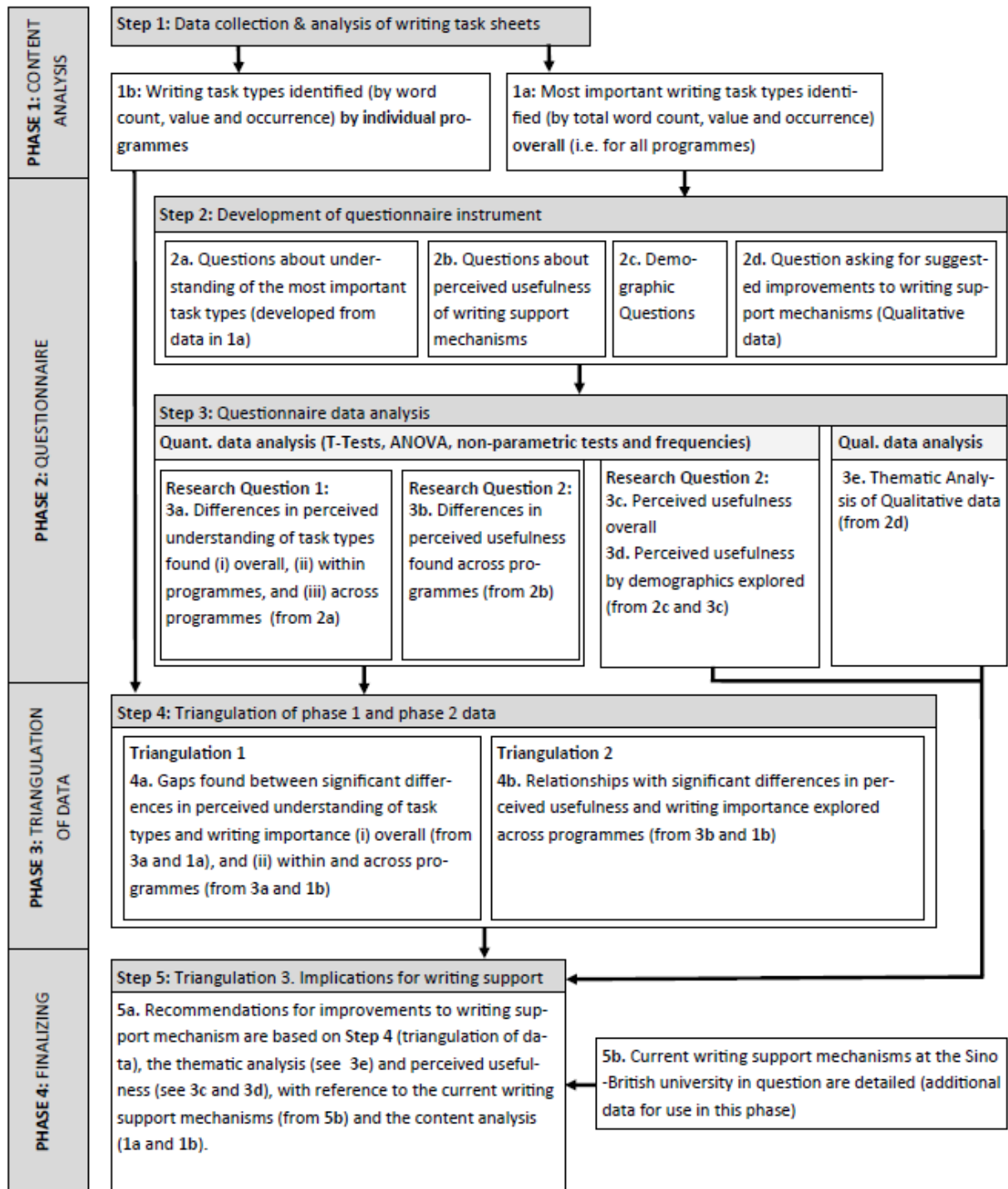
- Phase 1 content analysis (see sections 3.4.1 - 3.4.2)
- Phase 2 questionnaire data (quantitative and qualitative data - thematic analysis, see sections 3.4.5.1 and 3.4.5.2)
- Phase 3 triangulation of data from research question 1 and 2 (see Tables 6 and 7, section 3.4.5.1.1).
- A description of the current writing support mechanisms¹²

3.4.5.4 Data analysis: flow of data

Figure 2 below summarizes the how all data in the study flows through all the research questions in the four main phases of the study.

¹² The description of the current support mechanisms (see Results and Analysis chapter, section 4.4) is based on publicly available materials and the researcher's own knowledge of teaching on the PG EAP course. Therefore, no data instrument was needed for the collection of this data.

Figure 2. Visual summary of data flow



3.5 Ethical considerations

Ethical guidelines for education research articulate principles, or rules, that guide researchers through ethical issues that could arise in the course of conducting research (AERA, 2011; BERA, 2011). Oliver (2003) categorized these potential issues into ones that should be considered *before the study begins* and *during the course of the study*. The majority of these considerations have already been addressed in the relevant sections of this chapter. For instance, before conducting this research study, the researcher addressed the following issues: (i) 'gatekeepers' for document collection (section 3.4.1); (ii) informed voluntary consent of the participants (sections 3.4.1 and 3.4.4.3); (iii) providing clarity for use of the data collected (section 3.4.4.3); and (iv) mitigating any possible undue influence on participants (sections 3.4.4.3 and 3.3.3). In the course of conducting the research, the following ethical considerations were carefully observed: (i) ensuring the anonymity and confidentiality of the research participants (section 3.4.4.3); and (ii) ensuring and explaining to participants how the data would remain confidential (section 3.4.4.3). However, there are other ethical considerations which are pertinent to this study. These are discussed below.

The Sino-British University where the study took place requires all research proposals to be sent to the University Ethics Committee for approval. Oliver (2003) noted that proposals which are approved by a formal ethics committee "provide a sense of organizational support for what [the researcher] is doing" (p. 40). Indeed, when addressing 'gatekeepers' (section 3.4.1), formal approval of the proposal by a research committee could enhance their confidence in the study (Oliver, 2003, p. 42). The University committee classified the current study as Negligible Risk. This means the proposal only needed to be approved by the Head of the Ethics Approval Committee and did not require a formal application to the University Research Ethics Subcommittee before starting the research. The documentation confirming this (Appendix A) was sent to the University of Liverpool to demonstrate that the researcher had approval from the Sino-British University where the research took place. The University of Liverpool also required ethics approval before commencing the study. The following

documents were submitted and approved: the Ethics Response form, the online University of Liverpool Ethics Application form, the Participant Consent Form (in English and Chinese), and the Participant Information Sheet (Appendix B).¹³

A final consideration is the use of information technology during this research study. Oliver (2003) outlined several possible ethical issues involved with the use of information technology. The issues relevant to this study involve data collection and storage to ensure the confidentiality of the data. Regarding storage, the task sheets were collected from the University's Registry Department on a USB drive. They were then transferred to a password protected cloud server and deleted from the USB drive. Additionally, an online survey platform – Survey@universityname was used for the final questionnaire. Only the researcher has access to the results via a secure password, and the results are stored on a secure server. This means that there is no sharing of confidential or sensitive data with third-parties. Additionally, both sets of data were only ever accessed from the cloud server and were not transmitted at any time from the cloud server (Oliver, 2003, p. 50-51). In terms of confidentiality, the email addresses of PG students who completed the questionnaire were visible when the initial data was accessed and downloaded. However, it is not possible to determine which students completed which questionnaire, so anonymity is protected (AERA, 2011; BERA, 2011; Oliver, 2003). Additionally, the demographic information the students provided on the questionnaire (Appendix D) is not enough to identify individual students.

¹³ When the researcher requested access to PG degree programme task sheets, the PG students' PIS was also sent to the PG Programme directors to provide them more information concerning the study.

Chapter 4. Results and Analysis

4.1 Introduction

As the study is comprised of several phases, using sequential mixed methods, the data is presented in the order it was collected. Phase 1, the content analysis, provides data that was used in two ways. Firstly, it was utilized to identify the writing requirements (e.g. *occurrence*, *word count*, *value*) by task type for every PG programme. This data is used in the subsequent phases of the study to answer the research questions. Secondly, the content analysis data was used to find the most important task types for all PG programmes which helped inform the creation of the questionnaire for use in phase 2 of the study. After presenting the data from the content analysis, the phase 2 quantitative and qualitative data from the questionnaire is presented and analyzed. Phase 3 is the triangulation of data from phase 1 and phase 2, and therefore phase 3 data is integrated with quantitative results from the questionnaire so that this data can be seen in context. Finally, the current PG writing support mechanisms at the Sino-British University in China (taken from sources including the PG Student Handbook) are outlined. See Figure 2 (Methodology chapter, section 3.4.5.4) for a summary of how the data is used in all parts of the study. The discussion of these results follows in the next chapter.

4.2 Content analysis

The content analysis identified the writing requirements for the PG programmes. It is examined first because this data was used to inform the development of the student questionnaire for use in phase 2, and this data is also used as part of the research questions in the subsequent Discussion chapter.

This content analysis section is divided into three parts. The first section briefly presents writing requirements for the individual degree programmes. Data from this feeds into the next two sections: (i) a summary of task types (over all degree programmes), and (ii) a summary of task types by writing importance (in terms of *occurrence*, *word count* and *value*).

The former provides data that is used in the phase 3 triangulation of data, and the latter is data that helped form the questionnaire and is also used as part of the phase 3 triangulation.

4.2.1 Writing task types for individual degree programmes by writing importance

In this section, the content analysis of each degree programme is presented. This analysis gives information about the various writing task types and their importance (in terms of *occurrence*, *word count* and *value*) for every PG degree programme using data collected from the task sheets (see the Methodology chapter, sections 3.3.1, 3.4.1 and 3.4.2, for more information about the data collection and analysis procedures). As discussed above, data from this analysis is used in the next two sections.

Table 8 below shows the data for the International MBA programme. It is used as an example to show how the data was collected (data for all 22 programmes included in the content analysis can be found in Appendix I). Task types marked with an (*) in these tables were not included on the questionnaire (the reason is discussed in section 4.2.3 below). The data types collected for all programmes, and the example result for the International MBA programme in Table 8, is detailed in Table 9 below.

Table 8. International MBA content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
ACF 405 (5)	Report	3000		100	
MAN 416 (5)	Report	1000		35	
MAN 419 (5)	Report	3000	9000	100	37.5
MAN 420 (5)	Report	1000		25	
MAN 416 (5)	Report	1000		40	
ECO 405 (5)	Essay	1500	1500	10	1.25
ECO 405 (5)	Case Study	1000	2000	25	6.25
ECO 405 (5)	Case Study	1000		25	
MAN 418 (5)	Marketing Plan*	500	500	50	6.25
<i>There are eight core courses (40 credits).</i>		Total Word Count: 13000		Total programme value: 51.25%	

Table 9. Content analysis (data types collected – International MBA example)

Column	Data Collected	Result (or example)	Note
Course (credits)	The number of courses with writing tasks and their respective credits	6 (ACF405, MAN416, MAN418, MAN419, MAN420 and ECO405) – all worth 5 credits.	There are 8 core courses worth a total of 40 credits (noted at the bottom of Table 8) with writing tasks
Task Type	The total number of writing tasks and how often each task type occurs	9 (five reports, one essay, two case studies and one marketing plan)	
Word Count	The word count for each assessment	For example, for ACF405, this report is 3000 words	
Total Word Count (by Task Type)	The total word count by task type	9000 (Reports), 1500 (Essay), 2000 (Case Studies), 500 (Marketing plan)	This means, for example, International MBA students write a total of 9000 words for the five reports (see 'Task Type' above) they complete
Value	The value for each assessment	For example, the report for ACF405 is worth 100% of the final grade	That means this report is the only assessment on the ACF405 course
Programme Value (by Task Type)	The total value by task type	37.5% (Reports), 6.25% (Case Studies), 6.25% (Marketing Plan), 1.25% (Essay)	This refers to the total programme value for these task types. E.g. 37.5% of all the marks on this programme are assessed via reports ¹⁴
Total Word Count (at the bottom of the table)	Total Word Count	In this case it is 13000 words (calculated by adding the word count for all writing tasks).	In the proceeding summary sections, this allows degree programmes to be compared by the writing requirements in terms of words
Total programme value (at the bottom of the table)	The total value of writing tasks on the programme	The total programme value of the writing tasks is 51.25% ¹⁵	In the proceeding summary sections, this data allows degree programmes to be compared by the total value assigned to the writing tasks

¹⁴ These were calculated by taking the *value* of each writing task and multiplying it by the credits for that course, resulting in a *weighted value* for each task (most courses are worth 5 credits, but this is not always the case, so the *value* had to be weighted). The *weighted values* were then added for each task type (e.g. *reports*) and divided by the total number of credits on the programme that derive from core courses (noted at the bottom left of the table, e.g. see Table 8). For example, for *case studies*, there are two 25% assignments on the 5 credit ECO405 course. The *weighted values* are $(25\% * 5 = 125) + (25\% * 5 = 125) = 250\%$. 250% was then divided by the total number of credits for the core courses on the programme (40), equaling 6.25% for *case studies*. The same procedure was repeated for all task types.

¹⁵ It was calculated by adding all of the *Programme Value (by Task Type)* results (i.e. $37.5\% + 6.25\% + 6.25\% + 1.25\% = 51.25\%$). This means the remaining 48.75% of the marks on this programme derive from tasks unrelated to writing.

4.2.2 Summary of writing task type data for all degree programmes by writing importance

In this section, summary data for task types from the previous section is presented in Table 10 below. This data is subsequently used in the phase 3 triangulation of data (sections 4.3.2.4 and 4.3.3.3). In this section, only main trends are highlighted.

This data was transferred from the content analysis (as detailed in the last section) for every individual programme. However, in this case, the *word count* and *value* are combined for each task type. For example, for the International MBA, there are two 1000-word *case studies*. Therefore, here they are shown together as 2000 for *word count*. See Table 8 and Table 9 above for an explanation of how the figures were calculated. However, Table 10 also gives the *average word count* and *average value* (shown at the bottom of the table) of the writing tasks for all programmes. These were calculated by adding the *total word count* and *total programme value* columns for all PG programmes and dividing by 22 (the total number of programmes in the content analysis).

Table 10 is ordered by the *total value* of writing tasks. It shows that the *average value* of writing tasks for the programmes is 32.06%, with MRes Management the highest at 92.50%, and MRes Molecular Bioscience the lowest at 3.46%. Furthermore, the *average word count* for all programmes is 15,409, with MSc Sustainable Construction having the most at 46,500 words, and MRes Molecular Bioscience and MSc Entrepreneurship and Innovation the both having the least words at 3,000¹⁶. These statistics highlight that there are widely varying writing requirements *by degree programme*, both in terms of the *word count* and *value* associated with these writing tasks.

¹⁶ Some of these totals are relatively low because (i) some programmes had a substantial amount of assessments without assigned writing tasks; for instance, lab work (for the science programmes) and oral presentations, and (ii) as justified in the Methodology chapter (see section 3.3.1), the study examined core classes only and the final year project (i.e. the dissertation) is excluded.

Table 10. Task type summary (by degree programme)

Degree Programme (No. of courses)	Task Type	Word Count (by Task Type)	Total Word Count	Programme Value (by Task Type) (%)	Total Programme Value (%)
MRes Management (4)	Proposal	10000	21500	42.50	92.50
	Report	6500		25.00	
	Essay	5000		25.00	
MSc Urban Planning (8)	Essay	10500	33900	24.38	64.00
	Report	16000		22.88	
	Annotated Bibliography*	5400		12.50	
	Proposal	2000		4.25	
MA TESOL (7)	Report	5000	17500	14.29	57.14
	Essay	2500		7.14	
	Proposal	2000		5.71	
	Term Paper*	5500		15.71	
	Review of test*	1000		5.71	
	Mini Qualitative Research *	1500		8.57	
International MBA (8)	Report	9000	13000	37.50	51.25
	Essay	1500		1.25	
	Case study	2000		6.25	
	Marketing plan*	500		6.25	
MRes Computer Science (2)	Essay	2500	8500	7.50	50.00
	Proposal	2000		15.00	
	Report	4000		27.50	
MSc Media and Communication (9)	Essay	6000	16000	18.89	46.11
	Proposal	5000		12.22	
	Research paper*	3000		9.44	
	Written evaluation of document*	2000		5.56	
MSc Operation and Supply Chain Management (8)	Report	12500	20500	30.00	45.00
	Case study	8000		15.00	
MBA (10)	Report	13000	20500	21.00	44.00
	Essay	3500		11.00	
	Case study	2500		10.00	
	Business Memorandum*	1500		2.00	
MSc Sustainable Construction (8)	Report	37500	46500	21.25	38.75
	Essay	9000		20.00	
MSc Social Computing (6)	Essay	2500	17500	2.50	38.33
	Proposal	2000		5.00	
	Report	9000		21.67	
	Pilot Study*	4000		9.17	

Degree Programme (No. of courses)	Task Type	Word Count (by Task Type)	Total Word Count	Programme Value (by Task Type) (%)	Total Programme Value (%)
MSc Applied Informatics (4)	Essay	2500	6500	3.75	33.75
	Proposal	2000		7.50	
	Report	2000		22.50	
MA Architectural Design (10)	Essay	7900	14600	12.67	32.00
	Report	6000		17.33	
	Book Review*	700		2.00	
MSc Business Analytics (13)	Report	16500	19500	22.83	27.00
	Case study	3000		4.17	
MSc Investment Management (10)	Report	22000	22000	24.22	24.22
MRes Advanced Chemical Science (4)	Report	5000	5000	11.25	11.25
MSc Professional Accounting (10)	Report	15000	15000	11.11	11.11
MSc Finance (7)	Report	8000	11000	7.71	9.14
	Proposal	3000		1.43	
MSc Management (8)	Case study	3000	4500	6.25%	8.13
	Report	1500		1.88%	
MSc Economics and Finance (12)	Report	11000	14500	5.61	7.02
	Essay	2000		1.05	
	Proposal	1500		0.35	
MSc Entrepreneurship and Innovation (8)	Case study	3000	3000	6.25	6.25
MSc Economics (4)	Report	5000	5000	5.00	5.00
MRes Molecular Bioscience (5)	Report	3000	3000	3.46	3.46

*task types not included on the questionnaire **Average word count:** 15409 **Average Value:** 32.06%

4.2.3 Summary of task type importance

Summary data for task types from the previous section is now presented by importance in terms of *occurrence*, *word count* and *value*. This data is used in two ways. Firstly, it is triangulated with data from the phase 2 questionnaire (section 4.3.2.4). Secondly, as detailed in the Methodology chapter (see section 3.4.3.1), this data was used to help inform the creation of the questionnaire.

Table 11 shows the four most frequently *occurring* task types, and also those with the highest *total word count* and *value*, are *reports*, *essays*, *proposals* and *case studies*. For example, *reports occur* in 20 of the degree programmes, a total of 61 times (*occurring* multiple times in most of the programmes). Over these 61 *occurrences* the total combined *word count* is 207,500 words (i.e. this is the summed *word count* for every *report* on all PG programmes), and the *average value* is 16.09% (i.e. 16.09% of the marks over all 22 PG programmes in the content analysis derive from *reports*). See the footnotes for an explanation of how these values were calculated. Ascertaining the total *word count* and *average value* of the task types in this way allowed for the most important task types for inclusion on the questionnaire to be identified. After *reports*, *essays*, *proposals* and *case studies*, the next task type, *Term Papers* at 5,500 words and 0.71% *average value*, are much less important than these four task types and they only *occur* in one degree programme. Therefore, only *reports*, *essays*, *proposals* and *case studies* were included as part of the questionnaire.

Table 11. Task type summary (overall)

Task Type	No. of degree programmes	Freq.	Total Word Count ¹⁷	Average Value % ¹⁸
Report	20	61	207500	16.09
Essay	12	24	55400	6.03
Proposal	9	12	29500	4.27
Case Study	6	9	21500	2.18
Term paper*	1	2	5500	0.71
Annotated Bibliography*	1	1	5400	0.57
Research paper*	1	1	3000	0.43
Pilot study*	1	1	4000	0.42
Mini qualitative research*	1	1	1500	0.39
Marketing Plan*	1	1	500	0.28
Review of test*	1	1	1000	0.26
Written Evaluation*	1	1	2000	0.25
Business Memorandum*	1	1	1500	0.09
Book Review*	1	1	700	0.09
*task types not included on the questionnaire	Total	114	339000	32.06

4.3 Questionnaire analysis

The questionnaire is phase 2 of the research study, which was in part developed from data in the phase 1 content analysis as discussed in the previous section. This data is later used as part of the research questions in the Discussion chapter. This section starts by detailing the frequencies and minimum sample sizes for questionnaire data to be included in the questionnaire analysis. It then provides data for students' perceived understanding of writing task types (Q7-10). Finally, the students' perceptions of the current PG writing support

¹⁷ This was calculated by adding the required *word count* for each task type for all the programmes. E.g. *Annotated Bibliography* only occurred once in one programme, with a required *word count* of 5400; *Term Papers* occurred twice in one programme, one with a required *word count* of 2500, and another with 3000, adding up to 5500. All other task type *total word counts* were calculated in the same way.

¹⁸ This was calculated by adding the *programme value (%)* (see Table 10) for each task type over all the PG programmes, and then dividing by the total number of programmes in the content analysis (i.e. 22). For example, *case studies* appear in six different programmes with *programme values* of 15%, 10%, 6.25%, 6.25%, 6.25% and 4.17%. Combined these add up to 47.92%. Dividing by the 22 programmes included in the content analysis gives an *average value* of 2.18% for *case studies* over the 22 programmes. Combining these *average values* yields a *total average value* of 32.06% for all writing tasks over the 22 PG programmes included in the content analysis (the same as in Table 10).

mechanisms are presented in two parts through quantitative data (Q16-18) and qualitative data by performing a thematic analysis of Q19 which asked the PG students for suggested improvements to the writing support mechanisms (a PG EAP course and the Writing Centre). As explained in the introduction to this chapter, data from the phase 1 content analysis is also triangulated with the phase 2 quantitative data in this section. This triangulation is phase 3 of the study, the results of which are included as part of the questionnaire data. See the Methodology chapter, section 3.4.5, for more information about the analysis procedures.

4.3.1 Frequencies and minimum sample sizes

As discussed in the Methodology chapter, the quantitative Likert-scale questions were analyzed (i) *overall* (i.e. using combined data from all programmes), (ii) *within* degree programmes (i.e. data used to find different writing needs *within* an individual programme), and (iii) *across* degree programmes (i.e. data used to find different writing needs *across* programmes). See the Methodology chapter (section 3.4.5) for detailed definitions of these terms. As detailed in the Methodology chapter (section 3.4.5.1), in most cases the quantitative data in this section is compared to find significant differences. These comparisons allow for differences in students' writing needs both *overall*, and *within* and *across* degree programmes to be found for use in the subsequent Discussion chapter. For example, these comparisons might show that students from one programme report a significantly weaker understanding of how to write a certain task type (e.g. *essays*) than students from other PG programmes, and therefore indicates they may need more writing support with this task type.

As also explained in the Methodology chapter (section 3.4.5.1.1), the minimum sample size for a programme to be analyzed is $N \geq 5$ when examining significant differences *within* and *across* programmes. When looking for differences *overall*, no minimum sample size for individual programmes is required because data for all 162 responses, over all the programmes, was grouped together. Although 22 programmes were included in the content analysis (Appendix I), after applying the sampling procedure as detailed in the Methodology

chapter (section 3.3.2), questionnaire data was only obtained for 14 of these. Of these, nine programmes meet the $N \geq 5$ criterion (see Table 12). Therefore, these nine programmes were included in the analysis for *within* and *across* degree programmes, with the largest being MSc Operations and Supply Chain Management with a sample size of 24, and MSc Economics and Finance and MRes Computer Science the smallest, both with sample sizes of six. However, the Likert-scale questionnaire questions gave the option of 'n/a', allowing students to indicate where they believe a question did not apply to them. For Q17 and Q18 (questions about perceived usefulness of the writing support mechanisms) this resulted in the sample size for three programmes (MRes Computer Science, MSc Economics and Finance and MA Architectural Design) dropping to below five. Therefore, only the remaining six programmes were included in the *across* degree programme analysis for these questions. For Q16, two programmes (MRes Computer Science and MA Architectural Design) did not meet the minimum sample size, and were therefore excluded.

Table 12. Sample size by degree programme ($N \geq 5$)

Degree Subject	Freq.	Cohort Size	Proportion of Cohort Size (%)
MSc Operations and Supply Chain Management	24	69 (23 part time)	34.78%
MSc Professional Accounting	20	46	43.48%
MA TESOL	19	52 (9 part time)	36.54%
MSc Business Analytics	10	27	37.04%
MSc Urban Planning	8	12	66.67%
MA Architectural Design	7	22	31.82%
MSc Media and Communication	7	23	30.43%
MRes Computer Science	6	14	42.86%
MSc Economics and Finance	6	18	33.33%
Average			37.81%

4.3.2 Perceived understanding of writing task types

Questionnaire Q7-10 asked students to rate their understanding of how to write the most important task types (Q7: *Reports*; Q8: *Essays*; Q9: *Case Studies*; Q10 *Proposals*) on a five point Likert-scale, with 1 being 'Strongly Agree' and 5 being 'Strongly Disagree' that they

understand how to write the task type. They could also choose 'n/a' where they thought the task type was not relevant for their programme.

As discussed in the Methodology chapter, this data was analyzed with the purpose of ascertaining if there are any significant differences in the students' perceived understanding of the four task types (i) *overall* (i.e. using combined data from all programmes), (ii) *within* degree programmes (i.e. data used to find different writing needs *within* an individual programme), and (iii) *across* degree programmes (i.e. data used to find different writing needs *across* programmes), thereby allowing the researcher to understand how their writing needs may differ (see Methodology chapter, section 3.4.5, for more detailed definitions of these terms). For example, if students for a particular programme report themselves to be weaker at *report* writing than students from other programmes, this may indicate they need more support with this task type.

The final part is to present 'Triangulation 1' which relates significant differences in perceived understanding to writing importance as identified in the content analysis (section 4.2). As discussed in the Methodology chapter, the reason the study focuses heavily on significant differences in understanding is that it is the only objective way to differentiate the students by writing need. The results and analyses in this section are used in the Discussion chapter to show that triangulating differences in students' perceived understanding of task types with writing importance can provide useful information concerning their writing needs.

4.3.2.1 Perceived understanding of task types: overall

To find out if *overall* (i.e. using combined data for students from all programmes) perceived understanding of how to write the four task types (*reports, essays, case studies and proposals*) differs, paired t-tests were carried out. The data presented in Tables 13 and 14 below reveal that there are significant differences in the students' perceived understanding of (i) *essays* and *case studies* (*essays* mean = 2.48, *case studies* mean = 2.78, $p = 0.000$), (ii) *essays* and *proposals* (*essays* mean = 2.48, *proposals* mean = 2.72, $p = 0.003$), (iii) *reports* and *case studies*

(*reports* mean = 2.54, *case studies* mean = 2.78, $p = 0.000$), and (iv) *reports* and *proposals* (*reports* mean = 2.56, *proposals* mean = 2.72, $p = 0.027$). All of these differences are significant at the $p=0.01$ (99%) confidence level, except *reports* and *proposals*, which is significant at the $p=0.05$ (95%) confidence level. As discussed in section 3.4.5.1.1, the significant results were also subjected to the equivalent non-parametric test. Therefore, Wilcoxon signed-rank tests (see Appendix G, Tables 68(a) and 68(b)) were performed on pairs 2, 4, 5 and 6, resulting in a similar levels of significance (*Essays* and *Case Studies*, $z=-4.260$, $p=0.000$; *Reports* and *Case Studies*, $z=-3.533$, $p=0.000$; *Proposals* and *Essays*, $z=-3.146$, $p=0.002$; *Reports* and *Proposals*, $z=-2.186$, $p=0.029$). Essentially, this shows that the PG student body, in general, has less perceived understanding of writing both *cases studies* and *proposals* than *essays* and *reports*.

Table 13. Overall task type (paired samples statistics)¹⁹

		Mean	N	SD	SEM
Pair 1	Report	2.54	160	0.9	0.07
	Essay	2.48	160	0.95	0.08
Pair 2	Essay	2.48	157	0.96	0.08
	Case Study	2.78	157	0.94	0.07
Pair 3	Case Study	2.78	156	0.94	0.08
	Proposal	2.7	156	0.95	0.08
Pair 4	Report	2.54	157	0.91	0.07
	Case Study	2.78	157	0.94	0.07
Pair 5	Proposal	2.72	158	0.96	0.08
	Essay	2.48	158	0.96	0.08
Pair 6	Report	2.56	159	0.9	0.07
	Proposal	2.72	159	0.96	0.08

¹⁹ Some of the means for the same task types differ slightly for some pairs (e.g. the pair 1 and 6 mean for *reports*) because of some students occasionally not responding or choosing 'n/a', reducing the number of pairs.

Table 14. Overall task type (paired samples test)

		Paired Differences					T	df	Sig. (2-tailed)
		Mean	SD	SEM	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Report – Essay	0.07	0.69	0.05	-0.04	0.18	1.26	159	0.211
Pair 2	Essay - Case Study	-0.31	0.87	0.07	-0.44	-0.17	-4.42	156	0.000**
Pair 3	Case Study - Proposal	0.08	0.99	0.08	-0.07	0.24	1.05	155	0.295
Pair 4	Report - Case Study	-0.24	0.85	0.07	-0.38	-0.11	-3.57	156	0.000**
Pair 5	Proposal – Essay	0.23	0.98	0.08	0.08	0.39	3.01	157	0.003**
Pair 6	Report - Proposal	-0.16	0.89	0.07	-0.3	-0.02	-2.23	158	0.027*

* Difference is significant at the 0.05 level ** Difference is significant at the 0.01 level

In order to provide a clearer understanding of the meaning of these significant differences, it is also useful to look at simple response frequencies (Table 15).

Table 15. Overall task type (descriptives)

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree	Total
Reports	14 (8.70%)	73 (45.34%)	48 (29.81%)	23 (14.29%)	3 (1.86%)	161
Essays	19 (11.88%)	74 (46.25%)	44 (27.5%)	18 (11.25%)	5 (3.13%)	160
Case studies	11 (7.00%)	51 (32.48%)	61 (38.85%)	29 (18.47%)	5 (3.18%)	157
Proposal	16 (10.06%)	49 (30.82%)	62 (38.99%)	28 (17.61%)	4 (2.52%)	159

As the students reported significantly less perceived understanding of *case studies* and *proposals* than *reports* and *essays*, the results are explained with a focus on these differences.

In terms of agreement, for *reports*, 54.04% (8.70% + 45.34%) of the students indicated they ‘strongly agree’ or ‘agree’ that they understand how to write this task type. It is slightly higher for *essays* at 58.13%. As expected, it is much lower for *proposals* (40.88%) and *case studies* (39.48%). Regarding disagreement (‘disagree’ or ‘strongly disagree’), it was 16.15% for *reports* and slightly less for *essays* (14.38%). Again, as expected, it is higher for *proposals* (20.13%) and *case studies* (21.66%).

However, the difference between disagreement is not as pronounced as with agreement. For example, there is an 18.65% (58.13% - 39.48%) difference between *case studies* and *essays* for agreement, but only a 7.28% (21.66% - 14.38%) difference for disagreement. This data helps illuminate the statistical differences in perceived understanding in terms of frequencies, and this is referred to again as part of the Discussion chapter.

4.3.2.2 Perceived understanding of task types: within degree programmes

To find out if perceived understanding of how to write the four task types (*reports*, *essays*, *case studies* and *proposals*) differs *within* degree programmes, paired t-tests were carried out. As discussed in section 4.3.1, the data only contains degree programmes with a sample size of $N \geq 5$ and task types relevant to each programme as identified in the content analysis (section 4.2.2). For example, pair 1 (Table 16) shows that MSc Operations and Supply Chain Management students have to write *essays* and *reports*. There is no data for these students for *case studies* and *proposals* as they were not assigned these task types. MSc Professional Accounting does not feature because only one task type was identified, and therefore there is no other task type to compare it to. The data presented in Tables 16 and 17 below reveals that for MA TESOL students, there are significant differences in their perceived understanding of how to write (i) *essays* and *proposals* (*essays* mean = 2, *proposals* mean = 2.67, $p = 0.004$), and (ii) *reports* and *proposals* (*reports* mean = 2.22, *proposals* mean = 2.67, $p = 0.042$), with the former being significant at the 99% confidence interval and the latter at the 95% level. No other significant differences were found. As discussed in the Methodology chapter (section 3.4.5.1.1), significant differences were also checked with an equivalent non-parametric test. Therefore, Wilcoxon signed-rank tests (see Appendix G, Tables 69(a) and 69(b)) were performed on pairs 3 and 4, resulting in a similar level of significance (*essays* and *proposals*, $z = -2.652$, $p = 0.008$; *reports* and *proposals*, $z = -1.999$, $p = 0.046$).

Table 16. Within programmes task type (paired samples statistics)

		Mean	N	SD	SEM
Pair 1: Operations and Supply Chain Management	Report	2.61	23	1.27	0.26
	Case Study	2.61	23	1.23	0.26
Pair 2: TESOL	Report	2.26	19	0.73	0.17
	Essay	2	19	0.58	0.13
Pair 3: TESOL	Essay	2	18	0.59	0.14
	Proposal	2.67	18	0.91	0.21
Pair 4: TESOL	Report	2.22	18	0.73	0.17
	Proposal	2.67	18	0.91	0.21
Pair 5: Business Analytics	Report	2.5	10	0.97	0.31
	Case Study	2.6	10	0.84	0.27
Pair 6: Urban Planning	Report	2.25	8	0.46	0.16
	Essay	2.13	8	0.35	0.13
Pair 7: Urban Planning	Essay	2.13	8	0.35	0.13
	Proposal	3	8	1.07	0.38
Pair 8: Urban Planning	Report	2.25	8	0.46	0.16
	Proposal	3	8	1.07	0.38
Pair 9: Architectural Design	Report	2.71	7	0.95	0.36
	Essay	2.57	7	0.79	0.30
Pair 10: Media & Communication	Essay	2.86	7	0.9	0.34
	Proposal	2.86	7	0.9	0.34
Pair 11: Computer Science	Essay	3.17	6	1.17	0.48
	Proposal	2.5	6	1.05	0.43
Pair 12: Computer Science	Proposal	2.5	6	1.05	0.43
	Report	2.83	6	0.75	0.31
Pair 13: Computer Science	Report	2.83	6	0.75	0.31
	Essay	3.17	6	1.17	0.48
Pair 14: Economics and Finance	Report	2.67	6	0.82	0.33
	Essay	2.17	6	0.75	0.31
Pair 15: Economics and Finance	Essay	2.17	6	0.75	0.31
	Proposal	2.67	6	0.82	0.33
Pair 16: Economics and Finance	Report	2.67	6	0.82	0.33
	Proposal	2.67	6	0.82	0.33

Table 17. within programmes task type (paired samples test)

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	SD	SEM	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1: Operations and Supply Chain Management	Report - Case Study	0	0.6	0.13	-0.26	0.26	0	22	1.000
Pair 2: TESOL	Report – Essay	0.26	0.65	0.15	-0.05	0.58	1.76	18	0.096
Pair 3: TESOL	Essay – Proposal	-0.67	0.84	0.2	-1.08	-0.25	-3.4	17	0.004 **
Pair 4: TESOL	Report – Proposal	-0.44	0.86	0.2	-0.87	-0.02	-2.2	17	0.042 *
Pair 5: Business Analytics	Report - Case Study	-0.1	0.32	0.1	-0.33	0.13	-1	9	0.343
Pair 6: Urban Planning	Report – Essay	0.13	0.35	0.13	-0.17	0.42	1	7	0.351
Pair 7: Urban Planning	Essay – Proposal	-0.88	1.13	0.4	-1.82	0.07	-2.2	7	0.064
Pair 8: Urban Planning	Report – Proposal	-0.75	1.16	0.41	-1.72	0.22	-1.8	7	0.111
Pair 9: Architectural Design	Report – Essay	0.14	0.9	0.34	-0.69	0.97	0.42	6	0.689
Pair 10: Media & Communication	Essay – Proposal	0	1	0.38	-0.92	0.92	0	6	1.000
Pair 11: Computer Science	Essay – Proposal	0.67	1.86	0.76	-1.29	2.62	0.88	5	0.421
Pair 12: Computer Science	Proposal – Report	-0.33	0.82	0.33	-1.19	0.52	-1	5	0.363
Pair 13: Computer Science	Report – Essay	-0.33	1.37	0.56	-1.77	1.1	-0.6	5	0.576
Pair 14: Economics and Finance	Report – Essay	0.5	0.84	0.34	-0.38	1.38	1.46	5	0.203
Pair 15: Economics and Finance	Essay – Proposal	-0.5	1.05	0.43	-1.6	0.6	-1.2	5	0.296
Pair 16: Economics and Finance	Report – Proposal	0	0.63	0.26	-0.66	0.66	0	5	1.000

* Difference is significant at the 0.05 level ** Difference is significant at the 0.01 level

4.3.2.3 Perceived understanding of task types: across degree programmes

To discern if perceived understanding of the four task types (*reports, essays, case studies and proposals*) differs *across* degree programmes, ANOVA tests were carried out. The data only contains degree programmes with a sample size of $N \geq 5$ (as discussed in section 4.3.1), and task types relevant to each degree programme as identified in the content analysis (section 4.2.2).

Reports: Table 18 below shows the descriptive data for *reports* (Questionnaire Q7, “I understand how to write reports”). The greatest mean (indicating least perceived understanding) is MRes Computer Science (2.83), while the lowest (indicating most perceived understanding) is MSc Urban Planning (2.25).

Table 18. Across programmes: reports – Q7 (descriptives)

Programme	N	Mean	SD	SE	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Professional Accounting	20	2.7	0.8	0.18	2.32	3.08	1	4
Architectural Design	7	2.71	0.95	0.36	1.83	3.59	2	4
Business Analytics	10	2.5	0.97	0.31	1.8	3.2	1	4
Computer Science	6	2.83	0.75	0.31	2.04	3.62	2	4
Economics and Finance	6	2.67	0.82	0.33	1.81	3.52	2	4
Operations and Supply Chain Management	23	2.61	1.27	0.26	2.06	3.16	1	5
TESOL	19	2.26	0.73	0.17	1.91	2.62	1	4
Urban Planning	8	2.25	0.46	0.16	1.86	2.64	2	3
Total	99	2.55	0.92	0.09	2.36	2.73	1	5

Table 19 below shows the ANOVA analysis for *reports*, and it indicates that there are no significant differences *across* any of the programmes ($p=0.762$).

Table 19. Across programmes: reports – Q7 (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	4	7	0.51	0.59	0.762
Within Groups	79	91	0.87		
Total	83	98			

Essays: The descriptive data for essays (Q8: “I understand how to write essays”) is shown in Table 20 below. The least perceived understanding is for MRes Computer Science (Mean=3.17) and the most perceived understanding is for MA TESOL (Mean=2.00).

Table 20. Across programmes: essays – Q8 (descriptives)

	N	Mean	SD	SE	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Architectural Design	7	2.57	0.79	0.3	1.84	3.3	2	4
Computer Science	6	3.17	1.17	0.48	1.94	4.39	2	5
Economics and Finance	6	2.17	0.75	0.31	1.38	2.96	1	3
Media and Communication	7	2.86	0.9	0.34	2.03	3.69	2	4
TESOL	19	2.00	0.58	0.13	1.72	2.28	1	3
Urban Planning	8	2.13	0.35	0.13	1.83	2.42	2	3
Total	53	2.36	0.81	0.11	2.13	2.58	1	5

Table 21 below shows the ANOVA analysis which indicates that there are significant differences in perceived understanding of how to write essays ($p=0.011$).

Table 21. Across programmes: essays – Q8 (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	9.1	5	1.82	3.4	0.011
Within Groups	25	47	0.53		
Total	34	52			

The post-hoc analysis using the Tukey's HSD method is shown in Table 22 below. The test shows that there is a significant difference in the students' perceived understanding of how to write *essays* for MRes Computer Science and MA TESOL (MRes Computer Science mean = 3.17, MA TESOL mean = 2, $p=0.016$). The result is significant at the 95% confidence interval. As discussed in the Methodology chapter (section 3.4.5.1.1), significant differences were also checked with an equivalent non-parametric test. Therefore, a Mann-Whitney U test (see Appendix G, Tables 70(a) and (b)) was performed, confirming a similar level of significance ($p=0.011$).

Table 22. Across programmes: essays – Q8 (Tukey HSD post-hoc analysis)

(I) Degree Subject	(J) Degree Subject	Mean Difference (I - J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Architectural Design	Computer Science	-0.6	0.41	0.688	-1.8	0.61
	Economics and Finance	0.4	0.41	0.917	-0.8	1.61
	Media and Communication	-0.29	0.39	0.977	-1.45	0.87
	TESOL	0.57	0.32	0.496	-0.39	1.53
	Urban Planning	0.45	0.38	0.844	-0.68	1.57
Computer Science	Architectural Design	0.6	0.41	0.688	-0.61	1.8
	Economics and Finance	1	0.42	0.188	-0.25	2.25
	Media and Communication	0.31	0.41	0.973	-0.9	1.52
	TESOL	1.17	0.34	0.016*	0.15	2.18
	Urban Planning	1.04	0.39	0.108	-0.13	2.21
Economics and Finance	Architectural Design	-0.4	0.41	0.917	-1.61	0.8
	Computer Science	-1	0.42	0.188	-2.25	0.25
	Media and Communication	-0.69	0.41	0.54	-1.9	0.52
	TESOL	0.17	0.34	0.996	-0.85	1.18
	Urban Planning	0.04	0.39	1	-1.13	1.21
Media and Communication	Architectural Design	0.29	0.39	0.977	-0.87	1.45
	Computer Science	-0.31	0.41	0.973	-1.52	0.9
	Economics and Finance	0.69	0.41	0.54	-0.52	1.9
	TESOL	0.86	0.32	0.105	-0.1	1.82
	Urban Planning	0.73	0.38	0.394	-0.39	1.86
TESOL	Architectural Design	-0.57	0.32	0.496	-1.53	0.39
	Computer Science	-1.17	0.34	0.016*	-2.18	-0.15
	Economics and Finance	-0.17	0.34	0.996	-1.18	0.85
	Media and Communication	-0.86	0.32	0.105	-1.82	0.1
	Urban Planning	-0.13	0.31	0.998	-1.04	0.79

(I) Degree Subject	(J) Degree Subject	Mean Difference (I - J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Urban Planning	Architectural Design	-0.45	0.38	0.844	-1.57	0.68
	Computer Science	-1.04	0.39	0.108	-2.21	0.13
	Economics and Finance	-0.04	0.39	1	-1.21	1.13
	Media and Communication	-0.73	0.38	0.394	-1.86	0.39
	TESOL	0.13	0.31	0.998	-0.79	1.04

* Difference is significant at the 0.05 level

Case Studies: The descriptive data for *case studies* (Q9: “I understand how to write a case study”) is shown in Table 23 below. Only two programmes were identified in the content analysis as being relevant for *case studies*, MSc Business Analytics (mean=2.6) and MSc Operations and Supply Chain Management (mean=2.61).

Table 23. Across programmes: case studies – Q9 (descriptives)

	N	Mean	SD	SE	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Business Analytics	10	2.6	0.84	0.27	2	3.2	2	4
Operations and Supply Chain Management	23	2.61	1.23	0.26	2.08	3.14	1	5
Total	33	2.61	1.12	0.19	2.21	3	1	5

As there are only two programmes, it would have been possible to use an independent samples t-test. However, to be consistent with the other tests in this section, an ANOVA test was performed (Table 24 below). The test confirms that there is not a significant difference in the students’ perceived understanding of how to write *case studies* for these programmes ($p=0.984$).

Table 24. Across programmes: case studies – Q9 (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	0	1	0	0	0.984
Within Groups	39.88	31	1.29		
Total	39.88	32			

Proposals: The final task type to be analyzed is *proposals* (Q10: “I understand how to write a proposal/research proposal”). Descriptive data is shown in Table 25 below. MSc Urban Planning students reported the least perceived understanding of how to write *proposals* (Mean=3), while MRes Computer Science students showed the most perceived understanding (Mean=2.5).

Table 25. Across programmes: proposals – Q10 (descriptives)

	N	Mean	SD	SE	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Computer Science	6	2.5	1.05	0.43	1.4	3.6	1	4
Economics and Finance	6	2.67	0.82	0.33	1.81	3.52	2	4
Media and Communication	7	2.86	0.9	0.34	2.03	3.69	2	4
TESOL	18	2.67	0.91	0.21	2.22	3.12	1	4
Urban Planning	8	3	1.07	0.38	2.11	3.89	2	5
Total	45	2.73	0.91	0.14	2.46	3.01	1	5

The ANOVA test in Table 26 below indicates that there are no significant differences in the students’ perceived understanding of how to write *proposals* (p=0.869).

Table 26. Across programmes: proposals – Q10 (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.11	4	0.28	0.31	0.869
Within Groups	35.69	40	0.89		
Total	36.8	44			

4.3.2.4 Triangulation 1: significant differences in perceived understanding and writing importance

The final key area to explore is how significant differences from the questionnaire questions about students’ perceived understanding of task types relate to writing importance. This is part of phase 3 of the research study. Specifically, the goal here is to examine if there are any ‘gaps’ between students’ perceived understanding of the four most important task types (*essays, reports, case studies and proposals*) and writing importance in terms of task type

occurrence, value and word count as identified in the content analysis (section 4.2). For instance, in the questionnaire analysis, it was found that MRes Computer Science students have significantly lower perceived understanding of how to write *essays* than MA TESOL students. The content analysis shows the importance of *essay* writing for every programme, and, therefore, these two programmes can be compared in terms of the respective importance of *essay* writing in their programmes. This triangulation is an important part of this study as it enables the researcher to explore the insights into students' needs that can be provided by combining writing importance with students' perceived understanding of task types. As with the analysis of the questionnaire, this was done (i) *overall* (i.e. using combined data from all programmes), (ii) *within* degree programmes (i.e. data used to find different writing needs *within* an individual programme), and (iii) *across* degree programmes (i.e. data used to find different writing needs *across* programmes). See the Methodology chapter, section 3.4.5, for a detailed definition of these terms. Only instances where there were significant differences are included in the triangulation. As discussed in the Methodology chapter (section 3.2.1), this is because the study can only ascertain whether including students' perceived understanding of task types in a needs analysis has any value if there are objectively measurable differences (i.e. if there were no measurable differences, then there would be no way to separate students by their writing needs by using perceived understanding). A summary of the significant differences (as shown by the parametric tests) to be explored in the triangulation can be found in Table 27 below. This table also shows the mean differences between the groups so that the extent of these significant differences can be seen.

Table 27. Summary of significant results (perceived understanding)

Type	Highest-lowest (mean in brackets)	Mean Diff. ²⁰	Sig.
Overall	Case study (2.78) – essay (2.48)	0.310	0.000**
Overall	Case Study (2.78) – report (2.54)	0.240	0.000**
Overall	Proposal (2.72) – Essay (2.48)	0.230	0.003**
Overall	Proposal (2.72) - Report (2.56)	0.160	0.027*
		0.235 Average Mean Difference	
Within	TESOL: Proposal (2.67) - Essay (2)	0.670	0.004**
Within	TESOL: Proposal (2.67) – Report (2.22)	0.440	0.042*
		0.555 Average Mean Difference	
Across: Essays	Computer Science (3.17) and TESOL (2)	1.170	0.016*
		1.170 Average Mean Difference	

*Difference is significant at the 0.05 level ** Difference is significant at the 0.01 level

4.3.2.4.1 Triangulation 1: overall

For *overall* (i.e. using combined data from all programmes), Table 28(a) summarizes data from section 4.3.2.1. It highlights that the PG students reported less perceived understanding of how to write *case studies* (mean=2.78) and *proposals* (mean=2.72) than *essays* (mean=2.48) and *reports* (mean=2.56). Data from the content analysis (Table 28(b)) shows that *essays*, and especially *reports*, occur in many more degree programmes (*reports* 61; *essays* 24), have a higher *total word count* (*reports* 207,500; *essays* 55,400) and a higher *average value* (*reports* 16.09%; *essays* 6.03%) than both *case studies* and *proposals*. Therefore, the task types with the highest perceived understanding (i.e. *essays* and *reports*) also have greater writing importance than *case studies* and *proposals*. However, it should also be noted that these differences are relatively small. Table 28(a) shows that the mean differences in understanding range from 0.16 (*proposals and reports*) to 0.31 (*case studies and essays*), with an average mean difference of 0.235. This is an important consideration in the Discussion chapter when discussing the value of including students' perceived understanding of task types in a needs analysis within the context of the methodology employed in this study.

²⁰ It is worth recalling that these are all Likert-scale questions from 1-5. Higher numbers indicate less understanding. For instance, for 'Across: Essays' MRes Computer Science students reported a mean of 3.17 on this scale, while MA TESOL students reported 2, showing significantly more perceived understanding of how to write *essays*.

Table 28(a). Overall task type significant differences

Highest-lowest (mean in brackets)	Mean Diff.
Case study (2.78) – Essay (2.48)	0.31
Case Study (2.78) – Report (2.54)	0.24
Proposal (2.72) – Essay (2.48)	0.23
Proposal (2.72) - Report (2.56)	0.16
Average Mean	0.235

Table 28(b). Relevant content analysis data

Task Type	No. of degree programmes	Freq	Total Word Count	Average Value %
Report	20	61	207500	16.09
Essay	12	24	55400	6.03
Proposal	9	12	29500	4.27
Case Study	6	9	21500	2.18

4.3.2.4.2 Triangulation 1: within programmes

For *within* programmes, Table 29(a) below summarizes the significant differences from section 4.3.2.2. It shows that MA TESOL students reported significantly less perceived understanding of *proposals* (mean=2.67) than *essays* (mean=2) and *reports* (mean=2.22). While the content analysis (Table 29(b)) reveals that *proposals* have the lowest *word count* (2000) and *programme value* (5.71%) of the three relevant task types, and they only occur once, they are reasonably close to *essays* (*word count* 2500; *programme value* 7.14%; 1 occurrence). Another point is that the significant differences observed here (0.67 and 0.44) are slightly greater than those seen *overall* in the section above.

Table 29(a). Within programmes task type significant differences

Highest-lowest (mean in brackets)	Mean Diff.
TESOL: Proposal (2.67) - Essay (2)	0.67
TESOL: Proposal (2.67) – Report (2.22)	0.44
Average Mean	0.555

Table 29(b). Relevant content analysis data

Degree Programme (No. of courses)	Task Type	Freq	Word Count	Programme Value
MA TESOL (7)	Report	2	5000	14.29%
	Essay	1	2500	7.14%
	Proposal	1	2000	5.71%

4.3.2.4.3 Triangulation 1: across programmes

For *across* programmes, Table 30(a) summarizes the significant difference from section 4.3.2.3. It shows that MRes Computer Science students reported less perceived understanding of writing *essays* (mean=3.17) than MA TESOL students (mean=2). The content analysis (Table 30(b)) shows that MRes Computer Science students are required to write the same number of words for *essays* as MA TESOL students (2500 words), and for MRes Computer Science students *essays* have a slightly higher *programme value* (7.5%). It is also interesting to note that the observed mean difference in the students' perceived understanding of how to write *essays* (1.17) is much larger than the observed mean differences for the triangulation *overall* and *within* degree programmes as shown in the previous two sections. As mentioned in the introduction to the triangulation 1 section, this data is useful for the researcher in the next chapter when discussing the value of adding perceived understanding of task types to a needs analysis.

Table 30(a). Across programmes task type significant differences: essays

Highest-lowest (mean in brackets)	Mean Diff.
Computer Science (3.17) and TESOL (2)	1.17

Table 30(b). Relevant content analysis data

Degree Programme (No. of courses)	Task Type	Freq	Word Count	Programme Value
MRes Computer Science (2)	Essay	1	2500	7.50%
MA TESOL (7)	Essay	3	2500	7.14%

4.3.3 Perceptions part 1: perceptions of writing support mechanisms - quantitative data

This section provides data for the quantitative questions regarding the students' perceptions of the PG writing support mechanisms at the Sino-British University. The relevant questionnaire questions are Q16 ("The Writing Centre helps me with my writing coursework"), Q17 ("The postgraduate EAP ALA²¹ teaches writing genres (e.g. reports, essays)

²¹ The course 'PG EAP ALA' is abbreviated to 'PG EAP' in this study. The term PG EAP ALA was used on the questionnaire as this is the official title of the course.

that are useful in my other postgraduate courses”), and Q18 (“The postgraduate EAP ALA teaches writing skills (e.g. paraphrasing, summarizing, identifying journal articles for research, etc.) that are useful in my other postgraduate courses”). As with the other quantitative questions, they use a five point Likert-scale, with 1 showing ‘Strongly Agree’ and 5 ‘Strongly Disagree’. Where students did not take the PG EAP course they were asked to put ‘n/a’, and that data is excluded from the analysis.

This data is examined (i) *overall* (i.e. using combined data from all programmes) and (ii) *across* programmes (i.e. data used to find different writing needs *across* programmes)²². See the Methodology chapter, section 3.4.5, for more detailed definitions of these terms. However, this data is used in different ways in the subsequent Discussion chapter. The analysis *overall* is used to gain a wider understanding of the students’ perceptions of usefulness and is also used in the Discussion chapter as supporting data when making suggested improvements to writing support mechanisms. The purpose of the data for *across* programmes is to find out if the students’ perceptions of usefulness of the support mechanisms differ significantly *by degree programme*. This *across* programme data then feeds into Triangulation 2 (see Figure 2, Methodology chapter, section 3.4.5.4). Triangulation 2 is part of phase 3 of the current study, where significant differences in perceived usefulness of the PG writing support mechanisms (from this part of the questionnaire) *across* programmes are triangulated with writing importance (as identified in the phase 1 content analysis, section 4.2). The purpose of this triangulation is to explore any relationships between perceived usefulness and writing importance for the PG programmes.

²² The previous main section (4.3.2) also explored significant differences in perceived understanding *within* degree programmes. However, for perceived usefulness, the study did not collect data to be compared *within* degree programmes.

4.3.3.1 Perceptions of PG writing support overall

As discussed in the Methodology chapter (section 3.4.5.1), data for this section is analyzed in two ways. Firstly, simple descriptive data for all the quantitative questions about perceptions of writing support (Q16-Q18) is given. As discussed above, this data is used to provide a wider understanding of the students' perceptions, and is also used in the Discussion chapter when making suggestions for improvements to the writing support mechanisms. Secondly, differences in perceptions of PG writing support are explored by demographic data. This is to find out if certain groups; for instance, international students, find the PG writing support more or less useful.

4.3.3.1.1 Perceived usefulness of PG writing support mechanisms: PG EAP course and the Writing Centre

In Table 31 below provides simple descriptive data for the questionnaire questions related to the students' perceptions of the PG writing support mechanisms. It can be seen that the means for Q17 (usefulness of PG EAP course - task type support) and Q18 (usefulness of PG EAP course - writing skills support) are very similar, 2.43 and 2.41 respectively, indicating that the students find them equally as useful. For Q16 (helpfulness of support from the Writing Centre with coursework) the mean is 2.79.

Table 31. Overall perceived usefulness (descriptives)

	N	Mean	SD
Writing Centre (Q16)	117	2.79	1.13
PG EAP task type (Q17)	105	2.43	1.13
PG EAP writing skills (Q18)	106	2.41	1.23

In order to provide a clearer understanding of how useful the students find the PG writing support mechanisms, Table 32 below shows the frequencies. In terms of how useful the students find the PG EAP course (Q17: task types and Q18: writing skills), as might be expected from their very similar means, there is also little variation between them in terms

of the frequencies, further emphasizing that the students find the PG EAP course to be as useful in both aspects. For instance, in both cases more than half (53.33% and 56.6% respectively) of the students chose ‘Strongly Agree’, or ‘Agree’. However, the frequencies are markedly lower for the question about support from the Writing Centre (Q16), indicating lower perceived usefulness. In contrast to the questions about the PG EAP course, less than half the students (39.32%) chose either ‘Strongly Agree’, or ‘Agree’. As previously indicated (see Methodology chapter, section 3.4.3) the question about the Writing Centre has a different emphasis; however, the data presented above does indicate that the students may find the PG EAP course more useful than the Writing Centre. The implications of this finding are detailed in the Discussion chapter.

Table 32. Overall perceived usefulness (descriptives - frequency)

	Strongly Agree	Agree	Neither agree nor disagree	Disagree	Strongly Disagree
Writing Centre (Q16)	17 (14.53%)	29 (24.79%)	42 (35.9%)	20 (17.09%)	9 (7.69%)
PG EAP task type (Q17)	27 (25.71%)	29 (27.62%)	30 (28.57%)	15 (14.29%)	4 (3.81%)
PG EAP writing skills (Q18)	32 (30.19%)	28 (26.42%)	23 (21.7%)	17 (16.04%)	6 (5.66%)

4.3.3.1.2 Perceived usefulness of PG writing support mechanisms by demographic data

Another area of interest is whether any differences exist within certain demographics. The purpose is to ascertain if any differences in usefulness can be explained by the demographic data. Any differences would feed into the implications for writing support mechanisms (Discussion chapter, section 5.5) in the Discussion chapter when making suggestions for improvements. For instance, if L1 Chinese speakers find the PG EAP course more or less useful than L1 speakers of other languages. However, in almost all cases, the sample sizes for comparison are very low because there is little variation in the demographic data. For example, there are only 10 L1 English speakers. These sample sizes were decreased further because of students choosing ‘n/a’ for these questions, reducing the overall sample size. For example, of the 10 L1 English speakers, only four of them gave answers for Q16, Q17 and Q18. Therefore, the only groupings with a large enough sample size to meet the minimum

sample size criterion (see section 4.3.1) are those who have gone through the Chinese education system prior to taking the PG EAP course, and those that went through an international education system (either transnational, e.g. through an international university in China, or a university in another country outside of China). Grouping these students yields a sample size of 17 to 23 students for these questions. Therefore, independent sample t-tests for these two groups were carried out for Q16, Q17 and Q18 to ascertain if any significant differences exist. The two groups are marked under Education System as ‘Chinese’ or ‘Non-Chinese’. Table 33 below gives descriptive data showing that in all cases the means are quite close. For instance, for Q16, the average for students going through the Chinese education system is 2.8, and it is 2.74 for those not going through the Chinese education system, only a difference of 0.06. The largest difference in means is 0.19 for Q17. The t-tests in Table 34 below confirm that there are no significant differences, with the p-values ranging from 0.529-0.824 (Equal Variances Assumed). Therefore, the study did not find that students’ prior education system has any significant effect on the students’ perceptions of usefulness of the writing support mechanisms for these questions.

Table 33. Perceived usefulness Chinese/non-Chinese education (descriptives)

	Education System	N	Mean	SD	SEM
Writing Centre (Q16)	Chinese	94	2.8	1.17	0.12
	Non-Chinese	23	2.74	0.96	0.2
PG EAP task type (Q17)	Chinese	88	2.4	1.11	0.12
	Non-Chinese	17	2.59	1.28	0.31
PG EAP writing skills (Q18)	Chinese	89	2.39	1.23	0.13
	Non-Chinese	17	2.47	1.28	0.31

Table 34. Perceived usefulness Chinese/non-Chinese education (independent t-test)

		T-test for Equality of Means								
		Levene's Test for Equality of Variances		T	Df	Sig. (2-tailed)	Mean Diff.	Std. Error Diff.	95% Confidence Interval of the Difference	
		F	Sig.						Lower	Upper
Writing Centre (Q16)	Equal variances assumed	1.61	0.207	0.22	115	0.824	0.06	0.26	-0.46	0.58
	Equal variances not assumed			0.25	39.49	0.803	0.06	0.23	-0.42	0.53
PG EAP task type (Q17)	Equal variances assumed	0.19	0.662	-0.63	103	0.529	-0.19	0.3	-0.79	0.41
	Equal variances not assumed			-0.57	20.92	0.572	-0.19	0.33	-0.88	0.5
PG EAP writing skills (Q18)	Equal variances assumed	0.08	0.775	-0.24	104	0.814	-0.08	0.33	-0.73	0.57
	Equal variances not assumed			-0.23	22.02	0.821	-0.08	0.34	-0.78	0.62

4.3.3.2 Perceptions of PG writing support across individual degree programmes.

In order to ascertain if there are any significant differences with how students from different programmes perceive the writing support services, ANOVA tests were conducted for Q16 (Writing Centre), Q17 (PG EAP course support - task types) and Q18 (PG EAP course support - writing skills). As discussed in the introduction to this section, significant differences *by degree programme* are later triangulated with writing importance (as identified in the content analysis) to ascertain any connections. For example, if students from programmes who find the writing support significantly more useful are from programmes where writing is relatively important (as identified in the content analysis). There is an important point to note about the treatment of data within this section. As discussed in section 4.3.1, only programmes with $N \geq 5$ are included. In this case, as many students selected 'n/a', only six programmes meet this criterion.

Writing Centre (Q16): Questionnaire Q16 asked the students to what extent the Writing Centre helped them with Coursework. In Table 35 below, it can be seen that the highest mean (indicating least help from the Writing Centre) was reported by MSc Media and Communication students (mean=3.4), while the lowest (indicating most help from the Writing Centre) is 2.31, reported by MA TESOL students. However, despite these differences in means, Table 36 (ANOVA Test) indicates that there are no significant differences between any of the groups (p=0.583).

Table 35. Across programmes perceived usefulness: Writing Centre - Q16 (descriptives)

	N	Mean	SD	SE	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Professional Accounting	16	2.69	1.25	0.31	2.02	3.35	1	5
Architectural Design	7	3.14	1.07	0.4	2.15	4.13	2	5
Business Analytics	8	3.13	0.35	0.13	2.83	3.42	3	4
Economics and Finance	5	2.6	1.14	0.51	1.18	4.02	1	4
Media and Communication	5	3.4	0.89	0.4	2.29	4.51	3	5
Operations and Supply Chain Management	12	2.92	1.44	0.42	2	3.83	1	5
TESOL	13	2.31	1.03	0.29	1.68	2.93	1	5
Urban Planning	8	2.88	1.13	0.4	1.93	3.82	1	4
Total	74	2.81	1.12	0.13	2.55	3.07	1	5

Table 36. Across programmes perceived usefulness: Writing Centre – Q16 (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	7.22	7	1.03	0.81	0.583
Within Groups	84.13	66	1.27		
Total	91.35	73			

PG EAP Support: Task Types (Q17): Questionnaire Q17 asked the students to what extent they found the PG EAP course useful in terms of teaching task types. The highest mean (indicating least usefulness) is 3.33, reported by MSc Media and Communication students, and the lowest (indicating most usefulness) is 1.83, as reported by MA TESOL students (Table

37). The ANOVA test in Table 38 below indicates that there are significant differences between the students in different programmes ($p=0.017$).

Table 37. Across programmes perceived usefulness: PG EAP task type – Q17 (descriptives)

	N	Mean	SD	SE	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Professional Accounting	13	2.54	1.13	0.31	1.86	3.22	1	4
Business Analytics	5	3	0.71	0.32	2.12	3.88	2	4
Media and Communication	6	3.33	1.03	0.42	2.25	4.42	2	5
Operations and Supply Chain Management	9	3	1.5	0.5	1.85	4.15	1	5
TESOL	18	1.83	0.79	0.19	1.44	2.22	1	3
Urban Planning	7	2.14	0.9	0.34	1.31	2.97	1	4
Total	58	2.47	1.13	0.15	2.17	2.76	1	5

Table 38. Across programmes perceived usefulness: PG EAP task type – Q17 (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	16.51	5	3.3	3.07	0.017
Within Groups	55.92	52	1.08		
Total	72.43	57			

A post-hoc test, using the Tukey HSD method, was performed to find the significant differences *across* the programmes (see Table 39). The test shows that there is a significant difference between the students' perceived usefulness of PG EAP course support for task types for MA TESOL and MSc Media and Communication (MA TESOL mean=1.83, MSc Media and Communication mean=3.33, $p=0.038$). The difference is significant at the 95% confidence level. As discussed in the Methodology chapter (section 3.4.5.1.1), significant differences were also checked with an equivalent non-parametric test. Therefore, a Mann-Whitney U test (see Appendix G, Tables 71(a) and (b)) was performed, also confirming a significant difference, but at the 99% confidence level ($p=0.005$).

Table 39. Across programmes perceived usefulness: PG EAP task type – Q17
(Tukey HSD post-hoc Analysis)

(I) Degree Subject	(J) Degree Subject	(I - J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Professional Accounting	Business Analytics	-0.46	0.55	0.957	-2.08	1.15
	Media and Communication	-0.79	0.51	0.632	-2.31	0.72
	Operations and Supply Chain Management	-0.46	0.45	0.907	-1.79	0.87
	TESOL	0.71	0.38	0.433	-0.41	1.82
	Urban Planning	0.4	0.49	0.964	-1.04	1.83
Business Analytics	Professional Accounting	0.46	0.55	0.957	-1.15	2.08
	Media and Communication	-0.33	0.63	0.995	-2.19	1.52
	Operations and Supply Chain Management	0	0.58	1	-1.71	1.71
	TESOL	1.17	0.52	0.244	-0.38	2.72
	Urban Planning	0.86	0.61	0.72	-0.94	2.65
Media and Communication	Professional Accounting	0.79	0.51	0.632	-0.72	2.31
	Business Analytics	0.33	0.63	0.995	-1.52	2.19
	Operations and Supply Chain Management	0.33	0.55	0.99	-1.28	1.95
	TESOL	1.5	0.49	0.038*	0.05	2.95
	Urban Planning	1.19	0.58	0.322	-0.52	2.9
Operations and Supply Chain Management	Professional Accounting	0.46	0.45	0.907	-0.87	1.79
	Business Analytics	0	0.58	1	-1.71	1.71
	Media and Communication	-0.33	0.55	0.99	-1.95	1.28
	TESOL	1.17	0.42	0.081	-0.09	2.42
	Urban Planning	0.86	0.52	0.576	-0.69	2.4
TESOL	Professional Accounting	-0.71	0.38	0.433	-1.82	0.41
	Business Analytics	-1.17	0.52	0.244	-2.72	0.38
	Media and Communication	-1.5	0.49	0.038*	-2.95	-0.05
	Operations and Supply Chain Management	-1.17	0.42	0.081	-2.42	0.09
	Urban Planning	-0.31	0.46	0.984	-1.68	1.06
Urban Planning	Professional Accounting	-0.4	0.49	0.964	-1.83	1.04
	Business Analytics	-0.86	0.61	0.72	-2.65	0.94
	Media and Communication	-1.19	0.58	0.322	-2.9	0.52
	Operations and Supply Chain Management	-0.86	0.52	0.576	-2.4	0.69
	TESOL	0.31	0.46	0.984	-1.06	1.68

* Difference is significant at the 0.05 level

PG EAP Support: Writing Skills (Q18): Questionnaire Q18 aims to find significant differences with the students' perceived usefulness of the PG EAP course in terms of teaching writing

skills *across* the programmes. In Table 40 below, it can be seen that the highest mean (indicating least usefulness) is 3.33 (MSc Media and Communication), and the lowest mean (indicating most usefulness) is 1.61 (MA TESOL). The ANOVA test (Table 41) indicates that there are significant differences ($p=0.002$).

Table 40. Across programmes perceived usefulness: PG EAP skills - Q18 (descriptives)

	N	Mean	SD	SE	95% Confidence Interval for Mean		Min	Max
					Lower Bound	Upper Bound		
Professional Accounting	14	2.71	1.33	0.35	1.95	3.48	1	5
Business Analytics	5	2.6	0.89	0.4	1.49	3.71	2	4
Media and Communication	6	3.33	1.03	0.42	2.25	4.42	2	5
Operations and Supply Chain Management	9	3.11	1.45	0.48	1.99	4.23	1	5
TESOL	18	1.61	0.7	0.16	1.26	1.96	1	3
Urban Planning	7	1.86	0.69	0.26	1.22	2.5	1	3
Total	59	2.39	1.2	0.16	2.08	2.7	1	5

Table 41. Across programmes perceived usefulness: PG EAP skills – Q18 (ANOVA)

	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	24.62	5	4.92	4.39	0.002
Within Groups	59.41	53	1.12		
Total	84.03	58			

A post-hoc test using the Tukey HSD method was conducted (Table 42). The results show that there are significant differences for (i) MA TESOL and MSc Media and Communication (MA TESOL mean=1.61, MSc Media and Communication mean=3.33, $p=0.013$), and (ii) MA TESOL and MSc Operations and Supply Chain Management (MA TESOL mean=1.61, MSc Operations and Supply Chain Management mean=3.11, $p=0.013$). Both differences are significant at the 95% level. As discussed in the Methodology chapter (section 3.4.5.1.1), significant differences were also checked with an equivalent non-parametric test. Therefore, Mann-Whitney U tests (see Appendix G, Tables 72(a) and (b), and 73(a) and 73(b)) were performed, also confirming significant differences (MA TESOL and MSc Media and Communication, $p=0.001$; MA TESOL

and MSc Operations and Supply Chain Management, $p=0.01$), with the former being significant at the 99% confidence level.

Table 42. Across programmes perceived usefulness: PG EAP skills – Q18
(Tukey HSD post-hoc analysis)

(I) Degree Subject	(J) Degree Subject	(I - J) Mean Difference	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Professional Accounting	Business Analytics	0.11	0.55	1	-1.52	1.75
	Media and Communication	-0.62	0.52	0.836	-2.15	0.91
	Operations and Supply Chain Management	-0.4	0.45	0.95	-1.73	0.94
	TESOL	1.1	0.38	0.054	-0.01	2.22
	Urban Planning	0.86	0.49	0.507	-0.59	2.31
Business Analytics	Professional Accounting	-0.11	0.55	1	-1.75	1.52
	Media and Communication	-0.73	0.64	0.861	-2.63	1.16
	Operations and Supply Chain Management	-0.51	0.59	0.953	-2.26	1.23
	TESOL	0.99	0.54	0.445	-0.59	2.57
	Urban Planning	0.74	0.62	0.836	-1.09	2.58
Media and Communication	Professional Accounting	0.62	0.52	0.836	-0.91	2.15
	Business Analytics	0.73	0.64	0.861	-1.16	2.63
	Operations and Supply Chain Management	0.22	0.56	0.999	-1.43	1.87
	TESOL	1.72	0.5	0.013*	0.25	3.2
	Urban Planning	1.48	0.59	0.141	-0.27	3.22
Operations and Supply Chain Management	Professional Accounting	0.4	0.45	0.95	-0.94	1.73
	Business Analytics	0.51	0.59	0.953	-1.23	2.26
	Media and Communication	-0.22	0.56	0.999	-1.87	1.43
	TESOL	1.5	0.43	0.013*	0.22	2.78
	Urban Planning	1.25	0.53	0.193	-0.32	2.83
TESOL	Professional Accounting	-1.1	0.38	0.054	-2.22	0.01
	Business Analytics	-0.99	0.54	0.445	-2.57	0.59
	Media and Communication	-1.72	0.5	0.013*	-3.2	-0.25
	Operations and Supply Chain Management	-1.5	0.43	0.013*	-2.78	-0.22
	Urban Planning	-0.25	0.47	0.995	-1.64	1.15
Urban Planning	Professional Accounting	-0.86	0.49	0.507	-2.31	0.59
	Business Analytics	-0.74	0.62	0.836	-2.58	1.09
	Media and Communication	-1.48	0.59	0.141	-3.22	0.27
	Operations and Supply Chain Management	-1.25	0.53	0.193	-2.83	0.32
	TESOL	0.25	0.47	0.995	-1.15	1.64

* Difference is significant at the 0.05 level

4.3.3.3 Triangulation 2: significant differences in perception (across programmes) and writing importance

The final key area is the phase 3 triangulation between students' perceptions of usefulness of the PG writing support mechanisms *across* programmes from the previous section and writing importance in terms of task type importance as identified in the content analysis (section 4.2). For example, the above questionnaire analysis shows that MA TESOL students find the writing support significantly more useful than students from some of the other programmes. The content analysis shows the importance of writing for every programme. As a result, it allows the researcher to explore if perceived usefulness could be linked to writing importance. This triangulation is an important part of this study, as it shows what useful information concerning students' writing needs can be provided by exploring students' perceived usefulness of PG writing support. Only instances where there were significant differences in perceived usefulness are included in the triangulation. As discussed in the Methodology chapter (section 3.2.1), this is because the study can only ascertain the value of examining students' perceived usefulness of PG writing support and its relationship with writing importance if there are objectively measurable differences (i.e. if there were no measurable differences, the students' needs could not be differentiated).

A summary of the significant differences (according to the parametric tests) to be explored in the triangulation can be found in Table 43 below. This table also shows the mean differences between the groups so that the extent of these significant differences can be seen. Data from the content analysis is examined in terms of the *total word count* and *total programme value* for writing (see section 4.2 for how these values were calculated). The triangulation for these two parts *across* degree programmes (for Q17 and Q18) follows.

Table 43. Summary of significant results (perceived usefulness)

Question	Highest-lowest (mean in brackets)	Mean Diff.	Sig.
Across: Q17	Operations and Supply Chain Management (3) - TESOL (1.83)	1.17	0.038*
Across: Q18	Media and Communication (3.33) - TESOL (1.61)	1.72	0.013*
Across: Q18	Operations and Supply Chain Management (3.11) - TESOL (1.61)	1.5	0.013*

* Difference is significant at the 0.05 level

4.3.3.3.1 Triangulation 2 Q17: PG EAP course usefulness in terms of task types

Table 44(a) summarizes the significant findings from section 4.3.3.2 for questionnaire question 17. It shows that there are significant differences for two programmes. MA TESOL (mean=1.83) students reported the PG EAP course to be more useful for task types than MSc Media and Communication (mean=3.33) students. Looking at the content analysis (Table 44(b)), it is interesting to note that MA TESOL students have a greater writing demand in terms of the *programme value* (57.14% compared to 46.11%). However, the *word count* and the *occurrence* of writing tasks for these two programmes are quite similar.

Table 44(a). Across programmes perceived usefulness significant differences: PG EAP task type

Highest-lowest (mean in brackets)	Mean Diff.
Media and Communication (3.33) - TESOL (1.83)	1.5

Table 44(b). Relevant content analysis data

Degree Programme (No. of courses)	Word count (all writing tasks)	Programme Value	No. of writing tasks
MA TESOL (7)	17500	57.14%	8
MSc Media and Communication (9)	16000	46.11%	7

4.3.3.3.2 Triangulation 2 Q18: PG EAP course usefulness in terms of writing skills

Table 45(a) provides a summary of the significant differences from section 4.3.3.2. It shows that there are significant differences involving three programmes, with MA TESOL (mean=1.61) students finding the PG EAP course to be more useful for skills than students on the other two programmes (MSc Operation and Supply Chain Management and MSc Media

and Communication). The content analysis (Table 45(b)) shows that for MA TESOL writing is the most important in terms of *value* (57.14% compared to 45% and 46.11% for the other two programmes). As was discussed in Q17 above, the content analysis (Table 45(b)) also shows that the MA TESOL programme has higher writing importance than the MSc Media and Communication programme in terms of *word count* and *occurrence* of tasks. This may indicate a connection between the importance of writing by *programme value* and how useful they perceive writing support. However, this is not conclusive from the limited available data, and it not supported by *word count* or the *occurrence* of writing tasks. In fact, MSc Operation and Supply Chain Management students have to write a greater number of words (20,500) and complete more writing tasks (9) than MA TESOL students.

Table 45(a). Across programmes perceived usefulness significant differences: PG EAP skills

Highest-lowest (mean in brackets)	Mean Diff.
Media and Communication (3.33) - TESOL (1.61)	1.72
Operations and Supply Chain Management (3.11) - TESOL (1.61)	1.5

Table 45(b). Relevant content analysis data

Degree Programme (No. of courses)	Word count (all writing tasks)	Programme Value	No. of writing tasks
MSc Operation and Supply Chain Management (8)	20500	45.00%	9
MA TESOL (7)	17500	57.14%	8
MSc Media and Communication (10)	16000	46.11%	7

4.3.4 Perceptions part 2: perceptions of writing support mechanisms - qualitative data

The final part of phase 2 of the research study is the thematic analysis of the qualitative questionnaire question (Q19). This data is used in the Discussion chapter in research questions 2 and 3 as another source of data for identifying the students' writing needs and making recommendations for improvements to PG writing support mechanisms. The results

of the thematic analysis can be found in Table 46 below. The main themes are briefly presented below; however, they are discussed in depth in the Discussion chapter.

Most comments are related to either 'Teaching Methods' (45.38%) or 'Course Design and Resources' (26.91%). While 'Other' is also quite high (23.08%), a large proportion of these fall into the 'Unclear' and 'n/a' categories. Of 'Teaching Methods', most of the comments relate to 'More instruction/practice' (24.62%); for example, asking for 'more exercises/practice' (7.69%). However, a fairly large proportion (10.77%) of the respondents asked for 'more communication/teaching methods' such as online chat. In terms of 'Course Design and Resources', the most significant issue is asking for 'Support related to Major'²³ (20.77%), with the most common response of these asking for task types (e.g. *essays*) to be taught according to their major (15.38%). Few responses (4.62%) were about the overall quality of the teaching. Of 'other', the most common response (8.46%) was about their study habits resulting in them not using any of the available writing support mechanisms.

²³ At the Sino-British University where the study took place, the students tend to use the words 'major' and 'programme' interchangeably (researcher's own observation while working there).

Table 46. Thematic analysis

	2nd Coding	Freq/% total	1st Coding	Freq/% of total	Total by Type
Teaching Methods	More instruction/practice	32 (24.62%)	<ul style="list-style-type: none"> • More exercises/practice 	10 (7.69%)	45.38%
			<ul style="list-style-type: none"> • Get writing instruction/practice (e.g. organization) 	10 (7.69%)	
			<ul style="list-style-type: none"> • Help with language (e.g. grammar/vocabulary) • Help with references • Help with writing logic • How to analyze data 	6 (4.62%)	
Help with assignment	9 (6.92%)	<ul style="list-style-type: none"> • Help with CW/assignment (inc. giving feedback) 	9 (6.92%)		
More communication/teaching methods	18 (13.85%)	<ul style="list-style-type: none"> • Need more writing materials/guides (e.g. PPT) • More communication/teaching mediums (e.g. online chat/tutorials) • Use examples in teaching 	2 (1.54%) 14 (10.77%) 2 (1.54%)		
Teaching Quality	Teaching Quality (poor)	2 (1.54%)	<ul style="list-style-type: none"> • Issue with teaching/course quality 	2 (1.54%)	
	Teaching Quality (good)	4 (3.08%)	<ul style="list-style-type: none"> • Support is sufficient/good/should be mandatory 	4 (3.08%)	
Course Design and Resources	Support related to major	27 (20.77%)	<ul style="list-style-type: none"> • Want writing tasks (e.g. essay) according to major 	20 (15.38%)	26.92%
			<ul style="list-style-type: none"> • Course should be relevant to/split by major 	5 (3.85%)	
			<ul style="list-style-type: none"> • ALA does not relate to major • Teach software useful for major 	1 (0.77%) 1 (0.77%)	
Doesn't meet PG needs	5 (3.85%)	<ul style="list-style-type: none"> • Already learned skills elsewhere 	1 (0.77%)		
		<ul style="list-style-type: none"> • Not suitable for PG (relates to UG/lower level) • ALA should be split by (e.g. by level) 	2 (1.54%) 2 (1.54%)		
Lack of resources	3 (2.31%)	<ul style="list-style-type: none"> • More writing tutors needed • More class time/courses 	1 (0.77%) 2 (1.54%)		
Other	Don't use due to their study habits	11 (8.46%)	<ul style="list-style-type: none"> • Will ask a teacher (when/if) they need help 	2 (1.54%)	23.08%
			<ul style="list-style-type: none"> • Study themselves/don't need help 	2 (1.54%)	
			<ul style="list-style-type: none"> • Lack of time 	6 (4.62%)	
			<ul style="list-style-type: none"> • Get help from department 	1 (0.77%)	
	Promote more	2 (1.54%)	<ul style="list-style-type: none"> • Explain benefits of writing support 	2 (1.54%)	
Unclear meaning/misc	8 (6.15%)	<ul style="list-style-type: none"> • Unclear • Assignment brief Issue 	7 (5.38%) 1 (0.77%)		
N/A (haven't taken)	9 (6.92%)	<ul style="list-style-type: none"> • N/A 	9 (6.92%)		

Total comments: 130

4.4 Description of the current PG writing support mechanisms

This section details the current writing support mechanisms. It is required to give context for any suggested improvements to the support mechanisms in the proceeding Discussion chapter. Data for this section²⁴ came from publicly available information, specifically the PG Student Handbook and other information provided on the University's website, and the researcher's own experience, both as module convenor and tutor on the PG EAP course.

At the Sino-British University where this study took place, for PG students there are two options for English language support: (i) students can take a pass/fail elective EAP course, and (ii) the University's Writing Centre offers two hour, twice a week drop-in times specifically for PG students. However, the current curriculum for the PG EAP course has almost no input from academic lecturers or students²⁵. Furthermore, tutors who teach on the postgraduate EAP course do not know how students will be grouped, which groups they will teach, or how many students there will be per class until one week before the PG EAP course begins. This is due to several factors. The EAP course is an Additional Learning Activity (ALA) meaning it is an optional (or elective) course. Postgraduate students must complete 400 to 600 hours of optional courses along with their core classes (non-optional, required classes) to be awarded a postgraduate degree. Students must wait until they have registered for their core classes before registering for the PG EAP course because they have to: (i) choose ALAs that fit their schedule, (ii) decide which ALAs will be most beneficial for them, and (iii) determine how many hours they need to accrue each semester to attain their additional hours. Therefore, teachers often must prepare materials from scratch depending on which group they receive and how the degree programmes are mixed within their classes.

²⁴ As detailed in the Methodology chapter (section 3.4.5.3), as the data collected is publicly available no formal data collection instrument was necessary.

²⁵ This is based on the researcher's first-hand experience both teaching on and leading the PG EAP course.

4.5 Summary

The content analysis shows that students from different programmes have different writing needs in terms of the *word count*, *value* and *occurrence* of writing tasks. The questionnaire data highlighted several significant differences in students' perceived understanding of task types *overall* and *by degree programme*, and it was shown how these significant differences relate to writing importance as identified in the content analysis. The questionnaire data also explored differences in the perceived usefulness of the writing support mechanisms both *overall* and *across* degree programmes. While not conclusive, there is some data to suggest that the students find the PG EAP course more useful than the Writing Centre. The triangulation with writing importance as identified in the content analysis also indicates a potential link between how useful students (namely the MA TESOL students) find the PG EAP course to be and how important writing is for their programme in terms of the *value* of writing tasks. The thematic analysis also identified areas for possible improvement to the support mechanisms. The implications of these findings are discussed in-depth in the proceeding chapter.

Chapter 5: Discussion

5.1 Introduction

Before beginning to discuss the study's results, it would be worth recalling its main goals. The overall purpose is to identify PG students' writing needs in order to inform suggested improvements to writing support mechanisms (e.g. PG EAP courses). The study has utilized a sequential mixed methods approach to identify writing needs by considering both writing importance and student perceptions (of their perceived understanding of task types - i.e. self-efficacy - and of their perceived usefulness of support mechanisms). Writing needs were explored *overall* (i.e. the most important writing needs when considering all PG programmes) and *by degree programme* (i.e. writing needs individual to each PG programme).

The objective of phase 1, the content analysis, was to identify writing task type requirements *by degree programme* and to provide a more thorough determination of writing task type importance than used in previous studies by taking into account multiple variables (*occurrence, value and word count*). This data was then used to inform the creation of the phase 2 research instrument (the student questionnaire). Some data resulting from the questionnaire (namely the thematic analysis and *overall* perceived usefulness of support mechanisms) is used to give a wider understanding of the students' perceptions of the writing support mechanisms, while other questionnaire data led to phase 3 where writing importance (as identified in the content analysis) was triangulated with the student perceptions (as identified in the questionnaire) to allow for input from multiple stakeholders.

This chapter begins by discussing the content analysis before answering the study's three research questions in turn. The triangulation of data is integrated into the discussion of the research questions as appropriate. See Figure 2 (Methodology chapter, section 3.4.5.4) for more details about how the data flows through the study.

5.2 Content analysis

Many task-based studies have utilized a content analysis to understand student writing needs (e.g. Cho, 2014; Shi & Dong, 2015). As previously discussed, the current study's methodology has built upon these studies in many important ways (see Methodology chapter, section 3.1), one of which is how it determined writing importance. Therefore, this section explains how this study has determined writing importance differently to previous studies and discusses what has been uncovered concerning the students' writing needs using this analysis.

5.2.1 Determining task type importance

No previous task-based or needs analysis study has determined task type writing importance by taking into account *occurrence*, *value* and *word count*. Previous studies have either only looked at *occurrence* (e.g. Braine, 1989; Canseco & Byrd, 1989; Cooper & Bikowski, 2007; Moore & Morton, 2005), *value* (Nicholas & Annous, 2013) *occurrence* and *word count* (Hale, et al., 1996), *occurrence* and *value* (Cho, 2014; Dunworth, 2008), or have asked students to prioritize tasks (Cai, 2017).

Using the content analysis *overall* (i.e. considering all writing tasks in all PG programmes) it was found that the four most important task types, in descending order, are *reports*, *essays*, *proposals* and *case studies*. In fact, all three measurements (*word count*, *value* and *occurrence*), independent of each other, show the same order of importance. For example, in terms of *occurrence*, *reports* are by far the most frequent, *occurring* in 20 out the 22 PG programmes included in the content analysis, followed by *essays*, which are used in 12. *Proposals* (9 programmes) and *case studies* (6 programmes) *occur* less frequently.

All other task types (e.g. *book review*), are much less important than these four task types when considering all three measurements. For example, in terms of *word count*, the one with the next highest *word count* after *case studies* (21,500 words), the least important of the four, is *term paper* (5,500 words). See 4.2.3 for more information about the relative importance of these task types.

Therefore, in the case of this, *occurrence*, *value* and *word count* all show the same conclusion about the most important writing tasks and their relative importance to each other. This means the methodology employed in the previous studies, discussed above, would have led to a similar conclusion about what task types to cover in a standardized PG EAP course (i.e. a single course intended for students from all PG programmes). However, the reason why this study's method is more thorough is because the *occurrence* does not necessarily correlate to its *value* or *word count* with individual programmes. There are many instances of this. For example, MRes Computer Science students have to write one proposal, and one report; however, the report has twice the *word count*, and almost twice the *value*. In fact, Dunworth (2008) highlighted a similar issue with *occurrence* and *value*. Further support for using this method to determine writing importance in this way is also provided in section 5.3.3 where the differing needs *by degree programme* are explored in more detail.

As would be expected, the importance of task types is specific to the institution. For instance, while *reports* are the most frequent at the University where this study took place, they were the second (Canseco & Byrd, 1989; Hale, et al., 1996; Moore & Morton, 2005) or even third (Cooper & Bikowski, 2007; Zhu, 2004) most frequent at others. Therefore, it is suggested that institutions conduct their own content analyses to determine task type importance and use this data to inform improvements to their support mechanisms. As discussed above, because *occurrence* does not necessarily correlate to *word count* or *value*, it is suggested that all of these variables be used to determine writing importance. As for the Sino-British University in this study, the pedagogical implications of there being four highly important task types are discussed as part of the implications for writing support mechanisms (section 5.5).

5.2.2 Writing task types requirements by degree programme

This content analysis was also used to give an overview of the writing requirements *by degree programme* for core courses. It revealed that PG students from different programmes have widely varying writing needs. These varying needs and how they relate to other studies are detailed below.

The differing writing requirements for the PG students in the study can be seen in many aspects. Firstly, the PG students, on average, are required to write 15,409 words²⁶. However, it varies greatly *by degree programme*. The highest is MSc Sustainable Construction at 46,500 words, and the lowest is MRes Molecular Bioscience at 3,000 words. It is a similar situation for the *total value* assigned to these writing tasks. In this case, it ranges from 3.46% for MRes Molecular Bioscience, and 92.5% for MRes Management. There is also large variation in the number of writing tasks. For five of the programmes, including MRes Molecular Bioscience, students only have one writing task. For other programmes, such as MSc Urban Planning there are as many as 10. Previous studies have used content analyses to discover similar variations. For instance, Chou's (2011) content analysis showed that PG students from Social Science and Humanities write significantly more than Science and Technology majors in terms of the number of pages. Additionally, Hale, et al.'s (1996) analysis demonstrated that different disciplines have different *word counts* for the same task types (task type is discussed further as part of research question 1, section 5.3), and the *overall word count* per discipline varies.

Another benefit of this study is that it covers multiple degree programmes. In fact, only one prior study compared task types *across* individual degree programmes²⁷. Like this study, Canseco and Byrd's (1989) analysis of six degree programmes highlighted notable differences. For example, *case studies occurred* most frequently in the Business Administration degree programme, but they did not *occur* at all in the Marketing degree programme. This emphasizes the differences in writing importance that can be found when considering multiple PG degree programmes.

²⁶ This data reflects the average number of words for the summative writing tasks for PG students' required (i.e. core) courses over the 22 programmes in the content analysis.

²⁷ There are studies in the Literature Review that looked at multiple degree programmes, but the data was presented by department or discipline, and not by individual degree programmes.

In summary, a content analysis can give an overview of how writing requirements *across* programmes can differ. The pedagogical implications of this are discussed further as part of the implications for writing support mechanisms (section 5.5). Next, the study turns to its research questions, and while answering them it continues to emphasize how this study has built on previous methodological approaches.

5.3 Research question 1

Research Question 1: What are the writing support needs that are indicated by comparing a content of analysis of postgraduate (PG) writing task sheets to PG students' perceived understanding of writing task types?

In answering this research question, it will be shown how this study has been able to provide new insights into PG students' writing support needs by triangulating writing importance (from the phase 1 content analysis) with students' perceived understanding (i.e. self-efficacy) of important task types (from the phase 2 questionnaire). In the Results and Analysis chapter (section 4.3.2), differences in perceived understanding of the four most important task types (*essays, reports, case studies and proposals*) were analyzed *overall, within* and *across* degree programmes (see Methodology chapter, section 3.4.5, for a definition of these terms), and accordingly this section discusses them in this order.

5.3.1 Writing importance and students' perceived understanding: overall

One of the unique aspects of this study is that it delves deeper into important writing task types by finding students' perceived understanding of these task types. Specifically, it is the first study to utilize a student questionnaire with a task-based analysis and apply a sequential mixed methods approach to research PG students' writing needs. This method has several advantages. Firstly, the questionnaire questions were created using data from task sheets that state the task type. This is opposed to studies that presuppose the task types *a priori* (e.g. Cai, 2017), or collected information on task types via self-reported data (e.g. Chahkandi, 2014). Secondly, no previous study that has investigated PG students' degree specific writing

needs has triangulated students' understanding of task types and how they relate to the importance of the writing task types they are assigned. These benefits are related to previous studies throughout the discussion of this research question.

Richards (2001) states that it is important to identify students' needs in order to "... develop a profile of the language needs of a group of learners in order to be able to make decisions about the goals and content of a language course" (p.90). In this case, looking *overall* (i.e. using combined data from all programmes), this study was able to demonstrate that in general the PG students at the Sino-British University reported less understanding of how to write *case studies* and *proposals* than *reports* and *essays*. This finding might suggest that the support mechanisms (e.g. the PG EAP course) should put more emphasis on teaching *case studies* and *proposals*. However, as previously discussed, one of the main aims of this research was to triangulate data from multiple sources. Indeed, while it was found that the PG students have less understanding of *case studies* and *proposals*, the content analysis shows these task types have less writing importance in terms of *occurrence*, *value* and *word count* than *essays* and *reports*. As they have less writing importance, it could be inefficient to utilize more resources to give them extra support with these task types.

As previously discussed, prior studies have not investigated connections between the importance of writing task types and students' perceived understanding of these task types. In a wider sense, the above finding shows this approach can provide information that could be useful in terms of developing or improving the content of a writing support course.

5.3.1.1 Limitations of overall view

While exploring *overall* in the previous section has led to some interesting findings, there are limitations to this approach.

Firstly, where a limited number of important task types were identified *overall* (i.e. *reports*, *proposals*, *essays* and *case studies* in the present study), it cannot be assumed that they are being used in the same way *across* programmes. For example, a business and a scientific

report may have very different writing demands. Therefore, the findings do not preclude significant variation within task types *across* programmes, thereby implying differing student writing needs.

Secondly, where statistically significant differences in perceived understanding are found (i.e. in this study, the PG student body as a whole reported significantly less understanding of how to write *case studies* and *proposals than essays* and *reports*), the differences can be modest. In this case, the average mean difference on a five point Likert-scale is only 0.235. To put this another way, taking *essays* and *case studies* as an example, there is only a 18.65% difference between students who reported 'Strongly agree' or 'Agree' for these task types for all respondents. Therefore, it is debatable whether this small difference should have any pedagogical implications. This could be a result of differences cancelling each other out. For example, MA TESOL students generally reported greater understanding of task types they are assigned than most other programmes, but when combined with other programmes, these differences are diluted.

Exploring *overall* (i.e. using combined data from all programmes) has allowed for some commonalities in perceived writing understanding and writing need for the whole PG student body to be found. However, because of the aforementioned limitations, it is also important to examine programmes on an individual basis, as is covered in the proceeding sections.

5.3.2 Writing importance and students' perceived understanding: within programmes

In the previous section, the limitations of examining students' writing needs *overall* (i.e. using combined data from all programmes) was discussed. In this section, significant differences in the students' perceived understanding of the four most important task types (i.e. *essays*, *reports*, *case studies* and *proposals*) are discussed in terms of *within* programmes, and related to the content analysis (see Results and Analysis chapter, section 4.3.2.4).

In this study, the only observed differences *within* programmes were for MA TESOL, which indicate that these students have significantly less perceived understanding of how to write *proposals* (mean=2.67) than *essays* (mean=2) and *reports* (mean=2.22). In terms of the triangulation to writing importance, the content analysis for MA TESOL reveals that *proposals* have the least words (2000) and the lowest *value* (5.71%) of the three task types, and only it only *occurs* one time. Therefore, *proposals* are the least important of these three task types. However, the importance of *proposals* is reasonably close to *essays* (*word count* 2500; 1 *occurrence*, programme weighting 7.14%). Also, in this case, the mean difference in perceived understanding of 0.670 on the five point Likert-scale between *essays* and *proposals* is much larger than *overall* (a 0.235 average mean difference, as detailed in the last section) meaning the students' writing needs have been differentiated to a greater degree. This indicates that these students could benefit from more writing support for *proposals* relative to *essays*.

While this finding shows the kind of information that can be found by relating the importance of task types to perceived understanding, this approach did not find similar connections for other programmes. However, it is unlikely that the differences between the task types in the *overall* section above (5.3.1) are explained solely by MA TESOL. The tests for *overall* (from section 4.3.2.1 in the Results and Analysis chapter) were rerun without the MA TESOL data, and with the exception of *reports* and *proposals* ($p=0.110$), the other differences were still significant. Therefore, this suggests that more differences exist; however, the small sample sizes for some individual programmes may have prevented any other differences from being found. If so, these would be Type II Statistical Errors (i.e. False Negatives). Issues with sample size are discussed further as part of the limitations (Conclusion chapter, section 6.2).

5.3.3 Writing importance and students' perceived understanding: across programmes

The previous section explored connections between the most important task types (*essays*, *reports*, *case studies* and *proposals*) and students' perceived understanding of these task types *within* programmes. In this section, the same is done, but for *across* programmes (i.e. how writing needs can differ from programme to programme). Again, this is achieved by

triangulating perceived understanding of task types (from the phase 2 questionnaire) and writing importance (from the phase 1 content analysis). An important point previously raised (section 5.3.1.1) is that this study does not assume that task types are used in the same way *across* programmes. Accordingly, in the questionnaire, students were asked to rate their understanding of task types for their own context.

Only one significant difference was found. MRes Computer Science students reported less understanding of how to write *essays* than MA TESOL students. This is especially interesting because the content analysis shows writing importance to be similar for these programmes both in terms of *value* and *word count* for *essays*. MA TESOL students write 2,500 words for *essays*, with a *total value* of 7.14%. MRes Computer Science students have to write the same number of words, but the total assigned *value* is slightly higher at 7.5%. While there were no significant differences with the other four programmes that write *essays*, MRes Computer Science students reported the least perceived understanding.

The main implication is that MRes Computer Science students need more help with writing *essays* compared to MA TESOL students. This is further supported by two other facts. Firstly, the mean difference of 1.17 (on the five point Likert-scale) is much more pronounced than was seen *overall* and *within* degree programmes. Furthermore, the *total programme value* of writing for the MRes Computer Science programme is high (50%) when compared to the average of 32.06% for all programmes (see Results and Analysis chapter, section 4.2.2). The pedagogical implications are also discussed later as part of the implications for writing support mechanisms (section 5.5) in terms of suggested improvements to PG writing support mechanisms.

In section 5.2.1, how task type importance was determined is discussed, and it was argued that task types should be measured by taking into account *word count*, *value* and *occurrence*. The above finding also adds weight to this suggestion because, in this case, the *occurrence* of the task type is not representative of writing importance in terms of *word count* or *value*. MA TESOL students write three essays, while MRes Computer Science students only write one.

Yet for MRes Computer Science students, the *value* is slightly higher, and the *word count* is the same. In fact, the few studies that compared task types *across* PG programmes (e.g. Cooper & Bikowski, 2007; Hale, et al., 1996; Shi & Dong, 2015) only compared the task type *occurrence* and therefore, in this case, their methodology would have reached the wrong conclusion. By incorporating perceived understanding of task types and triangulating it with writing importance, this study was also able to show that MRes Computer Science students have a relatively weak understanding of *essay* writing, but for them writing importance is relatively high. No prior study has performed this kind of analysis.

As with task types *within* programmes (section 5.3.2), it is possible that more differences *across* programmes exist, but might not have been found due to the small sample sizes for most programmes. This is discussed further with the limitations (see the Conclusion chapter, section 6.2).

5.3.4 Summary of Research Question 1

Research Question 1: What are the writing support needs that are indicated by comparing a content of analysis of postgraduate (PG) writing task sheets to PG students' perceived understanding of writing task types?

This study has been able to show connections that can be found by triangulating the importance of writing task types (in terms of *occurrence*, *value* and *word count*) with students' perceived understanding of these task types. For instance, *across* programmes, MRes Computer Science students reported a significantly weaker understanding of how to write *essays* than MA TESOL students, yet *essay* writing for these two programmes is of similar importance. This builds on previous studies that have not incorporated students' perceived understanding of task types as part of an analysis of student writing needs.

Further support was also added to this study's method of measuring writing importance (by *occurrence*, *value* and *word count*). In the above example about MA TESOL and MRes Computer Science students, *occurrence* alone would incorrectly indicate *essay* writing is

more important for MA TESOL students because they write it more frequently. The pedagogical implications of these findings have also been discussed, and they are discussed further as part of the implications for writing support mechanisms (section 5.5).

It is also worth discussing what the approach used in this study has not been able to show. A total of nine programmes were included in the analysis *within* and *across* programmes. However, significant differences were only found for two programmes. Therefore, while the significant differences found using this approach do increase our understanding of students' writing needs, this approach was not able to differentiate the other programmes using perceived understanding of task types. However, for these other programmes, the content analysis and the way writing importance have been determined still provide useful data. It should also be noted, as discussed in section 5.3.2, that there is evidence that more significant differences in perceived understanding of writing task types do exist for other programmes; however, it is possible that the small sample sizes for some of the programmes have prevented them from being found. This is discussed further as part of the limitations (see the Conclusion chapter, section 6.2).

It should also be noted that this study does not attempt to prove that actual writing ability has been measured by perceived understanding. In fact, using questionnaire data (e.g. through Likert-scale questions) is not recommended for this purpose (Gliem & Gliem, 2003). However, previous literature (see the Methodology chapter, section 3.2.1) has clearly shown that writing self-efficacy (i.e. perceived understanding of task types) can be a good indicator of writing ability (e.g. Hetthong & Teo, 2013; Pajares, 2003), and therefore this supports the value of using perceived understanding for making recommendations for improvements to writing support mechanisms. This is discussed further as part of the implications for the writing support mechanisms (section 5.5).

5.4 Research question 2

Research Question 2: What do PG students' perceptions of the usefulness of writing support mechanisms indicate concerning their writing support needs?

This section explores the students' perceptions of usefulness of the two main areas of writing support at the Sino-British University in China, the Writing Centre and the PG EAP course, both *overall* and *across* degree programmes (see the Methodology chapter, section 3.4.5, for a definition of these terms). For an in-depth explanation of these writing support mechanisms, see the Results and Analysis chapter (section 4.4). Data from the thematic analysis, where students commented on the usefulness of support mechanisms, is also discussed in the final part of this section.

5.4.1 Perceptions of PG writing support: overall

In this section, the questionnaire results concerning the support mechanisms at the Sino-British University are discussed to gain a wider understanding of the students' perceptions *overall* (i.e. using the combined data from all programmes), and the implications these perceptions may have regarding their writing needs. It is also compared to the findings of other studies where appropriate. Findings in this section, where relevant, are also later used as part of the implications for writing support mechanisms (section 5.5). See Figure 2 (section 3.4.5.4) in the Methodology chapter for more information about the flow of data in this study.

Regarding the PG EAP course, on the questionnaire, students were asked to rate this support mechanism in terms of how useful it is for teaching them about task types (Q17) and writing skills (Q18). The data shows that the students find the PG EAP course to be about as useful for both aspects (task type mean=2.43; skills mean=2.41). This translates to a small majority (just over 50%) of the students in both cases either choosing 'Strongly agree' or 'Agree' to the questions about their usefulness. Other studies (e.g. Storch & Tapper, 2009; Son & Park, 2014) have shown PG EAP courses to be highly valued in terms of students' perceptions of usefulness. The vast majority of PG students who participated in Son and

Park's (2019) study agreed that the PG EAP course prepared them for "academic reading and writing for their PhD studies..." (p. 30). Furthermore, Storch and Tapper's (2009) study of the utility of a PG EAP course revealed that the majority of PG students believed that the course improved their academic writing. In summary, most PG students at the Sino-British University generally perceive the PG EAP to be useful, and there is some evidence to suggest this kind of course is often valued in a wider sense.

Regarding the University's Writing Centre, for the question about how helpful they find the support from the Writing Centre with coursework (Q16), the perceived usefulness is lower (mean=2.79) than was seen with the PG EAP course, as discussed above. This mean equates to 39.32% choosing either 'Strongly Agree' or 'Agree'. Although the focus of these questions is slightly different (the question about the Writing Centre asked specifically about coursework), this appears to indicate that they find the PG EAP course to be more useful than the Writing Centre. The possible reasons for this are discussed below.

Firstly, students not taking the PG EAP course were asked to select 'n/a', and therefore this data is excluded from the statistics. PG students who gave an answer took the PG EAP course as an ALA. Unfortunately, it is not known how regularly they actually attended the PG EAP course; however, using the Writing Centre is optional. As a result, it is entirely possible that *overall* the students might find the Writing Centre less useful because they are likely to have used it less than the PG EAP course.

Secondly, the PG students may not have been adequately encouraged to use the Writing Centre. Writing Centres are a key resource for academic activity and support but are often positioned on the periphery of the university community of practice (Archer & Richards, 2011). This is further supported by Arkoudis and Tran's (2010) study of the Learning and Academic Support service (LAS) used by PG English L2 international students at a university in Australia:

“In particular, there is a lack of a common effective approach to encourage students to utilize the LAS and to help faculty integrate language and academic support services in their teaching. This could be due to the University positioning the LAS as a service area, separate from the core business of disciplinary teaching and learning” (Arkoudis & Tran, 2010).

Indeed, at the Sino-British University, the Writing Centre is located in a non-teaching building, while the PG students are located in the various departmental teaching buildings on the University’s north and south campus (Sino-British University Handbook, 2018). Regarding how effectively the Writing Centre is advertised is beyond the scope of this study. That said, some useful data in thematic analysis (section 5.4.3) does cover this point to a certain extent.

Another reason concerns the depth of study that the Writing Centre provides. Schulze and Lemmer’s (2017) investigation of writing support workshops for PG students noted that these workshops are short, often only spending thirty minutes on a topic such as teaching *proposals* (p. 61). Indeed, at the Sino-British University, writing workshops for PG students are two-hour time slots, with an hour set aside for each topic (Sino-British University, Writing Centre documents).

In summary, this section has shown that *overall* (i.e. using combined data from all programmes) the students at the Sino-British University generally have a positive perception of the PG EAP course, suggesting that they do value the course as a means of fulfilling their writing needs. There is also evidence to suggest that they may find the PG EAP course more useful than the Writing Centre for a number of possible reasons; however, more research would be needed to confirm which of these reasons, if any, do indeed influence their perceptions and to what extent. It should also be noted that the purpose of this section was to gain a wider understanding of the students’ perceptions and indications this has for writing support needs, particularly for use with other data as part of the implications for writing support mechanisms (section 5.5).

5.4.2 Perceptions of PG writing support: across degree programmes

The previous section explored students' perceptions *overall* (i.e. using combined data from all programmes), for both the PG EAP course and the University's Writing Centre, to better understand their perceptions of the writing support mechanisms and implications this may have concerning their writing support needs. This section explores the students' perceptions of usefulness *across* degree programmes (i.e. how the perceptions differ from programme to programme). It will also be shown how triangulating significant differences in perceived usefulness with writing importance (as identified in the content analysis) can provide useful information regarding students' writing support needs. As with research question 1, this data triangulation between writing importance and student perceptions is something that has not been done by previous studies that have researched students' writing needs.

As stated above, the study looked for any differences *across* degree programmes. Significant differences were found for Q17 (PG EAP course usefulness in terms of task types) and Q18 (PG EAP course usefulness in terms of writing skills) involving three programmes. The most significant finding here is that the MA TESOL students found the PG EAP course to be more useful than students from the other two programmes, and for the MA TESOL programme writing is also more important than for the other two programmes in terms of *programme value* (i.e. the total percentage of their grade which is assessed using writing tasks in their core courses). In the content analysis (see section 5.2.2) it was demonstrated that students from different programmes have very different writing demands. The fact that the MA TESOL students found the PG EAP course more useful than two of the other programmes could imply that for students where writing is more important (in terms of *value*), they may also perceive writing support to be more useful.

However, the data in this study is far too limited to prove this link conclusively. Further research would be needed to explore if the amount of writing support should be matched to writing demand *by degree programme*. In fact, other studies have already highlighted similar connections to a limited degree. For instance, Cai (2017) noted a similar phenomenon with

students who ranked their preferred task type. *Research papers* were the most preferred task type, and also the most “widely assessed text type for graduate studies” (ibid, p. 132).

5.4.3 Thematic analysis: findings relevant to research question 2

The qualitative questionnaire question (Q19) asked the students to suggest improvements to the writing support mechanisms. As the proceeding ‘implications for writing support mechanisms’ section focuses on improvements to writing support mechanisms, the primary purpose of the thematic analysis is to provide another source of data for triangulation with the questionnaire and content analysis data. However, rather than giving suggestions for improvements, some of the students’ responses relate to the usefulness of the writing support mechanisms and, accordingly, fit into the scope of research question 2. Therefore, those responses relevant to research question 2 are briefly discussed here. As with the section (5.4.1) which dealt with *overall* perceptions of usefulness, the purpose of this section is to gain a wider understanding of how students view the current writing support mechanisms and how this may impact their writing support needs.

A total of six comments (4.62% of the total) relate to the general teaching or course quality, four as a positive and two as a negative. Unfortunately, this data is too limited to draw any definitive conclusions; however, it is interesting to note some of the reasons they gave. One of the respondents emphasized that the PG EAP course is “extremely useful” for improving writing and they also said, along with one other student, that it should be made mandatory. Another student also emphasized the importance of writing skills but added that the PG EAP course needs to improve, without providing specific details. Therefore, these comments generally support the quantitative data in the *overall* student perceptions section (5.4.1) which suggests that the most students have a positive view of the PG EAP course in terms of it meeting their writing support needs.

Another issue that fits more into the scope of research question 2 is that 11 (8.46%) of the respondents said that they do not use the writing support because of their study habits, with the most frequent reason (4.62%) being that they do not have enough time; for example, because of coursework deadlines. This is a reasonably large proportion of the responses. These responses are from students who did not take the PG EAP course, and therefore the main source of writing support available to them was the Writing Centre. The PG EAP is a scheduled course and PG students' university course schedule determined whether or not they could take it. However, students do not have the same constraint with the Writing Centre. Therefore, understanding students' study time and habits are pragmatic considerations for the Writing Centre. It should be noted that this study did not ask the students to evaluate how much time they have for extra writing instruction. Further research would have to be conducted into how students' study habits affect their relationship with the usefulness of writing support.

One other issue, as previously mentioned (section 5.4.1), is that how well the writing support mechanisms (specifically the Writing Centre and PG EAP course) are advertised may have an impact on their perceived usefulness. It is interesting that two students gave comments about this issue. For example, one of the students wrote: "They need to reach students. I think the most efficient way is explaining the importance of Language Centre in a classroom setting at the beginning of every semester". This suggests that at time of data collection, the mechanisms were not being advertised effectively, and therefore students were not being made aware how the support mechanisms could help with their writing needs. However, as this data comes from just two students, the Writing Centre would need to further investigate this issue.

5.4.4 Summary of research question 2

Research Question 2: What do PG students' perceptions of the usefulness of writing support mechanisms indicate concerning their writing support needs?

The Literature Review chapter (see section 2.3) demonstrated the importance of obtaining students' perceptions of writing support mechanisms in order to understand their writing needs and to inform improvements to writing support mechanisms (e.g. Cai, 2017; Chahkandi, 2014). The study has investigated this in two ways.

Firstly, the study sought to gain a wider understanding of the students' perceptions of support mechanisms and the implications this may have for their writing support needs. *Overall* (i.e. using combined data from all programmes) it was found that the students generally perceive the PG EAP course to be a useful way of meeting their writing needs. There is also some data which suggests that they may find the PG EAP course more useful than the Writing Centre as a way of meeting their writing support needs, and a number of possible explanations for this were explored. The qualitative data also provided further insights into their perceptions of usefulness and how the support mechanisms might be able to better meet their needs (e.g. by considering the students' workload and coursework deadlines).

Secondly, differences in perceived usefulness of support mechanisms were explored *across* degree programmes. It was found that the MA TESOL students find the PG EAP course to be significantly more useful than two other programmes. It was posited that they may find the PG EAP course more useful because the triangulation of data showed that writing is more important for them than for the other two programmes in terms of *value* (as identified in the content analysis); however, this suggestion is based on limited data. Therefore, as this is the first study to investigate these connections, more research would be needed to explore links between perceived usefulness and writing importance. However, it would agree with the findings from similar studies that have demonstrate a possible link between writing *value* and perceived importance (e.g. Cai, 2017).

The above findings are discussed further as part of the implications for writing support mechanisms (section 5.5). However, it should also be noted that as was the case for *within* and *across* degree programmes in research question 1, this approach was only able to find significant differences in perceived usefulness for three out of the six programmes *across* degree programmes. As was suggested with research question 1, more significant differences may actually exist, but the small sample sizes for some of the programmes may have prevented them from being found. This is discussed as part of the limitations (Conclusion chapter, section 6.2). Therefore, although this study has built upon previous research, perhaps because of the limited sample size, this aspect of the study has not been able to explain as much as the researcher had hoped. However, despite these limitations there were some useful findings. Therefore, the research approach, as outlined in this section, may still be of interest to other institutions in a similar context.

5.5 Implications for Writing Support Mechanisms

The purpose of this section is to discuss what the data and findings from all parts of this study imply for the PG writing support mechanisms, with a strong emphasis on recommendations for improvement. This section also draws on qualitative data from the questionnaire (Q19) where the students provided suggestions for improvements. How this data can inform improvements to PG writing support mechanisms is viewed within the context of the transnational Sino-British University in China where the study took place by (i) considering the current writing support mechanisms (see the Results and Analysis chapter, section 4.4), and (ii) framing recommendations with an understanding that the University's resources (teachers, available class times etc.) are finite. See Figure 2 (Methodology chapter, section 3.4.5.4) for more information about how the data is used in this study.

This section is divided by different support mechanisms that could be used to meet the PG students' writing needs as identified in this study; specifically, a standardized PG EAP course (i.e. one course for multiple programmes), degree specific PG EAP courses and Writing Centre support. This discussion focuses on the Sino-British University, and provides suggested

actions that are relevant for the Language Centre's senior management, the PG EAP module convenor and the head of the Writing Centre; however, the approach used to determine suggested improvements could be applied by other institutions in a similar context. Therefore, where relevant, these findings are also related to other relevant research.

5.5.1 Standardized PG EAP course support

As detailed in the Results and Analysis chapter (section 4.4), the Sino-British University provides a single standardized PG EAP course which PG students can elect to take, no matter which programme they are from²⁸. As discussed by Cooper and Bikowski (2007), it is not always feasible (i.e. in terms of available resources) to have separate discipline, department or degree specific PG courses. Therefore, if the University's practice of only having a single course is maintained, important task types should be covered. The content analysis identified 14 task types used over all the PG programmes. However, of these, there are four task types (*reports, essays, proposals and case studies*) which are much more important (see section 5.2.1). These four task types *occur* much more frequently and have a much higher *total word count* and *value* associated with them. It was also shown that *overall* (i.e. using combined data from all programmes), the PG student body reported a lower perceived understanding of *proposals* and *case studies* than *essays* and *reports* (see section 5.3.1). However, according to the PG EAP course syllabus (available online), at the time of writing, *proposals* and *case studies* were not covered. Therefore, these findings indicate that that the PG EAP module convenor should add them to the PG EAP course. However, the content analysis also shows *proposals* and *case studies* to be the least important of these four task types and the differences in perceived understanding are modest (only a 0.235 average difference on the five point Likert-scale, see section 5.3.1.1). Therefore, their relative importance should not be overemphasized.

²⁸ Some PG programme directors require their students to take the PG EAP course. This can vary from year to year. However, because of scheduling, it is possible that students who want to take the PG EAP course cannot.

5.5.2 Degree specific PG EAP course support

The findings in this study strongly suggest that writing support should ideally be degree specific for a variety of reasons.

Firstly, in the case of the Sino-British University, its standardized PG EAP course (as discussed in section 5.5.1) would likely not be able to cater to all degree specific writing needs. For instance, the content analysis shows that highly important degree specific task types for some programmes would not be covered if just the *overall* most important ones (i.e. *reports, essays, case studies* and *proposals*) are taught. For example, the content analysis shows that MA TESOL students have to write a *term paper*, and for them this is the most important task type by *word count* and *value* (See Table 103, Appendix I). Furthermore, the study has also observed several instances of students *within* and *across* programmes (see Methodology chapter, section 3.4.5.4, for a definition of these terms) having significantly lower perceived understanding of certain task types which are important for their programme. For instance, the data *across* programmes shows that *essays* are slightly more important for MRes Computer Science students in terms of *value* and *word count* than they are for MA TESOL students. Yet their perceived understanding of *essay* writing is significantly lower than for MA TESOL students, indicating MRes Computer Science students would benefit from more *essay* writing instruction relative to MA TESOL students. Another issue with having a single PG EAP course, as discussed in research question 1 (see section 5.3.3), is that it cannot be assumed that task types are being used in the same way *across* programmes.

Secondly, the qualitative data (questionnaire Q19) adds further support. 27 (20.77%) of the respondents said that the support should specifically be related to writing task types in their programmes, or that the entire PG EAP course should be split *by degree programme*. For instance, one respondent wrote “Mixing engineering and media is an attempt to merge different writing styles and is not conducive to all learners involved”. Another respondent added that if they were taught how to write a research article “then we will be more

interested in such type of EAP". In fact, these students made these comments without being prompted to specifically address the issue of degree specific support.

Lastly, these findings are also supported by the conclusions of related research. For instance, as discussed in the Literature Review chapter (2.1), Ma's (2018) study of Chinese PG students at an EMI in Hong Kong revealed the majority of PG students reported that the PG EAP course was useful. However, criticism steamed from what PG students saw as EAP teachers' lack of understanding of students' discipline specific writing tasks and their ability to teach those task types (Ma, 2018). Furthermore, Schulze and Lemmer's (2017) analysis of interviews with academic lecturers at several EMIs in South Africa concluded that writing support for PG students should focus on 'explicit writing skills for specific disciplines' (p.64). Son and Park's (2019) study also found PG students would prefer 'topics and activities related to their major' (p. 31). These findings suggest that PG students at this institution prefer writing instruction rooted in the social/genre approach (as discussed in the Introduction chapter, section 1.1).

Therefore, this study's conclusion that the writing support mechanisms should ideally be degree specific are supported by the literature and the qualitative data. This is a suggested action that should be considered by the Language Centre's senior management, the PG EAP module convenor, as well as in the wider EAP context.

5.5.3 Writing Centre support

The purpose of this section is to briefly discuss how the data suggests the Sino-British University's Writing Centre could be used to greater effect. Indeed, the data (section 5.4.1) indicates that the students find the Writing Centre less useful than the PG EAP course which is perhaps to be expected considering using its services is entirely optional. This indicates that improvements to the Writing Centre's services could be beneficial.

In the previous section, it was shown that the data strongly indicates that degree specific support should be provided. However, as previously mentioned (section 5.5.1), the available resources (no. of available tutors, timetabling issues etc.) may not make this possible in a PG

EAP course (see Cooper & Bikowski, 2007). Therefore, a possible solution is not requiring students in programmes with low writing importance (as identified by the content analysis) to take the PG EAP course, and instead, require them to attend Writing Centre workshops specific to their degree, timed to coincide with when the support is needed. In fact, it has been suggested that they are one of the best possible writing support mechanisms to achieve this purpose (Fenton-Smith & Humphreys, 2015).

Making better use of the Writing Centre could also be a more efficient use of the students' time. Indeed, as discussed in research question 2 (5.4.3), 11 (8.46%) of the students reported not using the writing support because of their study habits, with the most common reason being a lack of time. By tying the level of writing support to writing importance, issues such as this could be reduced. Given that not all PG students are required to take the PG EAP course (i.e. it is a departmental decision, and not a university requirement), this would be entirely possible. This is also supported by the finding in research question 2 (5.4.2) which suggests that there may be a link between writing importance in terms of *value* and how useful PG students find writing support.

Another possibility would be to remove the PG EAP course entirely, and instead focus the resources on the provision of mandatory degree specific workshops or a workshop series. In this case, a workshop series would be more likely to mitigate the potential risk (see section 5.4.1) of individual workshops lacking the depth needed to adequately teach the required task types (Schulze & Lemmer, 2017). These recommendations should be considered by senior management at the Language Centre, as well as the head of the Writing Centre.

Chapter 6: Conclusion

This thesis concludes with a reflective summary of the research and its implications, outlines the study's limitations and possible avenues of future research, and ends with a personal reflection on what I have learned as a researcher and teacher.

6.1 Summary and implications of the study

This study has investigated the writing needs of PG students studying at a Sino-British University. The study used a sequential mixed methods approach with the goal of providing new insights into their writing needs by taking into account both writing importance and student perceptions. The overall goal was to demonstrate how this data could be used to make suggested improvements to writing support mechanisms, such as a PG EAP course.

The sequential mixed method approach in this study used data collected from a content analysis of PG writing task sheets to inform the development a PG student questionnaire. The content analysis identified all writing task types *by degree programme* and determined the importance of these task types by taking into account their *word count*, *value* and *occurrence*. The questionnaire allowed the students to report their perceived understanding of writing task types used in their degree programme, their perceived usefulness of the current writing support mechanisms, and give suggestions for improvements to the writing support.

These two sets of data (the content analysis and questionnaire) were triangulated allowing for input from multiple stakeholders to be considered when making recommendations for improvements to the writing support mechanisms.

6.1.1 Determining writing importance with content analyses

This study is the first to determine PG writing task type importance in terms of *value*, *word count* and *occurrence*. Previous studies determined task type importance using more limited and/or subjective measurements. Subjective measurements have been in terms of PG students' *perceived understanding* (e.g. Chahkandi, 2014) and students and/or academic

lecturers ranking task types by importance (e.g. Cai, 2017). More limited measurements are in terms of *occurrence* (e.g. Cooper & Bikowski, 2007; Graves, Hyland & Samuels, 2010), *value* (e.g. Nicolas & Annous, 2013); *word count* and *occurrence* (e.g. Hale, et al., 1996) or *occurrence and value* (e.g. Cho, 2014; Dunworth, 2008). In this study, it was shown that not taking into account all three (i.e. *value*, *word count* and *occurrence*) can lead to an incorrect determination of writing importance and therefore the wrong recommendation for what task types to teach, especially when considering individual programmes.

Therefore, it is highly recommended that institutions that have or intend to develop writing support mechanisms conduct content analyses, ideally ones which take into account *value*, *word count* and *occurrence* as discussed above. These analyses are vital to determine important task types and to what extent writing requirements differ *by degree programme*. For instance, at the University where the study took place, it was found that four task types (*reports*, *essays*, *case studies* and *proposals*) are the most importance ones *overall*. It was also shown that the requirements are very different *by degree programme*. For instance, the number of words that PG students have to write as part of the core courses range from as little as 3,000 (MRes Molecular Bioscience) to 46,500 (MSc Sustainable Construction). Degree specific support is discussed further as part of section 6.1.3.

6.1.2 Self-efficacy as a dimension of writing importance

Only one previous study (e.g. Chankhandi, 2014) has measured PG students' perceived understanding (i.e. self-efficacy) of degree specific writing task types. However, this is the first study to triangulate students' perceived understanding of task types with writing importance (in terms of *occurrence*, *value* and *word count*) as part of an investigation into students' writing needs. This study does not assume that perceived understanding measures actual writing ability; however, previous research has proved its usefulness as a gauge of students' writing outcomes (e.g. Hetthong & Teo, 2013) and therefore it can be a useful indicator of writing support needs. At the Sino-British University, as discussed in the previous section, the content analysis identified the most important writing task types *overall* (i.e.

considering all writing tasks in all PG programmes) as *reports, essays, case studies* and *proposals*. The triangulation of these important task types with the students' perceived understanding (i.e. self-efficacy) of these task types led to two main findings with implications for the University's writing support.

Firstly, the PG students *overall* (i.e. using combined data from all programmes) reported significantly less perceived understanding of *case studies* and *proposals* than *essays and reports*. However, it was also found that although these differences were statistically significant, the mean differences were small, and these task types are less important (i.e. than *reports and essays*). The implication for PG writing support for this institution is that as *case studies* and *proposals* are important, and are less understood, they should be taught if the University continues with its standardized PG EAP course. But the module convenor also should be aware that *reports* and *essays* do have the most writing importance.

Secondly, it was found that there are significant differences in the students' perceived understanding both *within* and *across* programmes for certain task types in some programmes. For instance, MRes Computer Science students reported significantly weaker perceived understanding of how to write *essays* than MA TESOL students, and for these programmes *essays* are of a very similar importance in terms of the *word count* and *value* associated with this task type. Therefore, this suggests that MRes Computer Science students require more writing support in terms of *essay* writing relative to MA TESOL students. Degree specific support is discussed further in the next section.

In a wider sense, these findings add support to the idea that self-efficacy of writing task types can be a useful dimension to explore when determining the focus of writing support.

6.1.3 Main arguments for degree specific support

The widely varying writing needs which can exist *by degree programme*, as discussed in sections 6.1.1 and 6.1.2, strongly suggest that ideally writing support mechanisms should consider individual degree programmes when identifying students' writing needs. This

assertion is also strongly supported by previous studies that investigated PG students' writing needs (e.g. Lax, 2002; Ma, 2018; Schulze & Lemmer, 2017; Son & Park, 2014). PG students' perceptions of writing support mechanisms can also provide valuable information about their writing needs. In this study, the thematic analysis of the qualitative questionnaire data revealed that around one-fifth (20.77%) of the students made suggestions regarding having degree specific writing support, despite not being prompted to give recommendations about this issue. Therefore, this study recommends that the PG EAP module convenor and Language Centre senior management at the Sino-British university where the study took place explore the possibility of introducing degree specific support. This would allow them to more effectively utilize the social/genre approach (the predominate writing instructional method at the Sino-British university) in writing support instruction.

In a wider sense, these findings also highlight the importance of considering both writing importance *by degree programme* and students' perceptions of how their specific writing needs can be met. This could be useful for other institutions which offer or have the resources to offer degree specific PG writing support. However, although this study has added further support to the existing literature which suggests that degree specific support is preferable, the potential issue with having degree specific support is that it may not be feasible due to a lack of resources (Cooper & Bikowski, 2007). Ways that this issue could be mitigated are dealt with as part of the next section.

6.1.4 Perceptions of usefulness of writing support mechanisms

As discussed in the previous section, degree specific support is not always possible due to resourcing issues (Cooper & Bikowski, 2007). The findings concerning students' perceptions of the support mechanisms (i.e. the PG EAP course and Writing Centre) are discussed here. Additionally, they include implications concerning how the support mechanisms could be used more effectively according to this data. It is important to recall that at the Sino-British University, a standardized PG EAP course is currently provided.

6.1.4.1 Perceived usefulness of the PG EAP course and writing importance

The data suggests that some students could have more use for PG EAP support compared to others. In fact, the data implies that there could be a link between how useful the students find the writing support, and how important writing is for their programme in terms of *value*. This is evident in the case of MA TESOL students. They reported finding the PG EAP course significantly more useful than two other degree programmes. When factoring in writing importance (in terms of *value*, *occurrence* and *word count*) for all task types, for MA TESOL, writing is more important in terms of *value* compared to those same two programmes. As this connection, however, was only made between three programmes, more research would be required to ascertain if this is a general trend. However, this finding, in addition to the widely varying importance of writing *by degree programme* (as discussed in section 6.1.1), would suggest that students in programmes where writing is less important could be offered different writing support to the PG EAP course. This is further discussed in the next section.

6.1.4.2 Perceptions of the Writing Centre mechanisms

The data indicates that the students find the Writing Centre less useful than the PG EAP course. For instance, the quantitative data in research question 2 shows that 53.33% of the students said 'Strongly agree' or 'Agree' to the questionnaire question (Q17) concerning the usefulness the PG EAP course support in terms of teaching writing task types. Although the emphasis was slightly different, this proportion is much lower for the question about the usefulness of the Writing Centre.

A number of possible reasons for why the students appear to value the Writing Centre less were offered; for example, as is often the case with Writing Centres (Archer & Richards, 2011), it is positioned on the periphery of the Sino-British University's community of practice (i.e. not in a central position relative to the areas where the PG programmes are located). Another significant issue is the fact that the PG EAP course is mandatory for some programmes; however, students are not required to use the Writing Centre's services. This indicates that

the Writing Centre could be used more effectively. For instance, students in programmes where writing is less important (as discussed in the previous section) could be required to take specific writing workshops or workshop series tailored to the writing needs of their programme at the Writing Centre, rather than taking a PG EAP course. In fact, Fenton-Smith and Humphreys (2015) argued that writing workshops are one of the best writing support mechanisms for this purpose. However, the workshop topics would need to be covered in enough depth to be sufficiently valued as a means of meeting their writing needs (Schulze & Lemmer, 2017). This could also be beneficial for those students who reported a lack of time to utilize the Writing Centre. In fact, the qualitative data shows that 11 (8.46%) of the students reported that they did not use the writing support mechanisms due to their study habits (e.g. not having enough time). Therefore, their class schedule could be considered when scheduling these workshops.

It should be noted that the above recommendations about the Writing Centre derive from a triangulation of data (i.e. quantitative and qualitative data from the questionnaire). It has primarily been used to provide suggestions for senior management and the head of the Writing Centre at the Sino-British University where the study took place. However, these recommendations may be of interest to other institutions that also offer in-session support through a PG EAP writing course and/or Writing Centre.

6.2 Limitations and future research

Perhaps the most significant limitation of this study is some of the sample sizes. As the focus is on PG students, it is a relatively niche area to explore, with a fairly small population in many of the degree programmes. Of the 22 programmes included in the content analysis, questionnaire data was only obtained for 14 of these. They had an average cohort of around 31 students; however, the researcher was only able to get a response rate of 37.81% for these programmes (See Table 12, Results and Analysis chapter, section 4.3.1). As a result, only nine of these programmes met the minimum sample size criterion applied in the study of $N \geq 5$ to be included in analyses *by degree programme*. Even if the response rate were higher, given

these programme population sizes, most sample sizes would still have been reasonably small. Because the whole population is not being tested, these relatively small samples sizes increase the possibility of both Type I (False Positives) and Type II (False Negatives) statistical errors (Larson & Farber, 2015, p351). Therefore, there may actually be more significant differences *by degree programme* in terms of students' perceptions (of their understanding of task types and of their perceived usefulness of writing support) than could be detected with the sample sizes in this study. Equally, it is possible that some of the statistically significant findings in this study would prove insignificant with a larger sample size. In fact, although this study has provided new insights into students' writing needs, particularly in terms of the connections between students' perceptions and writing importance, it was only able to establish these links for a small number of the programmes. As discussed above, this may be due to the small sample sizes. Therefore, this approach may have limitations for use at institutions that have PG programmes with a small number of students.

Another issue concerns the observed differences in the students' perceived understanding of task types. Firstly, the study did not investigate why differences in understanding exist. For example, why MA TESOL students reported greater understanding of *essays* than *proposals*. There could be a number of reasons for this. For instance, they may have more understanding of these task types because they use them more, and/or they could have had more training with them (e.g. in the PG EAP course or elsewhere). A greater understanding of the underlying reasons could have allowed the researcher to better discern students' writing needs and led to more robust recommendations for improvements to the writing support mechanisms. Secondly, the study used self-reported data on a Likert-scale to measure the students' perceived understanding of task types to provide an indication of their writing needs. However, as noted several times throughout the thesis, self-reported data is not always a reliable measure (Silverman, 2006). Also, while Likert-scale questionnaires can be used to obtain perceptions, they cannot measure actual ability (Gliem & Gliem, 2003). Future research could measure understanding more objectively (e.g. by using standardized test scores) to ascertain why any differences in understanding exist.

Additionally, the thesis had intended to explore if any of the differences in perceived usefulness (research question 2) could be explained by the demographic data. For example, if international students (i.e. not local Chinese students) find the writing support to be more or less useful than local students as this may have implications for the writing support they are offered. However, as detailed in the Results and Analysis chapter (section 4.3.3.1.2), the sample size for all demographic data the researcher wished to explore was low. Therefore, the only meaningful test that could be run was for students who went through either a 'Chinese' or 'non-Chinese' education system. No differences were found. There are three possibilities as for why: (i) there were no significant differences, (ii) as discussed above, there were differences, but the relatively small sample size may have led to Type II errors, or (iii) there were differences; however, as the students in the 'non-Chinese' group also included many diverse backgrounds (e.g. students from other Asian countries, Africa, Europe etc.), they would have needed to be divided into further sub-groups to find the differences. However, the sample size of these groups would then have been very small. Future research into this aspect would be an interesting avenue to explore. However, it must be carried out in contexts where there are large groups of students with diverse demographics.

6.3 Personal reflection

The impetus for this study was my positionality as an PG EAP teacher who found it challenging to support PG students, particularly in terms of their degree specific writing needs. This, combined with my pragmatist disposition to research, set me on the path to solve my 'real-world problem' in such a way that the methods and solutions could be both generalizable and applied to my practice to create positive change (Morgan, 2007).

The findings of my research demonstrate the difficult challenges that myself, PG EAP teachers, the Sino-British University where the study took place and other institutions are facing. We are responsible for providing writing support that is essential for enabling our students to flourish in an EMI setting. However, this research has shown the plethora of writing needs that exist and how they can differ extensively from programme to programme. Yet language

teachers and support tutors are often expected to meet students' highly differing needs in standardized EAP support courses and Writing Centre workshops. As a teacher, I intend to use these findings to emphasize the importance of degree specific support to my own institution in order to affect positive change. As a researcher, I hope to continue to explore how students' writing needs differ, and how these needs can be better identified and supported in institutions with large L2 English student bodies.

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Appendix A. VPREC

Dear Layla Shelmerdine		
<p>I am pleased to inform you that the EdD. Virtual Programme Research Ethics Committee (VPREC) has approved your application for ethical approval for your study. Details and conditions of the approval can be found below.</p>		
Sub-Committee:	EdD. Virtual Programme Research Ethics Committee (VPREC)	
Review type:	Expedited	
PI:		
School:	Lifelong Learning	
Title:	Graduate Writing Assessments across Postgraduate Departments: A Task-based Needs Analysis for Understanding Postgraduate Academic Writing Skills	
First Reviewer:	Dr. Lucilla Crosta	
Second Reviewer:	Dr. Morag Gray	
Other members of the Committee	Dr. Martin Gough, Dr. Julie-Anne Regan, Dr. Kalman Winston, Dr. Mariya Yukhymenko, Dr. Dimitrios Vlachopoulos	
Date of Approval:	13/09/2016	
The application was APPROVED subject to the following conditions:		
Conditions		
1	Mandatory	M: All serious adverse events must be reported to the VPREC within 24 hours of their occurrence, via the EdD Thesis Primary Supervisor.

This approval applies for the duration of the research. If it is proposed to extend the duration of the study as specified in the application form, the Sub-Committee should be notified. If it is proposed to make an amendment to the research, you should notify the Sub-Committee by following the Notice of Amendment procedure outlined at <http://www.liv.ac.uk/media/livacuk/researchethics/notice%20of%20amendment.doc>.

Where your research includes elements that are not conducted in the UK, approval to proceed is further conditional upon a thorough risk assessment of the site and local permission to carry out the research, including, where such a body exists, local research ethics committee approval. No documentation of local permission is required (a) if the researcher will simply be asking organizations to distribute research invitations on the researcher's behalf, or (b) if the researcher is using only public means to identify/contact participants. When medical, educational, or business records are analysed or used to identify potential research participants, the site needs to explicitly approve access to data for research purposes (even if the researcher normally has access to that data to perform his or her job).

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Please note that the approval to proceed depends also on research proposal approval.

Appendix B. Participant Information Sheet

Graduate Writing Assessments across Postgraduate Departments: A Task-based Needs Analysis for Understanding Postgraduate Academic Writing Skills

You are being invited to participate in a research study. Before you decide whether to participate, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and feel free to ask me if you would like more information or if there is anything that you do not understand. Please also feel free to discuss this with your friends, other students, or teaching staff if you wish. You do not have to accept this invitation and should only agree to take part if you want to.

Thank you for reading this.

Participant Information Sheet v 1.2 Sept. 9, 2017 LS

1. What is the purpose of the study?

The purpose of this study is to address the lack of knowledge on postgraduate (PG) writing tasks (assessments) and skills. A task-based needs analysis will be conducted to identify the written academic tasks (assessments) and writing skills that postgraduate students encounter in their postgraduate degree courses. To do this I will collect and analyzing PG coursework task sheets (i.e. handouts that provide instruction on how to complete the coursework). Based on the findings from the analysis I will ask PG students to complete a questionnaire to further investigate students' understanding of the required writing tasks and skills.

Please note that I am conducting this research in my role as a doctoral student at University of Liverpool, not in my role as an academic staff member at Xi'an Jiaotong-Liverpool University (XJTLU). However, I do plan to share the published findings of this research with other XJTLU staff (specifically Language Centre tutors and PG lecturers and programme directors).

2. Why have I been asked to take part?

You have been asked to take part in this study because you are a postgraduate student currently attending XJTLU. All postgraduate students are being asked to participate.

3. Do I have to take part?

You do not have to take part in this study and since your participation is completely voluntary you can withdraw from the study at any time without any penalty. To make sure that you do not feel under pressure to take part, the questionnaire will be available via email at the end of semester 2 (2017-18 academic year) and you can choose whether or not to participate. The questionnaire will be accessible by PG students from the end of the semester 2 until the start of semester 3 (approximately 2 months). The questionnaire will be anonymous (no names or student numbers). As the questionnaire will be completely anonymous, I will not know who has or has not completed it. Additionally, since your participation is completely voluntary you can withdraw from the study at any time without penalty.

4. What will happen if I decide to take part?

Taking part in the study means that your completed anonymous questionnaire will be downloaded from university's survey platform – Survey@universityname (the link emailed to you) and analyzed. Additionally, you will allow me to use comments/quotes from your questionnaire anonymously (i.e. not revealing your name or identity and not making you recognizable at all in any public document).” The questionnaire should take you approximately 10 minutes to complete. You can simply follow the instructions after clicking on the link in your email.

5. Expenses and /or payments?

No payments will be made to participants in this study.

6. Are there any risks in taking part?

There are no foreseeable risks to PG students, programme directors or Language Centre tutors in this study. Whether you choose to participate in this study or not will have no impact on your current or future grades or performance. However, if you may feel any discomfort in answering the questions you can stop filling it in at any time with no consequences

7. Are there any benefits to taking part?

By participating in this study and completing the questionnaire you will be contributing to language tutors' and PG academic lecturers' understanding of postgraduate students academic writing tasks and skills. Based on the data from the task-based analysis improvements could be made that may be of benefit to EAP and PG curriculums, and the academic writing support services for all postgraduate students.

8. What if I'm unhappy or if there is a problem?

If you are unhappy, or if there is a problem, you may contact my doctoral research supervisor at University of Liverpool, Dr. Dimitrios Vlachopoulos (dimitrios.vlachopoulos@online.liverpool.ac.uk). You may also refer to the contact details in question 11 of this form and contact me. I will try to help. If you remain unhappy or have a complaint which you feel you cannot come to my supervisor or me with then you should contact the Research Participant Advocate at 001-612-312-1210 (USA phone), or liverpooethics@ohcampus.com. When contacting the Participant Advocate, please provide details of the name or description of the study (so that it can be identified), the researcher(s) involved, and the details of the complaint you wish to make.

9. Will my participation be kept confidential?

Yes. The online questionnaire in this study is anonymous, and results will be stored in password-protected cloud server. The data will be backed up on a password protected external cloud drive that only I have access to. Any quotes used from the questionnaire will not identify individual students. Data from this study will be kept for five years. After this period, it will be deleted.

10. What will happen to the results of the study?

The results of the study will be utilized for my EdD thesis (Doctorate of Higher Education, University of Liverpool). The results will also be used to further develop the PG English ALA to be more relevant to students' postgraduate degree programme. Additionally, the data will be used to develop writing workshop for postgraduate students. Furthermore, the data may also be used for journal articles or presentations at academic conferences. I will provide PG programme directors, the Language Centre Head of Department and the Continuing Support Manager with a summary of the analyzed anonymous data.

11. What will happen if I wish to retract my permission?

You are free to withdraw your permission at any time up to the point questionnaires are downloaded. To do so, you can contact the researcher directly, Layla Shelmerdine (Layla.shelmerdine@online.liverpool.ac.uk).

12. Who can I contact if I have further questions?

If you have further questions or concerns, please contact the researcher directly:

Layla Shelmerdine
Language Centre
FB671
Xi'an Jiaotong-Liverpool University
111 Ren'ai Road, HET, SIP
Suzhou, Jiangsu Province
P R CHINA 215123
EMAIL: Layla.shelmerdine@online.liverpool.ac.uk
TEL: +86-512-8816-1394
Mobile: 18662597736
Wechat: LaylaShelmer

Appendix C. Participant Consent Form

研究伦理委员会 Committee on Research Ethics

PARTICIPANT CONSENT FORM

Title of research project/
研究项目
标题:

Graduate Writing Assessments across Postgraduate Departments: A
Task-based Needs Analysis for Understanding Postgraduate Academic
Writing Skills

Researcher/研究者:
Layla Shelmerdine

请在框内首
字母大写
签名

1. 我确认已阅读并理解针对上述研究的日期为【日期】的信息表。我曾有机会对这些信息进行考虑、提问，并且得到了令人满意回答。

I confirm that I have read and have understood the information sheet dated April 10, 2018 for the above study. I have had the opportunity to consider the information, ask questions and have had these answered satisfactorily.

2. 我理解，我的参与是自愿的，我可以随时在不给出任何原因的情况下退出，并且，我的权力不会受到任何影响。此外，如果我不想回答任何特定的问题，我可以自由拒绝。

I understand that my participation is voluntary and that I am free to withdraw at any time without giving any reason, without my rights being affected. In addition, should I not wish to answer any particular question or questions, I am free to decline.

3. 我理解，根据《数据保护法》，我可以随时要求访问我提供的这些信息，并且，如果希望，我还可以请求销毁这些信息。

I understand that, under the Data Protection Act, I can at any time ask for access to the information I provide and I can also request the destruction of that information if I wish.

4. 我同意参与上述研究。

I agree to take part in the above study.

参与者同意书

参与人姓名/ Participant Name

日期/ Date

签名/ Signature

获得同意人姓名 /Name of Person taking consent

日期/ Date

签名/Signature

研究者 / Researcher

日期/ Date

签名/Signature

Principal Investigator/主要研究者:

Name/姓名:

Layla Shelmerdine

Work Address/工作地址:

FB671, Xi'an Jiaotong-Liverpool University, 111 Ren'ai Road, HET, SIP, Suzhou, Jiangsu Province, P R CHINA

Work Email/工作邮箱:

Layla.Shelmerdine@online.liverpool.ac.uk

Work Telephone/工作电话:

+86-512-8816-1394

Appendix D. Student Questionnaire

Section 1: Background information.

Degree Programme: _____ (e.g. MRes Management)

Country of Origin: _____ (e.g. China)

First language: _____ (e.g. Mandarin, English, etc.)

Age: 18-24 25-29 30+

Gender: Male Female

Section 2: The next 2 questions are about your undergraduate degree.

1.) Where did you study for your undergraduate degree? Please check the box below.

XJTLU

Chinese university

Other

If other, please include the country where the university is located and the language of instruction:

(Country) _____ (Language) _____

2.) Was English the main language of instruction in your undergraduate degree (UG)?

Yes No

3.) During my undergraduate degree, the word count for my coursework was on average:

500-1000 words 1000-2000 words Other _____

2000-3000 words 3000-5000 words

Section 3. The next 8 questions are about the type of writing tasks you might have in the course of your Postgraduate degree (PG) programme (e.g. a business report, a case study in accounting, etc.). Circle 1-*strongly agree*, 2-*agree*, 3- *neither agree nor disagree*, 4-*disagree*, 5-*strongly disagree* or N/A (does not apply).

4.) Writing is important in my postgraduate courses.

1 2 3 4 5 N/A

5.) The task sheets for my postgraduate courses are easy for me to understand.

1 2 3 4 5 N/A

6.) I can easily meet the word count for each coursework assignment.

1 2 3 4 5 N/A

7.) I understand how to write a report.

1 2 3 4 5 N/A

8.) I understand how to write an essay.

1 2 3 4 5 N/A

9.) I understand how write a case study.

1 2 3 4 5 N/A

10.) I understand how to write a proposal/research proposal.

1 2 3 4 5 N/A

11.) I understand how to identify important literature in my area of study.

1 2 3 4 5 N/A

12.) I understand how to critically evaluate a journal article/book/case study.

1 2 3 4 5 N/A

13.) I understand how to apply theory, concepts, skills, computer programmes, etc. in my written coursework.

1 2 3 4 5 N/A

14.) I understand how to discuss important research in my area of study.

1 2 3 4 5 N/A

15.) I understand how to analyze data for research in my area of study.

1 2 3 4 5 N/A

Section 4. The next 4 questions are about the writing support services available to postgraduate students at XJTLU. Circle 1-strongly agree, 2-agree, 3- neither agree nor disagree, 4-disagree, 5-strongly disagree or N/A (does not apply).

16.) The Writing Centre helps me with my writing coursework.

1 2 3 4 5 N/A

17.) The postgraduate EAP ALA course teaches writing genres (e.g. reports, essays) that are useful in my other postgraduate courses. **(Please choose N/A if you did not take the PG EAP ALA either first or second semester).**

1 2 3 4 5 N/A

18.) The postgraduate EAP ALA course teaches writing skills (e.g. paraphrasing, summarizing, identifying journal articles for research, etc.) that are useful in my other postgraduate courses. **(Please choose N/A if you did not take the postgraduate EAP ALA either first or second semester).**

1 2 3 4 5 N/A

19.) How can Language Centre tutors, the postgraduate EAP ALA course, the Writing Centre or your academic lecturers help you more with academic writing?

Appendix E. Task Sheet Example (Extract)

MAN 449: Marketing and Sales S1, 2015-2016 Assessment #3: Marketing plan report

Marketing plan report:

The marketing plan report involves the preparation of a marketing plan. Students have to think of a new (fictional or real) product or service they wish to introduce into the market and then develop a marketing and sales plan for launching and selling the product or service. Each student deals with a different product/ service and makes all relevant decisions involved in the development and implementation of the marketing plan. Students need to make sure that they include an analysis of the role of technology in informing consumer behaviour and marketing and sales processes.

The marketing plan report is the full-fledged version of the marketing plan in written form. While the challenge for the oral presentations is to cover the essential points of the marketing plan in a clear and concise manner within a strict time limit, the individual report requires the students to provide detailed evidence and justifications for their choices and decisions.

The length of report is 3000 words (excluding cover page, graphs, figures, appendices and reference list). This word count is an absolute upper limit and no 'leeway' is given for students who exceed these limits (e.g. it is not acceptable to deviate by 10% above the limit). 3 marks or pro rata per part thereof will be deducted for every 100 words by which the work exceeds the maximum length.

Submission via ICE. Deadline: 5 January, 12pm/noon.

NB: Due to the open-ended nature of the assignment, there are no suggested answers. The sample marketing plan and accompanying lecture materials, however, serve as a substitute to a suggested answer in terms of structure and content that need to be covered.

Appendix F. Normal Distribution Data (Sample data)

Table 47. Normal Distribution Tests: Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Overall - Case Study (Q9)	157	96.9%	5	3.1%	162	100.0%
Operations and Supply Chain Management - Case Study (Q9)	23	95.8%	1	4.2%	24	100.0%
TESOL - Report (Q7)	19	100.0%	0	0.0%	19	100.0%
Business Analytics - Report (Q7)	10	100.0%	0	0.0%	10	100.0%
Urban Planning - Writing Centre usefulness (Q16)	8	100.0%	0	0.0%	8	100.0%
Architectural Design - Report (Q7)	7	100.0%	0	0.0%	7	100.0%

Table 48. Normal Distribution Tests: Tests of Normality

	Shapiro-Wilk		
	Statistic	df	Sig.
Overall - Case Study (Q9)	0.899	157	0.000
Operations and Supply Chain Management - Case Study (Q9)	0.909	23	0.038
TESOL - Report (Q7)	0.834	19	0.004
Business Analytics - Report (Q7)	0.868	10	0.095
Urban Planning - Writing Centre usefulness (Q16)	0.882	8	0.197
Architectural Design - Report (Q7)	0.732	7	0.008

a. Lilliefors Significance Correction

Table 49. Normal Distribution Visual Analysis Summary

Data set	Visually normal (Y/N)	Tables	Commentary
Overall - Case Study (Q9)	Y	50-52	The histogram shows a bell-curve with a clear central point. The points on the Q-Q Plot follow the line closely (there is some divergence; however, it is very slight). The Box Plot shows obviously symmetry.
Operations and Supply Chain Management - Case Study (Q9)	Y	53-55	The histogram shows a bell-curve, with slightly greater frequencies to the left side (resulting in some skew); however, given the sample sizes, the differences are slight. The Q-Q Plot is matched closely by the points (there is some divergence; however, it is very slight). The Box Plot shows obvious symmetry.
TESOL - Report (Q7)	N	56-58	While the Box Plot shows good symmetry, there are issues with the histogram and Q-Q Plot. The histogram shows skew to the left. This is not unexpected considering there are only 4 data points. However, this combined with the Q-Q Plot (shows some divergence from the line) means that this is not considered visually normal.
Business Analytics - Report (Q7)	N	59-61	On the histogram, the two bars to the right have the same frequency, with the bar to the left just one lower in frequency. Therefore, even though there does appear to be a central point, it cannot be concluded that a bell-curve exists. While the Box Plot also shows clear symmetry, there is some divergence from the Q-Q Plot. Therefore, taking the histogram and Q-Q Plot into account, this data set is not considered to be normally distributed.
Urban Planning - Writing Centre usefulness (Q16)	N	62-64	The histogram shows no obvious central point (the frequencies are skewed heavily to the right). There is divergence from the Q-Q Plot, and the Box Plot is not symmetrical. Therefore, none of the graphs indicate a normal distribution.
Architectural Design - Report (Q7)	N	65-67	There are only 3 data points. The histogram shows no evidence of a central point, the Q-Q Plot shows fairly significant divergence and the Box Plot is not symmetrical. Therefore, all graphs indicate that the data set is not normally distributed.

Table 50. Overall – Case Study (Q9): Histogram

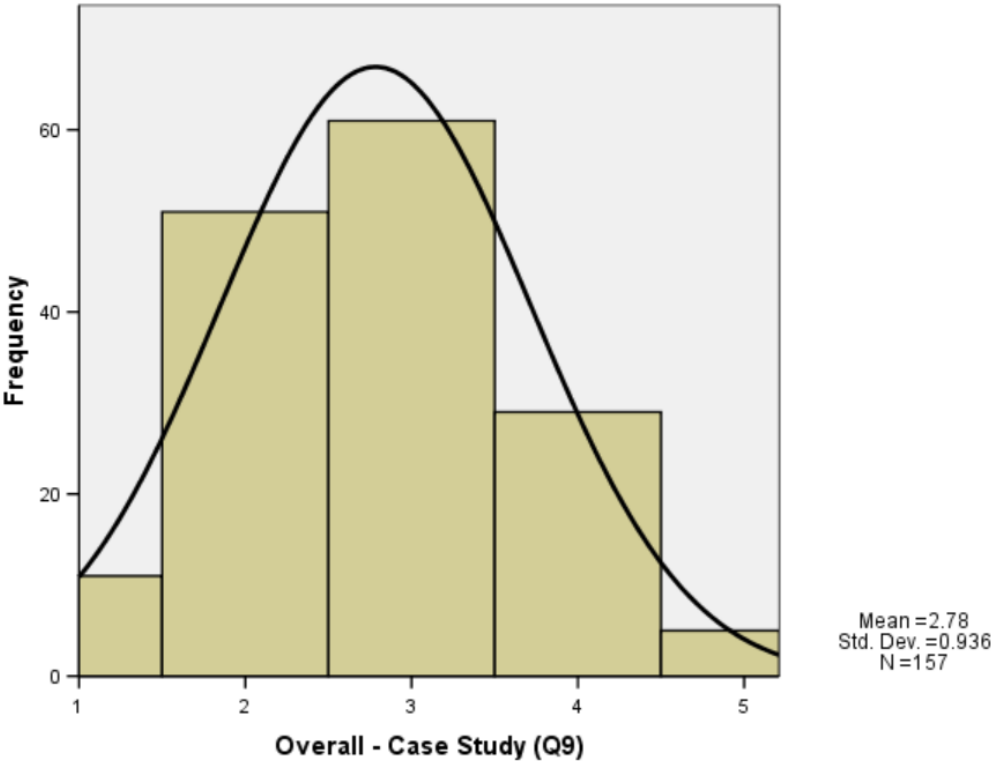


Table 51. Overall – Case Study (Q9): Q-Q Plot

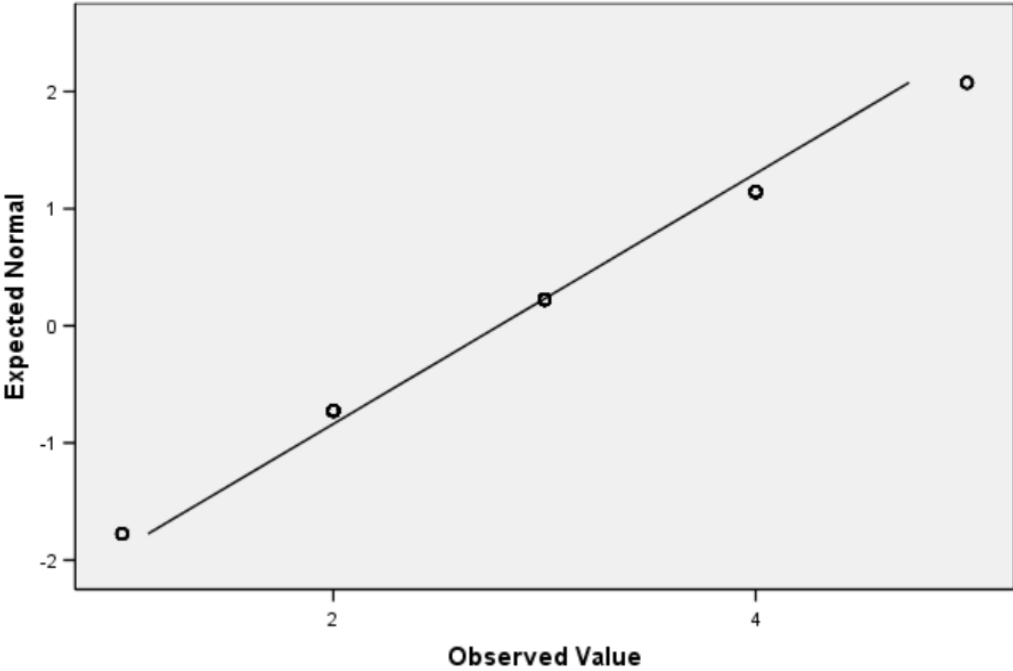


Table 52. Overall – Case Study (Q9): Box Plot

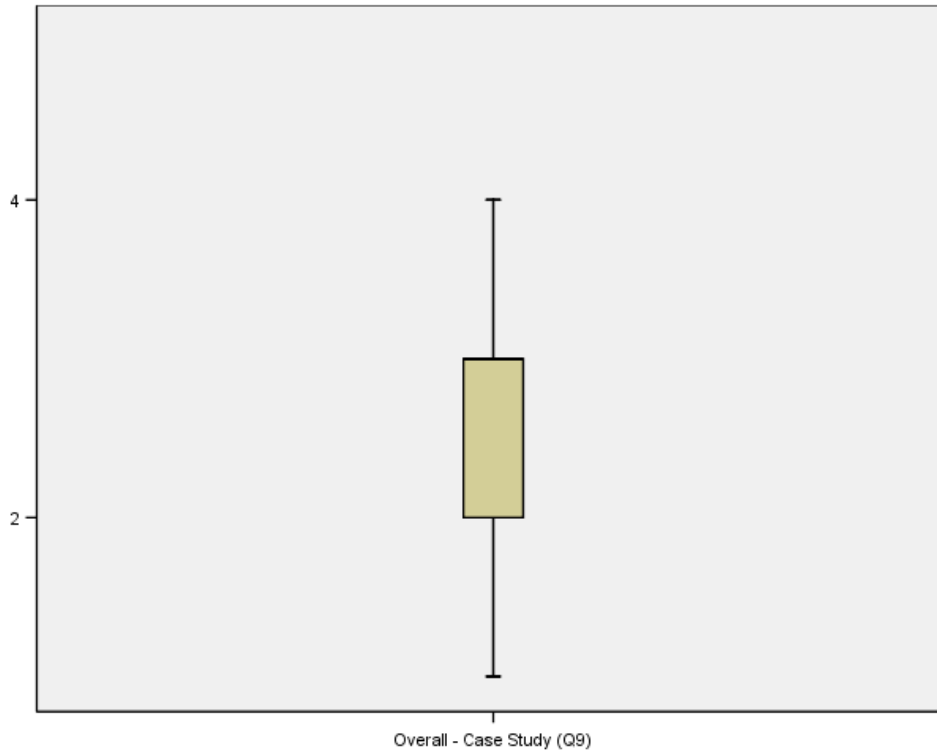


Table 53. Operations and Supply Chain Management – Case Study (Q9): Histogram

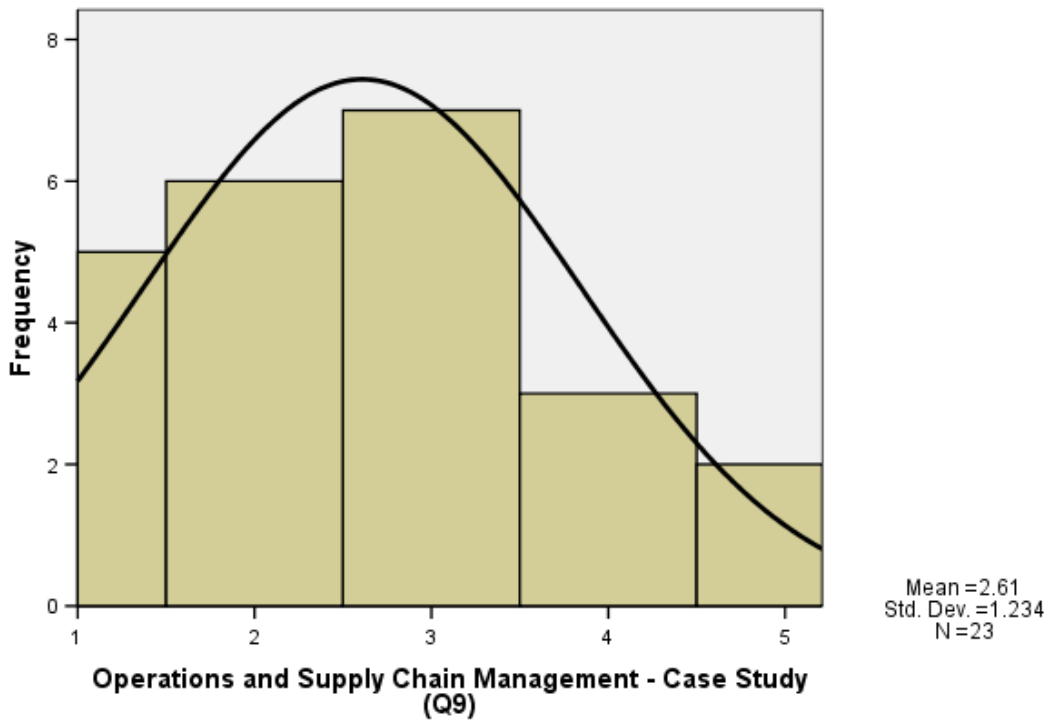


Table 54. Operations and Supply Chain Management – Case Study (Q9): Q-Q Plot

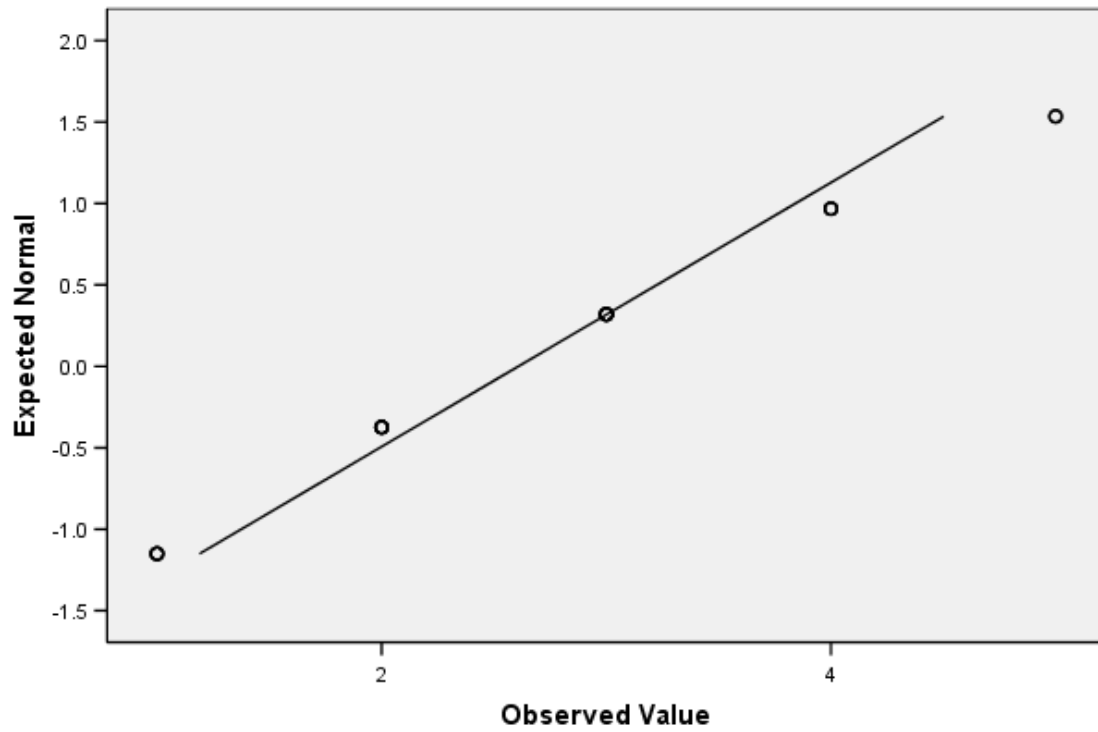


Table 55. Operations and Supply Chain Management – Case Study (Q9): Box Plot

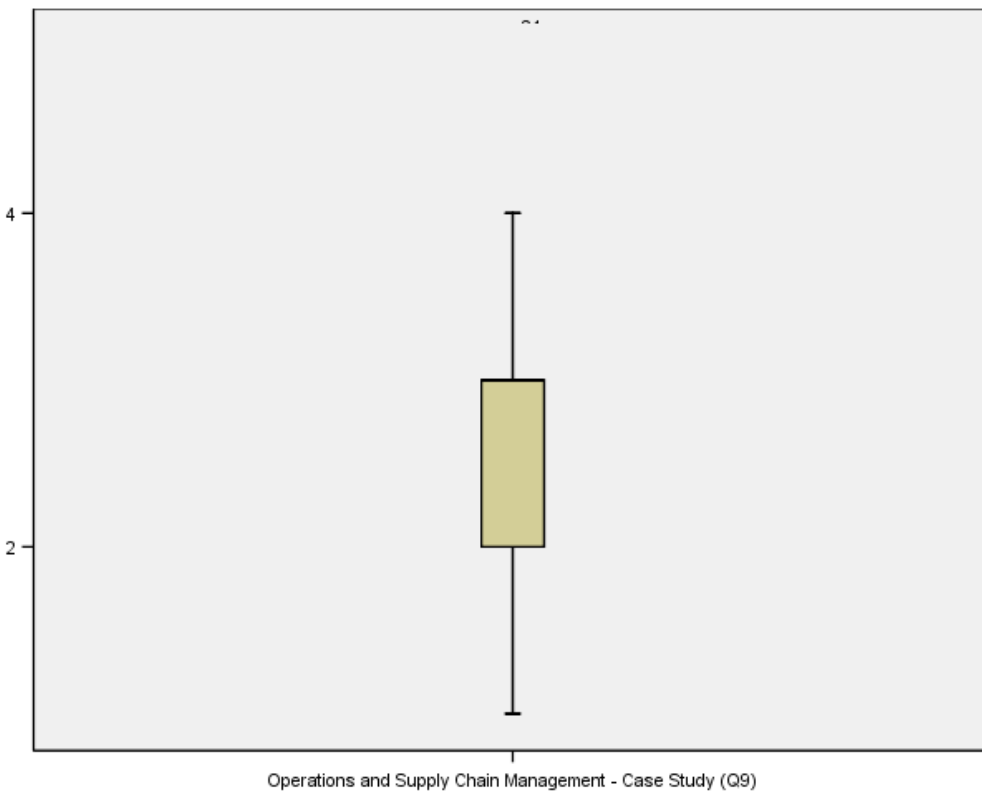


Table 56. TESOL – Report (Q7): Histogram

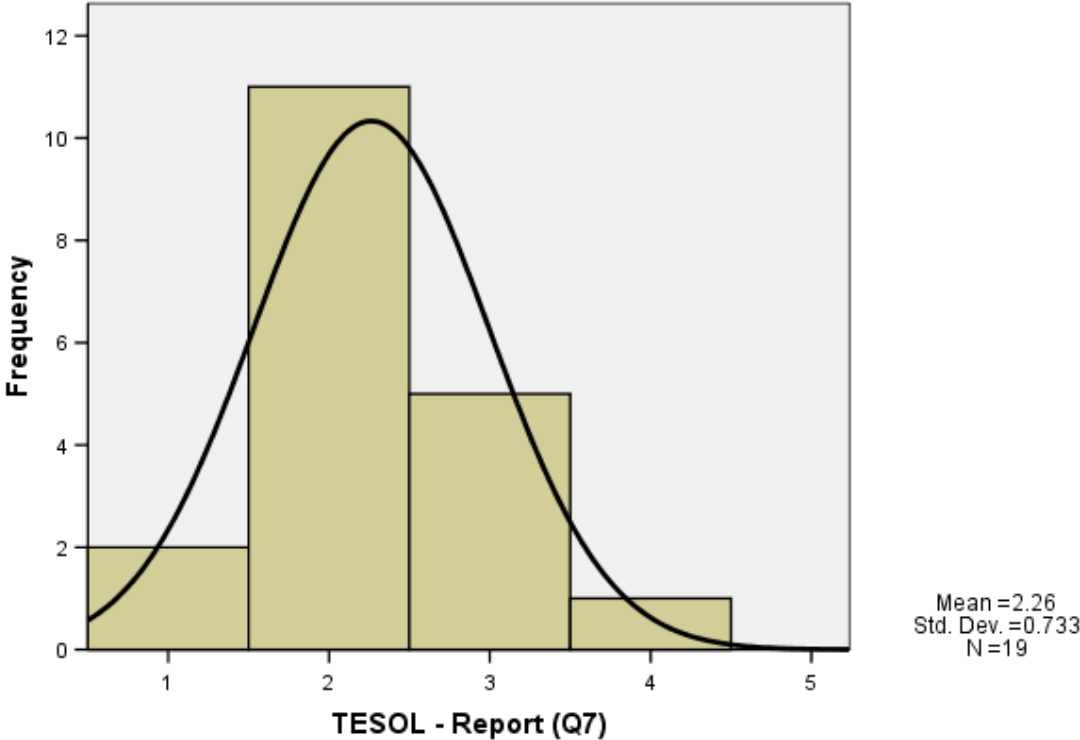


Table 57. TESOL – Report (Q7): Q-Q Plot

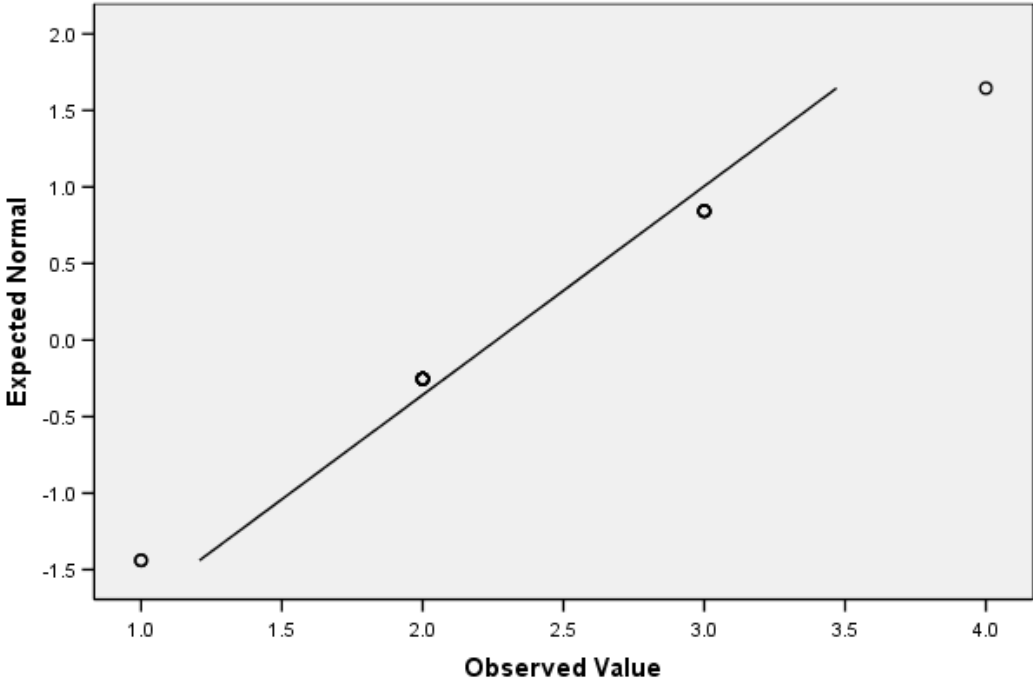


Table 58. TESOL – Report (Q7): Box Plot

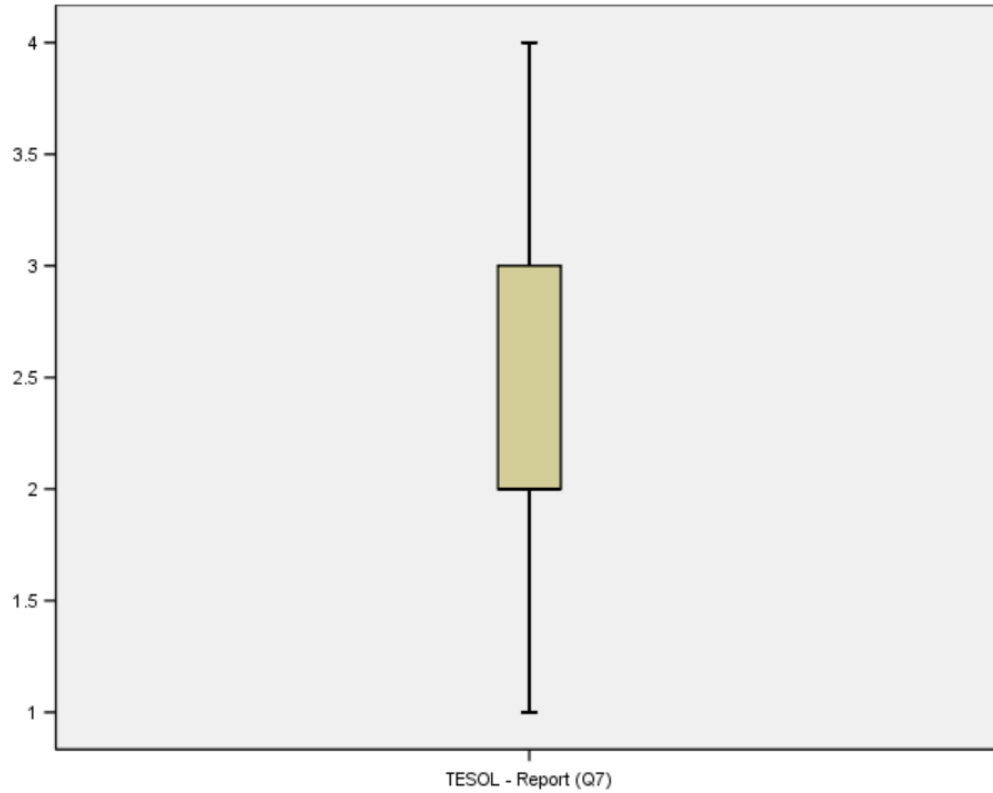


Table 59. Business Analytics – Report (Q7): Histogram

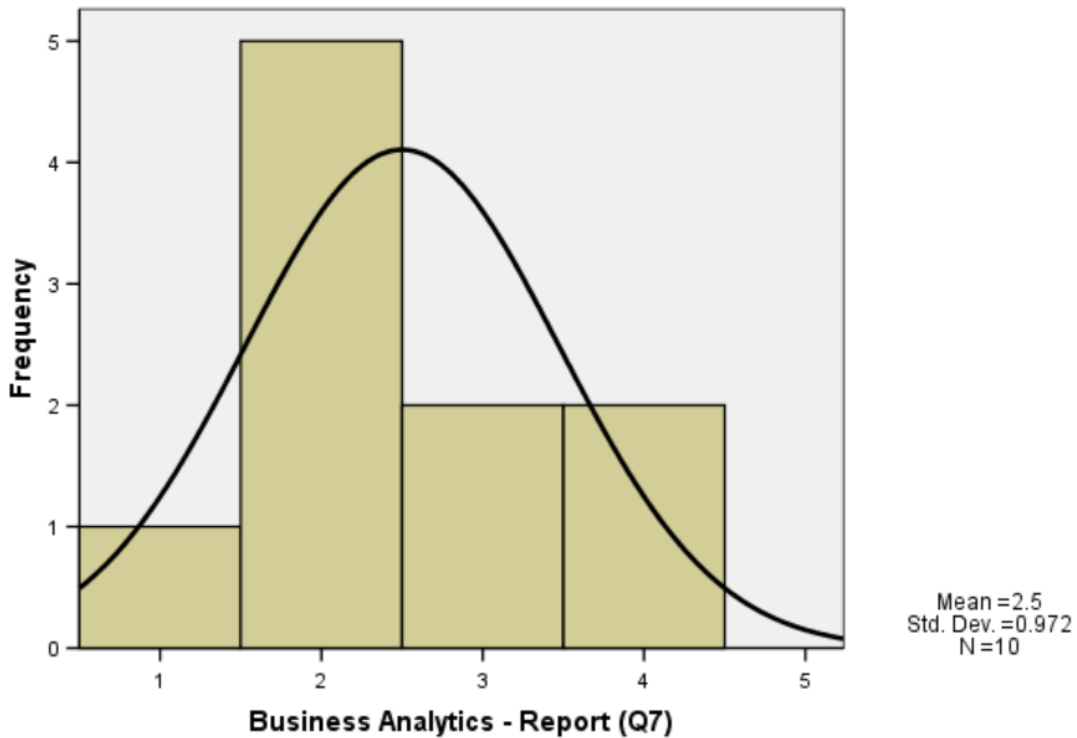


Table 60. Business Analytics – Report (Q7): Q-Q Plot

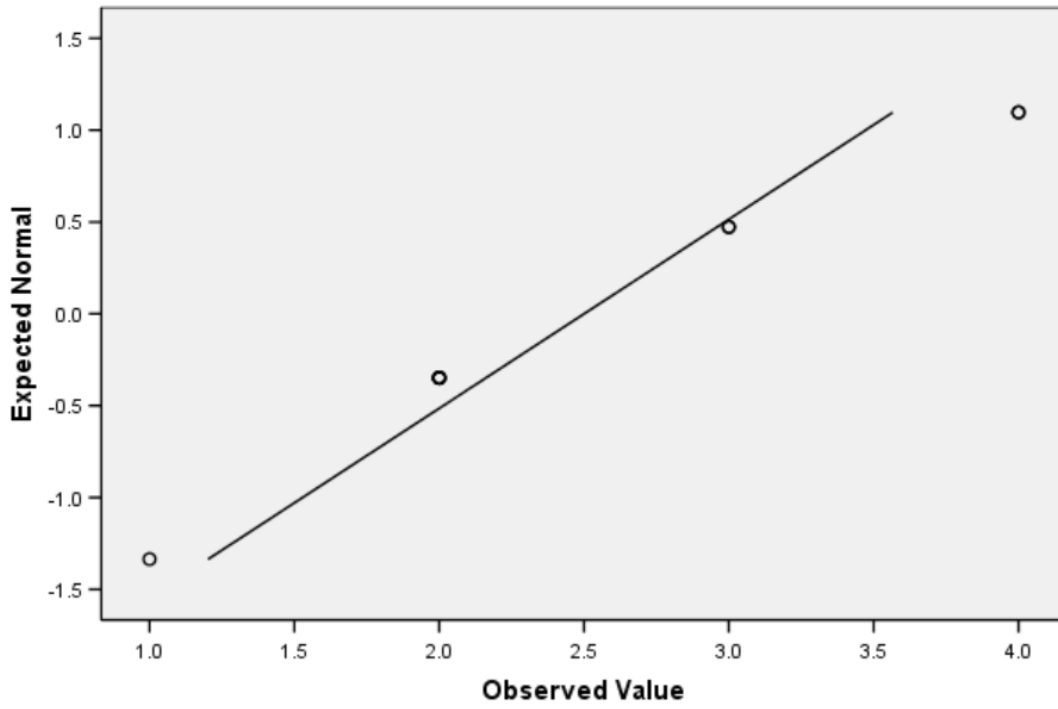


Table 61. Business Analytics – Report (Q7): Box Plot

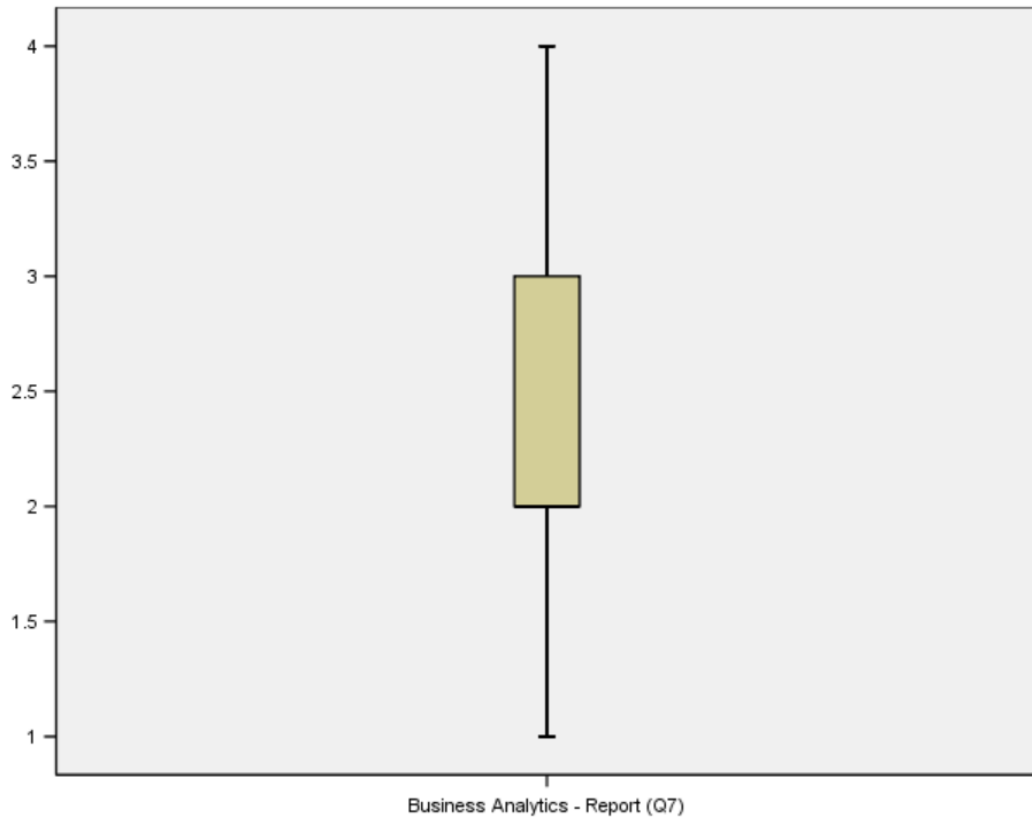


Table 62. Urban Planning – Writing Centre usefulness (Q16): Histogram

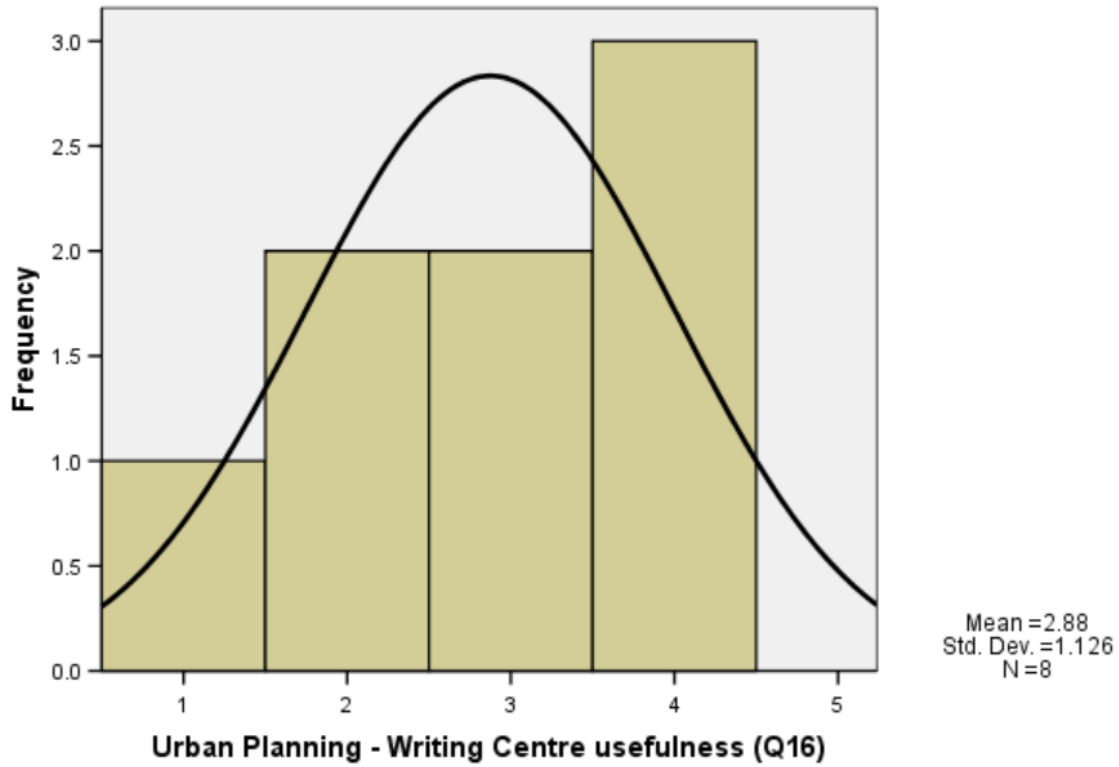


Table 63. Urban Planning – Writing Centre usefulness (Q16): Q-Q Plot

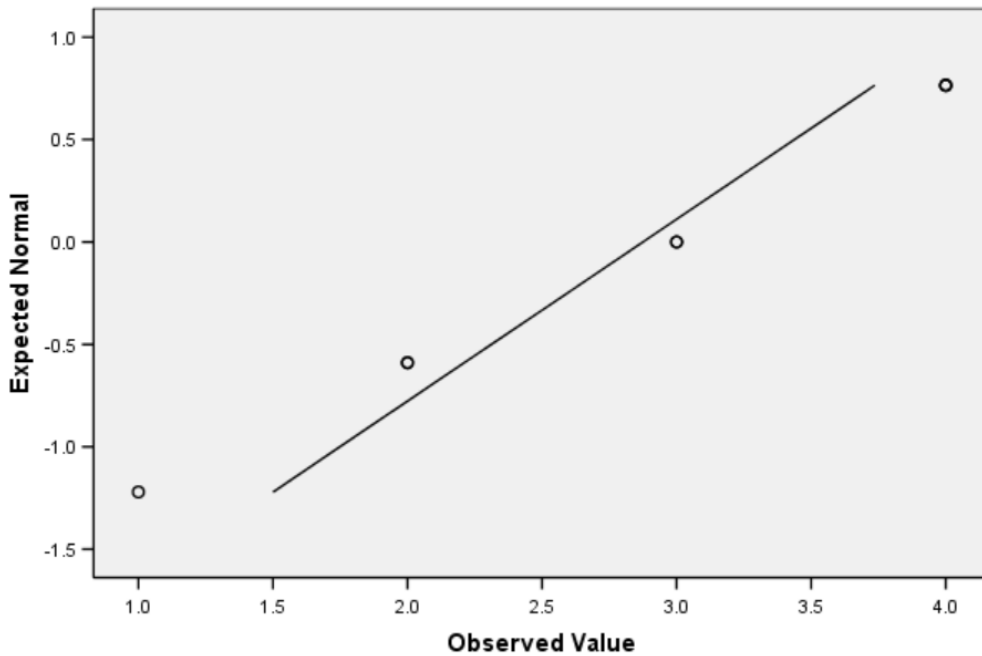


Table 64. Urban Planning – Writing Centre usefulness (Q16): Box Plot



Table 65. Architectural Design – Report (Q7): Histogram

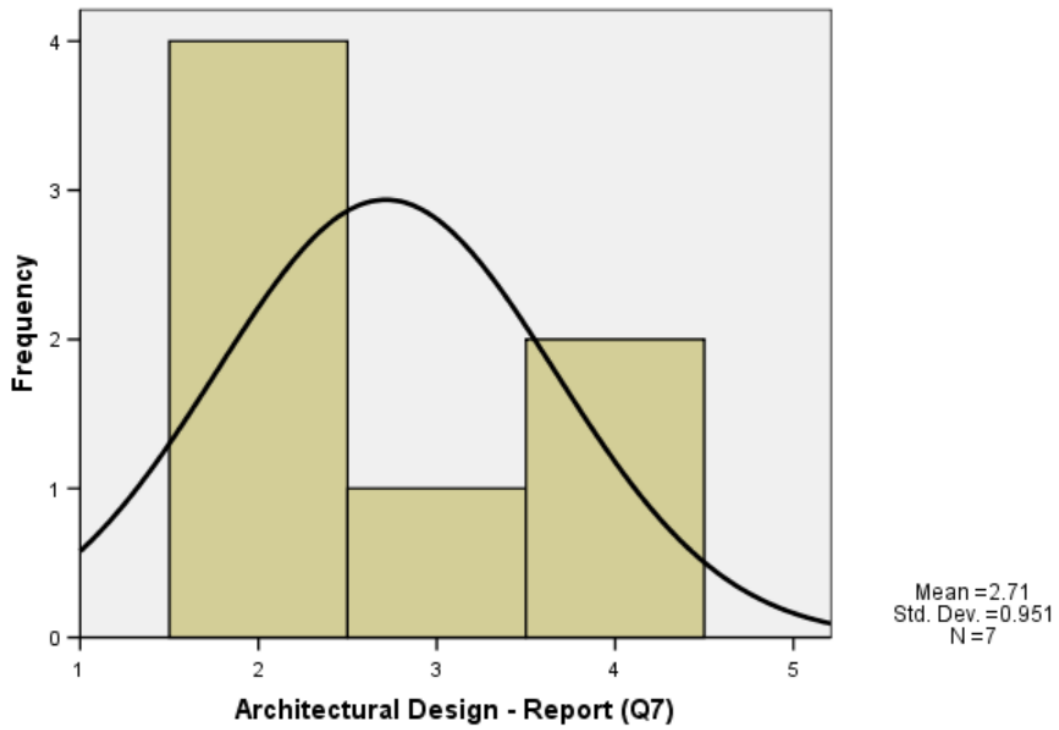


Table 66. Architectural Design – Report (Q7): Q-Q Plot

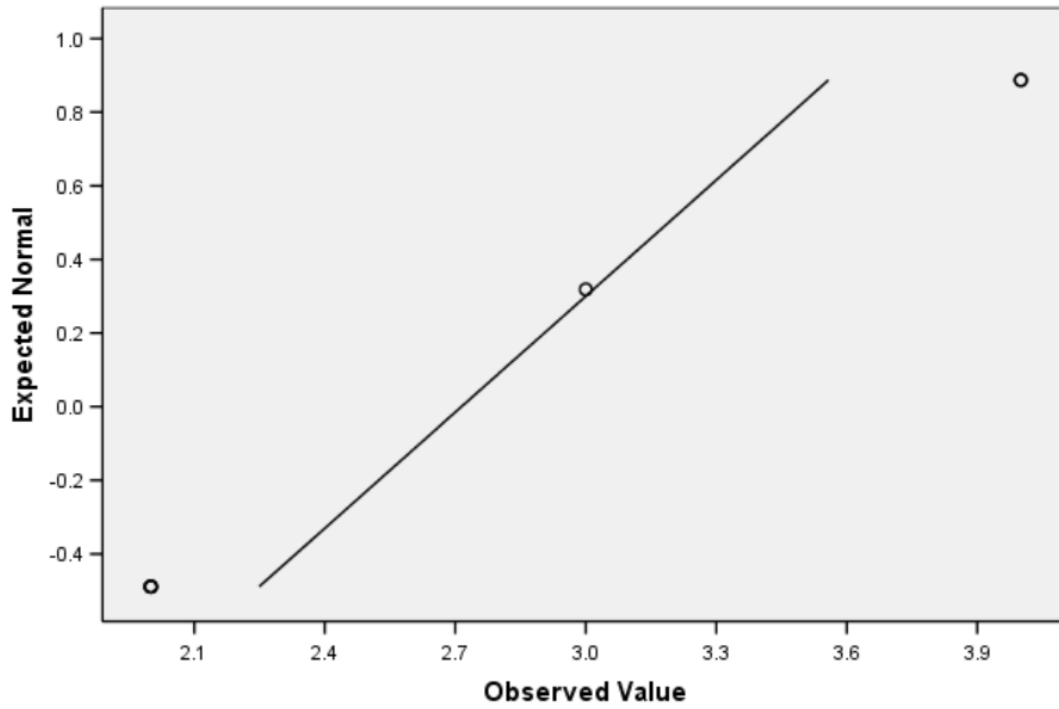
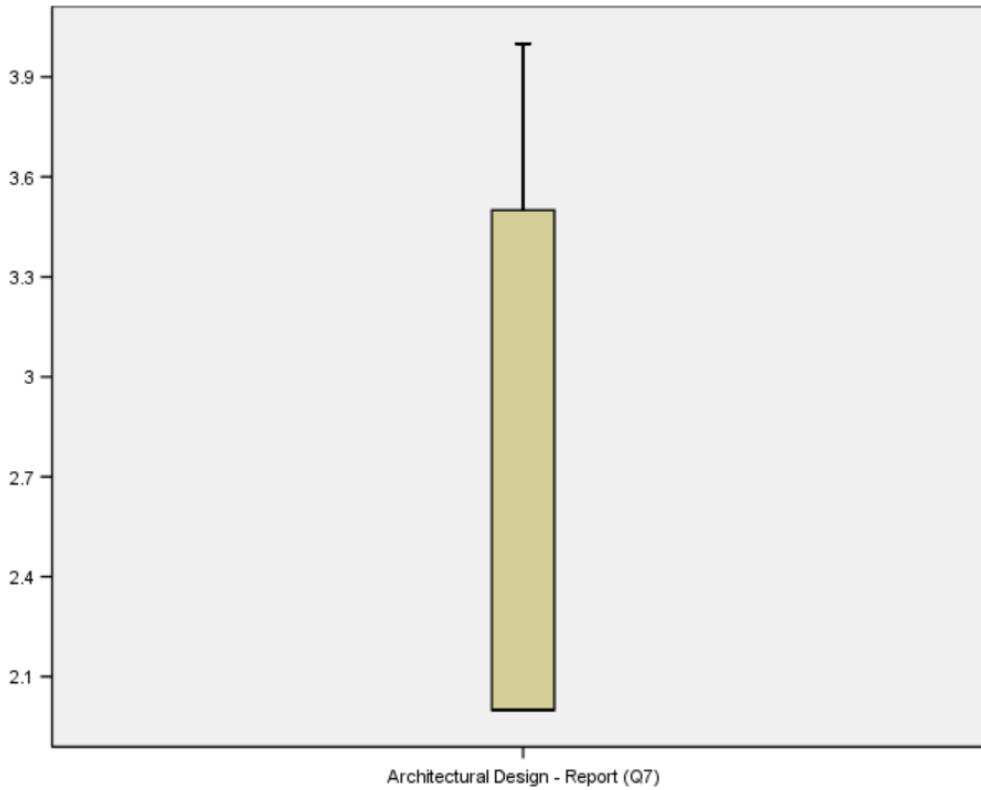


Table 67. Architectural Design – Report (Q7): Box Plot



Appendix G. Non-Parametric Tests

Table 68(a). Overall task type: ranks (Wilcoxon signed-rank test)

		N	Mean Rank	Sum of Ranks
Overall - Case Study (Q9)	Negative Ranks	19(a)	37.82	718.50
Overall - Essay (Q8)	Positive Ranks	58(b)	39.39	2284.50
	Ties	80(c)		
	Total	157		
Overall - Case Study (Q9)	Negative Ranks	21(d)	35.88	753.50
Overall - Report (Q7)	Positive Ranks	52(e)	37.45	1947.50
	Ties	84(f)		
	Total	157		
Overall - Proposal (Q10)	Negative Ranks	27(g)	37.09	1001.50
Overall - Essay (Q8)	Positive Ranks	53(h)	42.24	2238.50
	Ties	78(i)		
	Total	158		
Overall - Proposal (Q10)	Negative Ranks	30(j)	33.60	1008.00
Overall - Report (Q7)	Positive Ranks	44(k)	40.16	1767.00
	Ties	85(l)		
	Total	159		

- a. Overall - Case Study (Q9) < Overall - Essay (Q8)
- b. Overall - Case Study (Q9) > Overall - Essay (Q8)
- c. Overall - Case Study (Q9) = Overall - Essay (Q8)
- d. Overall - Case Study (Q9) < Overall - Report (Q7)
- e. Overall - Case Study (Q9) > Overall - Report (Q7)
- f. Overall - Case Study (Q9) = Overall - Report (Q7)
- g. Overall - Proposal (Q10) < Overall - Essay (Q8)
- h. Overall - Proposal (Q10) > Overall - Essay (Q8)
- i. Overall - Proposal (Q10) = Overall - Essay (Q8)
- j. Overall - Proposal (Q10) < Overall - Report (Q7)
- k. Overall - Proposal (Q10) > Overall - Report (Q7)
- l. Overall - Proposal (Q10) = Overall - Report (Q7)

Table 68(b). Overall task type: test statistics (Wilcoxon signed-rank test)

	Overall - Case Study (Q9) - Overall - Essay (Q8)	Overall - Case Study (Q9) - Overall - Report (Q7)	Overall - Proposal (Q10) - Overall - Essay (Q8)	Overall - Proposal (Q10) - Overall - Report (Q7)
Z	-4.260(a)	-3.533(a)	-3.146(a)	-2.186(a)
Asymp. Sig. (2-tailed)	.000	.000	.002	.029

- a. Based on negative ranks.
- b. Wilcoxon Signed Ranks Test

Table 69(a). Within programmes task type: ranks (Wilcoxon signed-rank test)

		N	Mean Rank	Sum of Ranks
TESOL - Proposal (Q10)	Negative Ranks	1(a)	4.50	4.50
- TESOL - Essay (Q8)	Positive Ranks	10(b)	6.15	61.50
	Ties	7(c)		
	Total	18		
TESOL - Proposal (Q10)	Negative Ranks	2(d)	4.50	9.00
- TESOL - Report (Q7)	Positive Ranks	8(e)	5.75	46.00
	Ties	8(f)		
	Total	18		

- a. TESOL - Proposal (Q10) < TESOL - Essay (Q8)
- b. TESOL - Proposal (Q10) > TESOL - Essay (Q8)
- c. TESOL - Proposal (Q10) = TESOL - Essay (Q8)
- d. TESOL - Proposal (Q10) < TESOL - Report (Q7)
- e. TESOL - Proposal (Q10) > TESOL - Report (Q7)
- f. TESOL - Proposal (Q10) = TESOL - Report (Q7)

Table 69(b). Within programmes task type: test statistics (Wilcoxon signed-rank test)

	TESOL - Proposal (Q10) - TESOL - Essay (Q8)	TESOL - Proposal (Q10) - TESOL - Report (Q7)
Z	-2.652(a)	-1.999(a)
Asymp. Sig. (2-tailed)	.008	.046

- a. Based on negative ranks.
- b. Wilcoxon Signed Ranks Test

Table 70(a). Across programmes task type: ranks (Mann-Whitney U test)

	Degree_label	N	Mean Rank	Sum of Ranks
Essay (Q8)	Computer Science	6	18.83	113.00
	TESOL	19	11.16	212.00
	Total	25		

Table 70(b). Across programmes task type: test statistics (Mann-Whitney U test)

	Essay (Q8)
Mann-Whitney U	22.000
Wilcoxon W	212.000
Z	-2.529
Asymp. Sig. (2-tailed)	0.011
Exact Sig. [2*(1-tailed Sig.)]	.025(a)

- a. Not corrected for ties.
- b. Grouping Variable: Degree_label

Table 71(a). Across programmes perceived usefulness: PG EAP task type - Q17: ranks (Mann-Whitney U test)

	Degree_label	N	Mean Rank	Sum of Ranks
PG EAP Task Type (Q17)	Media and Communication	6	19.25	115.50
	TESOL	18	10.25	184.50
	Total	24		

Table 71(b). Across programmes perceived usefulness: PG EAP task type - Q17: test statistics (Mann-Whitney U test)

	PG EAP Task Type (Q17)
Mann-Whitney U	13.500
Wilcoxon W	184.500
Z	-2.823
Asymp. Sig. (2-tailed)	0.005
Exact Sig. [2*(1-tailed Sig.)]	.004(a)

- a. Not corrected for ties.
- b. Grouping Variable: Degree_label

Table 72(a). Across programmes perceived usefulness: PG EAP Skills - Q18. Ranks, Media and Communication & TESOL (Mann-Whitney U test)

	Degree_label	N	Mean	
			Rank	Sum of Ranks
PG EAP Task Type (Q18)	Media and Communication	6	20.08	120.50
	TESOL	18	9.97	179.50
	Total	24		

Table 72(b). Across programmes perceived usefulness: PG EAP Skills - Q18. Test Statistics - Media and Communication & TESOL (Mann-Whitney U test)

PG EAP Task Type (Q18)	
Mann-Whitney U	8.500
Wilcoxon W	179.500
Z	-3.193
Asymp. Sig. (2-tailed)	0.001
Exact Sig. [2*(1-tailed Sig.)]	0.001(a)

- a. Not corrected for ties.
- b. Grouping Variable: Degree_label

Table 73(a). Across programmes perceived usefulness: PG EAP Skills - Q18. Ranks - Operations and Supply Chain Management & TESOL (Mann-Whitney U test)

	Degree_label	N	Mean	
			Rank	Sum of Ranks
PG EAP Task Type (Q18)	Operations and Supply Chain Management	9	19.28	173.50
	TESOL	18	11.36	204.50
	Total	27		

Table 73(b). Across programmes perceived usefulness: PG EAP Skills - Q18. Test Statistics - Operations and Supply Chain Management & TESOL (Mann-Whitney U test)

PG EAP Task Type (Q18)	
Mann-Whitney U	33.500
Wilcoxon W	204.500
Z	-2.571
Asymp. Sig. (2-tailed)	0.010
Exact Sig. [2*(1-tailed Sig.)]	0.012(a)

- a. Not corrected for ties.
- b. Grouping Variable: Degree_label

Appendix H: Validity Tests

Pilot Questionnaire

*Table 74. Case processing summary
(perceived understanding: Q7, Q8, Q9 & Q10)*

		N	%
Cases	Valid	53	94.64
	Excluded	3	5.36
	Total	56	100

*Table 75. Reliability statistics
(perceived understanding: Q7, Q8, Q9 & Q10)*

Cronbach's Alpha	N of Items
0.74	4

*Table 76. Case processing summary
(perceived usefulness of PG EAP: Q17 & Q18)*

		N	%
Cases	Valid	29	51.79
	Excluded	27	48.21
	Total	56	100

*Table 77. Reliability statistics
(perceived usefulness of PG EAP: Q17 & Q18)*

Cronbach's Alpha	N of Items
0.87	2

Final Questionnaire

*Table 78. Case processing summary
(Perceived understanding: Q7, Q8, Q9 & Q10)*

		N	%
Cases	Valid	156	96.3
	Excluded	6	3.7
	Total	162	100

*Table 79. Reliability statistics
(perceived understanding: Q7, Q8, Q9 & Q10)*

Cronbach's Alpha	N of Items
0.84	4

*Table 80. Case processing summary
(perceived usefulness of PG EAP: Q17 & Q18)*

		N	%
Cases	Valid	105	64.81
	Excluded	57	35.19
	Total	162	100

*Table 81. Reliability statistics
(perceived usefulness of PG EAP: Q17 & Q18)*

Cronbach's Alpha	N of Items
0.93	2

Appendix I: Full Content Analysis by Degree Programme

Commentary on how this data was calculated and is defined can be found in the Results and Analysis chapter (see Table 8 and 9, section 4.2.1).

Table 82. MBA Content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
MAN 449 (5)	Report	3000		60	
ACF 437 (5)	Report	1000		40	
MAN 436 (5)	Report	2000	13000	30	21
MAN 438 (5)	Report	5000		50	
MAN 451 (5)	Report	2000		30	
ACF 437 (5)	Essay	500	3500	30	11
ECO 417 (5)	Essay	3000		80	
ECO 414 (5)	Case Study	2500	2500	100	10
ACF 437 (5)	Business Memorandum*	1500	1500	20	2
<i>There are 10 core courses (50 credits).</i>		Total word count: 20500		Total programme value: 44%	

Table 83. International MBA content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
ACF 405 (5)	Report	3000		100	
MAN 416 (5)	Report	1000		35	
MAN 419 (5)	Report	3000	9000	100	37.5
MAN 420 (5)	Report	1000		25	
MAN 416 (5)	Report	1000		40	
ECO 405 (5)	Essay	1500	1500	10	1.25
ECO 405 (5)	Case Study	1000	2000	25	6.25
ECO 405 (5)	Case Study	1000		25	
MAN 418 (5)	Marketing Plan*	500	500	50	6.25
<i>There are eight core courses (40 credits).</i>		Total Word Count: 13000		Total programme value: 51.25%	

Table 84. MSc Business Analytics content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
ACF 403 (5)	Report	5000		34	
ACF 410 (5)	Report	2000		100	
CSE 413 (5)	Report	6000	16500	70	22.83
ECO 413 (2.5)	Report	2000		40	
MAN 410 (5)	Report	1500		50	
MAN 408 (5)	Case Study	3000	3000	50	4.17
<i>There are 13 core courses (60 credits)</i>		Total word count: 19500		Total programme value: 27%	

Table 85. MSc Professional Accounting content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
ACF 405 (5)	Report	15000	15000	100*	11.11
<i>There are 10 core courses (45 credits).</i>		Total word count: 15000		Total programme value: 11.11%	

Table 86. MRes Management content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
MAN 433 (5)	Proposal	4000		70	
MAN 435 (5)	Proposal	3000	10000	50	42.5
MAN 439 (5)	Proposal	3000		50	
MAN 437 (5)	Report	4000	6500	50	25
MAN 435 (5)	Report	2500		50	
MAN 437 (5)	Essay	2500	5000	50	25
MAN 439 (5)	Essay	2500		50	
<i>There are four core courses (20 credits)</i>		Total word count: 21500		Total programme value: 92.5%	

Table 87. MSc Management content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
MAN 408 (5)	Case Study	3000	3000	50	6.25
MAN 410 (5)	Report	1500	1500	15	1.88
<i>There are eight core courses (40 credits)</i>		Total word count: 4500		Total programme value: 8.13%	

Table 88. MSc Economics content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Word Count (by Task Type)	Value	Programme Value (by Task Type)
ECO 402 (5)	Report	5000	5000	20	5
<i>There are four core courses (20 credits)</i>		Total word count: 5000		Total programme value: 5%	

Table 89. MSc Operations and Supply Chain Management content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
MAN 419 (5)	Report	3000		100	
MAN 429 (5)	Report	2000		20	
MAN 429 (5)	Report	2000	12500	20	30
MAN 430 (5)	Report	2500		30	
MAN 430 (5)	Report	1500		40	
MAN 430 (5)	Report	1500		30	
MAN 408 (5)	Case Study	3000		50	
MAN 428 (5)	Case Study	2500	8000	40	15
MAN 431 (5)	Case Study	2500		30	
<i>There are eight core courses (40 credits).</i>		Total word count: 20500		Total programme value: 45%	

Table 90. MSc Economics and Finance content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
ACF 403 (5)	Report	5000	11000	34	5.61
ACF 408 (5)	Report	6000		30	
ECO 406 (5)	Essay	2000	2000	12	1.05
MAN 403 (2*)	Proposal	1500	1500	10	0.35
There are 12 core courses (57 credits)		Total word count: 14500		Total programme value: 7.02%	

*The marks for this course fed into the 20 credit research project (dissertation). 10% of this equates to 2 credits.

Table 91. MRes Computer Science content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
CSE 402 (5)	Essay	2500	2500	15	7.5
CSE 402 (5)	Proposal	2000	2000	30	15
CSE 402 (5)	Report	4000	4000	55	27.5
There are two core courses (10 credits)		Total word count: 8500		Total programme value: 50%	

Table 92. MSc Investment Management content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Word Count (by Task Type)	Value	Programme Value (by Task Type)
ACF 401 (5)	Report	1500	22000	10	24.22
ACF 401 (5)	Report	1500		10	
ACF 403 (5)	Report	5000		34	
ACF 408 (5)	Report	1500		50	
ACF 408 (5)	Report	3000		30	
ACF 410 (5)	Report	4000		30	
ACF 413 (2.5)	Report	3000		40	
ACF 435 (5)	Report	2500		34	
There are 10 core courses (45 credits).		Total word count: 22000		Total programme value: 24.22%	

Table 93. MSc Finance content analysis

Course/Task		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
ACF 401 (5)	Report	1500		10	
ACF 401 (5)	Report	1500	8000	10	7.71
ACF 403 (5)	Report	5000		34	
ACF 421 (5)	Proposal	3000	3000	10	1.43
<i>There are seven core courses (35 credits)</i>		Total word count: 11000		Total programme value: 9.14%	

Table 94. MSc Entrepreneurship and Innovation content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
MAN 408 (5)	Case Study	3000	3000	50	6.25
<i>There are eight core courses (40 credits)</i>		Total word count: 3000		Total programme value: 6.25%	

Table 95. MSc Applied Informatics content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
CSE 402 (5)	Essay	2500	2500	15	3.75
CSE 402 (5)	Proposal	2000	2000	30	7.5
CSE 402 (5)	Report	1000	2000	55	22.5
CSE 410 (5)	Report	1000		35	
<i>There are four core courses (20 credits)</i>		Total word count: 6500		Total programme value: 33.75%	

Table 96. MSc Social Computing content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (for Task Type)	Value	Programme Value (by Task Type)
CSE 402 (5)	Essay	2500	2500	15	2.50
CSE 402 (5)	Proposal	2000	2000	30	5.00
CSE 409 (5)	Report	2000		15	
CSE 411 (5)	Report	2000	9000	45	21.67
CSE 413 (5)	Report	5000		70	
CSE 402 (5)	Pilot study*	4000	4000	55	9.17
<i>There are six core courses (30 credits)</i>		Total word count: 17500		Total programme value: 38.33%	

Table 97. MSc Urban Planning content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
CDE 401 (5)	Essay	2000		40	
CDE 403 (5)	Essay	3000	10500	60	24.38
CDE 404 (5)	Essay	3000		70	
CDE 402 (5)	Essay	2500		25	
CDE 402 (5)	Report	2500		25	
CDE 405 (5)	Report	4000	16000	50	22.88
CDE 407 (5)	Report	7500		48	
CDE 408 (5)	Report	2000		60	
CDE 405 (5)	Annotated Bibliography	5400	5400	100	12.50
CDE 407 (5)	Proposal	2000	2000	34	4.25
<i>There are eight core courses (40 credits)</i>		Total word count: 33900		Total programme value: 64%	

Table 98. MSc Sustainable Construction content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Task)	Value	Programme Value (by Task Type)
CEN 401 (5)	Report	1000		30	
CEN 403 (5)	Report	1500		60	
CEN 404 (5)	Report	7500	37500	20	21.25
CEN 404 (5)	Report	7500		20	
CEN 405 (5)	Report	12500		20	
CEN 405 (5)	Report	7500		20	
CEN 402 (5)	Essay	5000		100	
CEN 403 (5)	Essay	3000	9000	20	17.5
CEN 403 (5)	Essay	1000		20	
<i>There are eight core courses (40 credits)</i>		Total word count: 46500		Total programme value: 38.75%	

Table 99. MRes Advanced Chemical Science content analysis

Course/Task Type		Word Count (by Task Type)		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
CHE 402 (5)	Report	5000	5000	45	11.25
<i>There are four core courses (20 credits)</i>		Total word count: 5000		Total programme value: 11.25%	

Table 100. MRes Molecular Bioscience content analysis

Course/Task Type		Word Count (by Type)		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
BIO 402 (6*)	Report	3000	3000	15	3.46%
<i>There are five core courses (26 credits)</i>		Total word count: 3000		Total programme value: 3.46%	

*The marks for this course fed into the 40 credit research project (dissertation). 15% of this equates to 6 credits.

Table 101. MA Architectural Design content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
ARC 402(5)	Essay	500		60	
ARC 407(5)	Essay	1500	7900	30	12.67
ARC 407(5)	Essay	2400		40	
ARC 406(5)	Essay	3500		60	
ARC 403(5)	Report	5000	6000	60	17.33
ARC 404(10)	Report	1000		100	
ARC 407(5)	Book Review	700	700	30	2.00
<i>There are 10 core courses (75 credits)</i>		Total word count: 14600		Total programme value: 32%	

Table 102. MSc Media and Communication content analysis

Course/Task Type		Word Count		Value (%)	
Course (credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
COM 403 (5)	Essay	1000		30	
COM 404 (5)	Essay	2500	6000	70	18.89
COM 405 (5)	Essay	2500		70	
COM 401 (5)	Proposal	3000	5000	80	12.22
COM 406 (5)	Proposal	2000		30	
COM 407 (5)	Research Paper	3000	3000	85	9.44
COM 408 (5)	Written Evaluation of document	2000	2000	50	5.56
<i>There are 9 core courses (45 credits)</i>		Total word count: 16000		Total programme value: 46.11%	

Table 103. MA TESOL content analysis

Course/Task Type		Word Count		Value (%)	
Course (Credits)	Task Type	Word Count	Total Word Count (by Task Type)	Value	Programme Value (by Task Type)
ENG 405 (5)	Report	2000	5000	40	14.29
ENG 405 (5)	Report	3000		60	
ENG 403 (5)	Essay	2500	2500	50	7.14
ENG 406 (5)	Proposal	2000	2000	40	5.71
ENG 401 (5)	Term Paper*	2500	5500	40	15.71
ENG 407 (5)	Term Paper*	3000		70	
ENG 402 (5)	Review of test*	1000	1000	40	5.71
ENG 406 (5)	Mini Qualitative Research*	1500	1500	60	8.57
<i>There are seven core courses (35 credits)</i>		Total word count: 17500		Total programme value: 57.14%	