

Transitioning from university to the workplace: Stakeholder perceptions of academic and professional writing demands

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Abstract

This study provides a detailed insight into the changing writing demands from the last year of university study to the first year in the workforce of engineering and accounting professionals. The study relates these to the demands of the writing component of IELTS, which is increasingly used for exit testing.

The number of international and local students whose first language is not English and who are studying in English-medium universities has increased significantly in the past decade. Many of these students aim to start working in the country they studied in; however, some employers have suggested that graduates seeking employment have insufficient language skills.

This study provides a detailed insight into the changing writing demands from the last year of university study to the first year in the workforce of engineering and accounting professionals (our two case study professions). It relates these to the demands of the writing component of IELTS, which is increasingly used for exit or professional entry testing, although not expressly designed for this purpose.

Data include interviews with final year students, lecturers, employers and new graduates in their first few years in the workforce, as well as professional board members. Employers also reviewed both final year assignments, as well as IELTS writing samples at different levels.

Most stakeholders agreed that graduates entering the workforce are underprepared for the writing demands in their professions. When compared with the university writing tasks, the workplace writing expected of new graduates was perceived as different in terms of genre, the tailoring of a text for a specific audience, and processes of review and editing involved.

Stakeholders expressed a range of views on the suitability of the use of academic proficiency tests (such as IELTS) as university exit tests and for entry into the professions. With regard to IELTS, while some saw the relevance of the two writing tasks, particularly in relation to academic writing, others questioned the extent to which two timed tasks representing limited genres could elicit a representative sample of the professional writing required, particularly in the context of engineering.

The findings are discussed in relation to different test purposes, the intersection between academic and specific purpose testing and the role of domain experts in test validation.

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IELTS Research Program

The IELTS partners – British Council, Cambridge English Language Assessment and IDP: IELTS Australia – have a longstanding commitment to remain at the forefront of developments in English language testing. The steady evolution of IELTS is in parallel with advances in applied linguistics, language pedagogy, language assessment and technology. This ensures the ongoing validity, reliability, positive impact and practicality of the test. Adherence to these four qualities is supported by two streams of research: internal and external.

Internal research activities are managed by Cambridge English Language Assessment's Research and Validation unit. The Research and Validation unit brings together specialists in testing and assessment, statistical analysis and item-banking, applied linguistics, corpus linguistics, and language learning/pedagogy, and provides rigorous quality assurance for the IELTS test at every stage of development.

External research is conducted by independent researchers via the joint research program, funded by IDP: IELTS Australia and British Council, and supported by Cambridge English Language Assessment.

Call for research proposals: The annual call for research proposals is widely publicised in March, with applications due by 30 June each year. A Joint Research Committee, comprising representatives of the IELTS partners, agrees on research priorities and oversees the allocations of research grants for external research.

Reports are peer reviewed: IELTS Research Reports submitted by external researchers are peer reviewed prior to publication.

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INTRODUCTION FROM IELTS

This study, led by a team of researchers from the University of Melbourne, was conducted with support from the IELTS partners (British Council, IDP: IELTS Australia and Cambridge English Language Assessment) as part of the IELTS joint-funded research program. Research funded by the British Council and IDP: IELTS Australia under this program complement those conducted or commissioned by Cambridge English Language Assessment, and together inform the ongoing validation and improvement of IELTS.

A significant body of research has been produced since the joint-funded research program started in 1995, with more than 100 empirical studies receiving grant funding. After undergoing a process of peer review and revision, many of the studies have been published in several IELTS-focused volumes in the *Studies in Language Testing* series (www.cambridgeenglish.org/silt), in academic journals, and in the *IELTS Research Reports*. Since 2012, to facilitate timely access, individual research reports have been made available on the IELTS website immediately after completing the peer review and revision process.

In this study, Ute Knoch and her colleagues investigated writing demands in the university and workplace contexts, drawing upon the perceptions of a range of Australian stakeholders from the fields of accounting and engineering. They found that writing in the two contexts differed in a number of ways, for example: the text types produced; the process of producing them, whether individually or collaboratively; and the valued qualities. They echo a number of the findings of Moore, Morton et al. (2015), another IELTS-funded research study looking at literacy practices in the workplace.

This difference in writing in the two contexts may in part explain why new graduates' workplace writing skills were judged by many employers to be inadequate. That this view is held of both local and international graduates indicates that this is not primarily a question of language ability as it is a problem with workplace-specific literacies. The report, therefore, raised the question of "whether more needs to be done at universities or whether workplaces are willing to accept that new graduates will be novices (or near-novices) in areas such as professional writing and that the workplace-specific training is handled on the job".

That is, of course, a philosophical question more than anything else, of the proper aims and purposes of a university education, and, therefore, whether such instruction has a place in the curriculum or not. It is certainly not a question of feasibility. The study showed that different workplaces have different requirements, so instructing students in all of these in the brief time they are at university may seem at first blush to be a challenge.

However, the reality is that there are approaches to writing instruction which teach students to be aware of and account for audience, purpose and genre, so that they can produce contextually-appropriate writing, possessing the right tone, register, etc. That is, you do not teach students particular types of writing, of which you can only do so many in a term, but you teach students how to approach different types of writing, which will equip them to deal with new genres long after the term is over. Teaching them to fish, as it were.

The research also considered the extent to which writing demands in the workplace and in the IELTS Writing test are aligned. Different aspects of the desired abilities were found to be over-represented and under-represented – which is not a surprise, given that IELTS is designed as a test of language ability rather than of specific workplace literacies. Interestingly, with regard to the IELTS Writing test, some respondents felt that "the high level of generality meant that the tasks could be applicable to any professional context" whereas other respondents felt that "the absence of tasks and topics that were directly relevant to specific professions raised issues of validity". In other words, another difference in philosophy.

The latter put a premium on test tasks being closely similar to real world tasks, which is no bad thing. On the other hand, verisimilitude is hardly the only consideration in creating valid tests, as the respondents came to understand:

Study participants did not see the immediate relevance of the essay genre of Task 2 to professional writing... However, when asked about the importance of persuasive writing and being able to argue a case in their professional contexts, most engineering and accounting employers agreed that this was an extremely important skill.

That is, they realised that even where surface similarity is not evident, the underlying abilities of interest can in fact still be tested. Indeed, the qualities of writing that employers identified as being important – accuracy, clarity, relevance, conciseness, having the right tone, ability to prioritise key points, among others – are captured in one way or another by the IELTS Writing assessment criteria. So, while not designed to assess workplace literacies specifically, a valid test of the same nonetheless. You know there will be fish if someone has shown they know how to fish.

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References to the IELTS Introduction

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CONTENTS

1 INTRODUCTION	5
1.1 Background	5
1.2 Language tests and university study	5
1.3 From graduate to employee	6
1.4 Language tests and employment	7
2 RESEARCH QUESTIONS.....	8
3 METHODOLOGY	8
3.1 Outline of the study	8
3.2 Selection of case study professions	9
3.3 Participants	9
3.4 Instruments	10
3.4.1 Background questionnaire.....	10
3.4.2 Interview questions.....	10
3.4.3 IELTS Writing task samples	11
3.4.4 Writing samples used in Phase 2 of the study	11
3.4.5 Phase 2 writing sample review questionnaire	11
3.5 Procedures	12
3.5.1 Data collection procedures.....	12
3.5.2 Data analysis.....	12
4 RESULTS	12
4.1 What are the specific writing demands on new accounting and engineering graduates?.....	12
4.1.1 Written genres in the workplace	13
4.1.1.1 Reports.....	13
4.1.1.2 Email.....	13
4.1.2 Writing processes.....	14
4.1.2.1 Team writing.....	14
4.1.2.2 Feedback.....	14
4.1.2.3 Templates and technology	15
4.1.3 Qualities of writing	16
4.1.3.1 Engineers	16
4.1.3.2 Accountants.....	17
4.1.4 Summary of workplace writing demands.....	17
4.2 Do stakeholders feel that graduates are sufficiently prepared for these demands?	18
4.3 How do the writing demands in the two professions align with the writing demands of the IELTS test?	21
4.3.1 Perceptions of the relevance of IELTS Task 1 to professional writing	21
4.3.2 Perceptions of the relevance of IELTS task 2 to professional writing	22
4.3.3 Employer review of IELTS and student assignment writing samples.....	23
5 DISCUSSION.....	25
6 CONCLUSION.....	28
REFERENCES	29
APPENDIX A: QUESTIONNAIRE FOR NEW GRADUATES.....	32
APPENDIX B: INTERVIEW QUESTIONS FOR PROFESSIONAL BODIES.....	33
APPENDIX C: INTERVIEW QUESTIONS FOR FINAL YEAR STUDENTS.....	34
APPENDIX D: INTERVIEW QUESTIONS FOR LECTURERS.....	35
APPENDIX E: INTERVIEW QUESTIONS FOR NEW GRADUATES IN THE WORKFORCE	36
APPENDIX F: INTERVIEW QUESTIONS FOR EMPLOYERS OF NEW GRADUATES	37
List of tables	
Table 1: IELTS writing scripts selected for employer review.....	11
Table 2: Salient workplace genres for accounting and engineering graduates.....	18
Table 3: Texts types at university and in the workforce – accounting.....	19
Table 4: Genres at university and in the workforce – engineering	19

1 INTRODUCTION

1.1 Background

In recent years, media coverage in Australia has reflected concerns about the inadequate English skills of international students both during their university studies and after exiting tertiary institutions (e.g. Morton, 2007). Issues with insufficient writing skills seem to be a particular problem (Healy & Trounson, 2010; Rowbotham, 2011). Blackmore et al. (2014) provide a detailed report on the current situation for international graduates in Australia as they seek to join the workforce; they note, in summary, that ‘there are multiple barriers to graduate labour market entry’ for international graduates including ‘visa status, poor communication skills, inadequate soft skills, and lack of local work experience’, with employers ‘demanding “work ready” graduates who will transition seamlessly into the workplace’ (p. 4). Similarly, a major study commissioned by the Australian Government (Arkoudis et al., 2009) found that it was more difficult for international students than their Australian counterparts to find suitable employment after graduation. The English language proficiency of international students was one of several factors affecting outcomes, although students’ profession-specific skills and personal characteristics also had an important influence.

In response to the perceived need for strong English language skills in university graduates, the Australian Government commissioned the Australian Universities Quality Agency (AUQA) to develop ‘good practice principles for English language proficiency’ (Australian Universities Quality Agency, 2009). One of the ten key principles identified was that ‘English language proficiency and communication skills are important graduate attributes for all students’ (p. 3). In addressing this principle, good practice was identified as supporting the development of English language proficiency during a course of study and considering ways for students to ‘demonstrate their English language proficiency to prospective employers, referees and other institutions’ (p. 9). These principles now form the basis of AUQA reviews of Australian universities, thus making English language proficiency a central focus for all stages of the university experience, not just an entry requirement.

The need for continued engagement with students’ proficiency and development throughout their degree is underscored by findings from research by Murray (2010), who advocates for post-enrolment assessment of English language proficiency: ‘many students who succeed in meeting IELTS requirements [for university entry] often struggle, subsequently, to negotiate the demands of their studies’ (p. 347). The complexity of negotiating a range of literacies necessary for successful engagement with tertiary study in a context where English is the dominant language is highlighted by Harper et al. (2011), who argue that linguistic capital comprises academic, professional and everyday literacies, operating from a ‘generic core of knowledge and skills in English’ (p. 45).

1.2 Language tests and university study

There is a general expectation that the language of international students from non-English-speaking backgrounds will develop during their time at university in English-speaking countries. However, this has not necessarily been shown in research. In a study focusing on the change in IELTS scores of 63 international students in an Australian university recorded at the start and on completion of their studies, O’Loughlin and Arkoudis (2009) found that the ‘least average improvement was in writing’ and point to aspects of language socialisation in higher education that impact on language development. A key factor appeared to be the extent to which international students were fully accepted and ‘legitimised’ by domestic students, particularly in assessable group work, the product of which was often written. The amount of emphasis given to extended academic writing in assignments in particular disciplines, and the extent to which students had accessed academic writing support services provided by the university were also linked to students’ progress in academic writing. O’Loughlin and Arkoudis (2009) note that the development of language proficiency during university study is a ‘much under-researched issue’ (p. 3), and point to possible implications for students subsequently transitioning to the workplace, with particular regard to writing skills: ‘the lack of writing development would be of concern to employers both in Australia and overseas’ (p. 42).

In a more recent study focusing only on writing, Knoch et al. (2015) found that the writing of international students did not develop after undertaking a three-year undergraduate degree in an Australian university. The researchers noted that one of the reasons for this was that students received very little feedback on the language aspects of their assignments from lecturers who generally focused on the subject content when marking.

The relationship between the linguistic and content demands of academic writing tasks undertaken by students in tertiary education contexts and of IELTS writing tasks has been the focus of validation studies by Moore and Morton (1999, 2005). Their investigation of how the requirements of the IELTS Writing Task 2 corresponded with a sample of 155 written assignment tasks representing a range of undergraduate and postgraduate disciplines (Moore & Morton, 1999) showed that university writing tasks were based on research into more abstract theoretical areas rather than on prior knowledge; completing such tasks required a wider range of rhetorical functions, including summarising and describing, than those elicited by IELTS Writing Task 2. These differences led Moore and Morton to conclude that Writing Task 2 has more in common with non-academic genres, including editorials and letters to the editor, than with written academic tasks. Lecturers interviewed as part of this study agreed that these were major differences, noting the absence of the integration and evaluation of source materials in Task 2.

Building on the findings of their 1999 study, Moore and Morton (2005) recommended that institutions preparing international students for university offer separate writing instruction to support the development of writing for academic purposes from that focusing on test preparation to reflect the significant differences between these two written discourses.

In an attempt to incorporate more fully aspects of authentic academic writing into the design of the now widely used Internet-based version of the Test of English as a Foreign Language (TOEFL iBT), developers included both independent and integrated writing tasks, with the latter requiring candidates to draw upon short written and spoken texts in order to produce their written response. Research found that, in addition to providing source material for the content of candidates' texts, thus creating the opportunity to activate paraphrasing and summarising skills in the test, the integrated writing tasks elicited higher levels of lexical sophistication and syntactic complexity, and higher levels of coherence (Cumming et al., 2006; Knoch, Rouhshad, & Storch, 2014). ESL teachers preparing candidates for the TOEFL iBT also responded positively to the integrated writing tasks, endorsing in particular the greater extent to which these tasks simulated key aspects of academic writing tasks than was previously the case (Cumming, Grant, Mulcahy-Ernt & Powers, 2005).

1.3 From graduate to employee

There is increasing socio-political pressure on tertiary institutions to monitor the second language proficiency of students beyond an initial language proficiency entrance requirement in order to ensure that graduating students' language skills are adequate for the professional work environment. A report by Birrell (2006) highlighted the limited English proficiency of many international students at universities in Australia and their subsequent failure to meet the language standards required for professional registration and/or permanent residency in the country.

There is mounting pressure for universities to demonstrate that their graduates have the attributes necessary for the workplace, including language proficiency to a satisfactory standard (Blackmore et al., 2014). As stated in the AUQA report introduced above: *English language proficiency has become an important issue in Australian higher education due in part to a heightened awareness of the role of English language ability in employment outcomes and the role of international graduates in meeting skill shortages in the Australian workforce. (2009, p.1)*

Australian studies support this focus, with graduate recruiters and employers ranking written and oral communication skills as the most essential skills (Graduate Careers Australia, 2011; Grebennikov & Shah, 2008). A more nuanced exploration of employer expectations was reported in a study by Hinchcliffe and Jolly (2011), in which employers in the United Kingdom

were asked to rank their expectations of employees according to three timeframes: on appointment, at one year of employment, and at three years. Of all the employers, 86.1% stated that they would expect graduates to 'be able to present ideas clearly, both verbally and in writing' on appointment. When asked to rank employability skills, 'written communication skills' were ranked as the second most important skill, surpassed only by 'interpersonal skills' (p. 573).

Although English language proficiency is therefore undoubtedly an important aspect of workplace readiness, Arkoudis, Baik and Richardson (2012) caution that other factors, including profession-specific skills, the ability to work in teams and employees' social, cultural and values alignment are also important to acknowledge (see also Arkoudis et al., 2009; Blackmore et al., 2014). The ability to engage in communication that is appropriate to a particular workplace context is an essential aspect of the successful progression from a 'student' to a 'graduate' and ultimately an 'employee' (Hinchcliffe & Jolly, 2011). Apprenticeship models that foreground the iterative nature and guided processes of writing involving experienced colleagues are well attested in workplace literacy studies (Bremner, 2011; Freedman & Adam, 1996; Freedman & Smart, 1997).

The pathway to Australian permanent residency via Skilled Migration visas has become a particular focus for the assessment of English language skills for workforce readiness (see also Moore, Morton, Hall, & Wallis, 2015). To be considered for skilled migration, applicants must pass the 'general skilled migration points test', which includes providing a minimum of IELTS Band 6 (or equivalent on recognised tests). For particular professions, the minimum test score is higher; for example, accountancy requires IELTS Band 7. An applicant obtains more points, for instance, if their English test score is classed as 'superior' (IELTS Band 8 or equivalent) rather than 'proficient' (IELTS Band 7 or equivalent) (<http://www.immi.gov.au/>, accessed 15 April, 2015). Thus, permanent residency is granted based on a candidate's rank within a cohort rather than relying on a proficiency standard that is an objective measure of adequacy for workplace readiness.

In this process, professional bodies, such as Engineers Australia or CPA Australia, carry out skills assessments on behalf of the Australian Government, including recognition of overseas qualifications, the assessment of work experience and fulfilment of English language requirements. Furthermore, some individual firms now also stipulate minimum language proficiency levels that are even higher than those of the professional registration bodies; for example, to be considered for employment by the international accounting firm KPMG, applicants who have been international students must provide recent IELTS results with a minimum overall score of Band 8 before their application will be processed (Birrell & Healy, 2008).

Thus, for international graduates who are aiming to apply for permanent residency on the basis of occupations that have been prioritised by the government, language test scores have assumed an even greater importance at the interface between university study and the workplace. This pressure emphasises the need to ensure that the test scores used offer the most relevant information in terms of fulfilling employment needs and effecting worthwhile applicant preparation practices.

1.4 Language tests and employment

It is accepted that developers of English language tests designed for use by tertiary institutions (e.g. IELTS Academic version, TOEFL iBT) may have operationalised the construct of academic writing in different ways. However, the complex relationship between academic writing and professional writing adds further complication to the determination of the literacy needs of students as they transition from their academic to their professional life. It is essential that graduates have a repertoire of linguistic resources that enable them to write effectively in the required technical genres, as well as in their communication with colleagues and clients.

In the Australian context, the ‘non-technical skills and knowledge that underpin successful participation in work’ have recently been identified in the Core Skills for Work (CSfW) framework (Department of Industry, 2013, p.4). Conceptualising communication for work using a continuum from ‘novice’ to ‘expert’, the CSfW framework includes the skills essential to ‘get the message across’, describing as an expert someone who ‘demonstrates sophisticated control over... written formats, drawing on a diverse range of communication practices to achieve goals’, and who ‘intuitively tailors every communication to achieve its purpose, demonstrating a sophisticated understanding of the needs, interests, issues and priorities of each audience’ (p. 28). Crucially for new graduates, this framework prioritises the need for workers to effectively engage in the ‘digital world’, with an expert defined as being able to ‘establish and contribute to virtual communities involved in collaborative construction of resources, sharing of information, development of ideas’ (p. 56). The complexity of written communication in the real world of work as described here appears to be reflected only in a very limited way in the written genres that undergraduates typically encounter in their assignments and coursework in university settings.

Studies of writing in professional contexts confirm the disjuncture between the writing required in university assignments and that required after graduation. In these studies, the perspectives of employers have been crucial to establishing what constitutes – in terms of writing – authentic demands made of employees working in particular professions. In a survey of employers in the accounting and finance sector who were linked with an Australian university, Grebbenikov and Shah (2008) found that graduates were generally perceived to have

‘poor communication, team building and networking skills’ (p. 11) although communication skills were ranked as being among the attributes most important for them. For employers from engineering firms, the researchers noted that effective communication and report writing were among the most valued skills.

In research incorporating the views of a variety of stakeholders on the communication needs of engineering professionals working in multinational companies in Thailand, Kaewpet (2009) found that the most common writing genre required of engineers was the periodic progress report. These reports were characterised as being ‘formal, factual and brief’ (p. 275), often consisting of just several sentences.

In a recent investigation of the extent to which the writing (and reading) tasks currently used in the Academic and General Training modules of IELTS elicit appropriate evidence to indicate test-takers’ readiness for the workplace, Moore et al. (2015) undertook a domain analysis to develop ‘a model of the demands of the target setting, articulated in terms of theoretical understandings of language and literacy’ (p. 13). The study involved an online survey followed by interviews with representatives of several professions, including accounting and engineering, and the collection of examples of texts produced in the workplace. The researchers found a range of genres were produced, from highly specific to more general, with the main audience for texts written by newly employed graduates being internal to the organisation concerned. Aspects of writing valued by study participants included formal features (grammar, spelling and punctuation), as well as qualities relating to professional communication, such as clarity, suitable tone, and conciseness (pp. 26–28). Two main perspectives are proposed concerning the connection between writing tasks on IELTS and in the workplace. The first recognises the somewhat limited scope of the current test tasks but also that new employees will need to (be helped to) develop locally relevant writing skills on the job assuming a satisfactory level of basic writing competence. The second, more radical, perspective is that a new IELTS module might be developed (to be offered alongside the Academic and General Training modules) that captures more explicitly the writing demands of the workplace albeit while remaining non-specific to any particular profession. This research clearly has implications for the present study.

English language proficiency of graduates is a global concern. In Hong Kong, Qian’s (2005) study explored employers’ views of what constituted effective writing in the engineering, hotel and tourism industries, and compared these to the views of language specialists. His findings indicate that while language specialists valued writing that was grammatically correct, the business professionals placed more emphasis on appropriate tone and discourse strategies. This raises the question of the extent to which a language test is able to reflect the qualities determined as important by those

with expertise and experience in the domain rather than by language test developers with their typical focus on more traditional aspects of language performance. In a study of criteria used to assess performance in a business qualification, representing the transition from education to vocational employment in Finland, Härmälä (2010) found that sociolinguistic and pragmatic competence was valued when language competence was lacking.

The term ‘indigenous assessment’ was used by Jacoby and McNamara (1999) to encompass the aspects of performance important to the ‘insiders’ in a workplace setting; the authors astutely anticipated the challenges of seeking to include them as criteria in language performance tests. Lockwood (2013) explains the difficulty for test designers to capture the specifics of a workplace in a test intended for global use due to the local nature of many aspects of business practice, while Douglas (2001) includes in a discussion of the ‘problems in testing language for specific purposes’ the issue of specificity, that is, the tension inherent in designing a test for a particular population in a defined context that also allows test users to generalise from test scores to performance in the real-world workplace situation. McNamara (1996) describes the job analysis involved in the development of the Occupational English Test (OET), a specific-purpose test of English for health professionals seeking registration to practise in Australia and elsewhere, and notes the need to develop test tasks that reflect common workplace tasks familiar across the test population. Interestingly, a recent research project (see Elder et al., 2013) sought to make the speaking component of this test more reflective of the domain-expert ‘insider’ view of performance with the recommendation of adding further, more professionally relevant assessment criteria to the existing language-related criteria.

Therefore, in particular contexts at least, awareness of the value of matching test tasks and criteria for assessing performance as closely as possible with the demands of the workplace is prompting changes to test specifications and processes.

As already noted, concern regarding the capacity of students to communicate effectively in professional situations has led to the use of English language tests, including IELTS, by professional organisations and regulatory authorities (Merrifield, 2010). For some professional contexts, more specific language tests have been developed. The OET (introduced above) is one example; others include language tests for teachers (see Elder & Kim, 2014) and in aviation (see Alderson, 2010), as well as the tests for the International Legal English Certificate (Corkill & Robinson, 2006) and the International Certificate in Financial English (Ingham & Thighe, 2006). There remains a need, nevertheless, for research on the actual language demands of particular professions and in particular areas of skill, such as writing, to help to determine the applicability of language tests, including IELTS, for use as a benchmarking system in professional contexts.

The current study therefore provides a detailed insight into the writing demands in the first year in the profession for young graduates, the relationship of these demands to the IELTS writing tasks, and the level of preparedness of young graduates for these writing demands.

2 RESEARCH QUESTIONS

The research questions for the study are as follows:

1. What are the specific writing demands on new graduates in selected key professions?
2. Do stakeholders (including lecturers, students, new graduates and employers) feel that graduates entering the workforce are sufficiently prepared for these demands?
3. How do the writing demands of the workplace in these professions align with the writing demands of the IELTS test?

3 METHODOLOGY

3.1 Outline of the study

Following the identification of the case study professions (described below), the study was undertaken in two broad phases.

The first phase involved interviews with five stakeholder groups:

1. representatives from the professional bodies for engineering and accounting,
2. non-English-speaking-background (NESB) engineering and accounting students in their final year of university study
3. lecturers of final year engineering and accounting students,
4. recently graduated NESB engineers and accountants in their first three years in the workforce
5. supervisors/employers of recently graduated engineers and accountants.

The students (group 2) were also asked to supply samples of any individual (i.e. not group work) assignments they would be willing to share.

During the second phase, supervisors/employers of newly employed graduates were asked to review two types of writing samples:

- up to two student assignment samples collected during the first phase of the study
- four IELTS essays (two from Task 1 and two from Task 2) selected from the *IELTS Scores Explained* DVD (IELTS Australia, 2009).

The employers were asked to comment on: the readiness of the writer to participate in the workplace; what criteria they used to make this decision; and whether the samples supplied were sufficient evidence of writing ability for their profession.

The instruments, participants and procedures for these two phases will be described in more detail below. First, however, the selection of the two case study professions is described.

3.2 Selection of case study professions

To select the case study professions, we undertook a survey of the English language requirements for the admission of professionals from non-English-speaking backgrounds (NESB) to several key professions in Australia. We also reviewed the enrolment figures of NESB students at Australian universities for courses which result directly in a professional qualification, and in particular at the University of Melbourne, where several of the researchers were situated. We reviewed relevant documents published by professional associations to establish which professions have particular concerns with the communication skills of professionals entering the profession.

Following this review, we identified engineering and accounting as two professions in which the issues we were interested to study were likely to be encountered.

3.3 Participants

Six groups of participants took part in the study, five in Phase 1 and one in Phase 2. As indicated above, the five groups of participants in Phase 1 were as follows:

1. representatives from the key professional bodies for engineering and accounting
2. engineering and accounting students in their final year of university study
3. lecturers of final year engineering and accounting students
4. engineering and accounting graduates in their first three years in the workforce
5. supervisors/employers of such engineering and accounting graduates.

Key professional bodies

Ten representatives of key professional bodies took part in the interviews. Seven of these represented the three different Australian accounting associations (Certified Practising Accountants, Institute of Public Accountants, Institute of Chartered Accountants Australia), and three participants from Engineers Australia (the only engineering registration body) were interviewed. The board representatives ranged in terms of role, with some closely involved in the skills assessment process (e.g. an advisor to applicants, an immigration assessor) and others more concerned with the role of language in board registration more generally (e.g. General Manager, Head Academic Relations).

Final year students

Twenty-four final year students took part in interviews, 12 enrolled in engineering and 12 enrolled in accounting. Of the final year accounting students, seven were enrolled in a Bachelor of Commerce degree with a major in accounting and finance and the remaining five were enrolled in a Master of Accounting. Ten of the 12 engineering students were enrolled in a Master of Engineering and two were enrolled in a Bachelor of Engineering.

The students came from a range of engineering sub-disciplines, including software (n=2), civil (n=2), environmental (n=1), electrical/electronics (n=4), mechanical (n=2) and structural (n=1).

The majority of the students came from Chinese language backgrounds (Mandarin, Cantonese) (n=16) and three students recorded English as their first language (coming from Malaysia or Hong Kong). The first languages of the other students were Tamil, Nepali, Vietnamese, Thai and Indonesian (each n=1).

The students had studied English for 12.33 years on average (min=6; max=20) and had been in Australia for an average of 3.37 years (min=1.5; max=8) at the time of the interviews. The students had all taken the IELTS test. The mean number of IELTS sittings was 2.7 (min=1, max=7). The students had taken the test to fulfil the language requirement for admission to university and, subsequently, to get sufficient points to meet the Australian residency requirements (see above). The students were asked for their most recent IELTS Writing scores. These ranged from 6 to 8 with the most common scores being either 6 or 6.5.

Lecturers

Four accounting and six engineering lecturers took part in the interviews. They were recruited because they all teach into the final year of their respective programs. All participants were experienced, with many years' teaching at university level and, in many cases, prior industry experience. More than half the participants were associate professors or professors in their disciplines (the highest academic ranks in the Australian tertiary system).

Graduates

Twelve recent graduates in the first three years in their profession were recruited: six accountants and six engineers. The graduates were employed in a range of workplaces, from small accounting firms or engineering consultancy firms to large multi-national companies. All had graduated from Australian universities. They had been in their current employment for four months to two and a half years at the time of the interviews.

Their first languages were Chinese (either Mandarin or Cantonese) (n=6), Russian, Urdu, Farsi, Bahasa Melayu and English (from Malaysia) (n=1 each). Two participants did not complete the questionnaire.

They had spent on average 5 years in Australia (min=2.5; max=8). Like the students, they had all taken the IELTS test for a variety of purposes (on average 2.67 times; min=1; max=7). Their IELTS writing scores ranged from 6.5 to 8 with the most common score being 7.

Employers/supervisors

The final group of participants in the first phase was 13 employers/supervisors of accounting and engineering graduates in the first three years of their employment (seven from engineering and six from accounting).

They were recruited from a range of companies, including small to medium-sized workplaces as well as large multi-national companies offering graduate rotation programs for the first two to three years of employment. The accounting participants generally worked in small to medium-sized workplaces while many of the engineering participants, in particular those not employed in software engineering, were generally from very large and well-known Australian or overseas engineering companies.

All participants in this group were highly experienced; all had more than 20 years' experience and some more than 40 years in their profession. All participants were either currently in charge of recruiting and mentoring new graduates or had been recently. Many were involved in shadowing programs, where new graduates are paired with experienced professionals for periods of two to six months before rotating to a new placement.

Phase 2 participants

The profile of participants in Phase 2 (the review of writing materials) generally mirrored that of the employer/supervisor group.

All employers from Phase 1 were invited to participate in Phase 2 and four of them took up this offer. The additional participants were also all highly experienced professionals in their respective fields with extensive experience in recruitment and mentoring of new graduates.

3.4 Instruments

Five types of instruments were used in this study:

1. background questionnaires for the students and the new graduates in the workforce
2. interview questions for the representatives from the professional bodies, the final year students, the lecturers, the new graduates and the employers
3. sample IELTS writing tasks presented to the five groups of interviewees listed above
4. writing samples presented to the employers in Phase 2 of the study
5. a questionnaire used for the writing sample review in Phase 2.

Each of these will now be described in more detail.

3.4.1 Background questionnaire

Final year students and recent graduates completed a background questionnaire designed to elicit information about their study background (both in English and their chosen degrees), their first language, the IELTS tests they had taken and the scores they were awarded. Graduates also provided information about their current workplace and the duration of their current employment. The questionnaire for graduates is given in Appendix A. The student questionnaire was identical except that Question 1 was not included.

3.4.2 Interview questions

The interviews were designed to be semi-structured, allowing the interviewer to probe more in certain areas of interest, but at the same time asking questions about all the topic areas of interest.

The questions for the members of the professional bodies focused on: the language proficiency test score requirements for professional membership, how well prepared new graduates were for the writing demands of their professions, the relevance of the IELTS tasks to the demands in the workforce, whether there were any issues with the writing of new NESB graduates, and whether the university system prepares students well for the workforce. The specific questions are given in Appendix B.

The final year students were asked about how many times and for what purposes they had taken IELTS, and what scores they received at the different sittings. They were asked about the writing they did at university, their expectations of the writing demands in the workforce, and how these types of writing related to their experience of writing for the IELTS test. The interview questions for the final year students are given in Appendix C.

The interview questions for the lecturers of final year students focused on their background in teaching and working in their specific disciplines, the types of writing students do as part of their courses, the relevance of the written work completed at university to tasks in the workplace, and what criteria they use to mark the written work. Lecturers were also asked about the graduate attributes relating to writing set by the university and whether they perceived any particular issues with the writing quality of NESB students in their courses. The final questions focused on their views on the language proficiency requirements for registration in the profession concerned. The interview questions for this group are given in Appendix D.

The interview questions for new graduates in the workforce are presented in Appendix E. The questions focused on the participants' writing in their positions, any difficulties they experienced and how they were helped or mentored to overcome these problems. They were also asked how much the IELTS tasks (they had all taken the IELTS test at least once) related to the writing they did in the workforce.

The interview questions for the employer stakeholders focused on the participants' professional background, their involvement with recruiting and supervising new graduates, and the kind of writing new graduates are expected to do in the workplace. The employers were asked to describe the challenges new graduates face when learning to write in their profession, how they are supported in this process, and whether NESB graduates face particular challenges. The employers were also asked to look at examples of IELTS writing tasks and comment on their relevance to writing done in the profession. Finally, the employers were asked for their views on the language proficiency requirements for professional registration. The interview questions are given in Appendix F.

3.4.3 IELTS Writing task samples

To stimulate discussion about the relevance of the IELTS writing task types to the writing done at university and in the workplace, interview participants who were not familiar with the IELTS test or who had not taken the test for some time, were shown sample tasks. These were taken from the IELTS website (www.ielts.org).

3.4.4 Writing samples used in Phase 2

Employer participants taking part in Phase 2 of the study (the review of the writing materials) were presented with a pack of materials drawn from two sources: (1) final year assignments collected from students taking part in the interviews in Phase 1; and (2) IELTS writing samples (*IELTS Scores Explained DVD*, IELTS Australia, 2009).

Table 1 summarises the tasks and writing samples selected for use in this study.

Task	Topic (Score)	Topic (Score)
Task 1	Brick manufacturing (Band 7)	Cinema attendance (Band 5.5)
Task 2	Upbringing (Band 6.5)	Tourism (Band 7)

Table 1: IELTS writing scripts selected for employer review

These writing samples were selected because they were written in response to a variety of task types (including a process and a graph for Task 1) and represented a variety of score levels, both below, at and above the score level (Band 6.5) generally accepted as sufficient for undergraduate entry into Australian higher education institutions, as well as around the score (Band 6 or 7 depending on the profession) generally accepted for professional registration in the skilled migration path to permanent residency as reviewed by the professional boards.

Two assignments, from those provided to the researchers by accounting students, were selected for review by the accounting employers. They were chosen for the following reasons: they were written by one student (not a group in collaboration); they were relatively short; they represented two very different types of writing (a report and taxation advice to a client); and they exhibited features of writing typically found in NESB student writing. The most recent IELTS writing score of the student providing the report was 6.5 while that of the student providing the tax advice was 7.5.

Choosing assignment samples for the engineering employers to review was more complex as the engineers were from a variety of sub-disciplines (e.g. mechanical, chemical). As far as possible, student assignment samples were selected to match the sub-discipline of the employers. As no short assignment samples were provided by the students, each employer reviewed only one assignment. Two employers reviewed an assignment representing an executive brief for a regional rail link (completed for a general course on engineering management), two employers reviewed an assignment on advanced solid mechanics (mechanical engineering), and one employer reviewed a feasibility study for the creation of a new suburb (civil engineering). The student writers' most recent IELTS writing scores were 6.5, 6.5 and 6, respectively. Due to ethics requirements, the assignments cannot be appended to this report.

3.4.5 Phase 2 writing sample review questionnaire

When reviewing the writing samples described above, the Phase 2 participants were required to complete a short questionnaire. The questionnaire posed three open-ended questions.

1. Looking at the sample of student writing, do you think this person has sufficient language to cope with the writing demands of the workplace?
2. Why/why not?
3. Do you think this kind of sample is adequate to decide about a new employee's professional writing ability? Is there some other kind of task you would prefer to see evidence of?

3.5 Procedures

3.5.1 Data collection procedures

The data was collected in several stages. Following ethics approval from the university, professional boards for the two professions were contacted via email and invited to participate. All boards nominated representatives with experience specific to language requirements. Interviews were either conducted individually or in groups at the offices of the professional bodies.

Final year students were recruited through two methods: (1) by asking lecturers teaching final year courses to post an invitation to participate on the learning management system site for their course; and (2) by posting printed invitations to participate in two university buildings used by potential participants, the Faculty of Engineering and the Faculty of Business and Commerce.

Before the interviews, students were sent information about the study and the questionnaire. They were asked to bring samples of their assignments to the interview. The interviews were conducted individually with one of the researchers and audio-recorded. The questionnaires and writing samples were collected and stored securely. The students were asked at the end of the interviews whether they knew others in their disciplines who had finished their studies and were working in their profession. In this way, recent graduates were approached and asked to participate in the study.

Lecturers were identified from the staff information on the websites of their respective schools and contacted directly via email with an invitation to participate. Interviews were held either in the offices of the lecturers or in another place nominated by the lecturers. The interviews were audio-recorded and, following the interviews, the lecturers were asked whether they had any industry contacts or past students who might be available to be interviewed for the study.

Employers and new graduates were similarly recruited via the snowball method, using contacts provided and seeking further contacts through them or through personal networks of the researchers. Interviews with employers were conducted either at their workplace or by telephone. Interviews with new graduates were generally conducted by telephone; a small number were conducted face-to-face in the researcher/interviewer's office or at the participant's workplace. All recent graduates were sent the questionnaire prior to their interview via email.

As noted above, the participants for Phase 2 were recruited from the group of employers from the first phase, as well as through personal networks of the researchers. The participants were sent detailed instructions, the assignments and the questionnaire via email and were asked to complete the questionnaires and return them via email. If any answers were not clear, these were clarified via email or through a phone call.

3.5.2 Data analysis

All interview data was transcribed and then subjected to a qualitative analysis involving the identification of key themes inductively (Boyatzis, 1998). The data were coded through an iterative process of identifying and verifying themes, involving several researchers to ensure consistency of coding. Coding was carried out using the software package NVivo (www.qsrinternational.com).

As the data were coded thematically, the participant groups were not analysed separately, but different perspectives (i.e. student, graduate, board member, employer) were merged into themes. The findings are reported so that these different perspectives are evident. The questionnaire data were summarised and used to gain an understanding of the profile of interviewees in the student and new graduate groups.

The data from Phase 2 was analysed by summarising the responses of the participants across each sample and across the professions as well as across questions. This analysis was complicated, as not all professionals reviewed the same samples and not all completed all tasks due to time constraints. Patterns were identified in the responses of the participants and these are reported as general trends in the results section.

4 RESULTS

The results are discussed in relation to each of the three research questions.

4.1 What are the specific writing demands on new accounting and engineering graduates?

In relation to our first research question about the nature of workplace writing demands for new accounting and engineering graduates, the data themes fall into three interrelated categories.

1. Written genres including specific features (e.g. tone, format, length)
2. Writing processes (e.g. collaborative writing, feedback)
3. Valued qualities of written discourse (e.g. conciseness)

Each of these themes will be discussed in turn, with reference to the similarities and differences between the two professions. Although we are gathering information about workplace writing genres and processes, and not presenting a genre analysis, we inevitably encountered aspects of genre in the data such as audience, text type, and various other aspects of context.

We have adopted Swales' definition of genre:
A genre comprises a class of communicative events, the members of which share some set of communicative purposes. These purposes are recognised by the expert members of the parent discourse community and thereby constitute the rationale for the genre. (1990, p.58).

In our analysis, we follow Paltridge (1996) and Lee (2002) in distinguishing between text type and genre, where *genre* categories are determined on the basis of external criteria such as 'intended audience, purpose and activity type' (Lee, 2002, p. 38). Genres are classified in this study according to the perceptions of insiders in the engineering and accounting professional discourse communities. We use *text type* to refer to text-internal lexical or grammatical features which may relate to one or more genres, for example, argumentation, description.

4.1.1 Written genres in the workplace

In the analysis of interview data, it is assumed that informants provided a perspective on professional genres which they consider to be most salient, as opposed to a comprehensive account of all written texts. The broad genres which emerged as primary for new graduates in both accountancy and engineering workplaces were emails and reports, each representing a diverse range of texts in terms of length, register, audience and purpose.

Two main categories of written content described by both professions were 1) *technical* content (e.g. calculation data, equipment specifications) and 2) *descriptive/explanatory* content (e.g. interpretations of graphs, project descriptions). Both types of writing may be required in a single document.

A key feature of both professions is the apprenticeship nature of workplace writing, through which new graduates are tasked with more basic level input. Graduate writing is generally subject to review by senior colleagues (see Section 4.1.2 Writing Processes).

4.1.1.1 Reports

Reports are the key formal genre in both professions, ranging from highly technical documents (i.e. largely numerical, specialised jargon or code) to language-based reports which may involve translating technical knowledge/findings into a more general register that is comprehensible to clients (see further discussion below). Reports can be major end products on financial performance, project development (e.g. Accounting Employer 5) or a literature review (e.g. Engineering Graduate 1) and the length may vary considerably.

For accountants, another less common genre was 'commentaries', which are explanations or narratives of past and prospective movements, e.g. changes in company expenses. These generally take the form of graphs and explanatory notes (e.g. Accounting Employer 6). As described by Accounting Employer 3, new graduates may have to 'analyse and explain what's driving [a financial movement] and put that into a document for their managers to read that sort of goes up the chain of command'.

A related genre is the 'memo', which is also a kind of narrative reporting which explains balances, for instance (e.g. Accounting Employer 2). Accounting Employer 3 explained that mastering the technical and explanatory components of these texts was a challenge for new graduates:

I find the accounting graduates have more a focus on the technical side of it, so rather than the memo-writing whereas I think the technical answer's only half the battle, being able to articulate it is the next bit.

In particular, accountants need to be able to translate 'numbers into words' (Accounting Employer 6) because clients may not understand the numerical content alone.

A similar combination of technical and explanatory content for engineers is required in 'specifications' or design documents which comprise a great amount of technical detail with some explanatory text, e.g. about project requirements. These documents may have a tick box component and the audience is typically people with relevant engineering background knowledge, as described by Engineering Employer 3 below.

A lot of it is very technically orientated. So technically they need to be able to write specifications, datasheets, which aren't so much writing but really ticking the boxes and setting up a table with a lot of technical data. But the specifications involve a greater degree of English, which are very structured, and they might consist of being in between 6 to sort of 30 pages in length. And there's various aspects, technical requirements and then project requirements that need to be explained in a specification. So you're really describing the equipment in great detail, what needs to be supplied.

For engineers, the distinction between design-based roles and consultant-based roles appeared to be quite pronounced, with consultant roles doing more formal written communication with clients in the form of progress reports and other types of liaison over project details (Engineering Professional Body 3).

4.1.1.2 Email

Emails were also highly salient and extremely frequent in both professions: 'email is huge' (Accounting Employer 6); 'there's squillions of emails' (Engineering Employer 1). These ranged from informal, low-stakes correspondence between peers to high-stakes client liaisons or messages to a large group of recipients. In general, the higher the stakes, the less independence was granted to novice writers (discussed further in Section 4.1.2). Some professionals from both disciplines also reported that they were required to write formal letters, e.g. to the Australian Tax Office.

Email correspondence was a diverse category for both professions, and writing emails to clients emerged as particularly salient as an accounting workplace skill new to graduates.

One new graduate explained that this kind of writing required a particular formal tone, which a fellow graduate was not skilled with:

You know writing to clients also you need to have that sort of um, formal kind of writing to be able to do that. For example, I have a colleague who did the same degree in uni with me but she didn't do that much writing or maybe she um, she wasn't the main person who was writing the assignments in uni and every time we were writing emails to clients or she was writing she wanted me to have a look at it because sometimes her sentences doesn't, didn't flow. (Accounting Graduate 4)

Engineering informants used email as a means of recording conversations, informing team members of developments (cc-ing emails) and reviewing project developments for accountability purposes, as described below by an engineering employer.

We discourage verbal engineering on any communication, we want you to back this up with an email, send off an email and copy the project leader on it, and then we try and look at what they've written and say, well, you know, this is not quite right. (Engineering Employer 2)

For engineers, emails may also be the site for discussing alternatives and justifying a recommendation (e.g. Engineering Employer 3, Engineering Employer 6). It can be a kind of short cut for discussions with managers who may not have time to read a full report, as explained by Engineering Employer 3 below:

It's often in an email where you would give a short paraphrase of what's in the report, and you talk about the recommendations and repeat them in the email and then suggest what should be done. Because the managers will read the email because it's not too long and it's directly put in their face, whereas they may not go to the report and look through it. So it tends to be more the email where you actually have to argue a case.

Thus, emails may fulfil a range of functions in the engineering workplace, such as justification, persuasion, information provision and accountability.

4.1.2 Writing processes

In addition to the descriptions of the key workplace genres (see Section 4.1.1 above), informants provided detail about how professionals went about their writing, particularly in relation to the skill development of new graduates which was the focus of the interview questions. The collaborative nature of workplace writing in both professions emerged, as did processes of writing skill development and quality assurance, such as feedback from senior colleagues and use of templates.

4.1.2.1 Team writing

Teamwork for report writing was common in both professions, as described by Engineering Employer 6 below, with reports of writing teams of up to 15 people (Engineering Lecturer 1).

We might do a report on the condition of a building, in which case the structural engineer would write a bit around the condition of the structure, the mechanical engineer will write a bit around the condition of the air-conditioning system, the electrical engineer will write the condition about the power and infrastructure, and then that would all get put together into a single report, and they're the challenging ones, trying to get the writing style consistent through a document. [Other reports] will be very specific around one discipline issue in which case, you know, could be a 100% [one person's] work. (Engineering Employer 6)

Another employer (Engineering Employer 1) explained that 'Nobody generally has sole responsibility for anything'. He described the common process as one person doing the initial writing, with extensive subsequent team review. Because of the extent of team writing, one lecturer (Engineering Lecturer 3) reported that he told his students to 'cut out personal flourish'. Although graduates may have more responsibility for reporting in smaller firms, the report will still need to be reviewed and signed off by a more senior colleague (as reported by Engineering Professional Body 1, Engineering Graduate 6).

4.1.2.2 Feedback

Informants from both professions reported that junior employees were inducted into professional writing processes through collaboration with, and feedback or guidance from, senior employees.

In accounting workplaces, reports are rarely written by new graduates, although they may be involved under the guidance of senior colleagues. In some report types, accountants are required to analyse and interpret data. One employer (Accounting Employer 5) explained that some, but not all, junior professionals had a 'good natural flair for interpreting and analysing information' which can be transferred logically into written form. His approach was to provide them with 'a framework, a systemic one which ends up with the same result and then they take that information that has been assembled logically in a systemic way and then put that on paper'. A similar interpretative skill was described by an engineering employer (Engineering Employer 2) who explained that the 'calculations' were the easy part of a report, whereas 'explaining what you've done to someone is very difficult, it is a difficult part of it'. He pointed out, however, that there are 'excellent engineers' who are 'lousy communicators' but nonetheless very valuable in the workplace.

This raises the issue of the use of an all-encompassing general language standard for specific professional roles which may be highly technical (mentioned by Engineering Professional Body 1).

Processes of review on important documents were very common. As one accounting employer (Accounting Employer 2) explained, very high-stakes documents would have ‘multiple layers of review’ before they were released to a client. However, employers took different approaches to the review process. One employer said she would simply overwrite the section (Accounting Employer 3), while another (Accounting Employer 5) opted to ‘sit down with a person and then they make the changes’. His view was that ‘tracking changes is very efficient but it is not very good from a training perspective’ because junior colleagues would come to expect others to edit their work and not develop their own writing skills as a result.

Similar processes of review were reported by engineering employers (e.g. Engineering Employer 5, Engineering Employer 3). The following excerpt shows the multiple scaffolding processes (model document use, team review, feedback) which occur for reports prior to releasing them to clients.

Well, they would normally be given an example of a similar type of document, and they'd be, there will be some past documents from other projects that they can adapt. And then yes, they'd certainly provide a draft for review, and then what I typically do or what other people typically do, is mark it up and send it back to them and explain some of the changes that need to be made. And so, all of our documents that go out to clients have to be checked so, regardless of who it is, we still have to do that anyway. And then, what we typically do is, after it's gone back to them, they would highlight, but they'd actually incorporate that change into the electronic version and then they would produce a hard copy and then we will go through that hard copy and then, on the same hard copy that marked up with a highlighter, we would highlight with a different colour to say: yes, I've checked that that's been back drafted.
(Engineering Employer 3)

This employer stressed that these processes encourage independence through teaching graduates to be more thorough and to edit their own work, rather than relying on others. Despite this, all reports go through some quality check processes, regardless of the writer's seniority. Some sense that the more intense editing work happens at a different level of seniority can be gleaned from the following excerpt.

There's some push back from senior people that they should be just checking that it meets the client's needs, that they shouldn't be involved in structuring the narrative or correcting the English or the nitty gritty details of the science, but there is the need for that in some places. (Engineering Employer 5)

Practices varied, however. One engineering graduate, for instance, said she never received feedback on her writing (Engineering Graduate 3). One employer (Engineering Employer 4) approached graduate writing as a way of ‘getting [graduate employees] involved in choices and decisions’ through researching and producing a short report with recommendations. For these initial tasks, ‘it would be a very small decision...and it will be guided, typically.’

It was reported by accounting professionals that emails, which were more important in terms of content and the level or number of recipients, were checked by senior colleagues before being sent – a practice that is either instigated by the novice writer (described by Accounting Employer 6) or required by senior colleagues (described by Accounting Graduates 1 and 5). This may be to avoid misunderstandings, but also for the purpose of making a good impression, as described by one employer: ‘nothing looks worse than emails with spelling mistakes or grammar mistakes’ (Accounting Employer 6). One graduate (Accounting Employer 4) explained that his supervisor would ‘change small parts and bits just to make it more formal’, suggesting that the graduate was still developing the appropriate register for client communication.

Engineering Graduate 6 described his regular strategy of writing emails subsequent to a spoken conversation where the communication may not have been successful.

For instance, today, like, I had to contact a contractor, I called him on the phone and I talked to him about it and then he didn't seem to get it, so at the end of the conversation I said: look, I'll send you an email to summarise what we spoke about today' and then, yeah, I thought that was a good way to, like a good system for me. (Engineering Graduate 6)

The processes for email writing varied. Some graduates and employers (e.g. Engineering Employers 2 and 5) reported that certain types of emails were sent without supervisors checking them. Such emails might have less complex functions, such as circulating minutes (Engineering Employer 5) or making arrangements with sub-contractors on a work site.

4.1.2.3 Templates and technology

The use of templates and previous texts to support writing is reportedly common in both accounting and engineering work practices, with one accounting employer observing that it was ‘more common than writing...from scratch’ (Accounting Employer 1). The limitations of template and text re-use were highlighted, however, by a member of the engineering professional body, who noted that ‘in the end it's what you put into it that counts’ (Engineering Professional Body 1).

One accounting graduate reported that at the start, her employer sat with her while she wrote and then later, she used ‘the same writing structures’ to compose by herself (Accounting Graduate 3).

As described in the excerpt below about the process of writing geotechnical reports, templates are integral to the writing process, and knowledge of such tools is learned on the job, as well as developed at the organisational level over time.

There'll be a report written about that, and the way almost every geotechnical report is written, is they take out the one from last time and open it up, ah there's all the fields, there's, this is what we say, and we just fill in the bits. And in fact, companies have got templates, to allow that to happen. So a lot of, so that style of writing, at least the sort of things to include are going to be learned on the job. They'll be learned from other experiences that companies have had. (Engineering Professional Body 3)

As is evident from discussion of the extensive use of templates and from the section on feedback above, writing practices in both accountancy and engineering workplaces are predominantly computer-mediated. Several programs were mentioned in the interviews, e.g. the use of Microsoft PowerPoint presentations for accountants' commentaries, the use of Excel for full reports, including calculations, method, results and discussion (Engineering Graduate 1), and other specific software such as BGL (Corporate Compliance Software) and MYOB (Accounting Software) which offer automatic data input, and formatting and templates for accountant-specific tasks (AG3). Synchronous computer-mediated communication applications, such as Instant Messenger, were also mentioned as frequently used writing technologies (Accounting Employer 6).

4.1.3 Qualities of writing

In the interviews, both novice and experienced professionals were prompted to describe the ideal qualities of workplace texts. Many experienced professionals were able to comment on features that marked the writing of novices, and new graduates spoke about feedback they received on their writing.

4.1.3.1 Engineers

A major challenge reported by engineers was the ability to use a register that is simultaneously suitable and comprehensible for various audiences, e.g. client, other engineers. One employer described how engineers need to be able to write in a register that is appropriate for non-engineers.

We've just done, for instance, a report, where we go and have a look at the structure and then what modified to accommodate another bit of gear that they put on it, and we have to write, we have to describe to them what they need to do, and we need to put it in layman's terms so that they can understand it easily. So there's a lot of writing in all of reports and calculation packages that we send out. And these have to be in a certain format. (Engineering Employer 2)

In addition, Engineering Employer 2 emphasised that reports for clients should be brief and contain short sentences. In terms of structure, there should be one point per paragraph, a conclusion and (bullet point) recommendations:

Generally getting the format nice and clear so it looks professional, appearance is very important, and having a conclusion, we always put a conclusion in our documents, we don't just leave it hanging. Trying to give some direction to clients, what we think what you should do, this is the situation and this is, we recommend this is where you should go from here...So the fewer words the better, and you know, concise short sentence...and nice, clean bullet point recommendations for our client...Keep everything delineated so that someone you know, one point, one paragraph.

There is a sense that experience in the workplace is required before client-appropriate language can be developed. Thus, graduates require the necessary proficiency to be ready to develop facility in client liaison, but do not necessarily have to demonstrate this on entry to the workplace.

...it's about understanding the client's perspective, being able to communicate so that the client understands what you want, and that means being able to communicate in their language and that bit takes time...so, you might have the capacity to produce well-formed and well-structured emails or documents, but picking the right language and the right perspective is a different layer. And it has nothing to do with intellectual ability or anything, it's mostly experience, actually. (Engineering Employer 4)

Obviously a green graduate would not be asked to write long complex reports because they're not capable of doing that. They don't have the understanding or the maturity to write that sort of thing. (Engineering Employer 1)

This was also true of accountancy, with employers (e.g. Accounting Employer 2) observing that learning standard professional communication practices entailed some degree of learning for all novice employees, not just those for whom English is an additional language.

One member of the engineering professional body described the qualities of report writing which a graduate would be developing during the first three to five years of professional practice.

Maybe reporting on a design, and the design may have calculations, fine, they're done in a very clear way so they might be in the appendix, but you would need to cut to the chase and say what the important things are, so you need to be able to marshal information that you have, in a report that is, stand out, can be scrutinised, and is clearly understood, because you can't afford to make mistakes in engineering. (Engineering Professional Body1)

Several engineering employers stressed the importance of terminological precision and clear meaning in writing (e.g. Engineering Employer 4). One graduate (Engineering Graduate 4) described this as being 'specific enough' and not omitting the important aspects. For one employer, the format of the document was less important than the accuracy of the content, which he viewed as critical. Reports need to justify engineering activities because 'you have to make sure that you're not going to get sued' (Engineering Employer 2). Other employers noted that grammatical accuracy was also important (e.g. Engineering Employers 1, 2 and 3) but not necessarily for emails for which prompt response was prioritised (e.g. Engineering Graduate 3). Timely completion of reports was also recognised as important (Engineering Employer 2), as was the ability to type quickly (Engineering Graduate 3).

Another employer summarised good reports as 'brief and concise and not [going] outside of our work scope' (Engineering Employer 2). The ability to present information succinctly was highly valued, as described by Engineering Employer 1.

But when I tell them to write a report, I make sure that their objectives are clear, and frequently I've had reports, and you read through it, and they've written 20 pages and I said: the main problem with this report is that it's 17 pages too long...Encourage them to be precise, to have really precise English, so that every word counts.

The necessity for brevity was reiterated by the graduates: 'I'd write, like you know, 100 words, and he'd cross out like 50' (Engineering Graduate 4). Although reporting has to be succinct (e.g. Engineering Employer 2), one employer observed that for some engineers the problem might be elaborating sufficiently (Engineering Employer 4).

4.1.3.2 Accountants

Accounting professionals indicated a similar emphasis on conciseness, brevity and clarity. When asked about the kind of feedback she provides to novice report writers, one accounting employer (Accounting Employer 1) explained that she tells graduates to be 'more precise and not give so much background and bluff in the document...just clarity, just be clear...put all your arguments or your reasons in a very clear manner that makes sense and don't put in a lot of unnecessary information'. For another employer (Accounting Employer 5), the inclusion of irrelevant information leads to a lack of 'logic' in sequencing. Thus, the ability to prioritise key points and present them succinctly is an important skill.

Email was a particularly salient genre for accountants, reflected in the feedback processes outlined above. Employers (e.g. Accounting Employers 2 and 3) were particularly concerned about the quality of messages for clients, customers and external colleagues. One employer observed that the tone and content of the message are very important and a challenge for less proficient speakers of English:

Just the language used in the emails, the tone, it is something a lot of people struggle with and just getting the message across, recording the details and also being as professional as possible, that's something that comes from years of experience, even for a first language person, but it was definitely a struggle I've noticed...three or four instances where we've had someone who's come in as a graduate with a second language. (Accounting Employer 2)

A further quality mentioned was that of simplicity. One graduate (Accounting Graduate 1) explained that most feedback he receives is related to his writing not being simple enough: 'so the communication with clients I am required to be as simple as possible, to explain them so they know what it is'. This notion of simplicity might be a combination of qualities resulting in a clear and succinct translation of professional register for clients.

4.1.4 Summary of workplace writing demands

The predominant genres described by both novice and experienced members of the two professions were emails and reports. Although these genres range considerably in purpose and content, a summary of textual features and valued qualities is provided in Table 2 on the following page.

As we have categorised these on the basis of the insights offered by discourse community insiders, it is presumed that they share an understanding of the broad genre categories. This summary is a starting point for a more in-depth exploration of the linguistic features of the text types, as well as the qualities employers value and graduates strive to develop (i.e. indigenous criteria).

Genre	Accountants	Engineers
Emails	<p>Features:</p> <ul style="list-style-type: none"> • Simple language, non-technical if required for non-accountant audience • Formal tone and grammatical accuracy for emails to clients <p>Valued qualities:</p> <ul style="list-style-type: none"> • Appropriate tone • Accurate content • Accurate grammar 	<p>Features:</p> <ul style="list-style-type: none"> • May involve a broad range of text functions, e.g. justification of action, information-giving, summary/support for spoken interaction <p>Valued qualities:</p> <ul style="list-style-type: none"> • Terminological precision • Timeliness
Reports	<p>Features:</p> <ul style="list-style-type: none"> • Usually written by more senior employees in larger companies (rather than new graduates) • If graduates are involved, it is under the guidance of more senior employees • Frequent use of templates or existing similar texts • Use of bullet points • Use of diagrams/charts/tables <p>Valued qualities:</p> <ul style="list-style-type: none"> • Clarity • Prioritisation of key points • Conciseness • Brevity • Relevance • Logical sequencing 	<p>Features:</p> <ul style="list-style-type: none"> • Usually written by more senior employees in larger companies (rather than new graduates) • Use of bullet points • Use of diagrams • Short sentences • Non-technical language for client reports • Highly technical language for other engineers/technicians • Includes summary/recommendations <p>Valued qualities:</p> <ul style="list-style-type: none"> • Clarity • Prioritisation of key points • Accountability • Conciseness • Brevity • Relevance to project/topic scope • Terminological precision • Grammatical accuracy

Table 2: Salient workplace genres for accounting and engineering graduates

4.2 Do stakeholders (including lecturers, students, new graduates and employers) feel that graduates entering the workforce are sufficiently prepared for these demands?

Responses to this question differed between the stakeholders currently in the workforce (graduates and employers) and those at university (lecturers and final year students). Students generally had very little to say about the expectations and writing demands of the workplace. While they generally felt well prepared in terms of course content (i.e. accounting and engineering knowledge), some felt only partially prepared for the writing demands. A number reported that they looked for real examples of different writing genres on the web and also mentioned that they were provided with such samples only in very few of their courses. They expected that they would write from templates once in their roles in the industry and thought that group work tasks at university were good preparation for similar tasks at work. Some expressed frustration at not being exposed to more real world examples during their time at university but also mentioned that they ‘learned a way of thinking’ which would be helpful when entering the workforce.

The two stakeholder groups recruited from the workforce (graduates and employers) generally agreed that new graduates are either not sufficiently prepared or only partially prepared for the writing demands of the workforce. Answers to this question varied widely, mainly due to the very different demands put on young graduates in terms of writing by different companies and employers. Accounting Graduate 6, for example, reported that she is not required to do any writing as part of her job:

I start in like a low position, not like management level position but that position is Accounts Payable Officer so there is not much reporting for me. I mainly deal with numbers, so I don't actually write reports in my workplace.
(Accounting Graduate 6)

Others reported similar situations where their written communication was limited to emails with immediate colleagues rather than contributing to larger reports or communicating with clients.

All stakeholders were asked to describe the writing requirements at university and in the workforce. The aim was to compare how many of the task types encountered in the workforce are anticipated and modelled at university. Table 3 sets out the genres that were mentioned as being practised at university and those required in the workforce.

Accounting genres – university	Accounting genres – workforce
Essays	Commentaries (company internal; to market)
Emails	Email (communication with clients and colleagues)
Exams	Reports (annual reports, project reports)
Reports (including financial, audit and project reports)	Papers on accounting treatments
Case-based assignments	Financial statements
Wikis	Training documents
	Letters (ethical checks of clients; official letters, e.g. to tax office)
	Memos
	Instant messaging
	PowerPoint presentations

Table 3: Texts types at university and in the workforce – accounting

As can be seen in Table 3, there is a greater variety of text types used in the workforce than students are exposed to at university. Not many text types used in the workforce were modelled at university, with reports being the most common text type widely used in both contexts. Some students reported being exposed to emailing clients for a practical project, but such opportunities were rare.

Table 4 below presents a summary of the different text types mentioned by the engineering stakeholders.

Engineering genres – university	Engineering genres – workforce
Reports (technical, lab, research, review, design)	Reports (many different types)
Email (within team and with clients)	Emails
Design specifications	Specifications
Meeting minutes	Design documents
Wikis	Formal letters
Essays/literature reviews	Grant proposals/tenders
Theses	Short texts (e.g. instructions to builders)
Website descriptions	Websites
Posters	

Table 4: Genres at university and in the workforce - engineering

Table 4 shows that engineering students are exposed to a wider variety of genres than accounting students but, as was found for the accounting discipline, the overlap with the document types written in the workplace is limited. Reports and emails seem to be the most common genres in both contexts, but students receive less exposure to other documents commonly used in the workforce. This comparison of the genres encountered at university and in the workforce indicates that students are probably not well prepared for the writing demands they may encounter once starting their careers.

In addition to this difference, a number of stakeholders mentioned that the requirements at university are generally too theoretical. For example, Accounting Graduate 5 described the differences as follows:

I would say that the things that I learn in university is very helpful...but talking about the working environment is another, you know, entirely different story. Because whatever thing I learn at work it is just so different. Like everything seems to be so practical but in university everything that I learn is very theoretical based. (Accounting Graduate 5)

Employers also commented on the fact that graduates are strong in understanding the theory of their respective fields, but struggled applying this to real world situations. They perceived a clear difference between the more 'essay' type writing completed at university and workplace documents such as reports.

Accounting Employer 1 described her view of the differences in the writing processes and expectations of these different genres:

I think when you are in uni and you have a 2000 word assignment, so you just keep adding until you get to 2000 words, whereas when you are at work, if someone gave me 2000 words of crap, I'm not even going to read it, I don't have time and I'm not going to be impressed. So you just need to get to the point, say what you need to say and that's it. I don't care if it's 2000 words or it's 500 words. (Accounting Employer 1)

A number of participants also described differences in the evaluation criteria used in the two contexts and commented on the fact that readers at university are more lenient when evaluating writing. This is well summarised by Engineering Graduate 1, who describes how prepared he felt for the workplace.

I'd say [I was] about 50% [prepared] I think. It's different... You write reports that are read by like, executives and senior managers so as I told you before, I write in a certain style, and when I wrote one of these reports for like a literature review I was doing on a study I was doing, there was a lot of comments on it. So like, people are reading something and then they'll think: is he talking about a new topic, but then they'll see a new heading right under it that's like, it should have been under the new heading, not leading to it, but like, if you want to talk about something new, just label it right down. So small things like that, so, I think in university they're a bit more lenient towards, because, they're studying, they're learning the concept of engineering, and not, they're not focused on how we write it, they're more focused on what we're learning and understanding of the technical side of things. (Engineering Graduate 1)

A further difference between the genres practised at university and those required in the workforce was their audience (see also Section 4.1). The majority of documents at university are written for the lecturer and are technical in nature. Less emphasis is given to writing documents suitable for clients. Participants agreed that writing for clients or less technically competent audiences is an area where graduates often struggle.

While most participants agreed that universities do not sufficiently prepare students for the writing demands of the workplace, many mentioned that important foundations are laid during that time on which employers can build. It was also widely acknowledged that preparing students for the workplace is challenging because of the wide range of possible roles graduates might be employed in and the range of writing demands associated with their roles. It was also mentioned in a number of interviews with employers that many graduates who are attempting to enter their workplace do not seem to have baseline language proficiency (rather than any more sophisticated skills).

For these reasons, some workplaces have either formal or informal processes in place to train graduates in a range of skills, including writing. In larger companies, this is done through formal graduate rotation programs which offer short courses on writing, as well as direct contact with mentors, while in smaller firms it often seem to depend on individual employers or supervisors being willing to mentor new colleagues.

Interview participants mentioned a number of writing issues that new graduates struggle with. It is important to note that many of these areas were not particular to graduates from non-English-speaking backgrounds (NESB) but rather were experienced by all graduates entering the workplace. Specifically, employers reported that young graduates struggle with conciseness and clarity in their writing, that they need to learn not to include so much background or unnecessary information in any text they write. The other major area of difficulty related to writing with the tone and level of formality appropriate to the purpose and audience. As Engineering Employer 4 noted, 'you can produce the same content for different audiences, and it would be a different document'.

Achieving the appropriate tone was repeatedly mentioned, as a document or request could easily be misinterpreted if tone is not realised effectively. Engineering Graduate 1 outlines the consequences of this from his experience:

It is really important that we write something that is catered for the client, or the reader. If they don't get the tone that we are trying to convey, then it can be misinterpreted entirely. So for example, there's a report that I was working on which required us to send out a massive mail to all different sites asking for information. If it wasn't written in a specific format, they might think that we'd try to audit them, you know. There's a clear difference, we don't try to scrutinise you, we're not trying to find what you have done wrong, we just want information so we can do research. (Engineering Graduate 1)

In the case of NESB graduates, employers also mentioned issues concerning grammar, sentence structure and word order.

Throughout the interviews, the employers stressed the importance of employees having good writing skills. They mentioned a number of possible consequences if the writing skills of a staff member are not adequate. This may result in a client not fully understanding what has been done or is proposed and money being wasted as a result (particularly in consulting companies where clients are billed by the hour). Other employers reported consequences such as alienating clients or stakeholders, missing out on potential contracts, and misinterpretation which may result in legal challenges.

For this reason, most employers reported taking a number of steps to avoid these issues occurring. In the first instance, as mentioned above, staff training is usually offered (either through a structured program or informal mentoring). If this does not help sufficiently, the staff member may be kept away from clients or given work that is more technical. This often means these staff members fail to rise through the company structure and remain in lower level roles.

Importantly, a number of employers also mentioned that because problems with writing (and wider communication issues) tend to be associated with NESB graduates from Australian universities, they often do not recruit from this group.

4.3 How do the writing demands of the workplace in the two professions align with the writing demands of the IELTS test?

As previous sections have demonstrated, the specific engineering and accounting workplace writing demands show considerable differences from the writing required at university, particularly in terms of genres represented, the importance of crafting a piece of writing for a particular audience with regard to tone and level of technical detail, and the processes of review that are commonly used in the professions. This section explores the alignment of the professional writing demands of accountancy and engineering to those of the IELTS Academic Writing test. The perceptions of graduates, employers and members of professional bodies allow an exploration of the extent to which they felt that the demands of Tasks 1 and 2 were relevant to the writing demands of their workplaces.

Respondents reacted to the nature of the tasks and topics in different ways. To some, the high level of generality meant that the tasks could be applicable to any professional context: 'They're very useful skills that you would need in a role...and that's what employers would be looking for' (Accounting Professional Board 2). The tasks were thus seen as relevant to any situation where communication involved others (e.g. clients) who did not share the level of technical expertise of the writer. This view was encapsulated by an engineering employer, who, upon being shown examples of Tasks 1 and 2 and asked about the extent to which they were relevant to the engineering profession, replied:

Yes, in a rather rudimentary way. Uhm, the objective, the whole purpose of any professional, when you think about it, is well, it's two things: one is understanding what you're doing so that you can do a good job, but almost as importantly is the art of explaining these concepts to those who you're dealing with. The whole purpose of a profession of any description is to help the people that come to you, to find the problem in the first place and then explain to them what's going on. So if a person can't explain complex things to those outside the profession, then they're not professionals, in my judgment. (Engineering Employer 1)

To others, however, the absence of tasks and topics that were directly relevant to specific professions raised issues of validity, with an accounting graduate commenting: 'from a work perspective I don't understand why asking you to write about a general topic, they can gauge how well you are going to do at work'. (Accounting Graduate 1).

In the next section, we examine the perceptions of the participants concerning the relevance of each IELTS task to professional writing. The perceptions of the study participants of the relevance of each task to professional writing is now examined in detail.

4.3.1 Perceptions of the relevance of IELTS Task 1 to professional writing

For both engineers and accountants, describing a graph or chart in Task 1 seemed to resonate more with writing demands they recognised in their professions than the Task 2 essay. An engineering graduate commented: 'I think the first one [Task 1] is pretty relevant...we do have to compare and contrast a lot...we do have a lot of analysing to do...so I thought that was pretty relevant to engineers' (Engineering Graduate 4). An engineering employer observed that 'engineers are visual people usually' (Engineering Employer 1), while another engineering employer stated: 'I think the idea of explaining the graph is a good one, that sort of thing we get all the time' (Engineering Employer 2). An engineering professional body member agreed: 'the first one is very relevant' (Engineering Professional Body 3). An accounting graduate commented that 'the graphs are not a bad idea at all because you probably have to do that at work...especially in the accounting profession, you have to do graphs and you have to write analysis and things like that' (Accounting Graduate 2).

While the overall impression of most respondents was that graphs, charts and diagrams frequently figured in the workplace writing of engineers and accountants, key differences noted by interviewees were the decontextualised nature of the graph or chart in the test format, the purpose of presenting the information in writing in the test, and the degree of technicality required in similar writing for colleagues and clients. Responses from two accounting employers describe instances in their work when a graph or chart is described within the context of a larger report:

It might be if you were writing up some management report...for the executive to explain how the business is performing...and even in the annual report...there'll be in the commentary part...they do put in some tables and then they do put in some comments below it, to explain. (Accounting Employer 1)

So like for example I am doing a business case for a branch campus that we are trying to open up and there is a lot of analysis around what has happened in that country in terms of undergrad and postgrad students. And there is a lot of research that I receive, market research in table format and you have to be able to translate that into words in a business case.

So for example you can say, "Well in this particular country we are seeing growth in PhDs of x% based on this graph that I saw from this file. Therefore I am putting forward this type of growth in our business case". So there is that type of interpretation from a graph into words.
(Accounting Employer 4)

Respondents pointed to the need not only to describe but also to analyse and interpret the graph/chart in a workplace report, with two engineering employers commenting:

I think, you have a report of say technical results, and you need to be able to talk about it, so it's not just showing graphical results and saying "OK, that's the result" in the report. You need to be able to interpret the results. (Engineering Employer 3)

Well they wouldn't describe what happens in the table because people can see that...They would be talking about what is behind it. Like what is driving it, so if you had a table with say interest rates going up...for a particular product...and then you would say, "Interest rates were going up," but say your revenue was going down, well then you would be saying, "Interest rates were going up and revenue was going down". And you would be saying why that was happening because you would expect them probably to go in the same direction...It would be talking about what was behind it as opposed to describing what it is...The graph is meant to show you what is happening...It is no point then writing about what is happening. (Accounting Employer 6)

Another key difference that emerged was that the description and interpretation of a graph or chart would not occur in isolation; it would most often be found within the context of constructing an argument or a particular recommendation or course of action, often in a full report. The graph or chart would therefore most likely be referred to, rather than being described in detail. The decontextualised description of a graph or a chart on a topic that is not related to engineering or accounting, as required in IELTS Writing Task 1, may thus be of limited representativeness in terms of the workplace writing demands. An engineering employer believes that data must be 'translated' into 'something meaningful' in the context of decision-making:

Quantitative analysis particularly, or all things where there's data, you would make some measurements, and then you would be seeking to explain the consequences of a measurement or an aggregated set of measurements...And you would probably want to translate that from some set of engineering units or model units into...if we have this particular thing and we use it in this particular way, then the result will be good or bad or indifferent. Being able to take it from...we measured it and it was 6.2 and translating that into something that is meaningful in the space of somebody trying to make a decision. (Engineering Employer 5)

Furthermore, the graph or chart itself would in some cases have been the result of research and analysis, and thus would have been created by the engineer or accountant, who then includes it in a report. An accounting employer explains this process of creating graphs and charts, which then form part of the analysis of a situation:

So therefore to get the right data, to define the data, to extract it and profile it and then represent it and then once you have got the graph then to be able to analyse and interpret it. So this graph is going up and down or it might look pretty but you have got to analyse what it is saying and understand it then you are able to write...In our office I actually have to... get the data for the graph. (Accounting Employer 5)

Another point raised by respondents is that the description of a graph or chart is often done as part of an oral presentation in the context of a meeting and is thus also a spoken genre. This has implications for speaking tasks if tests developers seek to represent key aspects of spoken discourse in these professions. Respondents from both professions raised this point.

The graph part, which was the first task, it can be sometimes related [to work]. Because we have to analyse a graph and for example in the presentation, we have to support our ideas, so the best way is to mention it through graphs and comparison
(Engineering Graduate 4)

The interplay of spoken and written descriptions of a process is described by an accounting employer, who in effect becomes an intermediary between IT specialists and his own manager:

Part of my job is to go and speak to these IT guys and understand exactly what they are doing and understand the benefits because to be able to capitalise an asset you have to be able to show five years' worth of benefits, financial benefits. So I will go and speak to them and they will describe a very complex IT process to me and then I have to come back and be able to explain that same process almost, not word for word, or write it up in a report to my manager in a way that he can understand and he can make a decision. (Accounting Employer 4)

4.3.2 Perceptions of the relevance of IELTS Task 2 to professional writing

Study participants did not see the immediate relevance of the essay genre of Task 2 to professional writing. Several respondents commented on the lack of letter writing in the Academic module, with an accounting graduate suggesting 'they could give a scenario for a work situation, like you know even IT Helpdesk or something like that. Or like a legal document that you have to get from a government establishment or a query with ATO [Australian Tax Office] or something like that which is much more practical' (Accounting Graduate 2).

In comparison to Task 1, a member of the engineering professional body felt that Task 2 was ‘less directly applicable’, and explained that:

Some engineers would do it, some of the consultants will do a bit of that, in that, if you're the client you ask me to do some work, then I might find two solutions. I got two ways of solving your problem, and so I might want to present it in an argument style about the benefits of this versus pros and cons versus pros and cons. But that's not going to be the style of writing for most engineers. Most engineers I'm thinking, will have that style of: here's a bit of information, here's the graph, here's the calculation, our, the stress turn has to be 7 mega(something), this means that the beam needs to be made out of steel and you know, that sort of communication. It's more that analysis of some information.
(Engineering Professional Body 3)

However, when asked about the importance of persuasive writing and being able to argue a case in their professional contexts, most engineering and accounting employers agreed that this was an extremely important skill, as the following responses attest:

When we write accounting papers we have to research why we're going down a certain road, and have to explain both sides and why you pick one or the other. (Accounting Employer 1)

You need to be able to argue a case, so particularly later on, after the first few years, it becomes more important that you need to be able to direct a course of action, whereas in the first few years that's not at all asked of you. So, it doesn't really matter what the subject is in some ways, you need to be able to present the arguments in a logical and strong way.
(Engineering Employer 3)

Respondents noted that, rather than essays, longer written text types would more commonly be reports or emails on a specific topic, tailored to a specific audience and crafted in order to achieve a specific purpose. These reports would usually contain recommendations for a course of action.

[This is] typically done via email. It can be done during a report too...but often you've done your work, you've got results, and then you have a section called discussion, where you talk about the results and then you...can talk about recommendations, and why one recommendation is...preferred to another recommendation. (Engineering Employer 3)

As documented in Section 4.1.3, concise writing is highly valued in both professions. Professional reports can thus contain bullet points, lists and tables in order to convey information in the most efficient manner. This contrasts with the standard paragraph developed around a topic sentence that is typical in a Task 2 essay.

An engineering graduate describes his experience writing a report and the choices that she has, taking into account the reader.

There was a report I did which I was comparing technology, and you can present an argument saying: here is one against the other in a paragraph [or] you can...list, you can...do a table doing advantages and disadvantages which is more concise: some people like it, some people don't. Or you can just talk about it in a paragraph, it just depends on the writer and the person who's going to read it.
(Engineering Graduate 4)

An accounting graduate also commented on the potential disjunct between the formality of the writing required in an IELTS essay compared with the writing he engages in addressed to clients, which is generally via email.

IELTS requirements are maybe a little bit too... complex for client communication. We didn't really need to use those...complex sentences structures and big words. (Accounting Graduate 1)

4.3.3 Employer review of IELTS and student assignment writing samples

Accounting and engineering employers reviewed IELTS Writing samples and final year student assignments. After reading each piece of writing, they were asked to complete a brief questionnaire asking them to judge the suitability of the writer's proficiency for their workplace, identify criteria they drew on to make that judgement, and comment on whether they would be able to make employment decisions about writing ability based on the writing sample provided. This section reports first on the findings for the review of the IELTS Writing samples and then on the student assignments. Where there are differences between the accounting and engineering employers' views, these are highlighted. Table 1 (in Section 3.4.4) presents an overview of the IELTS Writing scripts used in this phase of the study.

The first questionnaire question asked employers to judge whether the writer of the sample has sufficient language to cope with the writing demands of the workplace.

Sixty per cent of the employers judged the writing proficiency in the Task 1 response on cinema attendance (IELTS score 5.5) to be sufficient for the workplace; however, there were large differences between the accounting and engineering employers. Only 40% of accountants thought the writing was strong enough for their workplace while 80% of engineering employers deemed the sample to be sufficient.

The other writing sample written in response to Task 1 (brick manufacturing; IELTS score 7) was judged by 40% of employers to be sufficient. Two employers noted that it depended on the professional role of the graduate so they were not able to make a decision. For this sample, no differences were identified between the two professions.

The two samples written in response to Task 2 were viewed less favourably by the employers. The text *Upbringing* (IELTS score 6.5) was only deemed sufficient for the workplace by 30% of the employers (20% accounting, 40% engineering) while the text *Tourism* (IELTS score 7) was seen as strong enough by only 20% of employers (with no differences between the professions). Overall, it seems that the employers viewed the scripts differently from the IELTS raters. The engineering employers were slightly more lenient when reviewing certain essays (but not consistently so). It is also possible that there was an effect for task type over writing level (discussed further below).

Employers were asked to state what features in the writing they used to guide their decisions. No major differences between the features of Task 1 and Task 2 responses were noted. Employers drew on a number of linguistic criteria, including grammatical accuracy, sentence structure, appropriateness of vocabulary, organisation (including how the argument was structured and paragraphing, formatting, and sub-headings), spelling and punctuation to make their decisions. They also mentioned criteria already noted during the interviews, such as the conciseness of the writing, whether evidence was provided for arguments or recommendations, the tone of the document (including whether inappropriate slang or emotive language was used), whether the question was answered precisely, and whether signposting was used to guide the reader through the text.

Employers also made judgements about the professional knowledge of the writer, in particular (but not limited to) when engineering employers reviewed the brick manufacturing task. Here they commented on whether the writer had understood the process, had any idea of brick manufacturing and whether they had inappropriately added information not represented in the diagram.

This section also provided an insight into why the engineering employers were occasionally found to be more lenient. A number shared the view of Engineering Employer 2, who wrote when reviewing the *Tourism* task (Task 2, IELTS score 7) that ‘some minor editing during the review process would lead to a document that could be “published”’. Several engineering employers suggested similar practical strategies to overcoming perceived problems in writing ability. Yet, an accounting employer (Accounting Employer 4) wrote in response to the same prompt that this script is ‘not at the level of professional writing standards in the workplace’.

Finally, employers were asked whether the sample they reviewed provided sufficient evidence of a potential employee’s writing ability. The employers mostly felt it did not. IELTS Task 1 was preferred over Task 2; 50% and 70% of employers, respectively, did not find the writing samples to provide enough information.

To summarise, when reviewing the IELTS Writing samples, the employers failed to agree on the level of performance suitable to enter the workplace, and they viewed the writing differently from the IELTS raters (as represented by the scores given). They based their decision-making on a range of linguistic criteria but also criticised the essays’ lack of features such as sub-headings, which would likely be penalised in the rating of an IELTS essay. Employers also criticised the lack of professional knowledge of the writers.

The employers also reviewed student assignments, i.e. writing samples possibly more relevant to their professional contexts. The results from this analysis are more difficult to evaluate and summarise. The engineering employers were each provided with a single writing sample relevant to their sub-discipline (where possible), while the accounting employers all reviewed the same two assignment samples.

It is important to note that the assignments were written by NESB students who had previously obtained IELTS scores high enough for entry to an Australian university. The most common IELTS Writing score for the writers providing the assignments was 6.5. One engineering assignment (*Individual design feasibility*) was written by a student whose most recent IELTS Writing score was 6; the accounting assignment providing tax advice to a client (*Tax advice*) was written by a student whose most recent IELTS Writing score was 7.5.

In their reviews of the assignments, the employers did not agree on whether the writer would have sufficient writing ability to participate successfully in the workplace. Half endorsed each assignment and the other half did not. A number of employers also qualified their answer. For example, one assignment which was meant to be written as if for a CEO was judged not strong enough for that audience, but sufficient if written for less senior colleagues.

Employers were asked to mention features of the student assignments which helped them make their decision. As was the case in their responses to the IELTS essays, the accounting and engineering employers generally commented on similar features. Repeated mention was made of language features, such as grammatical accuracy, as well as sentence structure and vocabulary used (e.g. the use of ‘phrases not common in Western business’, Engineering Employer 1). Employers also commented on several occasions on the conciseness of the writing (or the level of unnecessary repetition and ‘long-windedness’), as well as the structure and organisation of the texts. In the case of the tax advice assignment for accounting, employers commented that the answer was not broken down well enough for the client. Engineering-specific comments focused on the use of tables and charts in the text, and the lack of a contents page or page numbers. One employer commented that the writing in the assignments was ‘okay for everyday writing but not for important documents like this’.

When asked whether the writing sample supplied was sufficient to make decisions about the writer's ability to cope in the workplace, all engineering employers responded that the assignments were sufficient. In the case of the accounting employers, their opinion was less clear. Some criticised the tasks as being inauthentic and therefore not a suitable basis on which to make this judgement. The first task, the accounting report, was criticised because this type of writing would usually be done as an email in the workplace. Some employers also suggested that the second task would have been better designed as a direct response to a client email.

In sum, when reviewing the students' assignment samples, the employers did not agree on their sufficiency for the workplace. They based their decisions on linguistic criteria, as was the case with the IELTS samples, but were also able to comment on a wider range of aspects of writing more relevant to the professional setting, such as how an answer needs to be presented to a client and how reports need to be formatted and written for different audiences (e.g. a CEO). The employers mostly thought the student assignments did provide sufficient information to make decisions about the writer's ability to cope with the writing demands of the workplace, although this was not the case if the task set by the lecturer was deemed inauthentic.

5 DISCUSSION

This study has explored the transition from university study to workplace for accountants and engineers, focusing on the nature of writing practices in both university and professional contexts, and perceptions of how prepared graduates are for workplace writing. Because the study was motivated by the use of the IELTS Writing test to determine standards indicating sufficient language proficiency for skilled occupations in Australia, it also investigated the relationship between the IELTS Writing tasks and the characteristics of professional written genres. Each of these areas (workplace writing practices, preparedness of graduates and relationship of workplace genres to IELTS) is discussed in turn.

In the exploration of the writing of new graduates in engineering and accountancy workplaces (i.e. the first research question), several patterns emerged. Stakeholders from both professions recognised emails and reports as being highly salient workplace genres. These genre categories were extremely diverse within themselves, however, ranging from low-stakes to high-stakes documents – for example, a low-stakes informal email to a sub-contractor about work arrangements compared with a formal email to multiple clients. In general, informants distinguished between technical writing, which comprises extended numerical content or codes and specialised jargon, and content that is explanatory, descriptive or interpretive. Both kinds of content may co-occur in documents, but the latter frequently involves linguistic consideration of a non-specialist audience, in the explanation of a business trend for a client, for example.

Most workplace writing appeared to involve teamwork and some degree of supervision, for example, in the form of feedback and guidance or a sign-off by a senior professional. The data were particularly revealing in terms of an apprenticeship model of workplace learning, where senior colleagues took responsibility for training new graduates in workplace genres. Various approaches were described by participants, ranging from direct editing of documents with no further interaction to highly collaborative face-to-face writing processes. There was widespread understanding that new graduates were novices in work-related written genres, particularly those for a client audience, and that a certain amount of professional scaffolding would be required. In addition to this guidance from colleagues, workplace genres were scaffolded through extensive use of templates, either in the form of in-house documents or commercially-available software.

The transition from university to professional writing has been theorised and researched in terms of situated workplace communities of practice (Lave & Wenger, 1991), with context conceptualised as a “productive mediational space”, where participants are required to “apply their knowledge of genre systems and rhetorical strategy to construct and use a new written form” (Wegner, 2004, p.412). The notion of apprenticeship, in terms of a more expert ‘other’ inducting a ‘novice’ into the valued forms of communication for a specific workplace context was explored by Freedman and Adam (1996), who concluded that the most salient differences between university and workplace writing are “the nature of the interactive co-participation and collaboration between mentor and learner, the improvisatory nature of the task, the task's authenticity and ecological validity within a larger context...and the varied and shifting roles played by mentor and learner” (pp. 409–410). In a longitudinal study of a group of 10 novice engineers, Artemeva (2008), found that the key aspects influencing their acquisition of workplace genre knowledge included “understanding the improvisational qualities of genre, their personal goals, and their ability to...enact genres in ways that are recognisable by the community of practice” (p179).

Learning is thus contextually contingent and the demands of successfully making the transition are considerable: Brent (2011, p. 416) refers to the “shock of boundary crossing” that is inherent in the transition from student to employee and emphasises the need for learning transfer.

Generally speaking, the degree of independence granted to new graduates in these tasks was commensurate with the level of risk associated with the written product. For instance, senior accountants vet correspondence with external clients for the appropriateness of tone and content, and senior engineers place great emphasis on the precision, accuracy and accountability of reports for purposes of minimising litigation risk. As described in Table 2, the interview data revealed features and valued qualities of the key genres of email and report writing.

This information might be usefully considered as a basis for future, more targeted investigation of the key genres and characteristics for the purposes of constructing more workplace-specific assessments.

The second research question focused on the level of preparedness of graduates entering the workforce. While the student participants were not sure what writing they would be expected to complete, the participants in the workforce (both recent graduates and employers/supervisors) agreed that graduates starting their first job generally were not sufficiently prepared. The reasons for this became clear when the writing domains of the university and the workforce were compared.

University students, while well prepared for the technical demands of their disciplines, do not seem to encounter many of the different genres used in the workplace while studying. Participants seemed to have different views on whether university studies should be expected to prepare students for a wider variety of text types but, apart from reports and some emailing, students were generally exposed to different types of writing tasks from those used in the industry. Not only were the genres modelled differently, but the evaluation criteria also seemed to differ substantially. University lecturers generally placed more emphasis on the content when evaluating student writing. Language and writing criteria were often not included in their assessment criteria or made up only a small proportion of the overall assessment. While content of written documents is, of course, also important in the workforce, employers put much emphasis on concise writing which is appropriate to the audience in tone and content (see also Moore et al., 2015).

In fact, the appropriateness of the written text to its audience is one of the most important criteria listed by participants from the workplace, while the audience is given much less attention at university, where the lecturer is usually the only reader or the audience is unspecified. This is therefore something that could be modelled in assignment tasks in the final years of study.

It seems that university lecturers focus mostly on teaching the content of their respective disciplines and less on other skills and knowledge needed to be effective in the workforce. Much less emphasis is given to the types of skills listed in the Core Skills for Work Framework (Department of Industry, 2013) and it seems that insufficient emphasis is being placed at university on the development of workplace-specific writing skills (see e.g. De Lange, Jackling, & Gut, 2006; Matthews, Jackson, & Brown, 1990; Sageev & Romanowski, 2001; Zaid & Abraham, 1994). This may be due to the increased time pressure, as many courses are being squeezed into shorter and shorter timeframes (see, for example, de Lange et al., 2006) when competing for the lucrative international student market.

It may also be that lecturers do not feel it is their role to give students workplace skills beyond the technical skills of their subject. As one lecturer pointed out, it is

very difficult to adequately prepare graduates for the workforce considering the diversity of workplaces they might enter following completion of their studies. In fact, there was considerable evidence in the data that workplaces and employers have systems in place to train new employees in writing on the job, through graduate rotation programs or one-to-one mentoring (as described in Section 4.2). It seems that the jury is still out on whether more needs to be done at universities or whether workplaces are willing to accept that new graduates will be novices (or near-novices) in areas such as professional writing and that the workplace-specific training is handled on the job.

Nevertheless, the data collected for this study, as well as a number of media reports and other studies (e.g. Healy & Trounson, 2010; Rowbotham, 2011; Birrell, 2006), show that graduates are often under-prepared for the writing demands of the workplace. Employers explained that, while this may not always be a safety risk, it certainly has financial implications, as well as implications for the career trajectories of the staff members in question. The industries selected for this study are both currently in an employment slowdown – particularly engineering (personal communications from participants) – which means that weaknesses graduates may have in, for example, written communication can mean the difference between gaining paid employment or not.

The relevance of IELTS Writing tasks to the writing demands of the workplace (the third research focus) is an important question because occupational language testing has the potential to have positive consequences for preparation for workplace communication (Macqueen, Pill, Elder, & Knoch, under review). As revealed in the interview analysis, it is clear that the two IELTS tasks are perceived to be to some extent relevant to workplace writing for engineers and accountants. In particular, the description of a graph, chart or diagram in Task 1 is acknowledged by graduates, employers and members of professional bodies in both professions as reflecting certain aspects of the professional writing domain. The presentation of an argument or discussion, as required in Task 2, may be required of some new graduates, depending on the workplace context. This would, however, usually be in the form of an email or report, leading to recommendations, rather than a stand-alone argument or discussion in a relatively short essay.

Participants viewed both tasks to be over-representing certain aspects of writing, while under-representing or omitting other aspects fundamental to the workplace writing domain, including creating and interpreting graphs, charts and diagrams, and making recommendations based on this analysis in a report format (see also Moore et al., 2015).

Concerns were also expressed regarding the general topics and lack of a relevant audience, and thus the absence of the need to tailor written communication to a particular colleague or client, in terms of tone,

assumed shared knowledge and the level of technical detail required to communicate effectively. The letter-writing task in the IELTS General Training module may, in fact, tap into some aspects of communicating with clients that are absent from Tasks 1 and 2 in the Academic module (see also Moore et al., 2015). The more interactive nature of email writing, which is commonly required of new graduates in both accounting and engineering contexts, does not appear to be fully reflected in the current Academic Writing tasks. Some participants who had presumably done both the General Training module (for migration purposes) and the Academic module (for entry to university) commented that the General Training Writing Task 1 seemed in certain respects to be more relevant to workplace writing:

I think it depends on what kind of job you have. Normally General Training might be a bit more useful because you have to in General Training IELTS, sometimes you have to write say a complaint letter or answer to the complaint letter or write a thank you note or something like that.
(Accounting Graduate 4)

Writing for new graduates in the two professions is co-constructed, in that they often write in teams, and in the first few years of employment, their writing is usually subject to quite rigorous feedback and review. Their writing, and the subsequent review, is usually carried out on a computer. Therefore a timed, handwritten writing test may not elicit or encompass key features of workplace writing, which is interactive, co-constructed in nature and crafted for a particular reader. Although timely completion of tasks was valued in the workplace, the speeded nature of test writing may over-emphasise this skill, as one accounting graduate commented: "...you don't really write or read under such time pressure in the job situation" (Accounting Graduate 2).

A finding that has potential to inform test task design is that the description and interpretation of graphs occurs in both spoken and written modes. Furthermore, graphs and charts are often created by engineers and accountants after accessing and selecting relevant information. These graphs and charts then form part of either an oral presentation or a written report, often resulting in recommendations. This workplace configuration of skills opens possibilities for integrated writing-speaking tasks that could elicit a more representative sample of professional domains.

When reviewing IELTS Writing samples, employers did not appear to view the essays in the same way as the IELTS raters (e.g. an essay awarded 5.5 was viewed as superior to an essay with a score of 7). The accountants were less likely to endorse a piece of writing to be of sufficient quality for the workplace than the engineers. It is conceivable that these differences are due to the fact that engineers and accountants are not well-placed to make decisions about language proficiency. However, employers may well be the experts to make decisions about the writing quality needed in their respective professions.

The results described can be partly explained by examining the criteria employers reported using when making these decisions. Employers looked for conciseness in the writing, for an appropriate tone for the audience, and for organisational features which would probably be penalised in the writing of IELTS candidates, such as frequent sub-headings and bullet-points. So, while the employers explicitly commented on the differences between the two IELTS Writing tasks and workplace writing, an examination of the differences in the criteria applied shows a further disconnect between the IELTS test and more profession-oriented evaluations of writing.

This study is not the first to discover such differences. Similar studies conducted in other professional contexts have consistently arrived at similar findings, showing that, while professionals in various professions may view linguistic criteria as important, they also consider a variety of other features when reviewing context-specific samples of performance. Jacoby (1998) was the first to coin the term 'indigenous assessment criteria' when referring to the assessment criteria employed by the 'insiders' of a specific discipline, and studies have since shown that these criteria can focus on a range of different aspects of communication. For example, in the context of health professional-patient consultations, a recent study (Elder et al., 2013; Pill, 2013) has shown that health professionals also evaluate the professional manner of practitioners with patients by their ability to use appropriate questioning techniques to elicit information from patients and guide them through the consultation. Other studies have shown that professionals from a range of disciplines also evaluated colleagues' professional competence, rather than just language proficiency (see e.g. Knoch, 2012; Ryan, 2007), which was also apparent in our study to some degree; some even focused on their colleagues' appearance (Douglas & Myers, 2000).

It is clear, therefore, that indigenous assessment criteria may not overlap well with the typical linguistic criteria used in many language assessments and, therefore, discrepancies in the scoring of test performances are to be expected.

The present study also found that the employers generally agreed that the IELTS essays individually (in particular Task 2) do not provide an adequate sample of writing to make decisions about workplace readiness for writing. The samples of writing were deemed as not sufficiently workplace-relevant. This is not surprising considering that the IELTS test was designed for a different purpose, i.e. to show readiness for first year university study in English-medium settings.

Interestingly, the employers did not agree with each other on the writing ability level of the student assignments they reviewed. Two possible reasons are suggested for this. First of all, the employer participants in our study were drawn from a range of workplaces and contexts and, as the interviews showed, the writing demands on and expectations of new graduates were very diverse.

Some graduates are not required to do much writing beyond emails with colleagues, and others who do need to contribute to reports and other documents are closely monitored by more experienced colleagues. Other workplaces have graduate rotation programs or other systematic practices to help new staff members to become acculturated. These measures show that employers are well aware of the fact that graduates will need support structures to learn about the workplace writing practices. The second reason may be that employers find it hard to rate the quality of writing of NESB writers.

The data also showed that the engineering employer participants in our study were more lenient in their judgements of writing quality than the accountants. This is reflected in the higher entry standards in terms of English proficiency (as measured using IELTS) set by the professional accounting associations in comparison to the professional body for engineers in Australia. In the data, engineers were more likely to suggest strategies that could be used within a workplace to shape the writing of a novice writer, by having someone more experienced edit a text before it is sent to clients. This was not found in the accounting data, where most employers required high standards for writing necessary to succeed in the workplace.

6 CONCLUSION

The preceding discussion has a number of implications for the use of IELTS scores at the interface between study and work for accounting and engineering. This exploration of workplace writing genres and practices reveals several differences between the nature of writing genres, valued qualities and writing processes in the workplace and those of the IELTS writing test. These include:

- the salience of report writing and email correspondence in the workplace
- the nature of workplace writing processes (i.e. team-oriented, electronic, based on templates, iterative)
- modes (integrated speaking and writing)
- register (e.g. technical, non-technical)
- text type (e.g. explanatory, interpretative)
- the criteria for expert texts, (e.g. conciseness, brevity, terminological precision, appropriateness of and facility with register).

That said, informants were able to recognise some congruence with workplace tasks in IELTS Writing Task 1, which requires description and some level of interpretation of visual information. Although concern was expressed that graduates were not being adequately prepared for workplace writing practices and standards at university, the analysis also shed light on the extent of on-the-job learning and enculturation which novice writers undergo as a matter of course. An implication of this for workplace language testing is that newcomers to a workplace must be ready to develop workplace-specific writing skills through socialisation processes, rather than demonstrate prior mastery of them.

A further issue raised in this study is the discrepancy between the evaluations of industry professionals and IELTS raters. It is perhaps the fact that the test tasks and topics are not related to those of their professions that makes decisions about language proficiency problematic for professionals. Thus, a greater alignment between test tasks and workplace genres might enable more meaningful standard setting. As mentioned earlier, the current IELTS scores set for skilled occupation migration visas in Australia are more related to levels of graduate supply, cohort score distribution and other political considerations than to any focused assessment (e.g., through formal standard setting exercises) of an appropriate level of proficiency for industry participation. However, the fact that the participants did not agree in the current study would be a threat to the validity of a standard-setting exercise. The disagreement we have reported is likely a reflection of the current study method, which sought to explore employer perceptions, rather than set standards.

This small-scale, exploratory study can, therefore, only highlight the need for a future formal standard-setting procedure in which a larger number of employer participants would convene as a group and discuss their respective values and criteria before reviewing a number of writing samples. Related to this, a further limitation of this study is that the employer participants judged the writing samples on an equal basis, without considering the test conditions, i.e. that the IELTS essays were produced in a very short time frame and are therefore less likely to be as polished as university assignments written over a considerably longer time period.

Employer disagreement when judging the writing samples can also be seen as an indication that they are not the best judges of language proficiency. This can be extended to their judgements of the adequacy of sampling for the purpose of making inferences (i.e. the test tasks). We acknowledge that employers in the study were mostly interested in profession-specific literacies while the focus of IELTS is more on language ability (although these are overlapping constructs). It is also important to note that the study showed that native speakers of English also take some time getting accustomed to workplace-specific literacies, and therefore only testing students/ new graduates from an English-as-an-additional-language background would raise fairness issues. That said, for fairness reasons also, it seems advisable to consider aligning the test instrument more closely to the target domain. It may well be that judgements about proficiency level and task appropriateness are best carried out in collaboration between domain and language experts.

Drawing on Fulcher and Davidson's notion of effect-driven testing (Fulcher & Davidson, 2007), this study provides some basis for the adaptation or development of test tasks and criteria which are purpose-built for the world of work (see also Moore et al., 2015) and which may theoretically produce washback effects that are beneficial to both the novice writers and the professions and workplaces they seek to join.

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APPENDIX A: QUESTIONNAIRE FOR NEW GRADUATES

Thank you for participating in our study. To provide us with some background data and to save time in the interview, please complete this questionnaire.

1. What work are you currently doing? (e.g. job title, type/name of employer, location, full- or part-time, casual/contract/permanent employment status)
 in Engineering _____
 in Accounting _____
2. What is your highest-level completed qualification? (Choose one.)
 Undergraduate degree
Course name: _____
University: _____
 Postgraduate degree
Course name: _____
University: _____
3. What is your first language? _____
4. How long have you studied English? _____ years
5. How long have you been in Australia? _____ years
6. What language did you mainly use in class for your secondary education? _____
7. When was your most recent IELTS test? _____ (month/year)
8. Which IELTS format did you take? Academic General Training
9. What were your scores? Overall: _____
Reading: _____ Listening: _____ Speaking: _____ Writing: _____
10. How many times have you taken the IELTS test? _____
11. Which of the following best describes your preparation for the IELTS test (tick/bold all that apply):
No special preparation
Personal study using sample materials from IELTS site
Personal study using IELTS practice materials
IELTS preparation course/s (Course length: _____)
General English course/s
Other: _____
12. Why did you take the IELTS test? (e.g. to enter university, to apply for permanent residency, to apply for a job)

13. How long have you been working in your current job? _____
14. How long is it since you graduated from university? _____

APPENDIX B: INTERVIEW QUESTIONS FOR PROFESSIONAL BODIES

Thank you for taking the time to participate in this study. The purpose of this study is to investigate the workforce writing demands on new (engineering/accounting) graduates and how well prepared new graduates are for these demands. We are interested in this issue because we are looking at the use of IELTS scores as a language requirement for professional registration.

Questions include the following themes:

- The IELTS score requirement set by the board for professional membership – why is there a language requirement, why IELTS (Academic or General Training module) was chosen for this purpose, how the level was set and why?
- What types of writing (engineering/accounting) graduates are expected to do and what are the more challenging aspects for graduates whose second language is not English (and who is the audience for this writing)
- How prepared new graduates are for the writing demands of the workforce
- The board representative's view of university writing (topics, genres, quantity, etc.) in relation to workforce writing and IELTS writing
- Whether the board representative has any sense from the industry that there are problems with new EAL graduates, particularly in writing
- Whether the board representative feels that universities are focusing enough on writing
- What typical writing tasks for (recently graduated) engineers are and whether these are practised in university courses (e.g., emails)
- Views on whether the university system prepares EAL students for practice
- Board representatives' knowledge of any discussion in consultations or government inquiries (etc.) of the issues of English language proficiency in the profession

Thank you for your time.

APPENDIX C: INTERVIEW QUESTIONS FOR FINAL YEAR STUDENTS

Thank you for taking the time to participate in this study. The purpose of this study is to investigate the workforce writing demands on new (engineering/accounting) graduates and how well prepared new graduates are for these demands. We are interested in this issue because we are looking at the use of IELTS scores as a language requirement for professional registration.

Questions will include the following themes:

- How many times have you taken IELTS, for what purpose, what scores?
- Did you prepare for IELTS? How? What did you pay attention to in your writing preparation?
- How well prepared do you think you were for the writing demands of your course when you first started?
- Do you think the kind of writing you did for the IELTS test was related to the kind of writing you are doing for your course? How is it similar/different?
- What kinds of writing did you do during your course?
 - How long were the writing tasks?
 - Were they done as individual or group writing tasks?
 - Did lecturers give you model for writing task, e.g. real reports from industry?
 - Was there a process of peer feedback/editing?
 - Did tutors/lecturers look at drafts of assignments?
 - How were they assessed?
 - Was language part of the criteria? Did you ever get feedback on your language, organisation etc?
 - Did the writing demands change over the course of your study?
- Do you think this is the kind of writing you will need to do once you are in the workforce?
- What do you think is going to be the most challenging writing you will need to do in the workforce?
- Do you think your writing has improved throughout your course?
- Are you planning to apply for registration with the professional board? Do you have the required IELTS score for board registration? If not, do you think you will get the required score?
- Do companies ask for IELTS scores?
- What type of writing will you have to do when you enter the workforce?
- What sort of job would you like to get?
- Will there be writing for entry level graduates in your kind of job?

Thank you for your time.

APPENDIX D: INTERVIEW QUESTIONS FOR LECTURERS

Thank you for taking the time to participate in this study. The purpose of this study is to investigate the workforce writing demands on new (engineering/accounting) graduates and how well prepared new graduates are for these demands. We are interested in this issue because we are looking at the use of IELTS scores as a language requirement for professional registration.

Questions will cover the following themes:

- How long have you been lecturing in engineering/accounting?
- Background to profession – worked as engineer/accountant in workforce or always academic?
- What types of writing do (engineering/accounting) graduate students do as part of their course(s)?
 - Are these usually written for clients or colleagues or others?
- What written tasks are they expected to do in their final year?
- Are these written genres related to the types of writing employers expect (engineers/accountants) to do (e.g. do assignments simulate workplace genres and contexts)?
- Does your program specifically teach/focus on the type of writing required of professional accountants/engineers? If so, do you provide ‘real’ examples?
 - Are there any typical writing tasks in the workplace that students don’t do at uni?
- Are there specific criteria related to the authentic demands of professional writing?
- Do you comment specifically on students’ language use when you mark their assignments?
- Do you think that a professional (in the field of engineering/accounting) would have a different perspective on the quality and effectiveness of the writing?
- What are the more challenging aspects of writing for students whose first language is not English?
- Group writing versus individual writing at university? Group writing in workforce?
- Is there any specific focus on language use/development in the course and is it geared towards the workplace?
- Is written language an explicit skill in the graduate attributes?
- Is the course entrance IELTS (or other language test) score requirement adequate in terms of how students might develop linguistically throughout the course and be ready for the workforce?
- Is it reasonable to use IELTS scores for board registration?
- What do the professional boards require?
- Do you get any feedback from the workforce about the quality of the writing of graduates? Any references?

Thank you for your time.

APPENDIX E: INTERVIEW QUESTIONS FOR NEW GRADUATES IN THE WORKFORCE

Thank you for taking the time to participate in this study. The purpose of this study is to investigate the workforce writing demands on new (engineering/accounting) graduates and how well prepared new graduates are for these demands. We are interested in this issue because we are looking at the use of IELTS scores as a language requirement for professional registration.

Questions will include the following themes:

- 1) IELTS:
 - When did you take IELTS, for what purpose and what were your scores?
- 2) University
 - What kind of writing did you do at university? (genre, topics, quantity, format, individual/group work, timed/untimed, length, audience)
 - Do you think your writing improved throughout your course to a sufficient standard for work?
 - Did you get feedback from your lecturers? If so, on what?
 - Were you sufficiently prepared for that kind of writing?
 - Do you think IELTS was helpful for the kind of writing you had to do at university?
- 3) Work
 - What kinds of writing do you do at work? Who is the audience of the texts: colleagues or clients?
 - How much writing do you do for work?
 - What is the most challenging aspect of the writing you do for work?
 - Have you had formal or informal feedback from colleagues or supervisors regarding the quality and effectiveness/appropriacy of your writing?
 - Do you think your university course prepared you for this kind of writing?
 - If not, what should have been done at uni?
 - Do you ask for help or get any support with your writing at work (e.g. someone proofreads a report before it goes to a client)?
 - Are you registered with the (engineering/accounting) board? Did you take IELTS in order to do this?
 - What were your IELTS scores?
 - Do you think the kind of writing you did for the IELTS test is related to the kind of writing you are doing for work? How is it similar/different?
 - Thinking about your standard of writing at the beginning of your university course and your writing now, do you think your experiences of IELTS accurately reflected your development?

Thank you for your time.

APPENDIX F: INTERVIEW QUESTIONS FOR EMPLOYERS OF NEW GRADUATES

Thank you for taking the time to participate in this study. The purpose of this study is to investigate the workforce writing demands on new (engineering/accounting) graduates and how well prepared new graduates are for these demands. We are interested in this issue because we are looking at the use of IELTS scores as a language requirement for professional registration.

Questions will cover the following themes:

- How long have you been at [company name]?
- Are you involved in the recruitment and supervision of new graduates?
- How do you choose new graduates?
- How are they supervised?
- What kinds/quantities of writing are new graduates expected to do at work?
 - Is this usually done in teams?
 - Who 'teaches' how to do the writing?
 - Is there a review process?
 - Writing from templates?
 - What audiences do they need to write for?
 - How are new graduates supported so that they learn how to write for their profession?
Or is there no time for this?
- What are the main challenges of professional writing for new graduates whose first language is not English?
- Do you employ many graduates from non-English speaking backgrounds? Why/why not?
- Do you think university courses are preparing them for these challenges?
 - If not, what do they not know?
 - Are there certain task types they don't know how to write?
- What kind of writing do you think they should do at university? (genre, topics, quantity, format, individual/group work, timed/untimed, length)
- IELTS:
 - Do you know it is used and for what purpose?
 - Have you seen the writing tasks? Are they relevant?

Thank you for your time.