Investigating PhD thesis examination reports

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Abstract

There has been a slow but steady accretion of findings on doctoral assessment and examination processes over the past decade and a half. The study of Australian PhD examination reported here draws on the written reports on 301 theses across all discipline areas. Text categories identified in the reports are linked to other data including the recommendation examiners give the thesis and the final report of the committee. The assessment discourse of examiners is explored in depth with reference to high and low quality theses. The questions addressed are: (1) What qualities, attributes and characteristics of the thesis are examiners emphasizing in their reports? (2) What form does their evaluative comment take? (3) What can the reports indicate about the relative strengths and weaknesses of a thesis and the standards examiners apply in determining a recommendation? and (4) what areas of report content and types of comment most clearly differentiate between the high and low quality theses? While it was evident in the reports that examiners weigh and balance many features of the thesis against their expectations to arrive at a recommendation, there were three general criteria that distinguished each of high quality low quality theses.

Introduction

There is much about the doctoral degree, especially the full research doctorate – the PhD – that sets it apart. The PhD represents ‘a joint product, a doctor and a doctorate’ (O’Brien, 1995, p.11). The award of the degree confers on the individual an internationally recognised public title that acknowledges their elite status within the academy - a status grounded in the ‘contribution’ of the written thesis and (until quite recently) the expectation of a lifetime commitment to research and/or university teaching. Within the Academy the supervision and assessment of doctoral students is regarded as both a ‘duty’ and a privilege (Mullins & Kiley, 2002). But regardless of the unique importance of the degree there is a paucity of information about the educational processes involved.

The learning objectives for doctoral study are not articulated in conventional ways, which means that the nature of learning and the learning processes that take place at doctoral level are something of a mystery. Confusion about what constitutes appropriate research at the doctoral level, and the lack of benchmarks for doctoral outcomes, including standards for the thesis and its assessment, have been identified as problems within the academic community (Noble, 1994, 32-33, 39; Morley, Leonard & David, 2002; Shaw & Green, 2002; Powell & Green, 2003; Lawson, Marsh & Tansley, 2003; Tinkler &

Jackson, 2004). Many thousands of theses are examined annually, and while it is clear that examiners are applying criteria and standards of some kind, it remains to be seen if they are using some more consistently than others, and whether the criteria and standards vary across disciplines, institutions and nations. Mullins & Kiley (2002) noted that examiners appeared to use their own criteria, and were confident in the distinctions they made between poor, acceptable and outstanding theses (see also Winter Griffiths & Green, 2000). However, there is also evidence that some examiners might not be so sure. In a recent study by Denicolo (2003), a group of 62 UK examiners in the field of Education agreed that while the thesis had the highest priority as a source of evidence for 'quality', there was 'low' consensus about the criteria for assessment (p.89), and a 'high' level of 'insecurity about their knowledge of general standards' (p.90). In their book on doctoral examination in the UK, Tinkler and Jackson (2004) draw attention to the 'broad range of standards embraced by the award of Ph.D.' (p. 119). If PhD theses are to be graded effectively it will be necessary to have a much better informed understanding of examiner decisions in relation to their expectations.

In Australia, as in many countries, the completed research doctorate is presented in written form as a thesis (or dissertation). Australian universities typically send the thesis to either two or three independent, external examiners who each write a report and make a recommendation on the thesis. Two Australian studies have shown that approximately 50 per cent of examiners are selected from institutions outside Australia (Pitkethly & Prosser, 1995; Bourke, Hattie & Anderson, 2004). Unlike some countries, the thesis is the primary and, in most cases, the only evidence of the candidate's learning and skills development. There is usually no oral examination.

Given that the thesis is the end product of a long process, how do examiners use the evidence, what interpretative frameworks do they apply and are these evident in the reports? This particular paper draws on the 'core' text analysis of 803 examiner reports on 301 theses from three established universities that offer doctoral programs across most major disciplines. Two of these universities use three external examiners and the other uses two examiners. In the relatively few cases where the thesis was returned to the candidate for revision and re-submission for further examination, the examiner reports for only the initial examination have been used in this paper.

The main focus of this paper is the nature and prevalence of specific categories of comment in examiner reports and in what ways these flag the use of specific assessment criteria and standards.

The questions that will be addressed are:

- What qualities, attributes and characteristics of the thesis are examiners emphasizing in their reports?
- What form does their evaluative comment take?
- What can the reports indicate about the relative strengths and weaknesses of a thesis and the standards examiners apply in determining a recommendation?
- What areas of report content and types of comment most clearly differentiate between high and low quality theses?

While a significant minority of students do not complete their doctoral candidature, it is rare for a candidate to fail the thesis examination outright. Does this mean that there is a winnowing out of candidates and that those who reach examination are those who meet the criteria? Is the ability to persist in itself a criterion for success? The culture of thesis examination is such that students have the opportunity to correct and revise the work after the examiner's comments have been considered. Most who are asked to revise and resubmit the work do so, resulting in a high pass rate. There is evidence that recognition of the commitment and effort involved in completing a thesis has an impact on the decisions that examiners make. In their study involving interviews with experienced Australian examiners, Mullins & Kiley (2002) detected that examiners went into the process anticipating that students would pass. Such an expectation probably results, in part, from examiner experience as a PhD supervisor – most examiners would know that it is uncommon for a thesis to be submitted before the supervisor considers it ready for examination. Examiners approach the task of examining in a positive light (Johnston, 1997; Tinkler & Jackson, 2001; Mullins & Kiley, 2002) but demonstrate concern, disappointment, frustration and sometimes even anger in their reports if a thesis is submitted that does not meet their baseline expectations (Holbrook et al., 2004a).

A small number of Australian studies have subjected PhD examiner reports to content analysis (Nightingale, 1984; Pitkethly & Prosser, 1995; Johnston, 1997). Hansford & Maxwell (1993) focused in a similar vein on Masters level thesis examination. Hansford and Maxwell (1993) and Johnston (1997) drew attention to a possible lack of consistency in examination standards (that is, between different examiner recommendations and comments on the same thesis) and between an individual examiner's recommendation and their specific comments. Hansford and Maxwell (1993) and Johnston (1997) identified the prevalence of certain types of comment and emphasis in examiner reports, including a disproportionate amount of comment on 'presentation'. Pitkethly and Prosser (1995), in a phenomenographical study within a single institution, noted little difference between the frequency of various types of comment by Australian and international examiners.

An overview of the approach taken in the present study is presented next, followed by an overview of measures of the qualities, attributes and characteristics of theses that examiners noted in the reports analysed. Subsequently the text codes related to examiner recommendations for high and low quality theses are considered in some detail.

Approach

This paper arises from a national project in Australia investigating doctoral examination through the use of examiner reports and candidate information. The research questions guiding the larger project are grouped with an emphasis on examination process and outcome, but also extend to what we can learn from process and outcome about the skills and knowledge required at PhD level. The methodology, incorporating a mixed methods design, has been presented in full elsewhere (Holbrook & Bourke, 2004). The complete data set will comprise the examiner reports, examiner and institutional recommendations

and the doctoral candidate enrolment and supervision history on record for 100 of the most recent doctoral completions in eight universities. The data for this paper draws on three institutions combined and the candidates represent all disciplines or fields of study.

The most substantial source of data is the examiner reports, which range from one line to about 27 pages in length, and average between two and three pages in a standardised format. The content of the reports is coded into categories and entered into *QSR N6* software. The coding unit used was a standardised line of text. Multiple coding was possible and was, in fact, the norm – there was an average of about 2.5 codes per line. In the core phase the analyses are based on the proportions of total text units coded at categories, as well as instances of code occurrence and text intersection. There was an extended process of trialling the categories, the analyses and coder consistency. Detailed coding notes were generated. The core coding categories were developed with the intent of capturing all the characteristics and content of the reports.

The core analyses are informed by and contribute, in turn, to ‘extended’ analyses. The different strands of data and analysis enable the researchers to integrate and validate findings and systematically and creatively explore new directions and emerging theories. The core coding categories are built on a hierarchical structure of five parent coding categories (nodes). There are sub-categories for each parent or primary category. The act of coding occurs at the sub-category level. Each coding category has a description as well as a numeric designation and these in turn represent the levels of coding (see appendix).

The primary and overarching coding categories are:

1. Report organisation

Examiners can approach report writing in many and varied ways. This category focuses not on text content of the report, but how the examiner organizes and structures their report, including any impact of institutional instructions.

2. Examiner and process

Examiners may make comments about what they know or anticipate about examination and standards. They may comment on what they believe the candidate’s institution expects, and they may talk about themselves – e.g. the extent of their expertise. Such comments capture their approach to examination, the interpretation of their role and their expectations. They may discuss the expectations or ‘state of play’ within the discipline or field, and its methods. They may acknowledge regional and institutional differences and individuals, including the supervisor. All such areas of comment are captured under this primary category.

3. Assessable areas covered

This category captures all comment about the possible outcomes, subject matter and presentation of the thesis under examination – the substantive elements of the thesis and the project at its heart. The topics that are typically addressed include scope and significance, the literature review, the methods used and the substance of the findings (including interpretation and analysis of the data), also the presentation and

communicative competence of the candidate. There are no absolute surprises in the areas identified here, and they might be found in any guide to writing a thesis. They have also been identified under similar headings in other research into report content (Hansford & Maxwell, 1993; Johnston, 1997).

4. Dialogic elements

There are specific features of examiner discourse that reflect on the nature of academic communication. In particular this category identifies the notion of ‘active’ dialogue – engagement with, and consciousness of, communicating personally with the reader(s). This category concentrates on how examiners convey their response, once again in broad ways at this core level – such as use of the first person, for example, the depth and type of engagement with the thesis, and the directness of their approach to the reader.

5. Evaluative elements

This category captures all comment that contains evaluation and judgement, including different types of instructive comment as well as text identifying positive and negative judgements about various aspects of the thesis, or the thesis as a whole, and the candidate’s capacity to conduct research. Evaluative comment by examiners can be positive, negative, carefully neutral, or occasionally written in such a way that it is not possible to ascertain the tone. It can also serve a range of purposes. These can be summation, instruction or a personalised response such as, “this thesis was a joy to read”. Evaluative elements reported in this study comprise summative comment, formative instruction, other instructive comment such as prescription and instructive commentary, and ‘other’ judgement.

Qualities, attributes and characteristics of theses noted by examiners

Two approaches are used to get a sense of the types of comments examiners make and what they privilege in their reports. First the **occurrence of each of the categories** of comment, that is the percentage of examiner reports that use each sub-category at least once, is considered. Secondly, the **mean proportion of text** for each sub-category across all reports indicates the relative amount of text and therefore the emphasis given to each category. Utilizing 803 examiner reports obtained from three Australian universities, Table 1 shows both the occurrence and mean proportions of comment for each of the coding categories. As mentioned above, for any given report the code proportions may add up to more than 100 per cent because text units usually comprise more than one layer of information. Most coding overlap occurs between primary categories, and only rarely within them.

The following discussion explores examiner references to the nature of the examination task and doctoral process, the substance of the thesis and its dissemination, as well as comment relating to examiner judgement and evaluation.

Examiner and process

The type of comment here provides reference to the nature of the examination task and doctoral process. On average six per cent of a report tells us something about the personal

and professional context of the examiner and six per cent of the report refers to the criteria the examiners are using or anticipate to be relevant. Such comments occur in 56 and 66 per cent of reports respectively. Only very occasionally does an examiner provide explicit information about what constitutes an outstanding or model thesis, while the supervisor or research team working with the candidate receives brief mention in about one-fifth of all reports. In other papers the authors have explored more fully how the supervisor appears in examiner reports, and the degree to which the report addresses supervisors (Holbrook et al., 2003; Holbrook et al., 2004a; Holbrook et al., 2004b).

Assessable areas covered

The assessable areas category addresses the substance of the thesis and the dissemination of the research therein. The overwhelming occurrence of comment occurs in the category 'Subject matter – analysis and reporting' which is mentioned at least once in 93 per cent of reports. One might expect examiners to address the analyses or substance of the findings in some way, so this finding is not surprising. But what of the 7 per cent of reports where this comment is absent? Typically these reports were shorter and the examiner recommendation received was more favourable. On average this comment tends to constitute almost 40 per cent of a report. There is some evidence to suggest differences between disciplines exist in the extent of reporting on this category with the report proportions ranging from 34 per cent for Business and Arts associated disciplines to 42 per cent for Science and Agriculture.

In 38 per cent of reports a particular issue or topic is taken up in atypical detail by the examiner, and not necessarily in an engaged or positive way. This may take the form of providing extended lists of further readings or in the case of an atypical depth of engagement, could include intensive exploration of particular findings and constitutes, on average, 8 per cent of a report. Examiner reports on theses in the field of Health less often (4%) include comment on topic-related issues than reports in Arts, Humanities and Social Sciences (13%).

Continuing on the theme of findings, relatively few reports (15%) mention existing publications, although almost three times more of the reports anticipate publications will flow from the thesis. Such comments are usually quite brief and, on average, constitute less than one per cent of reports. Mention of existing publications was related to discipline area, with examiners in Science and Health more often commenting on publication than examiners in Education and Arts, Humanities and Social Sciences.

Issues about communication and presentation typically attract comment from examiners, but on average such comments constitute a very small proportion of the report. Some 80 per cent of reports make reference to a substantive issue, usually in either a positive or negative way. Editorial comment appears in 56 per cent of reports and, on average, constitutes 8 per cent of the report.

The approach and design of the study are mentioned specifically in 75 per cent of reports but accounts for only 11 per cent of total text on average, indicating that comment on this aspect is generally not detailed. Although the proportion of text in reports does not differ greatly between disciplines, the frequency of occurrence of comment of this type does

seem to differ significantly. Only 50 per cent of reports by examiners of Engineering theses and 65 per cent of reports in Arts, Humanities and Social Sciences include this category, while in all other disciplines the occurrence ranges from 77 to 87 per cent of reports.

Evaluative Elements

Most instructional comment, even formative instruction, is inherently critical because it indicates more could be done to improve the work. Some evaluative comment is explicit in its positive or negative tone, this being the case in summative comment and other judgement. The highest occurrences of evaluative comment were those of positive summative and other judgement, at about 80 per cent, and in each case they accounted for about 12 per cent of reports. The largest proportion of evaluative comment in reports was formative instruction, comprising on average more than a quarter of the content of reports. Evaluative comment then is relatively evenly distributed between other forms of instruction – prescription and commentary occurring in about 60 per cent of reports, with each constituting almost 10 per cent of the reports. Negative summative and other judgement occurs in approximately 26 and 45 per cent of reports respectively, but constitutes a very small proportion of comment.

Table 1. Percentage of examiner reports in which each category occurred, and mean proportion of text for each category (N=803)

Core category	% Occurrence	Proportion of text Mean (SD)	
Examiner and process			
Personal & professional context	56	5.9	(9.5)
Specific & anticipated criteria	66	5.9	(8.5)
The Model PhD	9	0.8	(4.2)
Supervisor/supervision	21	0.8	(2.5)
Assessable Areas			
Scope of the thesis	60	5.3	(8.1)
Significance, originality & contribution	79	9.5	(12.5)
Publications arising from the thesis	41	2.1	(4.1)
Existing publications	15	0.6	(1.8)
Review of the Literature – coverage	64	4.8	(6.4)
Review of the Literature – inaccuracy	29	1.8	(5.0)
Review of the Literature – use/ application	30	2.1	(4.5)
Research Approach, design	75	10.8	(12.7)
Subject matter – analysis & reporting	93	38.5	(23.9)
Subject matter - topic related issues	38	8.4	(16.3)
Communicative competence - substantive	80	6.4	(7.9)
Communicative competence - editorial	56	8.0	(13.7)
Dialogic Elements			
Intellectual engagement with thesis	20	3.0	(8.7)
Use of a conversational tone	49	5.6	(10.4)
Use of first person	85	15.6	(14.5)
Evaluative Elements			
Summative – positive	81	12.2	(15.2)
Summative – neutral	43	2.8	(5.0)
Summative – negative	26	1.5	(4.4)
Formative Instruction	68	25.7	(24.9)
Other Instruction – commentary	60	9.9	(13.9)
Other Instruction – prescription	59	8.6	(12.7)
Other judgement – positive	80	12.5	(16.2)
Other judgement – neither	43	1.5	(5.3)
Other judgement – negative	45	2.5	(4.9)
Report Length (number of lines)		132.3	(123.9)

Using the text codes – comparing high and low quality theses

For the candidates in the study it was possible to identify two sets of theses from the examination process that constitute two ends of the assessment spectrum, referred to hereafter as the high and low quality theses among the 301 theses examined. The word ‘quality’ is employed with caution. The method used to identify the two groups is grounded in the examination process and includes both the examiners’ recommendations and the University Committee’s decision on each thesis.

The high quality theses were identified as those for which all examiners recommended that the thesis be ‘Accepted as submitted’, and this was also the decision of the University Committee. Of the 301 theses, 23 theses with 57 examiner reports were in this category. The theses at the lower end of the spectrum did not reflect the same degree of consistency in recommendation between examiners and committee as those at the top. Whereas all the theses designated as high quality were judged as that by all concerned, only 4 of the 10 theses that the examiners recommended should be revised and resubmitted or failed were required by the university committee to be resubmitted for further examination. The committee decided that the other six theses required correction without re-examination. No thesis was failed on the first submission. The low quality group of theses was identified by the researchers as theses for which at least half the examiners recommended that the thesis be ‘Revised and re-submitted for further examination’ or ‘Failed’, and the University Committee at least ‘Required’ the thesis to be revised before being accepted. This low-quality category comprised 10 theses with 24 examiner reports. Both the groups of high and low quality theses (in total, $n = 33$) ranged across all broad discipline areas with no significant differences between groups.

The proportions of examiner reports across a total of 28 text categories and the overall length of reports were compared for the two groups of theses. The 28 coding categories were those from the parent nodes 2 to 5 (see appendix). The proportions are shown in Table 2, together with the statistical significance for those categories where the two groups differed at least at the 0.05 level.

The proportions of text coded differed significantly for 17 of the categories, and for the report length. There was proportionally more written about 11 categories for the high quality theses such as the following: the ‘Personal and professional context’, the ‘Model PhD’, ‘Supervision’, the ‘Scope, significance and contribution’ of the thesis, ‘Use of the literature review’, ‘Use of first person’, ‘Positive summative’ comment and ‘Other judgement’ generally but, more particularly, ‘Positive other judgement’. There was more written about seven categories for low quality theses such as the following: ‘Coverage’ and ; ‘Inaccuracies’ in the literature review, ‘Editorial’ matters, ‘Negative Summative’ comment, ‘Formative instruction’, ‘Prescriptive’ comment and ‘Negative other judgement’. The examiner reports on low quality theses were also significantly longer, the average of 220 lines being almost three times the average length of reports on the high quality theses. The average length of reports across all theses was 132 lines.

Text codes related to examiner recommendation

Five possible categories of examiner recommendation on each thesis were identified – Accept as submitted, Invite (minor) corrections, Require (more major) corrections, Revise and resubmit the thesis for further examination, and Fail without the option of resubmission. For our purposes here, the categories can be taken to form an ordinal scale with the best outcome, ‘Accept as submitted’ ranked as 5, and the poorest outcome, ‘Fail’ ranked as 1.

Differences in the types of examiner comment between high and low quality theses were identified by correlating the text category proportions in each examiner report with the examiner recommendation made. Of the 17 categories for which the percentages of text differed between high and low quality theses (see the first three columns of Table 2), 12 categories were significantly related to the examiner recommendation, as was the report length (see the last column in Table 2). None of the ‘Examiner and process’ or the ‘Dialogic elements’ categories was related to examiner recommendation. All five of the significant categories of ‘Assessable areas covered’ were related, as were seven of the eight significant ‘Evaluative elements’ categories.

The following illustrations of examiner text and the accompanying discussion focus on these 12 categories where there were differences between high and low quality theses and which were significantly related to the examiner recommendation.

Assessable Areas

Under ‘Assessable areas covered’, mention of the significance and contribution of a thesis and associated publications was far more extensive in reports on high quality theses. There was also a greater proportion of comment on the use and theoretical application of the literature in these reports, while comment on literature coverage and inaccuracies were more prominent in the reports on low quality theses. Comment on communicative competence, specifically editorial correction of the thesis, was almost absent in high quality theses, however, it comprised 8 per cent of reports on low quality theses.

Unsurprisingly, prominent use of the words ‘originality’ and ‘significant contribution’ featured in reports on high quality theses. While the significance of the findings was the aspect mentioned most frequently, examiners also recognised the importance of the contributions made by an ‘innovative theoretical framework’, a ‘critical and comprehensive literature review’, investigations into previously untraversed territory, and by the justification and development of new methodological approaches. The magnitude of the contribution was also emphasized with examiners identifying ‘major’ contributions and work that is ‘highly significant’ or ‘highly original’. In the high quality theses, while originality was valued, the ‘usefulness’ and the potential of the candidate’s contribution to be applied ‘in the broader field’, appeared to be even more highly esteemed. When these attributes were mentioned in low quality theses, it was generally in order to ‘encourage’ the candidate to revise and resubmit the thesis because of its potential, but as

yet unrealised, significance: “I think the pursuit of ...[topic] is quite a good one and one worth pursuing, but that it needs presentation with considerably more rigour.”

Table 2. Proportions of text coding categories in examiner reports compared for high & low quality theses, and correlation with examiner recommendation

TEXT CATEGORY	Report Text %		Signif. betw groups	Correl with Recom*
	High quality	Low quality		
2. Examiner and Process				
Personal & professional context	11.5	5.6	.042	.187
Specific & anticipated criteria	7.3	4.4	NS	.164
The model PhD	2.8	0	.004	.218
Supervisor/supervision	1.7	0.2	.010	.201
3. Assessable Areas Covered				
Scope of thesis	9.4	5.2	NS	.145
Significance & contribution of the thesis	16.2	5.0	<.001	.320**
Publications arising from the thesis	3.8	0.2	<.001	.347**
Existing publications	1.1	0.8	NS	.067
Review of literature – Coverage	3.4	9.0	.024	-.332**
Review of literature – Inaccuracy	0	1.4	.010	-.441**
Review of literature – Use/theory application	2.5	0.4	.002	.238*
Research Approach, design	8.9	13.9	NS	-.181
Subject matter - Analysis & reporting	39.5	41.0	NS	-.025
Subject matter – Topic related issues	9.0	12.5	NS	-.078
Communicative competence – Substantive	5.0	5.7	NS	-.049
Communicative competence – Editorial	0.8	8.2	.021	-.386**
4. Dialogic elements				
Intellectual engagement with the thesis	4.5	4.0	NS	.018
Use of a conversational tone	6.5	2.6	NS	.146
Use of first person	22.6	14.3	.027	.199
5. Evaluative elements				
Summative evaluation – Positive	20.5	2.0	<.001	.453**
Summative evaluation – Neutral	3.7	3.7	NS	.002
Summative evaluation – Negative	0.5	4.8	.019	-.385**
Formative instruction	14.0	42.3	<.001	-.512**
Other instruction – Commentary	12.9	11.1	NS	.052
Other instruction – Prescription	0.9	13.6	.001	-.554**
Other judgement – Positive	20.6	2.2	<.001	.409**
Other judgement – Neither	2.7	0.4	.014	.186
Other judgement – Negative	1.3	4.5	.014	-.327**
Report length: Number of lines in the report	75.4	220.4	<.001	-.432**

- Note: Positive correlations indicate high quality theses received more of the category of comment, while negative correlations indicate low quality theses received more..

In regard to publications arising from the thesis, typically, high quality theses were judged ‘worthy’ and ‘deserving’ of publication, with most examiners reiterating their belief in the study’s importance and contribution by urging candidates to disseminate their findings ‘for the benefit of the field’.

As indicated in Table 1, the literature review generally does not attract a substantial amount of examiner comment, with approximately only 9 per cent of a report devoted to discussion of all aspects of the literature including the breadth and depth of coverage as well as errors in citation or referencing. The aspect that received significantly more attention in high quality theses (see Table 2) was the manner in which the literature was critically discussed and applied. Examiners praised candidates who provided an appropriate theoretical framework in which to situate their study and who provided a *critical* evaluation of *relevant* literature. In contrast, low quality theses were condemned if important literature was omitted or if the literature was outdated or the sources were not ‘scholarly’: “all references appear to be textbooks - no journal articles quoted!!” While examiners expected candidates to ‘read widely’, low quality theses were criticised (at length) if the scope of the review was too broad or devoted to ‘tangential issues’ and the discussion was either not sufficiently focused or not integral to the design and topic of the study.

Rather than a review of the literature in the field, the examiner is presented with a catalogue... The review should concentrate on the immediately relevant material, and provide a basis to justify later decisions. (Report 302100410).

As indicated in Table 2, low quality theses attracted significantly more negative comments about omissions, errors and inaccuracies in referencing. The majority of these criticisms concerned editorial aspects such as incorrect or incomplete publication details including names of authors, dates of publications and inconsistencies in the referencing style: “Most worrying of all is the relatively cavalier attitude to the referencing scheme...”. Reports on low quality theses also identified sections where references were required to support the candidate’s assertions, argument or discussion. Examiners were disparaging of candidates who made ‘assumptions’ without providing theoretical or empirical evidence from the field to back up their claims.

Examiner comment on editorial issues also differentiated high from low quality theses. Compared to high quality theses, low quality theses attracted substantially more comment regarding editorial errors (1% and 8% respectively). This comment typically comprised lists of specific corrections regarding grammatical, spelling or punctuation errors. However, while editorial problems may have differentiated low from high quality theses, the mean proportion of comment devoted to editorial issues was also 8 per cent, across all reports regardless of standard (see Table 1). The absence of grammatical and mechanical errors may distinguish a high quality thesis, but it appears that the presence of such errors does not necessarily mean that a thesis will be judged as unacceptable.

Evaluative Elements

Under 'Evaluative elements', there was substantially more positive comment (summative and 'other') on high quality theses, while negative judgements and instructive comment (formative and prescriptive) featured more prominently in reports on low quality theses. According to Boud (2000) formative instruction provides feedback to students to assist in their learning, while summative assessment typically portrays a student's accomplishments and acts as a measure of performance and accountability. It is not surprising then, that examiners who are so satisfied with the standard of a thesis that they do not require any corrections, will provide more positive summative comment while examiners who perceive deficiencies in a thesis will employ more formative comment. Although, there were significant differences between high and low quality theses in both summative and 'other' positive and negative evaluation, the following discussion will focus on summative evaluative comment, since this text encapsulates examiner assessment of the thesis overall.

Positive summative evaluation. In reports on high quality theses, one-fifth of the report was devoted to positive summative comment. This proportion was ten times greater than the amount of such comment in reports on low quality theses. Positive summative comments primarily addressed the strengths of theses and because these comments are typically provided as an overall summary either at the beginning or end of the report, they cover all aspects of the research endeavour, including both the worth of the thesis and the merit of the candidate. The strengths identified in the high quality theses ranged from the inception of the study through to its publication potential and included: the development of a clear conceptual framework; research questions and hypotheses which are clearly stated and carefully explained; a thorough literature review which synthesizes the relevant information and demonstrates a sure grasp of theoretical debates; a sound methodology which is adequately justified; systematic and logical analyses, and findings that are well supported and linked back to the theoretical analysis. In short the high quality theses that pass without further requirement, clearly meet the criteria generally acknowledged as the aims of doctoral research study (see Tinkler & Jackson, 2004, pp.112ff). In the reports, in the main, this information was presented in the form of compliments for each of these qualities relating to aspects of the study.

As part of their summing up, examiners of high quality theses frequently commended the 'clarity and coherence' of presentation. As indicated previously, high quality theses appear to be distinguished both by the absence of editorial errors and by the excellence, accessibility and assuredness of the writing style. Not only did examiners express 'pleasure' and 'enjoyment' from theses that were 'easy to read' and 'well presented', but examiners interpreted the capacity to disseminate information proficiently, logically and concisely as an indication that a candidate had a thorough understanding of his/her subject. References to the candidate – their abilities and the characteristics they demonstrated as researchers - received greater prominence in reports on high quality theses, while examiners of low quality theses typically confined their summative comments to the research study or the thesis itself.

Desirable, personal qualities identified by examiners included honesty, integrity, perseverance, patience, creativity, maturity, care and attention to detail and a commitment to undertake challenging projects. Examiners applauded candidates who tackled issues which were complex or difficult to research and examiners also appreciated the effort and hard work that candidates put into their research: ‘comprehensive and in-depth treatment’; ‘the work is both intensive and extensive’; ‘deeply researched’; ‘significant amount of work’; ‘in-depth and thorough study’. The culmination of these qualities and demonstrated capacities is the development of an independent researcher.

All in all, the thesis demonstrates that the candidate has the capacity to conduct research independently and that he can design and pursue a research program without supervision. Report 302000390

Negative summative evaluation. Unsurprisingly, theses that were required to be revised, received significantly more negative summative comment (4.8%) than high quality theses (0.5%). These negative judgements were confined to specific criticisms of the thesis and did not address the qualities or capacity of the candidate. Typically, there were numerous flaws identified in the low quality theses or examiners indicated there was a major problem which was evident throughout the thesis.

...the thesis as whole has serious conceptual and contextual problems, as well as a host of relatively minor terminological and stylistic problems, and will need major revision. Report 130411370

I find three major classes of problem in the thesis presented: 1. The experimental design of the study was simply not appropriate to deal with the topic stated in the title...2. The numerical analysis of the data is a second major concern...3. The writing and presentation of the thesis is substantially below the level I find acceptable. Report 302100410

In my view, there are major analytic problems in this thesis. Because the difficulties begin with the weakness in the exposition of its subject ... the thesis is never able to right itself. Report 3046000930

Examiners expressed concerns about a range of weaknesses including: inadequate, unfocused or disjointed literature reviews; inappropriate experimental designs or methodologies; analytical or statistical deficiencies and unsubstantiated or overstated claims about the generalisability of the candidate’s findings. Underlying examiner comments about flaws in the design and conduct of the study or in the analysis and interpretation of the data, was an apprehension that the scientific validity or reliability of the study could be compromised. As evidenced by the fact that only approximately three per cent of the 301 theses in this dataset were recommended to be revised and re-submitted or failed, examiners do not lightly recommend that a thesis is unacceptable. It is only when there are major errors or omissions affecting the credibility of the research, that examiners judge a thesis to be ‘fundamentally flawed’. While poor presentation was

judged negatively it was the calibre of the discussion which drew the strongest response from examiners. Examiners expected a balanced and critical appraisal of both the literature and the candidate's own findings and judged a thesis harshly if the writing conveyed a lack of impartiality or insight.

*There is I believe, evidence of a strong bias that should be eliminated.
Report 150912280*

*...many emotive statements are made with little or no academic support.
Report 150912500*

A generally low standard of argumentation throughout, including a systematic failure to consider or discuss alternative theories which might also account for the evidence adduced. Report 131112780

Apart from protecting scientific integrity, examiners were also defensive of 'academic standards' and were unwilling to accept theses if candidates did not demonstrate adequate knowledge of their topic, a thorough understanding of their methodology and its limitations, and a capacity for critical and original insights.

This thesis is uncritical. It lacks focus from the very first page. Report 302100410

There is little evidence of independent thought, originality and understanding which I would expect at the academic level of PhD. Report 203801080

While contribution and significance were rarely mentioned in reports on low quality theses, originality was often identified as a crucial element that was missing. If examiners were displeased with other aspects of the thesis, they appeared to use 'originality' as the bottom line. Previous investigations have revealed that examiners will forgive even major flaws if the research is 'cutting edge' and the candidate has attempted to solve challenging issues (Holbrook et al., 2004a). While the lack of originality by itself, was rarely stated as a sufficient reason for rejecting a thesis, when serious flaws were identified, examiners appeared to probe desperately for some evidence of contribution that would salvage the thesis.

On repeated reading of the overview and the sections that follow it, I could not discern any finding that could be considered to be new. Report 308201650

Originality is not always mentioned explicitly in examiner reports. Table 1 indicates that 21 per cent of examiners do not make any reference to the significance and contribution of the research and/or originality, all elements that are considered as the distinguishing markers of doctoral research (Kouptsov, 1994; Tinkler & Jackson, 2004, p. 117). However, when the quality of a thesis is considered to be marginal, a lack of originality appears to signal the dividing line between an acceptable and an unacceptable doctoral standard.

The major weakness in the thesis relates to its original contribution. In its current form it is a reasonable Masters [thesis]. Report 203802970

As discussed previously, examiners interpreted a candidate's ability to present their research in an eloquent and coherent fashion as evidence that the candidate had mastery of his/her topic. Examiners perceived 'pedestrian' reporting, without critical engagement, as an indication that candidates had only a rudimentary knowledge of their field. Similarly, examiners equated 'erratic' writing with the candidate's state of mind and 'disjointed' prose with either uncertainty on the candidate's part or an inability to evaluate major issues and integrate their own findings into a logical framework.

*...the summaries at the beginning and end of chapters are too mechanical.
Report 13191180*

*There is a sense throughout that the writer has had to struggle hard to synthesize and integrate his material, and that he is not fully confident with it.
Report 202000580*

Over all, there are major problems with this chapter both in terms of organization and coverage. The author jumps all over the place and the material seems to be presented in a series of extended dot points rather than a piece of prose with links that aid the flow from one section to another. Report 303000610

Instruction. Compared to reports on high quality theses, reports on low quality theses contained a greater proportion of comment that instructs. The two types of instruction that were given greater prominence were formative and prescriptive instruction. Formative instruction is employed when examiners feel there is a need to inform, instruct, question or extend a candidate's understanding of their topic or application of their methodology. When a thesis is judged to require major corrections, the implication is that the thesis is a 'work in progress'. In these cases examiners often tend to adopt a 'supervisor' role and attempt to guide the candidate as to how the thesis can be improved. Prescriptive instruction, on the other hand, provides brief 'fix-it' comments, where a candidate may simply be told what is wrong or a correct alternative is supplied.

In the current investigation, formative instruction comprised the largest category of examiner comment in reports on low quality theses, with 42 per cent of the report devoted to this type of extensive and intensive instruction. Examiners typically focused their advice on issues relating to the methodological approach and the analysis of the data. While the methods employed by the candidate cannot be changed at the end of the study, examiners provided information about alternative approaches that may have produced better or more reliable outcomes.

In the experiment, each of the three critical factors ... is realized with one level only. Therefore, conclusions apply only to this specific mix of conditions. To achieve a more general result, which allows conclusions going beyond the

specific experimental set-up, it would have been necessary to vary the three aspects systematically, eg. direct comparison of.... Report 302000390

This examiner then goes on to provide specific details about how the experiments could have been conducted. Although it is unlikely that a candidate will be required to act on this advice for the completed doctoral study, the examiner appears to be ‘mentoring’ the candidate by providing information which will be useful for future research activities. On the other hand, when examiners provided formative instruction relating to the analysis of the data and reporting the findings they usually anticipated that candidates would act on the advice provided.

I have a particular problem with the use of no less than [number supplied] t-tests. The likelihood of family-wise error in this case is large and appropriate techniques (at the very least with the correction of the [symbol] level) needs to be acknowledged as a problem and reasons for not taking action upon this should be presented. Report 308201660

I fail to understand how the candidate was able to achieve statistical significance with n's of 1 and 2 per group/timepoint. It would seem that the candidate has erroneously used measurement variance as standard deviation of the population mean. It should be pointed out that multiple determinations of a variable in an individual animal only improves the reliability of the measurement. Irrespective of the number of measurements performed on the individual animal, the population sample is still one and the standard deviation therefore does not exist. As such, all of the quantitative analysis is invalid and needs to be readdressed. Report 309301880

Examiners were also concerned if essential information about the methods or the results was not presented or if extraneous information was incorporated, and often identified what should (and what should not) be included.

There is no detailed description of the lesion tracing methodology used, and the thesis does not contain examples of the images themselves (in a study of this nature, the images themselves constitute basic data, and should be shown). Report 308201650

This examiner provided six pages of detailed instruction with a page-by-page analysis of the candidates work, and suggestions ranged from refocusing the study to providing lists of useful references and discussion of current issues in the field. The tone in this report was conversational with the examiner debating some issues with the candidate, arguing the relevance of others and encouraging the candidate to develop pertinent themes in the revision of the thesis. The examiner went to great lengths to provide constructive feedback and indicated his/her willingness to provide ongoing support to help the candidate achieve a passable thesis.

I should like to repeat that I believe the thesis has good potential and I am more than willing to assist ...X in any way that I can to develop it into a satisfactory level of originality. Report 150912280

Although the bulk of instructive comment on low quality theses was formative, examiners did not always take the time to engage in extended discussion about suggested revisions. Examiners also provided a briefer and more detached form of corrective advice, categorised as Prescription. Prescriptive instruction was almost absent in high quality theses, but comprised 14 per cent of examiner comment in reports on low quality theses. This type of instruction was typically succinct, specific, and requires a response from the candidate. Examiners used prescription to

- a) point out errors: ‘FCR of breed PK is incorrect’;
- b) provide correction: ‘dates would be better for the x-axis of table 5-6’;
- c) query some aspect: ‘Would femocrats agree they are under less scrutiny?’, and
- d) request information, ‘What was the effect of SMT and L-name on normoxic cells?’

The final difference indicated in Table 2, between high and low quality theses was that reports on high quality theses were, on average, one-third the length of reports in which examiners specified major corrections. This finding suggests that when examiners are satisfied with a thesis they feel less need to make comments about it, while the lengthy reports for the theses requiring amendment appears to be due to the extra instruction that examiners included for candidates who they felt needed more guidance in the conduct or reporting of their study.

Summary and Discussion

There has been a slow but steady accretion of findings on doctoral assessment and examination processes. The study of Australian PhD examination reported here draws on one of the largest samples of examination reports to date and links the quantified findings from the reports to other quantified data including the recommendation examiners give the thesis and the final report of the committee. This paper focuses on the 301 theses that include all disciplines (defined as eight broad fields of study following the Australian discipline field classification scheme). The analyses of the data reported here are topical in the current climate of concern about thesis quality and comparability. The first half of the paper reports on the types of comments examiners made across all theses and then compares the comments on high and low quality theses to explore how the comments might define the characteristics of these theses.

The types of comment made by examiners were classified into four overarching coding categories – ‘Examiner and process’, ‘Assessable areas covered’, ‘Dialogic elements’ and ‘Evaluative elements’. The importance of each of 28 sub-categories of comment in the reports was determined in two ways – by the occurrence of each category of comment in a report and by the proportion of each report devoted to each category. The major section of this paper illustrates how the sub-categories relate to overall thesis quality. To do this,

57 examiner reports on 23 theses that were unanimously judged as outstanding by both the university committee and the examiners were compared with 24 examiner reports on 10 theses which were required to be revised and resubmitted. Not only was the text compared by category, but a finer grained analysis of the assessment discourse was undertaken including term use, comment style, placement and frequency.

The investigation identified a number of categories that differentiate high quality from low quality theses. The high quality theses were characterized by categories that captured the significance of the research topic and its potential for publication, by the way in which the literature was used to develop a framework for the study, by the logic and clarity of the reporting and discussion, and by the extent that the findings can be applied in the field. As well as identifying what qualities of the work they were pleased with, examiners also made frequent mention of the challenging nature of the research project and the substantial amount of work undertaken by a candidate. Mullins and Kiley (2002) noted that examiners indicated they appreciated ‘quantity as well as quality’ when evaluating the worth of doctoral research. When examiners encounter a thesis of a very high standard, they produce a relatively brief report (albeit still over a page on average) which primarily acknowledges the candidate’s strengths as a researcher and the contribution that the research will make to existing knowledge in the field. The low quality theses were characterised by reports some three times the length on average, featuring a preponderance of instructive comment, a relatively greater proportion of negative judgement and a greater emphasis on editorial errors and inaccuracies in referencing the literature. However, examiners did not dwell on the flaws in purely negative terms. The fact that instructive comment (formative, commentary and prescription combined) made up two-thirds of examiner comment and far outweighed other negative forms of judgement such as negative summative comment, suggests that examiners give greater emphasis to assisting candidates to improve a thesis than to condemning its inadequacies. By contrast the examiners could find a lot to say of a positive summative nature on the high quality theses, often listing and complimenting strengths one after the other, illustrating the research and the researcher’s ‘model’ qualities.

In the main this paper has focussed on the characteristics of examiner reports, particularly those categories that distinguish the types of comments examiners make in their reports on high quality and on low quality theses. Within these report characteristics there are embedded sets of criteria that can be used to describe what characterizes high quality theses and low quality theses. Table 3 has been developed to indicate these criteria. In summary, there were three general criteria that distinguished each of high quality low quality theses in the examiner reports. These are shown in Table 3, with more specific criteria for high and low quality theses matched by row, where possible. The blank cells in the table indicate that the inverse of a specific criterion distinguishing a high or a low quality thesis does not necessarily distinguish the opposite.

Table 3. Criteria that distinguish between high quality and low quality theses

GENERAL CRITERIA	SPECIFIC CRITERIA	
	HIGH QUALITY THESES	LOW QUALITY THESES
THESIS TOPIC & APPROACH	Significance and challenge of the topic	
	Fusion of originality of the approach with realization of a significant contribution to the field	Questionable integrity of the approach of thesis or presentation of findings
LITERATURE REVIEW	Expert use of the literature in design of the study and discussion of the findings	Inadequate coverage or focus of the literature in relation to the study
	Thorough, clear and incisive reporting of the literature	Inaccuracies and omissions in referencing
COMMUNICATIVE COMPETENCE		Manifest editorial inadequacies
PUBLICATIONS ARISING	Recognised need for early publication of/from the study	

It is evident that much can be learned from the written assessment discourse of PhD examiners, most particularly from their comments on less satisfactory theses. Examiners go to great lengths to attempt to show how elements of a thesis or the research skills fall short of base-line standards, and this in turn highlights the employment of those standards and their mutability, and to some extent the priority some criteria are given over others in the final recommendation. The findings suggest that it is possible to identify and delineate very clear distinctions between the characteristics of high and low quality theses across disciplines, suggesting that identifying gradations of characteristics between these two extremes is possible.

To attempt a grading possibly suggests an oversimplification in the understanding of the assessment process, but using examiner comment works against this. A gradation system built on examiner comment has the potential to address concerns about the comparability of theses and the consistency of examiners from the empirically grounded base of what examiners actually report on when examining.

This study works with the multiple layers of meaning applied to examination and is receptive to the existence of the ‘indeterminate’ aspects of judgement that come into play (Delamont et al., 2000). On the one hand they may reflect the values attached to doctoral work, or they may be qualities related to the demonstration of ‘researcherliness’ that examiners find hard to articulate at one step removed from the activity of examining. Tacit qualities such as these may be recognizable only in some combination of characteristics in the execution of a project and thesis – a capacity or disposition – that shows the appropriate learning has occurred (Burbules, 2004).

The values and assumptions that underpin examination are often close to the surface and no less so in the written reports than in examiner explanations of why they regard their role as examiners important (Mullins & Kiley, 2002; Denicolo, 2003; Tinkler & Jackson, 2004). In the study reported here, for example, examiner reports capture the passion of examiners for instruction, for the protection the standards in their discipline, and for robust supervision over inadequate supervision. There is also evidence in the reports that shows how the roles of examiner and candidate are reconstructed and subject to change as immersion of the examiner in the candidate's work proceeds. For the best candidates the examiner personalizes their comments, announces the candidate's qualities as a researcher and essentially welcomes them to the academy. For the low quality thesis group the focus is virtually wholly on the thesis. The process is treated as unfinished and the candidate remains unannounced and on the margins.

There is clear evidence that examiners weigh and balance many features of the thesis against their expectations to arrive at a recommendation. It remains a challenge to tease out these aspects further, replicate the analyses for more institutions and probe more deeply into examiner comments on theses that fall between the two extremes. This will be the focus of the next stages of the project.

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Appendix: Selected Core coding (node) categories & numeric designation

2 EXAMINER & PROCESS

- 2 1 PERSONAL & PROFESSIONAL CONTEXT
- 2 2 SPECIFIC & ANTICIPATED CRITERIA
- 2 3 THE MODEL PhD
- 2 4 SUPERVISOR/SUPERVISION

3 ASSESSABLE AREAS COVERED

- 3 1 SCOPE, SIGNIFICANCE & CONTRIBUTION
  - 3 1 1 Scope
  - 3 1 2 Significance & contribution
  - 3 1 3 Publications arising
  - 3 1 4 Existing publications
- 3 2 REVIEW OF THE LITERATURE
  - 3 2 1 Coverage
  - 3 2 2 Inaccuracy
  - 3 2 3 Utilisation/theoretical application
- 3 3 APPROACH
- 3 4 SUBJECT MATTER, FINDINGS
  - 3 4 1 analysis & reporting
  - 3 4 2 topic related issues
- 3 5 COMMUNICATIVE COMPETENCE
  - 3 5 1 Substantive issues
  - 3 5 2 Editorial

4 DIALOGIC ELEMENTS

- 4 1 INTELLECTUAL ENGAGEMENT
- 4 2 CONVERSATION
- 4 3 FIRST PERSON

5 EVALUATIVE ELEMENTS

- 5 1 SUMMATIVE
  - 5 1 1 Positive
  - 5 1 2 Neutral
  - 5 1 3 Negative
- 5 2 FORMATIVE INSTRUCTION
- 5 3 OTHER INSTRUCTION
  - 5 3 1 Commentary
  - 5 3 2 Prescription
- 5 4 OTHER JUDGEMENT
  - 5 4 1 Positive
  - 5 4 2 Neither
  - 5 4 3 Negative