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What makes a Thesis by Publication? An international study of policy requirements and restrictions

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ABSTRACT

The thesis by publication is expanding across countries, institutions and disciplines, and so a more in-depth understanding of the format across contexts is warranted, to ensure that all stakeholders understand the implications of this format and implement it in a fair and transparent manner. This paper provides a cross-sectional analysis of policies related to the Thesis by Publication in six countries, investigating requirements and restrictions related to the timing and number of publications, publication and authorship status, preferred publication characteristics, and structure and format of the submission, with an ultimate aim to answer the question: what makes a Thesis by Publication? The findings show diversity across programs and flexibility within them, but present a common yet broad conceptualisation that maintains the integrity of doctoral research. Less attention to finer details may reflect flexibility and autonomy but may also lead to uncertainty for doctoral researchers, supervisors, and examiners.

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Introduction

The thesis by publication format has grown in popularity across disciplines and institutions globally in recent years (Peacock, 2017; Solli & Nygaard, 2023). As a result, universities have increasingly introduced policies that attempt to clarify the expectations in terms of what can and cannot be included in doctoral theses (Mason et al., 2024). Such

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policies have implications for doctoral researchers, supervisors and institutional committees as they consider when deciding if a Thesis by Publication is a viable option for a doctoral project, as well as for the international comparability of doctoral level work and the way in which it is presented (Chou, 2022; Odendaal & Frick, 2017). While there is evidence of discipline and country-specific studies on the Thesis by Publication (e.g., Arda, 2012; Christianson et al., 2015; Jackson, 2013; Moodie & Hapgood, 2012), there is no published evidence that takes into account how such policies across institutions and countries guide and shape practice. This is reflected in the scoping review of Solli and Nygaard (2023), who found the majority of published work on the Thesis by Publication focuses on micro-level analyses of individual experiences rather than more comparative, macro-level studies that engage with the Thesis by Publication from a broader perspective. This paper addresses this gap in our understanding of what makes a Thesis by Publication as a collective concern across national boundaries, institutions and disciplines. This has implications for students and supervisors, but also for other community members (such as examiners), as it remains important that those involved in doctoral education across the globe have a collective understanding of what a Thesis by Publication is (Nerad et al., 2022).

Policy on Thesis by Publication sets the expectations for and nature of what this format entails. Questions on the timing and number of publications, as well as the publication status (whether included work is required to be publishable or already published) are commonly raised (Dwyer, 2008; Hagen, 2010; Mason et al., 2020; Merga et al., 2019), though there does not seem to be consensus across (or even within) disciplines and institutions. Issues of authorship are also a concern, particularly where the Thesis by Publication is less accepted. Paré (2019) positions the writing of a doctoral thesis as identity work, raising questions around identity, voice and agency: who are the authors, with what authority do they speak, and to whom? These questions become (more) complex when authorship extends beyond the individual doctoral researcher. While it has always been the case that supervisors have contributed to their students' monographs to varying degrees, the explicit nature of authorship claims in a Thesis by Publication often raises questions around the actual contribution of doctoral researchers, which seemingly would demand a policy response. There is furthermore a risk that doctoral researchers could be exploited by established scholars under pressure to publish (Frick, 2019; O'Keeffe, 2020). Acceptable publication genres in a Thesis by Publication highlight what research outputs are valued, or not. Whether a policy is explicit in this regard or not may have far-reaching implications for how these theses take shape and are examined and received within and across scholarly communities. It also bears reference to the choice of language used in Thesis by Publications, how quality is conceptualised, and the eventual form the thesis takes (see Heesacker & Elliott, 2007; Horta & Santos, 2016).

This paper therefore set out to investigate the expectations, requirements and restrictions placed on doctoral researchers concerning their thesis submission by asking the question, '*What makes a Thesis by Publication?*' It reports on specific requirements and restrictions as documented in institutional policies in public universities across six countries in order to ascertain how we might conceptualise a Thesis by Publication (regardless of discipline or institutional affiliation). Finding some commonality — whilst remaining sensitive to the need for contextual and disciplinary nuance and diversity — may enable members of the doctoral education community to claim the rigour, fairness and defendability of the doctoral work.

Methodology

Our study involved six countries familiar to our research team (Table 1), allowing investigation of the Thesis by Publication in different national and linguistic contexts and at different stages in terms of acceptance and adoption. For each country, we began by identifying all public universities with doctoral programmes, and determining the presence of a Thesis by Publication (otherwise named) through manual and keyword searches of institutional websites. We then sought any relevant online materials including institutional policies, student handbooks, submission guidelines, etc. (For brevity, we refer to these materials collectively as 'policies'). In total, 158 universities were identified that provided policies (of various length and depth), relating to 192 distinct programs. This is because some universities offer distinct programs at the faculty or department level, though where possible we sought institutional-level policies.

To collect data, a spreadsheet was developed including a series of specific questions related to requirements and restrictions of the Thesis by Publication. For example, 'Do the guidelines state any minimum required number of papers?', and 'What do the guidelines say in relation to the inclusion of book chapters?'. A local researcher or research team was responsible for identifying relevant policies in their country in order to answer questions and populate the spreadsheet by filling in either dropdown menus or descriptive elements. This enabled us to create a comparable overview of all the identified policies, which allowed for a nuanced understanding across the dataset.

Data from each country were merged into a single master spreadsheet and prepared for analysis. Where clarification was needed, research teams were contacted to provide additional information or context. Descriptive statistics were calculated for all questions as appropriate. For textual responses, manifest content analysis was conducted, involving 'isolating small pieces of the data that represent salient concepts and then applying or creating a framework to organise the pieces in a way that can be used to describe or explain a phenomenon' (Kleinheksel et al., 2020, p. 127). Through this process patterns of commonality across responses were identified and categorised.

Table 1. Overview of programs included in the analysis.

Country	Total public universities	n with doctoral program	n with Thesis by Publication option	n with policies available	n distinct programs identified
Australia	37	37	37	33	35
Japan[1]	48	48	28	28	57
New Zealand	8	8	8	8	8
South Africa	26	23	18	18	19
Spain	50	50	48	48	50
United Kingdom	140	140	23	23	23
Total	309	306	162	158	192

[a]Due to the large number of universities, analysis was delimited to comprehensive national institutions.

Results

This section begins by reporting on the timing of publications, followed by the number, status, authorship, language, quality, structure and formatting of publications. For issues relating to the prominence, promotion, or positioning of the Thesis by Publication, please see our earlier paper (Mason et al., 2024).

Timing of publications

Almost half of the policies did not mention the issue of timing. For the most part, doctoral researchers may only include publications developed during the candidature period (Table 2). Where outputs published prior to enrolment are allowed, conditions generally apply, limiting the number or percentage of such publications or the time lapsed since their publication.

Number of publications

In regards to the number of publications that constitute a Thesis by Publication, more than a quarter of policies ($n = 54$, 28%) do not provide this information, and a further 9% explicitly state that there is no specific requirement regarding the number of publications (Table 3). Around half of all policies state a required minimum number of publications for a Thesis by Publication, with one and three being most common (Table 4). In some cases, a given number refers to the number of outputs to be published, while in others it refers to outputs to be included but not necessarily published (see next section). For example, the University of Lleida in Spain requires doctoral researchers to include a minimum of four academic articles, of which at least two must be either published or accepted for publication at the time of submission. In many policies this distinction is unclear.

Publication status

Depending on the policy, publications included in a Thesis by Publication may be published (Table 5), submitted or under review (Table 6), or prepared in manuscript form, sometimes referred to as being 'publishable' (Table 7). Overall, explicit reference to publication status is limited, with Japan and Spain seemingly the most insistent on publication, with Australia and New Zealand more likely to allow under review and publishable outputs.

Authorship position

Table 8 and Table 9 show policies related to lead-authored and co-authored publications, respectively. Findings show that importance is placed on the doctoral researcher being the lead author and while allowed in some cases, conditions are often placed on publications where the doctoral researcher is in a co-author position, often limiting the number and/or requiring approval and/or an explicit statement on the nature of each author's contribution. In addition, five policies (Spain = 3, UK = 2) require doctoral researchers to have one or more sole-authored publications.

Table 2. Policies related to the timing of publications that can be included.

Country	n	Only papers developed during candidature can be included	Papers published prior to candidature are allowed, with conditions	Papers published prior to candidature are allowed	No clear mention
Australia	35	32 (91%)	2 (6%)	-	1 (3%)
Japan	57	6 (11%)	7 (12%)	2 (4%)	42 (74%)
New Zealand	8	6 (75%)	1 (13%)	-	1 (13%)
South Africa	19	6 (32%)	-	-	13 (68%)
Spain	50	27 (54%)	3 (6%)	5 (10%)	15 (30%)
United Kingdom	23	9 (39%)	2 (9%)	3 (13%)	9 (39%)
Total	192	86 (45%)	15 (8%)	10 (5%)	81 (42%)

Table 3. Policies related to the number of publications.

Country	n	States minimum *required* number of publications	States minimum *recommended number* of publications	States *typical* number of publications	States that there is *no* specific number	No clear mention
Australia	35	7 (20%)	-	11 (31%)	11 (31%)	8 (23%)
Japan	57	38 (67%)	-	-	-	19 (33%)
New Zealand	8	1 (13%)	4 (50%)	3 (38%)	-	2 (25%)
South Africa	19	6 (32%)	6 (32%)	2 (11%)	-	11 (58%)
Spain	50	39 (78%)	13 (26%)	3 (6%)	1 (2%)	8 (16%)
United Kingdom	23	4 (17%)	1 (4%)	6 (26%)	6 (26%)	6 (26%)
Total	192	95 (49%)	24 (13%)	25 (13%)	18 (9%)	54 (28%)

Table 4. Number of minimum required publications.

Country	n	One paper	Two papers	Three papers	Four papers	No clear mention
Australia	35	5 (14%)	-	1 (3%)	1 (3%)	28 (80%)
Japan	57	24 (42%)	9 (16%)	4 (7%)	1 (2%)	19 (33%)
New Zealand	8	-		1 (13%)	-	7 (88%)
South Africa	19	3 (16%)	-	2 (11%)	1 (5%)	13 (68%)
Spain	50	2 (4%)	7 (14%)	24 (48%)	6 (12%)	11 (22%)
United Kingdom	23	1 (4%)	-	3 (13%)	-	19 (83%)
Total	192	35 (18%)	16 (8%)	35 (18%)	9 (5%)	97 (51%)

Publication genres

In regards to acceptable publication genres, scholarly articles published in peer-reviewed journals hold primacy in all six countries. Other genre types are mentioned less often, and in addition to the accepted publication types detailed in Table 10, a number of policies (also) explicitly or implicitly note genres *not* allowed to be included, such as non-peer-reviewed outputs (28%, $n = 53$), books (24%, $n = 47$), conference proceedings (24%, $n = 47$), non-written outputs (23%, $n = 44$), and book chapters (21%, $n = 41$).

Table 5. Requirements related to published (or accepted) papers.

Country	n	Required of all papers	Required of a majority of papers	Required of at least one paper	No clear mention
Australia	35	3 (9%)	5 (14%)	2 (6%)	25 (71%)
Japan	57	39 (68%)	-	7 (12%)	11 (19%)
New Zealand	8	1 (13%)	1 (13%)	-	6 (75%)
South Africa	19	-	4 (21%)	-	15 (79%)
Spain	50	21 (42%)	17 (34%)	2 (4%)	10 (20%)
United Kingdom	23	5 (22%)	-	1 (4%)	17 (74%)
Total	192	69 (36%)	27 (14%)	12 (6%)	84 (44%)

Table 6. Policy related to papers submitted or under review.

Country	n	Allowed	Allowed, with conditions	Not allowed	No clear mention
Australia	35	25 (71%)	7 (20%)	3 (9%)	-
Japan	57	2 (4%)	5 (9%)	6 (11%)	44 (77%)
New Zealand	8	7 (88%)	-	-	1 (13%)
South Africa	19	3 (16%)	6 (32%)	-	10 (53%)
Spain	50	3 (6%)	2 (4%)	-	45 (90%)
United Kingdom	23	12 (52%)	-	3 (13%)	8 (35%)
Total	192	52 (27%)	20 (10%)	12 (6%)	108 (56%)

Table 7. Policy related to prepared 'publishable' papers.

Country	n	Allowed	Allowed, with conditions	Not allowed	No clear mention
Australia	35	18 (51%)	2 (6%)	12 (34%)	3 (9%)
Japan	57	-	2 (4%)	7 (12%)	48 (84%)
New Zealand	8	4 (50%)	-	-	4 (50%)
South Africa	19	6 (32%)	3 (16%)	-	10 (53%)
Spain	50	2 (4%)	1 (2%)	-	47 (94%)
United Kingdom	23	11 (48%)	-	4 (17%)	8 (35%)
Total	192	41 (21%)	8 (4%)	23 (12%)	120 (63%)

Language of publications

We note that requirements related to the language/s in which publications can be written may be addressed in broader-level policies governing doctoral education as a whole. Our analysis of Thesis by Publication-specific policies found explicit mention of publication language only in Japan ($n = 17$) with one exception at Pompeu Fabra University in Spain which states that at least one publication must be written in English. In Japan, almost all references state the requirement for at least one, if not all papers to be written in English. Two exceptions refer to 'European' language journals, although these also appear to refer to English.

Table 8. Requirements related to lead-authored publications.

Country	n	Required of all papers	Required of a majority of papers	Required of at least one paper	No clear mention
Australia	35	24 (69%)	3 (9%)	1 (3%)	7 (20%)
Japan	57	13 (23%)	1 (2%)	23 (40%)	20 (35%)
New Zealand	8	7 (88%)	1 (13%)	-	-
South Africa	19	7 (37%)	-	-	12 (63%)
Spain	50	17 (34%)	10 (20%)	3 (6%)	20 (40%)
United Kingdom	23	4 (17%)	5 (22%)	-	14 (61%)
Total	192	72 (38%)	20 (10%)	27 (14%)	73 (38%)

Table 9. Policy related to co-authored publications.

Country	n	Allowed	Allowed, with conditions	Not allowed	No clear mention
Australia	35	10 (29%)	10 (29%)	11 (31%)	4 (11%)
Japan	57	2 (4%)	8 (14%)	6 (11%)	41 (72%)
New Zealand	8	-	4 (50%)	2 (25%)	2 (25%)
South Africa	19	-	1 (5%)	1 (5%)	17 (89%)
Spain	50	13 (26%)	17 (34%)	1 (2%)	19 (38%)
United Kingdom	23	5 (22%)	1 (4%)	2 (9%)	15 (65%)
Total	192	30 (16%)	41 (21%)	23 (12%)	98 (51%)

Table 10. Explicit mention of acceptable publication genres.

Country	n	Journal articles	Edited book chapters	Books	Conference proceedings[a]	Non-written outputs	Non-peer-reviewed outputs
Australia	35	35 (100%)	20 (57%)	7 (20%)	$17^{(7)}$ (49%)	8 (23%)	1 (3%)
Japan	57	54 (95%)	-	-	$3^{(3)}$ (5%)	-	-
New Zealand	8	8 (100%)	4 (50%)	4 (50%)	$4^{(1)}$ (50%)	4 (50%)	-
South Africa	19	14 (74%)	2 (11%)	4 (21%)	$1^{(0)}$ (5%)	2 (11%)	1 (5%)
Spain	50	42 (84%)	20 (40%)	16 (32%)	$1^{(0)}$ (2%)	1 (2%)	-
United Kingdom	23	18 (78%)	11 (48%)	11 (48%)	$3^{(2)}$ (13%)	1 (4%)	-
Total	192	171 (89%)	57 (30%)	42 (22%)	$29^{(13)}$ (15%)	16 (8%)	2 (1%)

[a]Superscript numbers refer to policies within that specify refereed conference proceedings.

'Quality' of publications

In this section we look at specific references to quality, as indicated through highlighting the characteristics of publications that are desired or preferred, that are 'more likely to impress examiners' (Deakin University, Australia) and/or that 'might tarnish the evaluations of examiners' (Charles Darwin University, Australia).

One third of policies ($n = 58$) use adjectives to describe characteristics of publications, publishers, and/or outlets. Figure 1 is a word cloud, where the size of each word corresponds to its frequency, with 'reputable' used in 11 policies, and 'competitive' used in one.

The first column of Table 11 shows a country breakdown of the inclusion of adjectives, as shown in Figure 1. Other columns illustrate the specific publication characteristics of publications to be included, as required or recommended in policy.

Around one-fifth of policies ($n = 34$, 18%) make mention of citation-based metrics, such as quartile rankings and/or Impact Factors. This includes five policies that require journal metrics to be reported with their submission, and 15 cases where doctoral researchers are required or strongly recommended to publish at least one article (if not all) in journals in the top quarter ($n = 1$), top half ($n = 11$), top three quarters ($n = 1$), or top four quarters ($n = 2$) of journals in terms of citation ranking.

Central Queensland University in Australia makes explicit reference to predatory journals and publishers, as does Shinshu University in Japan, where they are referred to as 'vulture journals'. In both cases doctoral researchers are provided with links to further information on how to avoid publication in suspect outlets.

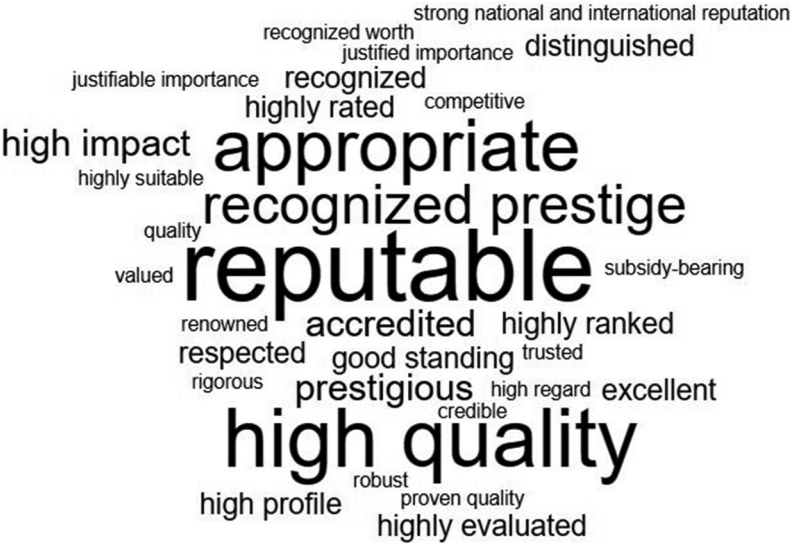

Figure 1. Adjectives used to describe publications, publishers, and outlets.

Table 11. Breakdown on adjectives used (figure 1) and explicit publication characteristics.

Country	n	Adjectives	Peer-reviewed	Indexed	International
Australia	35	17 (49%)	11 (31%)	-	-
Japan	57	11 (19%)	34 (60%)	2 (4%)	13 (23%)
New Zealand	8	3 (38%)	5 (63%)	1 (13%)	3 (38%)
South Africa	19	9 (47%)	3 (16%)	1 (5%)	5 (26%)
Spain	50	13 (26%)	3 (6%)	30 (60%)	3 (6%)
United Kingdom	23	5 (22%)	4 (17%)	1 (5%)	-
Total	192	58 (30%)	60 (31%)	35 (18%)	24 (13%)

Structure and formatting

The importance of cohesion in a thesis is noted in more than half of all policies ($n = 107$, 56%), and in a small number of cases doctoral researchers are asked to minimise unnecessary repetition ($n = 13$, 7%). There is emphasis on the thesis being more than a collection of papers, and it should 'conform to the disciplinary norm for theses that do not include publications' (University of Auckland, New Zealand). A number of policies ($n = 32$, 17%) explicitly require the inclusion of materials to preface each paper and how it fits in the broader study.

Where an overall structure is mentioned or implied, there appear to be two broad approaches. In some cases, all additional information is presented in a single prefacing 'global introduction', 'comprehensive summary', 'overarching statement' or otherwise named comprehensive introduction (17%, $n = 33$), which precedes the publications presented in the second half of the thesis. Other cases are structured similarly to a monograph, organised into discrete chapters, with introduction (39%, $n = 74$) and conclusion chapters (46%, $n = 89$) most commonly requested or required. Publications are integrated into the thesis within or as chapters. Relatively fewer policies noted the need to also include separate methodology (21%, $n = 41$) and/or literature review chapters (15%, $n = 29$).

In terms of presenting publications, 16 policies state that they must be reformatted to be consistent with the rest of the thesis, 11 policies require the final typeset version to be included and 23 explicitly state that this is a decision for doctoral researchers. There is also some mention on whether or not changes can be made to publications that appear in the thesis (as different to the published version). In 13 cases this is allowed, but generally needs to be highlighted or explained in some way, while 3 policies explicitly prohibit changes.

Discussion

The findings presented above should be considered in light of several limitations. While the study aims to contribute to the conceptualisation of the Thesis by Publication across disciplinary and national contexts, it relies on analysis of public-facing online information which may not constitute the totality of all materials available to doctoral researchers. It also focuses on information available at the institutional level (with the exception of Japan) and thus does not reflect diversity that is likely among disciplines. The study involves a select number of

six countries and is delimited to public institutions. While our study is not representative of all national or institutional contexts, it provides a cross-section of the Thesis by Publication and highlights some of the different expectations placed on doctoral researchers, which raises discussions about the comparable nature of doctoral level qualifications. Differences in findings also reflect variations in the prominence, position, and promotion of the Thesis by Publication in the different contexts, as we detail in our initial paper (Mason et al., 2024).

The policy attention given to the Thesis by Publication shows some institutional awareness of the need to govern the processes, pedagogies and outputs related to the model as a specific genre. The limited detail provided by many higher education institutions may be indicative of flexibility, affording doctoral researchers relative autonomy over decisions relating to the content and structure of their thesis. However, without some detail on issues related to the different elements highlighted in our analysis, it may cause uncertainty for both doctoral researchers and supervisors. A lack of policy specificity furthermore may also discourage doctoral researchers from adopting the model, and it may also expose institutions to risks associated with the responsible dissemination of research (such as dubious authorship practices and predatory publishers), and creates difficulties in determining what kind of support doctoral researchers need. In addition, the doctoral assessment process may be compromised if policies do not provide clarity on the expectations that a Thesis by Publication needs to meet, leaving this aspect open to examiners' own interpretations.

There is diversity and a lack of clarity across the dataset in terms of whether publications included can be produced prior or have to be produced during the doctoral candidature, despite clear indications of timing in some contexts such as Australia and New Zealand. If prior publications are allowed, the doctorate is based on an existing body of scholarship produced over an extended period of time (but not necessarily as part of a doctoral research project itself). If only work produced after enrolment is allowed, the Thesis by Publication becomes delimited to work done as part of a contained doctoral research project, which seems to be favoured especially in Australian and New Zealand policies, and to a lesser extent Spain. Moreover, the rest of the policies included in our dataset did not explicitly comment on the timing of publications, leaving it open to interpretation. This lack of clarity may create some conundrums in conceptualising what a Thesis by Publication is, which relates to Niven and Niven and Grant's (2012) claim that the thesis *by* or *through* publication is misleading as it foregrounds a production oriented view of knowledge creation, whereas doctorateness emerges more iteratively and gradually over time. Hence, there may be convincing reasons for including prior publications (especially in contexts where there is a paucity of academic staff with doctorates, such as in South Africa). The evidence suggests conceptualising the Thesis by Publication as consisting of doctoral work produced prior and/or during candidature, where the inclusion of prior publications has to meet set specifications in terms of number, when they were produced, and how these publications relate to the central theme of the doctoral work included in the thesis. It also opens up questions about the role of the supervisor in a Thesis by Publication, given that the usual expectation is that doctoral research is conducted under supervision, and prior publications may not have been supervised. The lack of clarity on such specifications creates risks that the doctoral work may not be considered timely and original any more and that the thesis itself may

lack coherence. Institutions that do allow the inclusion of prior work as part of the Thesis by Publication would also need to clearly communicate this intent to examiners, who may not be familiar with this approach.

The timing and number of publications expected are key questions that doctoral researchers, supervisors and institutional committees consider when deciding if a Thesis by Publication is a viable option for a doctoral project. While publication can form part of a pedagogical approach to scholarly development (Aitchison et al., 2012; Lee, 2010), Pare (2010) warns that pressuring doctoral researchers to publish too early in the process may rob them of the rhetorical dexterity they need to negotiate their own authorial voice, especially if the language in which they are publishing is not their first (Paré, 2019). While these scholars agree that it may take time and concerted support to develop doctoral researchers' ability to produce publishable work, nowhere could we find evidence of critical scholarly engagement with whether or not this development needs to be situated narrowly within the doctoral candidature or can be based on a longer term developmental trajectory preceding actual enrolment in a doctoral program. Insistence on publication is also something that needs to be considered when organising doctoral programs and policies since publication timeframes are often not compatible with the thesis writing timeframe, adding another obstacle to adoption and timely completion. On the other hand, blanket exclusion of papers published prior to enrolment has implications for early career researchers who may have some research experience but not enough to fulfil the expectations of a doctoral degree, for whom a 'hybrid' model, allowing publications developed both before and during candidature, would be an ideal option.

The number and publication status of outputs are also variable areas across the dataset, which shows the variation in national, institutional and disciplinary contexts. The use of the term 'publications' is a misnomer, as it is not always the case that outputs included in a doctoral thesis are actually published, with those still under review, or prepared for submission allowed in some cases. Given the implications of time to publication (Mason, 2018; Robins & Kanowski, 2008), it makes sense for institutions to allow publishable work in the interests of student throughput and completions. The finding furthermore highlights the importance of clearly distinguishing between 'published' and 'publishable' when referring to the envisioned and/or expected thesis outputs. While there may be good reasons for expectations in each case, transparency can help all involved to approach the Thesis by Publication with clear expectations and appropriate support structures. Allowing publishable work as part of the Thesis by Publication may also counteract the risk of pressuring doctoral researchers to publish before they or their work is ready for publication (Pare, 2010).

Our dataset has shown some diversity in relation to what publication types are acceptable, though the primacy of the peer-reviewed journal article is clear across contexts. The current push to publish and the role of citation metrics in measuring institutional and individual research 'quality' may be part of this drive (Becker & Lukka, 2023; Huang, 2021). However, such a product-oriented focus has far-reaching consequences, and does not capture the variety of outputs that could potentially form part of a Thesis by Publication. Many of the 'quality' indicators that are given policy attention are embedded in inequitable systems that exist in research production and scholarly publication (Collyer, 2018), giving status to high-impact indexed journals which are commonly produced in English and owned by corporate publishers and managed by editorial

teams positioned largely in the Global North. The push to publish in indexed journals has contributed to the rapid rise of predatory publications (Grudniewicz et al., 2019; Van Schalkwyk et al., 2020). Given the preference for journal articles, we found it surprising that so few policies explicitly addressed issues related to predatory publishing as a quality concern. Also noteworthy is an absence of any overt policy attention to Open Access articles, especially with the intention to broaden the audiences to communicate research outputs, and to support doctoral researchers to do so.

The studied policies highlight the need to govern authorship within the Thesis by Publication to manage risk and protect the academic integrity of both the thesis-as-product and the authors-as-stakeholders. The analysis furthermore clearly shows the conceptualisation of the Thesis by Publication as co-authored (and co-created) text, with the doctoral researcher firmly in the driver's seat and enabling supervisors to become publication brokers (Kamler, 2010). Lead authorship in most fields indicates the author who has made the largest contribution, and thus provides some assurance with regards to the contribution of the doctoral researcher, which is a key concern raised by examiners (Sharmini et al., 2015). This may be one driver for the strong explicit policy attention given to authorship order. However, the exclusion of co-authored papers could be attributed to the emphasis on doctoral researchers being expected to prove both independence and originality in their work, not only due to the potential for unethical authorship inclusion practices which may arise from the inherent unequal power balance between doctoral researchers and supervisors. Allowing a (possibly limited) number of non-first authored papers may allow for disciplinary differences, and where authorship in teams is an established practice, allow for doctoral researchers to learn how to be a co-author, and/or allow for a more formative, developmental approach to publication (especially at the initial phases of candidature where the doctoral researcher may not yet have the skills to lead a paper). Whether or not doctoral researchers themselves have the agency to drive authorship issues is debatable (see Pare, 2010), which makes it even more important that this aspect of the Thesis by Publication be explicitly conceptualised and governed in policy documents. Whilst the Thesis by Publication puts a spotlight on potential issues around authorship (as we have also acknowledged in our discussion above), it does not mean that more traditional monograph thesis formats are immune to such issues. Pare (2010) argues that any thesis is a co-authored text, where supervisors are often invisible co-authors in the case of monograph theses, while supervisors' contributions are more explicit in Thesis by Publication. In a Thesis by Publication approach, the writing itself is opened up to scrutiny, reflection, comparison and review (above and beyond that of the eventual examiners). Arguably, making the implicit explicit in the case of a Thesis by Publication may be seen as a strength of this format.

With a traditional format, the main criteria has generally been the development of an original and significant contribution (Frick, 2010), and while that alone is open to wide interpretation, there are many more options when it comes to the Thesis by Publication. While doctoral researchers in some institutions have flexibility as to where and what to publish, others may be pushed to publish articles in high ranking academic journals. Our dataset shows that peer-reviewed articles are indeed valued as the most legitimate publication genre. However, scholars are

increasingly required to communicate their research to a wide variety of audiences, including Indigenous communities, the media and the general public (Brownell et al., 2013). If doctoral researchers are focussed on only one avenue of dissemination, it may limit the development of skills necessary to communicate their research beyond academia. Conceptualising a Thesis by Publication thus needs to take into account the broader goals of doctoral education and the expectations of researchers.

We found very little attention to the language of publications accepted in a Thesis by Publication. As we noted earlier, these requirements may be addressed in broader-level policies. For example, in New Zealand, given a bicultural system, the thesis and publications can be written in Māori. Nevertheless, we might expect policies to specifically address the language/s of publications that can be included. Interestingly, none of the South African policies explicitly mention language — even though the country has 12 official languages and multilingualism is often promoted within higher education settings. Given that the majority of highly-rated scientific journals are published in English (and are situated in the Global North), genre preference for journal articles may predispose publications to be written in English, perpetuating the centre-periphery dichotomy. This adds to the challenges that English as an Additional Language researchers already face in academic doctoral writing (Ma, 2021), in a landscape where the mantra is often not 'publish or perish', but in fact, 'publish *in English* or perish' (DiBitetti & Ferreras, 2017). Conceptualising the Thesis by Publication needs to take such implicit influences into account, especially in contexts where multilingualism is prevalent and promoted. Returning to our previous discussion of communicating research beyond academia, Mason and Merga (2022) noted instances where early career researchers who conduct their research training entirely in English environments struggled to communicate research in their local communities, even in their mother tongue. This also strengthens the argument for broadening the characteristics of outputs that could be included in a Thesis by Publication.

Even though the majority of studied policies were not particularly prescriptive in terms of structure, cohesion emerged as a key concern. Cohesion is also emphasised in the Thesis by Publication literature (e.g., Abdolmalaki et al., 2019; Guerin, 2016). The lack of structural prescriptions is not surprising, as the studied policies represent a wide array of not only national and institutional contexts but also disciplines that have varied research traditions and ways of reporting research. Structural divergence is to be expected. Mason and Merga (2018) show how a diversity of possible Thesis by Publication formats can support the reporting of rigorous, systematic, defendable – and above all – coherent doctoral research.

Conclusions

The aim of this study was to analyse policy requirements and restrictions across six national contexts in order to create a better understanding of what makes a Thesis by Publication. Our results have shown the similarities and differences across policies. Given the latter diversity, conceptualisation of the Thesis by Publication is complex and in a state of constant flux. Any conceptualisation furthermore needs to be sensitive to nuance and context. Despite this conceptual complexity, both our findings and the available literature highlight the need for some cross-boundary conceptualisation that would enable understanding and alignment across countries, institutions and disciplines to support fair and transparent administrative, pedagogical, and examination processes.

This would also ensure that Thesis by Publication doctorates constitute no more and no less than any other doctorate following a different format.

To return to our question of interest, what makes a thesis by publication? Based on our analysis, a Thesis by Publication is, generally, currently conceptualised as a doctoral thesis format that includes a variable number of co- or single-authored outputs, preferably with the doctoral researcher in lead position, mostly or fully produced during candidature, and ideally published in 'quality' peer-reviewed journals. The final submission must be presented in a coherent way as more than just a collection of outputs, with their relevance and connection to each other and to the overall study evident (for example, through introductory and conclusive chapters and/or prefacing text). This broad conceptualisation allows for flexible interpretation across (and even within) contexts, although this may also invite uncertainty for doctoral researchers, supervisors and examiners. There is potential for the Thesis by Publication to be more inclusive of a wider array of publication genres to encourage development of a range of science communication skills, and the generally narrow definition of 'quality' in regards to publication outlets could be viewed with a more critical lens to ensure the format does not perpetuate existing biases and unfairly disadvantage doctoral researchers. Nevertheless, it can be said that the Thesis by Publication overall maintains the expected quality of doctoral work as rigorous, coherent, systematic, defendable, and above all, evidence of original and independent thinking.

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References

Abdolmalaki, S.G., Tan, H., Abdullah, A. N., Sharmini, S., & Imm, L. G. (2019). Introduction chapter of traditional and article-based theses: A comparison of rhetorical structures and linguistic realisations. *GEMA Online® Journal of Language Studies*, *19*(1), 116–135. https://doi.org/10.17576/gema-2019-1901-07

Aitchison, C., Catterall, J., Ross, P., & Burgin, S. (2012). 'Tough love and tears': Learning doctoral writing in the sciences. *Higher Education Research & Development*, *31*(4), 4354–47. https://doi.org/10.1080/07294360.2011.559195

Arda, B. (2012). Publication ethics from the perspective of PhD students of health sciences: A limited experience. *Science and Engineering Ethics*, *18*(2), 213–222. https://doi.org/10.1007/s11948-011-9256-4

Becker, A., & Lukka, K. (2023). Instrumentalism and the publish-or-perish regime. *Critical Perspectives on Accounting*, *94*, 102436. https://doi.org/10.1016/j.cpa.2022.102436

Brownell, S.E., Price, J. V., & Steinman, L. (2013). Science communication to the general public: Why we need to teach undergraduate and graduate students this skill as part of their formal scientific training. *Journal of Undergraduate Neuroscience Education: JUNE: A Publication of FUN, Faculty for Undergraduate Neuroscience*, *12*(1), E6–E10.

Chou, C. (2022). Thesis by publication: Definition, regulations and issues for consideration. *Journal of Educational Media & Library Sciences*, *59*(1), 73–96. https://doi.org/10.6120/JoEMLS.202203_59(1).0037.OR.BM

Christianson, B., Elliott, M., & Massey, B. (2015). *The role of publications and other artefacts in submissions for the UK PhD*. UK Council for Graduate Education. https://ukcge.ac.uk/assets/resources/27-The-Role-of-Publications-and-other-Artefacts-in-UK-PhD-2015.pdf

Collyer, F.M. (2018). Global patterns in the publishing of academic knowledge: Global north, global south. *Current Sociology*, *66*(1), 56–73. https://doi.org/10.1177/0011392116680020

DiBitetti, M.S., & Ferreras, J. A. (2017). Publish (in English) or perish: The effect on citation rate of using languages other than English in scientific publications. *AMBIO: A Journal of the Human Environment*, *46*(1), 121–127. https://doi.org/10.1007/s13280-016-0820-7

Dwyer, A. (2008). The pressure (not) to publish: Some things to consider. *Nexus: Newsletter of the Australian Sociological Association*, *20*(2), 27–28.

Frick, B.L. (2010). Creativity in doctoral education: Conceptualising the original contribution. In C. Nygaard, N. Courtney, & C. W. Holtham (Eds.), *Teaching creativity – Creativity in teaching* (pp. 15–32). Libri.

Frick, B.L. (2019). PhD by publication–Panacea or paralysis? *Africa Education Review*, *16*(5), 47–59. https://doi.org/10.1080/18146627.2017.1340802

Grudniewicz, A., Moher, D., Cobey, K. D., Bryson, G. L., Cukier, S., Allen, K. … Lalu, M. M. (2019). Predatory journals: No definition, no defence. *Nature*, *576*(7786), 210–212. https://doi.org/10.1038/d41586-019-03759-y

Guerin, C. (2016). Connecting the dots: Writing a doctoral thesis by publication. In C. Badenhorst & C. Guerin (Eds.), *Research literacies and writing pedagogies for masters and doctoral writers* (pp. 31–50). Brill.

Hagen, N.T. (2010). Deconstructing doctoral dissertations: How many papers does it take to make a PhD? *Scientometrics*, *85*(2), 567–579. https://doi.org/10.1007/s11192-010-0214-8

Heesacker, M., & Elliott, T. R. (2007). My dog's better than your dog: Publication counts and quality of clinical psychology PhD training. *Clinical Psychology Science & Practice*, *14*(2), 175–178. https://doi.org/10.1111/j.1468-2850.2007.00077.x

Horta, H., & Santos, J. M. (2016). The impact of publishing during PhD studies on career research publication, visibility, and collaborations. *Research in Higher Education*, *57*(1), 28–50. https://doi.org/10.1007/s11162-015-9380-0

Huang, Y. (2021). Doctoral writing for publication. *Higher Education Research & Development*, *40*(4), 753–766. https://doi.org/10.1080/07294360.2020.1789073

Jackson, D. (2013). Completing a PhD by publication: A review of Australian policy and implications for practice. *Higher Education Research & Development*, *32*(3), 355–368. https://doi.org/10.1080/07294360.2012.692666

Kamler, B. (2010). Revise and resubmit: The role of publication brokers. In C. Aitchison, B. Kamler, & A. Lee (Eds.), *Publishing pedagogies for the doctorate and beyond* (pp. 64–82). Routledge.

Kleinheksel, A.J., Rockich-Winston, N., Tawfik, H., & Wyatt, T. R. (2020). Demystifying Content Analysis. *American Journal of Pharmaceutical Education*, *84*(1), 7113. https://doi.org/10.5688/ajpe7113

Lee, A. (2010). When the article is the dissertation: Pedagogies for a PhD by publication. In C. Aitchison, B. Kamler, & A. Lee (Eds.), *Publishing pedagogies for the doctorate and beyond* (pp. 24–41). Routledge.

Ma, L.P.F. (2021). Writing in English as an additional language: Challenges encountered by doctoral students. *Higher Education Research & Development*, *40*(6), 1176–1190. https://doi.org/10.1080/07294360.2020.1809354

Mason, S. (2018). *Publications in the doctoral thesis: Challenges for doctoral candidates, supervisors, examiners and administrators*. *37*, 1231–1244. https://doi.org/10.1080/07294360.2018.1462307

Mason, S., Frick, B. L., Castelló, M., Cheng, W., Chong, S. W., Díaz-Villalba, L., García-Morante, M., Kong, M. S., Sakurai, Y., Shojaeian, N., Spronken-Smith, R. A., & Weise, C. (2024). Prominence, promotion and positioning of the "thesis by publication" in six countries. *Higher Education Policy*. https://doi.org/10.1057/s41307-024-00350-7

Mason, S., & Merga, M. (2018). Integrating publications in the social science doctoral thesis by publication. *Higher Education Research & Development*, *37*(7), 1454–1471. https://doi.org/10.1080/07294360.2018.1498461

Mason, S., & Merga, M. K. (2022). Communicating research in academia and beyond: Sources of self-efficacy for early career researchers. *Higher Education Research & Development*, *41*(6), 2006–2019. https://doi.org/10.1080/07294360.2021.1945545

Mason, S., Merga, M. K., & Morris, J. E. (2020). Typical scope of time commitment and research outputs of thesis by publication in Australia. *Higher Education Research & Development*, *39*(2), 244–258. https://doi.org/10.1080/07294360.2019.1674253

Merga, M.K., Mason, S., & Morris, J. E. (2019). 'What do I even call this?' Challenges of undertaking a thesis by publication. *Journal of Further and Higher Education*, *44*(9), 1245–1261. https://doi.org/10.1080/0309877X.2019.1671964

Moodie, J., & Hapgood, K. (2012). The PhD thesis by publication in engineering: Insights for supervisors. *Proceedings of the 23rd Annual Conference of the Australasian Association for Engineering Education 2012: Profession of Engineering Education: Advancing Teaching, Research and Careers* Melbourne, Australia (p. 884). Engineers Australia.

Nerad, M., Bogle, D., Kohl, U., O'Carroll, C., Peters, C., & Scholz, B. (2022). *Towards a global core value system in doctoral education*. UCL Press.

Niven, P., & Grant, C. (2012). PhDs by publications: An 'easy way out'? *Teaching in Higher Education*, *17*(1), 105–111. https://doi.org/10.1080/13562517.2012.640086

Odendaal, A., & Frick, B. L. (2017). Research dissemination and PhD thesis format at a South African university: The impact of policy on practice. *Innovations in Education and Teaching International*, *55*(5), 594–601. https://doi.org/10.1080/14703297.2017.1284604

O'Keeffe, P. (2020). PhD by publication: Innovative approach to social science research, or operationalisation of the doctoral student … or both? *Higher Education Research & Development*, *39*(2), 288–301. https://doi.org/10.1080/07294360.2019.1666258

Pare, A. (2010). Slow the presses: Concerns about premature publication. In C. Aitchison, B. Kamler, & A. Lee (Eds.), *Publishing pedagogies for the doctorate and beyond* (pp. 30–46). Routledge.

Paré, A. (2019). Re-writing the doctorate: New contexts, identities, and genres. *Journal of Second Language Writing*, *43*, 80–84. https://doi.org/10.1016/j.jslw.2018.08.004

Peacock, S. (2017). The PhD by publication. *International Journal of Doctoral Studies*, *12*, 123–134. https://ijds.org/Volume12/IJDSv12p123-135Peacock3498.pdf

Robins, L., & Kanowski, P. (2008). PhD by publication: A student's perspective. *Journal of Research Practice*, *4*(2), M3. https://jrp.icaap.org/index.php/jrp/article/download/136/165/

Sharmini, S., Spronken-Smith, R., Golding, C., & Harland, T. (2015). Assessing the doctoral thesis when it includes published work. *Assessment & Evaluation in Higher Education*, *40*(1), 89–102. https://doi.org/10.1080/02602938.2014.888535

Solli, K., & Nygaard, L. P. (2023). The doctorate in pieces: A scoping review of research on the PhD thesis by publication. *Higher Education Research & Development*, *42*(4), 984–999. https://doi.org/10.1080/07294360.2022.2110575

Van Schalkwyk, S., Mouton, J., Redelinghuys, H., & McKenna, S. (2020). A systematic analysis of doctoral publication trends in South Africa. *South African Journal of Science*, *116*(7–8), 1–9. https://doi.org/10.17159/sajs.2020/7926