Transitioning from undergraduate to postgraduate studies: A multistage evaluation of a discipline-specific writing intervention

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ABSTRACT

This study attempted to address academics' general concern about the steady decline in students' academic writing abilities and the impact this has on students' ability to demonstrate their learning and negotiate written tasks in their respective disciplines. The study focused on what can be done within a higher education institution in terms of academic writing instruction to develop the literacy abilities required to enable students to cope with the demands of tertiary studies within specific disciplines, as students progress from undergraduate to postgraduate work. Given the varied and specialised nature of academic discourses in different fields of study, a discipline-specific approach to writing instruction was adopted to facilitate students' familiarity with the conventions of academic and discourse-specific writing, and develop their ability to produce effective and appropriate texts for their courses. A multistage evaluation design was used to measure the potential effect of the writing intervention, the results of which indicate an improvement in students' academic literacy and writing abilities, as well as their ability to apply these abilities to writing in their subject area.

Keywords: academic writing development, discipline-specific, course evaluation, higher education, postgraduate writing, writing centre.

1. Introduction

There is growing concern amongst academic lecturers about the steady decline in students' academic writing skills, particularly as students transition from undergraduate to postgraduate studies and the complexity and length of written texts increase. Massification of Higher Education in South Africa has resulted in an influx of students who are in need of academic literacy support to complete their studies successfully. Since writing is still a prominent means of assessment in tertiary institutions, particularly at postgraduate level, students' success depends largely on their ability to handle academic and discipline-specific discourses (Butler, 2013; Carstens, 2009; Weideman, 2013). This requires that students be familiar with the conventions of writing specific to their respective disciplines. However, there are misconceptions about the time it takes for students to develop the fluency required at postgraduate level. The mastery required at this level takes years to acquire and calls for the provision of ample opportunity throughout students' undergraduate studies to practice and develop their writing in contextualised and appropriate ways.

In light of the growing need for academic writing support, writing centre practitioners and subject specialists need to carefully consider how they can collaborate to effectively and responsibly attend to students' writing needs. Accordingly, the quest of the University of the Free State's writing centre (Write Site) to design effective and responsible academic writing interventions is central to this study. This requires that students' writing needs be unpacked and writing interventions be developed to address the problem of academic writing in this context. The aim of this study was therefore to investigate the effectiveness of a proposed model for addressing students' writing skills by measuring the degree of observable development in students' writing abilities after the intervention and their ability to apply these abilities to writing in their discipline.

The analysis in this paper is based on information and data collected by Drennan (2019). In the sections that follow, an argument is made for the socially-situated nature of academic discourse and concomitant theoretical and pedagogical strategies that should inform the design and implementation of writing instruction in the disciplines.

2. Key considerations for writing instruction

The argument for discipline-specific writing instruction has been made on several occasions (Clarence, 2012; Butler, 2013; Drennan, 2019; Drennan & Keyser, 2022; Goodier & Parkinson, 2005; Parkinson, 2000; Van de Poel & Van Dyk, 2015; Van Schalkwyk et al., 2009) on the grounds of relevance. Instructional material that includes texts and activities related to specific disciplines promotes student engagement and facilitates effective skills transfer more so than generic alternatives (Butler, 2013; Flowerdew, 2013; Goodier and Parkinson, 2005). Further theoretical justification is rooted in systemic functional linguistics, cognitive linguistics, and critical discourse analysis, which maintain that students' access to and membership in

particular discourse communities is determined by the extent to which they have mastered specific linguistic characteristics, communicative practices, as well as field, genre and academic discourse knowledge associated with those communities (Butler, 2006; Carstens, 2009; Halliday, 1994). Thus, writing support that is embedded in students' subject areas enables them to develop skills that are specific to the language requirements of the discourses involved.

Addressing students' discipline-specific writing needs involves taking key instructional approaches and learning practices into consideration. Firstly, the type of discourse that students will need to engage with in their respective fields of study needs to be identified. Students are 'apprentices' who are often unfamiliar with the language and writing conventions of academic discourse (Johns, 2002) and require the guidance and instruction from 'masters' of this discourse to acquire the necessary proficiency (Flowerdew & Ho Wang, 2015; Lave & Wenger, 1999). Students therefore need to be initiated into the discourses used within specific discourse communities by means of exposure to and the production of the genres (texts) that mirror the type of writing activities required in the discipline. Because students are required to produce various complex academic texts in a language that is not their mother tongue, ample opportunity needs to be provided to induct students into the norms and practices of academe. Writing instruction that is designed responsibly should therefore be carefully scaffolded to model the replication of activities and processes, and the completion of authentic, complex tasks that are characteristic of specific disciplines (Lave & Wenger, 1991).

The production of complex academic texts, particularly at senior and postgraduate levels, requires students to: engage critically with texts; analyse, synthesise, extrapolate and interpret information from multiple sources; engage in research and work with a plethora of data sets; as well as formulate and develop sound academic arguments. However, Pot and Weideman (2015) have shown that students have difficulty engaging critically with a variety of sources. They struggle to interpret texts in terms of identifying intertextual relations and the underlying assumptions that guide texts. Academic writing instruction thus needs to explicitly teach students to engage critically with multiple sources and provide sufficient opportunity for them to work with and write from relevant readings.

The ability to navigate texts and formulate sound academic arguments is furthermore dependent on students' ability to effectively gather, process, and interpret information from various sources (Chan, 2018; Drennan, 2019; Patterson and Weideman, 2013), as well as their awareness of organisational patterns in academic texts. Text navigation should be addressed by making explicit the logic of complex arguments, investigating how authors refer to theory to support arguments, and illustrating how sub-arguments are related to the overarching theoretical positions expressed in texts. This can be achieved by exposing students to discipline-specific texts on a similar topic and analysing the extent to which these texts support or oppose a central theme or argument. In terms of students' knowledge of organisational patterns in academic texts, writing instruction should make use of outlining activities to make explicit the structural requirements of specific text types by analysing model texts and critical

readings of authentic, relevant texts, and unpack the ways in which authors use specific organisational patterns and signposting to sequence information logically in their writing.

Other key aspects influencing the quality of students' writing are guided support and formative feedback. According to Hattie and Timperley (2007:81), the efficacy of feedback depends on "the type of feedback and way it is given". Patchan et al (2016) postulate that effective feedback focuses on higher-order issues first to address problems related to argumentation, structure, and organisation before focusing on lower-order issues, such as grammar and referencing. Research also suggests that the unique, verbal, and individualised feedback opportunities afforded by teacher-student conferencing are particularly effective (Mulliner & Tuckner, 2017). This is in keeping with Vygotsky's (1978) Zone of Proximal Development in that 'apprentice' students are guided by interaction with more able or expert writers to perform at levels beyond their current writing abilities.

Moreover, various basic pedagogic strategies should be met in the design and operationalisation of writing interventions. Table 1 (Drennan, 2019:154) presents an overview of postmethod 'macrostrategies' (Kumaravadivelu, 2003), method-neutral design requirements (Butler, 2013), and key genre-based pedagogical strategies that should be aligned with the teaching and learning practices mentioned above.

Table 1: Kumaravadivelu's postmethod conditions, Butler's key issues in the teaching and learning of academic writing, and foundational strategies of genre-based pedagogy

Kumaravadivelu's macrostrategies	Butler's key issues in the teaching and learning of writing	Core strategies in genre-based pedagogy
K1 Maximize learning opportunities	B4 Consider learners' needs and wants as a central issue in academic writing	Identify learner's needs (Paltridge 2001:40ff)
K2 Facilitate negotiated interaction	B9 Acknowledge assessment and feedback as central to course design	Stretch learners' abilities through interaction with teachers and more knowledgeable peers (Vygotsky, 1978)
K3 Minimize perceptual mismatches	B9 Acknowledge assessment and feedback as central to course design	Facilitate a "visible pedagogy" (Hyland, 2004:88)
K4 Activate intuitive heuristics	B3 Engage students' prior knowledge and abilities in different literacies to connect with academic literacy in a productive way	Validate learners' prior knowledge and draw upon students' previous experiences (Paltridge, 2001:40ff)
K5 Foster language awareness	B11 Include productive strategies that achieve a focus on language form	Provide sufficient information about text structure, grammar and lexis, so as to empower students to make

K6 Contextualize linguistic input	B10 Provide relevant, contextualized opportunities for engaging in academic writing tasks	informed choices (Hyland, 2004:104-105)
		Contextualization of linguistic input is implicit in all genre-based designs, since all applications are related to authentic texts and real-world problems
K7 Integrate language skills	B13 Focus on the interrelationship between different language abilities in the promotion of writing	Integrate reading and writing skills (Johns, 2002:35; Hyland, 2004:113)
K8 Promote learner autonomy	B5 Create a learning environment where students feel safe to explore their own voices in the academic context	Note: Promoting learner autonomy is a feature that is only weakly represented in genre-based designs
K9 Ensure social relevance	B2 Include an accurate account of the understandings and requirements of lecturers/supervisors in specific departments or faculties regarding academic writing	Identify the kinds of writing that learners need to do in their target situations (Hyland, 2003:93)
K10 Raise cultural consciousness	B3 Engage students' prior knowledge and abilities in different literacies to connect with academic literacy in a productive way	Validate and draw upon students' previous experiences (Paltridge, 2001:40ff)

The section that follows addresses some key findings of the needs analysis regarding the study cohort's readiness to produce information, in written format in this case, as they enter postgraduate studies. The section further articulates how the teaching and learning methods and pedagogical strategies described above, together with the results of the test and additional information gleaned from the needs analysis, informed the design of a writing intervention for honours students in the Urban and Regional Planning (URP) department at the University of the Free State.

3. Discussion of the writing intervention

3.1 Needs analysis

An essential first step is the needs analysis which serves to inform the "design, materials selection, methodology, assessment and evaluation" stages of the design process (Flowerdew, 2013:325). The needs analysis encompasses collecting and assessing information essential in determining the language needs and perceptions of all relevant stakeholders that then inform the development of the writing intervention. The needs analysis therefore ensures that the

intervention is tailored to the language needs of a particular cohort in a specific situation/context, thereby ensuring its potential efficiency and usefulness. The design of the writing intervention for the honours cohort in this study was preceded by a thorough needs analysis (see Drennan, 2019) aimed at gaining a firm understanding of the literacy and writing skills required as students transition from undergraduate to postgraduate (honours) studies, the details of which fall beyond the scope of this paper (see Figure 2). However, the results of the survey of staff perceptions on students' academic writing needs and an Assessment of Preparedness to Produce Information (APPMI) will be summarised here for context.

Staff survey

The *staff perceptions of student academic writing requirements* survey was conducted with academic staff across various disciplines to gain insight into their perceptions of academic literacy and writing requirements as students transition to postgraduate studies. The results showed that 71% of staff felt that their postgraduate students' literacy levels were below par. Staff indicated that students' undergraduate studies do not prepare them adequately for the demands of postgraduate studies and that performance at undergraduate level is neither an indication of academic literacy skills nor evidence that students are ready for postgraduate studies. Staff reported very little confidence in departmental strategies for identifying students in need of additional language support at postgraduate level (Drennan, 2019: 107), and the majority of staff (92%) indicated that language use, genres and functional text types are specific to particular disciplines. Staff were also asked to rate students' academic literacy abilities from poor to excellent; the results in Figure 1 show that the majority rated their students' literacy abilities as poor or average. It should be noted that the various categories in the figure below match the components of an established definition of academic literacy (Patterson & Weideman 2013a; 2013b).
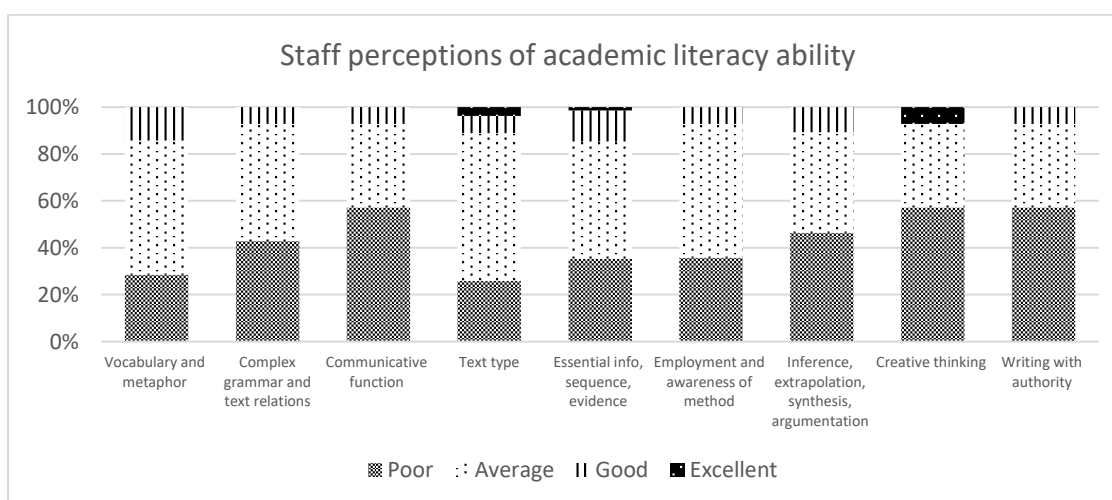

Figure 1: Staff perceptions of students' academic literacy abilities (Drennan, 2019: 107)

Staff furthermore indicated that the academic writing aspects that students typically struggle with most include the navigation and comprehension of complex disciplinary literature (64%), as well as the production of subject- or field-specific texts/genres (79%). Additionally, the aspects of text production that were rated most problematic for students included the production of quality content and arguments (93%), the use of appropriate style and register (71%), and text structure (50%). Students are often unaware that register and style are determined by audience and purpose; they also struggle to understand the relationship between text structure and the development and flow of arguments, and how the use of appropriate words and phrases facilitates the link between different parts of arguments. These findings suggested that students could benefit from additional writing support that provides them with sufficient opportunities to practice writing, as a recursive process, and respond to formative feedback provided by instructors.

APPMI design

The design and specifications of the Assessment of Preparedness to Produce Multimodal Information (APPMI) are described in detail in other publications (Drennan, 2019, 2021; Drennan, Joubert, Weideman & Posthumus, 2021). In brief, the purpose of the test was to measure students' preparedness to produce the kinds of information (texts) required in the discipline.

The design is based on the notion that the *production* of information is preceded by the academic actions of *gathering* information, in the form of note-taking during lectures and tutorials, engaging in class discussion and with various academic texts, and *processing* this information to support and develop academic arguments.

The production of information is therefore a complex cognitive process that combines several components of academic literacy and involves multiple activities related to the negotiation of academic discourse (Pot & Weideman, 2015).

The construct underpinning the development of the test is therefore based on a functional, skills-neutral view of academic literacy (Patterson & Weideman, 2013a; Weideman, 2020), and the development of the various task types incorporated texts relevant to the target cohort's subject area.

Table 2 illustrates the alignment between the cognitive phases associated with the *gathering* and *processing* of information (i.e., the academic actions preceding the production of information), the subtests of the APPMI, and the various components of the literacy construct.

Table 2: Alignment of cognitive phases, APPMI subtests and construct

Cognitive phases	Sub-processes	APPMI subtests	Alignment with literacy construct
Conceptualisation	Task representation Macro-planning	Understanding text type and communicative function Making academic arguments Interpreting graphic and visual information Text comprehension	Communicative function Text type (including visual representations) Essential/non-essential information, sequence and numerical distinctions, identifying relevant info for evidence Employment and awareness of method Inference, extrapolation, synthesis of information, and construction of argument
Meaning construction	Global careful reading Selecting relevant ideas Connecting ideas from multiple sources	Organising information visually Understanding academic vocabulary Text comprehension Making academic arguments Organisation of text/scrambled text	Vocabulary and metaphor Complex grammar and text relations Communicative function Text type (including visual representations) Essential/non-essential information, sequence and numerical distinctions, identifying relevant info for evidence Employment and awareness of method Inference, extrapolation, synthesis of information, and construction of argument
Organising ideas (based on mental task representation)	Organising intertextual relationships between ideas Organising ideas in a textual structure	Interpreting graphic and visual information Organisation of text/scrambled text Understanding text type and communicative function Making academic arguments Grammar and text relations Text editing	Vocabulary and metaphor Complex grammar and text relations Text type (including visual representations) Communicative function Employment and awareness of method Inference, extrapolation, synthesis of information, and construction of argument

The results of the test were used in conjunction with additional information collected during the needs analysis to determine students' academic writing needs. Since the majority of the subtests in the APPMI are similar to other tests of academic literacy, such as the TALL and TALPS, similar guidelines for interpreting results, in terms of performance scales, were applied to the interpretation of the APPMI results. The performance bands comprised high risk (<33%), clear risk (34-55%), risk (56-59%), less risk (60-74%), and little to no risk (>75%). The APPMI test results showed that 47% of students fell within the first three risk scales, indicating that almost half the student cohort could benefit from additional academic writing instruction.

Based on the results described above, together with additional information gleaned from the detailed needs analysis (see Drennan, 2019), the scope of the writing intervention included providing students with: support that is tailored to their individual writing needs; opportunities for critical engagements with subject-specific texts; opportunities to understand the recursive nature of the writing process; and formative feedback. All of these are necessary to ensure alignment between the writing intervention and the target cohort it was intended for.

3.2 Intervention design

A process-genre approach was adopted in the design of the writing interventions. This involved generating activities around authentic, discipline-specific texts (genres) to teach conventions of academic writing. The alignment with the aforementioned pedagogical strategies in Table 1 is indicated by means of italicisation, as discussed in the study by Drennan (2019:154-156).

The activities in the intervention were designed to facilitate students' critical engagement with multiple texts *relevant to a particular writing task they were required to produce in their respective fields* of study. Relevant genres were thus used to familiarise students with the organisational norms and conventions, and argument formation typical of their subject-area discourse, so that they might replicate these successfully in their own writing assignments. Thus, by engaging critically with reading texts towards informing academic writing, the intervention materials focused on the *interrelationship between different language abilities in the promotion of writing* (see K7 and B13 in Table 1).

The writing aspects covered in the instructional materials were selected according to the information provided by the needs analysis that took into consideration the *requirements of lecturers in specific departments regarding academic writing*. Thus, the design of the materials *aimed to maximise learning opportunities* by tailoring the interventions to their *writing needs and wants*. The incorporation of discipline-specific texts also ensured for the *provision of relevant, contextualised opportunities for engaging with academic writing tasks*, since all activities were geared towards assisting students with the production of a written text that formed part of assessment in their *target situations*.

The process-genre approach furthermore required that students produce multiple drafts of their writing tasks. This was done to make students aware of the recursive nature of writing, and the logical progression of the various stages of the writing process. Individual consultation sessions at the writing centre furthermore provided students with individualised, formative feedback on areas of concern in their writing. In addition to addressing higher-order issues (e.g. *text structure*), individual sessions also *fostered students' language awareness* by providing feedback on lower-order issues, such as *grammar and lexis*. The individual sessions were intended to reinforce the aspects addressed in the instructional materials and facilitate students' application thereof. In this way, the interventions *facilitated negotiated interaction* by requiring students to engage with *feedback* provided during their *interaction with knowledgeable peers* (i.e. writing consultants). In their interaction with field-specific academic knowledge and with those providing writing support, the technical interaction with texts and peers is once again evident. The writing centre furthermore provides students with a *safe environment* in which they *develop their authentic voices* by means of discussions with writing consultants around meaning-making.

A blended mode was adopted for the delivery of the writing support. Students were exposed to a combination of face-to-face and online learning opportunities. Such an approach presents the opportunity to accommodate students' varying learning styles and preferences, and affords them access to learning opportunities that *facilitate their autonomy*, reflection and control over their personal learning. The online learning materials contained additional supplementary instructional videos and resources, which could be downloaded and accessed repeatedly if necessary, to facilitate students' understanding and application of key writing aspects, and at their own pace. Face-to-face sessions, in the form of contact sessions during scheduled class time and individual sessions in the writing centre, provided students with opportunities to discuss their understanding

of key concepts with the instructor, as well as with their peers. A blended learning approach therefore serves to *engage students' prior knowledge and abilities in different literacies to connect with academic literacy in a productive way*.

3.3 Operationalisation

The literature review that the URP honours students had to write as a final formative assessment for their course was selected as a basis to address their academic writing needs as identified in the needs analysis. Table 3 illustrates the various components or 'parts' of the writing intervention which spanned a period of eight weeks, excluding individual writing consultations at the writing centre. For the first part, students had to write a first draft of the literature reviews and submit via plagiarism detection software (Turnitin) before being exposed to any writing support. The intention was to have students produce a near-complete (literature review) response based on their prior knowledge of literature review writing, their understanding of the topic they had selected, and to bring to their attention any plagiarism issues.

The second part constituted three 2-hour (face-to-face) contact sessions featuring various in- and out-of-class activities aimed at building awareness of the purpose, structural and organisational components of literature review writing, as well as how to select key and relevant information from various sources for inclusion in their writing. This was followed by five online parts, one part per week, designed to allow students to practice the writing aspects addressed in the contact sessions. The content was carefully scaffolded and therefore had to be completed in sequence. Students had to revise their draft literature reviews based on the content covered in the contact sessions and online components, after which they attended writing consultations at the writing centre to address their individual writing needs. The aspects that were addressed during the individual sessions are reflected in the rubric criteria stipulated under section 4.1 (data collection). Once students were satisfied with their revisions, they submitted a final draft to their lecturer, via Turnitin, for assessment purposes.

Table 3: Overview of URP short course content (Drennan, 2019: 158-159)

Session	Session theme	Purpose	Duration
Pre-intervention submission	First draft of literature review	Students commit to a first draft of the literature review based on what they think they know about writing a literature review	8 weeks to produce first draft before start of intervention
Face-to-face: Session 1	Understanding the purpose of a literature review and identifying relevant sources	Elaborate on the purpose of a literature review Identify various components of a literature review Identify sources that are relevant to a particular topic Apply reading strategies to analyse academic articles in terms of relevance Distinguish between essential and non-essential information	Week 1: 2 hours

Face-to-face: Session 2	The art of paraphrasing and summarising	Identify key information in sample texts Illustrate the difference between summarising and paraphrasing Summarise a sample text Paraphrase sample information	Week 2: 2 hours
Face-to-face: Session 3	Synthesis and developing arguments	Distinguish between descriptive and interpretive elements in a literature review Integrate information from sources into their own writing Formulate well-structured paragraphs, in relation to the development of own arguments Use linking words and discourse markers to create flow in writing, and give direction to arguments presented in own texts Reference sources correctly and accurately in acknowledgement of evidence used to support own arguments	Week 3: 2 hours
Online materials: Part 1	Developing vocabulary in context	Identify and use academic vocabulary they are likely to encounter in their disciplinary texts	Week 4: Available for 7 days
Online materials: Part 2	Identifying main ideas in sample texts	Identify the topic of specific paragraphs in a text, the topic of a text as a whole, as well as the author's main point or argument.	Week 5: Available for 7 days
Online materials: Part 3	Paraphrasing key information	Familiarise students with strategies for effective paraphrasing	Week 6: Available for 7 days
Online materials: Part 4	Developing academic arguments	Familiarise students with the format of academic arguments, as well as the inclusion of relevant and appropriate evidence	Week 7: Available for 7 days
Online materials: Part 5	Using linking words effectively	Familiarise students with the linking words and phrases used to signal the relationships between information and ideas	Week 8: Available for 7 days
Write Site sessions	Individual consultation sessions	Address students' individual higher-order and lower-order writing needs	2–4 hours (minimum)
Post-intervention submission	Final version of literature review	Students submit a final version of their literature reviews based on writing aspects covered in the short course and individual sessions at the Write Site	

The objective of the study was to determine the extent to which the writing intervention for these students influenced their writing abilities and their application of these abilities to the

production of their literature review submissions. The next sections discuss the methodology employed to evaluate the potential effect, followed by a discussion of the findings.

4. Methodology

A multistage evaluation design (Ivankova, et al., 2016) was adopted to evaluate the potential effect of the intervention in terms of (1) its development of the target cohort's academic literacy and writing abilities, and (2) the extent to which students were able to apply these abilities to the production of an acceptable literature review in their subject area (Fouché, 2016). The research paradigm of relevance here is pragmatism which concerns the identification of applications that serve as solutions to problems (Creswell & Poth, 2017). Ethical clearance was obtained for the study, and all student information and responses were treated confidentially.

Figure 2 shows the various stages of the evaluation design involving the collection of qualitative and quantitative information that was used to inform the development and assessment of the writing intervention in question.
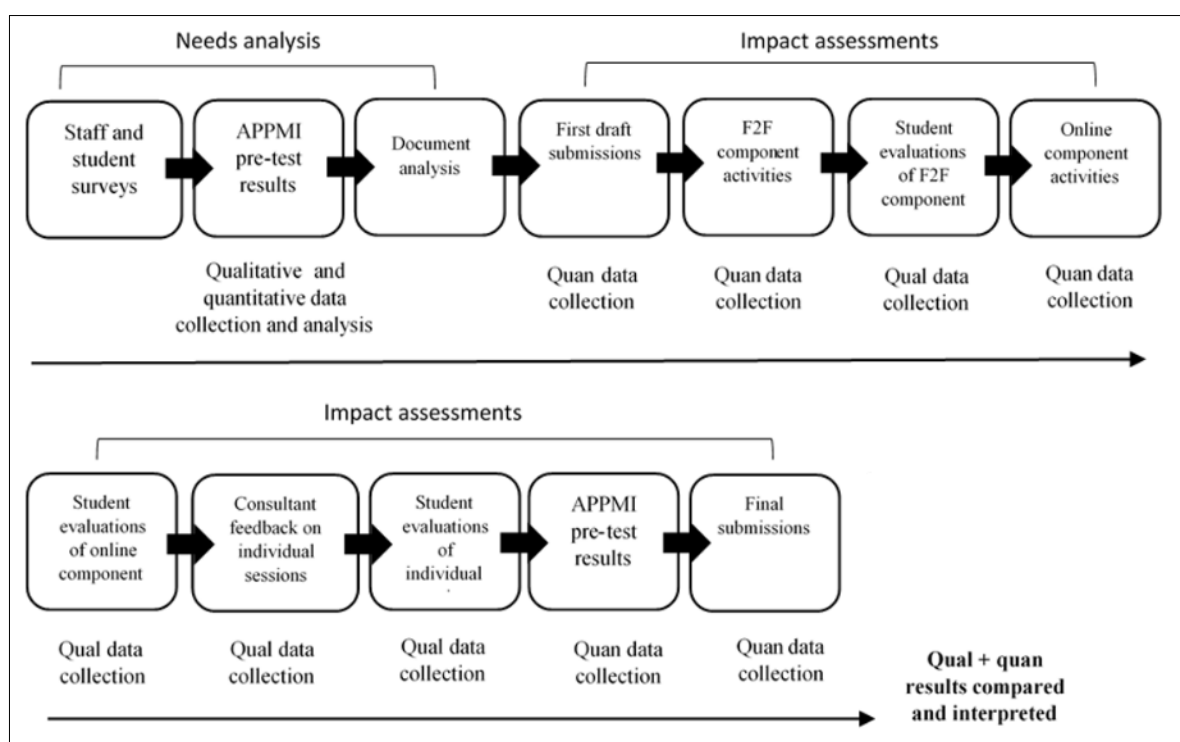

Figure 2: Notation system of the multistage evaluation design for URP intervention (adapted from Drennan, 2019:16)

4.1 Data collection

As mentioned earlier, the student and staff surveys, APPMI test scores, and analysis of the departmental/subject-area documentation formed part of the needs analysis that informed the development of the writing intervention for the URP students. The needs analysis was followed by the collection of several sets of data at various stages during the intervention to

determine its potential effect, as illustrated in Table 5. The document analysis here involved the analysis of students' first (pre-intervention) and final (post-intervention) literature reviews according to a set of criteria (rubric) that were compiled from the evaluation of various literature review rubrics. The rubric constituted eight sections, including literature review structure, introduction, body, coverage of content, conclusion, logic/coherence, referencing, vocabulary, language usage, and mechanics. Each of these sections contained further criteria relevant to the aspects/conventions of literature writing amounting to 29 criteria in total, which are listed Table 4.

Table 4: Literature review rubric criteria (Drennan, 2019: 246)

Literature review structure	1. Appropriate table of contents present	2. Introduction-body-conclusion structure is present	3. Appropriate use of headings and subheadings	
Introduction	4. Clearly introduces the topic/problem	5. Clearly states the rationale for the literature review	6. Clearly states the aim/purpose/problem to be discussed	7. Clearly indicates the main aspects/ideas to be discussed
Body	8. The paper moves from general ideas to specific conclusions	9. Body paragraphs make one clear point related to the thesis/problem	10. Body paragraphs have proper topic sentences	11. Topic sentences are supported by sufficient evidence
	12. Source information has been explained/analysed/elaborated on in supporting sentences	13. Relevant source information has been included as evidence in supporting sentences	14. A synthesis of a variety of sources to support the main argument/aim of the literature review is evident.	
Coverage of content	15. The discussion illustrates a grasp of main issues	16. Demonstrates proficient knowledge of the field	17. Relevance and/or significance of content covered is unquestionable	
Conclusion	18. Makes succinct and precise conclusions based on the review	19. Illustrates appropriate insight into the topic/problem	20. Conclusions are strongly supported in the review	
Logic/ Coherence	21. Effective use of linking words that link ideas/information within paragraphs	22. Effective use of linking words that link ideas/information across paragraphs	23. Effective use of links between sections	
Referencing	24. Accurate citation of sources within the text	25. Referenced sources accurately included in reference list		
Vocabulary, usage and mechanics	26. Contains no word/idiom choice errors	27. Contains no usage errors (e.g. word order, run-ons, fragments, etc.).	28. Contains no capitalisation, punctuation and spelling errors	29. Sentences are clear, concise and easy to understand

The pre- and post-intervention literature reviews were blind reviewed by five writing consultants selected based on their qualifications (MA and PhD) and consulting experience, who were furthermore unaware of which version (pre or post) they were marking. A pre-marking session was employed to ensure inter-rater reliability. Each criterion was graded according to a scale ranging from 0 ('inadequate') to 10 ('excellent'). The evaluation forms included a survey of students' perceptions of the content covered and the delivery of learning materials in the face-to-face contact sessions and online learning components of the intervention. After each individual consultation in the writing centre, students and writing consultants completed evaluation forms concerning the writing aspects addressed in the sessions and perceptions of students' learning. Students' final literature review scores, as scored by the writing consultants, and their scores for the various activities in the five parts of the writing intervention were collected to assess their ability to apply what they learned during the intervention. Students' post-intervention APPMI scores were also used to determine whether the writing intervention influenced their academic literacy proficiency.

Table 5: Overview of data collection procedure (Drennan, 2019:173-174)

Instrument	Data type	Information collected	Purpose
Document analysis	Quantitative	Students' pre and post-intervention literature review submissions	Marked according to a set of criteria to determine effect
Evaluation forms	Qualitative	Students' evaluation of face-to-face and online learning materials	To determine students' perceptions of their learning
	Qualitative	Consultant feedback on individual sessions at Write Site	To provide an overview of writing issues addressed during sessions
	Qualitative	Student evaluation of individual sessions at Write Site	To determine students' perceptions of their learning
Marks lists	Quantitative	Students' performance on out-of-class activities following face-to-face sessions	To determine students' ability to apply what they had learned
	Quantitative	Students' performance on online activities	To determine students' ability to apply what they had learned
APPMI test	Quantitative	Students' performance on APPMI post-test	To determine potential improvement in students' academic literacy abilities

4.2 Participants

Although 36 students were enrolled in the URP honours course, the writing intervention was piloted only with the 15 full-time students enrolled for the course, at the department's request. The various stages of the writing intervention were embedded in the course assessment and counted toward students' final literature review marks. Despite this, not all students engaged fully with all the stages of the intervention and failed to complete certain activities and submissions. These students' data were excluded from the results below which is why some of the results in the next section do not always include all 15 students.

5. Results and discussion

The descriptive statistics for students' pre- and post-intervention literature review submissions are reflected in Table 6. The results of the 13 students who made a final submission reflected a mean improvement of 14% from pre- to post-submission.

Table 6: Descriptive statistics for pre- and post-submissions (Drennan, 2019:178)

Variable	n	Minimum	Maximum	Median	Mean	Std Dev
Pre-submission	13	23	59	42	43	11.5
Post-submission		40	67	59	57	8.1
Improvement		2	27	12	14	6.9

The Shapiro-Wilk test results reflect a Sig. value greater than 0.05 (0.66), indicating a normal distribution of scores and that parametric tests apply. Accordingly, the results of a paired t-test in Table 7 furthermore indicate that the improvement from pre- to post-submission is statistically significant (Sig. <0.001). A Wilcoxon Signed-rank test was conducted to confirm the paired t-test results due to the small sample size, which confirmed the statistical significance (Sig. <0.001) in the change in scores.

These results can be interpreted as an indication that the writing intervention enabled students to apply what they had learned from the writing intervention to their disciplinary writing task.

Table 7: Paired t-test for differences in means between pre- and post-submissions (Drennan, 2019:179)

Paired Differences							
	Mean	Std Dev	Std. error mean	95% Confidence Interval		df	Sig. (2-tailed)
				Lower	Upper		
Post-pre submission %	14	6.95	1.93	9.8	18.1	12	.000

A further test was then done to determine the relationship between students' post-intervention (final) literature review submission scores and their APPMI pre-test scores. The results showed a strong (r = 0.81) correlation, indicating a solid alignment between the skills measured in the APPMI test and those assessed in students' post-submissions. Given the APPMI's high reliability (0.91), these results indicate that the test is an accurate measure of the skills required to produce information, particularly in written format, and could be used by the department as a future in-house assessment of students' writing abilities at the beginning of their undergraduate studies.

In terms of the intervention's potential effect on students' academic literacy abilities, particularly in relation to their preparedness to produce (written) information, a test was conducted to measure the potential improvement in students' performance on the APPMI. The descriptive statistics and paired t-test results for the APPMI in Tables 8 and 9 show an average improvement of 4.8%, from pre- to post-test. This indicates an improvement in students' academic literacy, although not statistically significant. Research (Van der Slik & Weideman, 2008) has shown that the factors of time, the initial level of academic literacy, and mother tongue all have a significant effect on the improvement in students' academic literacy abilities. Given the limited duration of the writing intervention and that all the students who wrote both the pre- and post-test (n=13) were second-language speakers of English, and time allocated to address students' writing needs was limited, an average increase of nearly 5% is acceptable.

Table 8: Descriptive statistics for APPMI pre- and post-test (Drennan, 2019:181)

Variable	n	Minimum	Maximum	Median	Mean	Std Dev
Pre-test	13	42	88	69	66.8	13.2
Post-test		46	93	69	71.6	12.7
Improvement		-15	25	5	4.8	13.3

Table 9: Paired t-test for differences in means between APPMI pre- and post-test (Drennan, 2019:181)

Paired Differences						df		Sig. (2-tailed)
	Mean	Std Dev	Std. error mean	95% Confidence Interval				
				Lower	Upper			
Post-test – pre-test %	4.8	13.33	3.70	-3.28	12.83	12		0.221

Figures 3 and 4 reflect students' evaluations of the face-to-face contact sessions and online components of the writing intervention. The figures show their perceptions concerning the relevance of the writing aspects covered, and whether the presentation of the materials facilitated their learning of these aspects. The majority of students strongly agreed (93%) or agreed (76%) that the writing aspects covered were relevant to the writing task (literature review) they were required to produce, and they agreed [strongly (98%) and agreed (70%)] that the presentation of the materials stimulated their learning of the aspects covered.

Students' responses did, however, indicate a preference for face-to-face sessions. Three students' comments concerning the online learning materials indicated that "online learning is not [for] everyone" and that "they don't like doing things online … [they] pre[fer] face to face" instruction (Drennan, 2019:183). Students' also provided comparatively more feedback in the open-ended questions for the face-to-face sessions than for the online components. They commented that the face-to-face contact sessions were "extremely useful and very helpful", that "they help guide [them] on what is expected in academic writing", and that "the information … was relevant to many writing skills" (Drennan, 2019:183). The responses also indicated that the use of subject-specific texts facilitated their learning of writing aspects (70%).
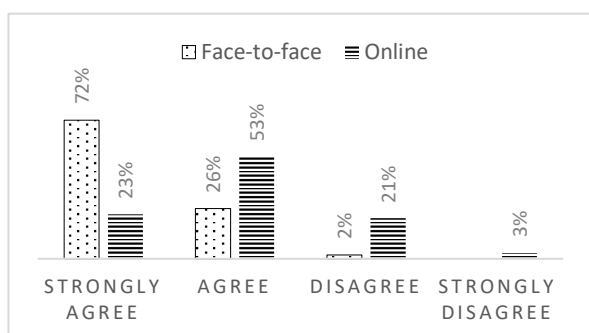

Figure 3: Student perceptions of the relevance of aspects covered in sessions (Drennan, 2019:184)

Figure 4: Student perceptions of facilitation of learning (Drennan, 2019:184)

Figure 5 shows that students generally agreed that the learning materials helped them better understand the writing aspects that were addressed, again indicating a preference for face-to-face instruction. The open-ended responses indicated that these sessions made them "look back at [their] literature review[s] and [made] them think twice about what [they had written] already" (Drennan, 2019:184). Students commented further that the sessions were "important in assisting one with formulating arguments" and "being mindful of the overall paragraph structure" when building arguments (Drennan, 2019:184). As illustrated in Figure 6, students felt confident in their ability to apply what they had learned during the writing intervention, specifically in relation to the face-to-face sessions. Students mentioned that "they should engage because [the sessions] really help"; they "are informative and … help one … acquire the necessary skills when writing academic papers". One comment was that students "usually battle with paraphrasing but [that day's] sessions helped [them] adopt some techniques that work best" (Drennan, 2019:184). Students furthermore agreed on the necessity of such interventions to help them approach writing tasks more effectively, and that more writing support should be provided throughout the year to assist students with their academic writing needs.
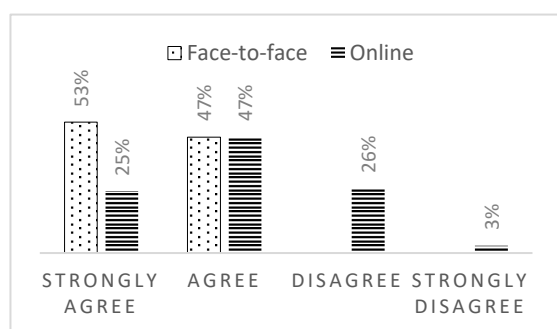

Figure 5: Student perceptions of their understanding of aspects covered (Drennan, 2019:185)

Figure 6: Student perceptions of application of learning (Drennan, 2019:185)

Regarding individual consultation sessions at the writing centre, Figure 6 reflects the aspects that consultants addressed during sessions with students. To clarify, tutorial sessions refer to particular writing aspects covered during consultations. The topics shown in the figure refer to the issues addressed in these sessions. For example, 'Assignment' tutorials focus on students' understanding of the audience, purpose and subject of the paper, while 'Invention' tutorials look at brainstorming, listing, or diagramming ideas to inform the writing process. 'Sentence' and 'Paragraph' tutorials are self-explanatory, and address issues that are 'Organisational', while 'Audience review' tutorials are concerned with the use of language and content that is appropriate to the audience and purpose of the paper. 'Drafting' refers to writing that is done during the session to fit the assignment using outlining techniques. Figure 7 shows that the aspects addressed most often included organisational, paragraph, and sentence-level tutorials. Students indicated that the individual sessions strengthened their

confidence in their writing abilities and aided them in improving their literature reviews. The open-ended comments indicated that students learned how to: "plan [their paper] before writing"; "structure their ideas … and … a thesis statement"; produce "a good and understandable introduction"; write clear "paragraphs and sentences"; as well as "present … [an] argument in a more specific and clear manner that allows the person who reads [their] words to understand without being familiar with the topic". One respondent commented that they learned "the importance of not losing direction when writing … and always linking back to the thesis statement". Several students also remarked that the sessions helped improve their "grammar, [sentence] structure and punctuation" (Drennan, 2019:186).
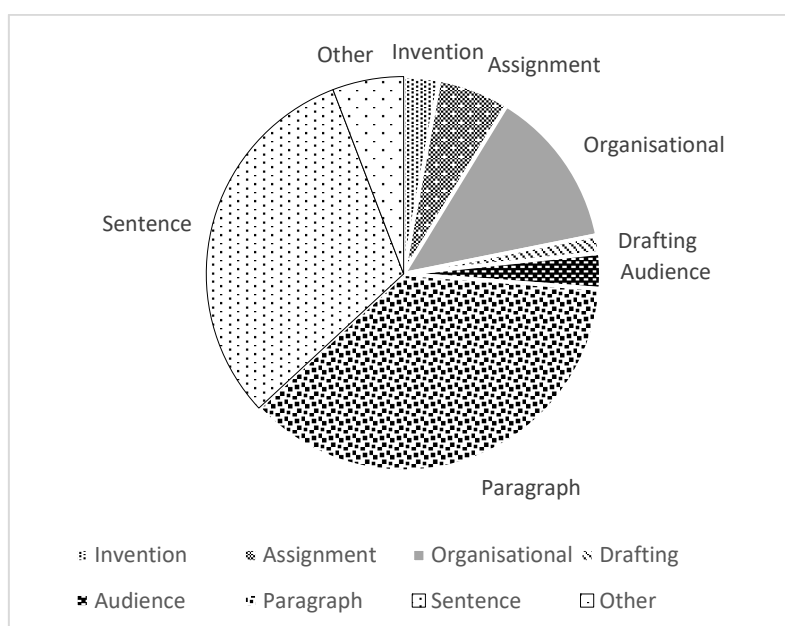

Figure 7: Aspects addressed during individual sessions (Drennan, 2019:186)

6. Conclusion

The results suggest that the writing intervention may have had a positive effect on the URP students' academic writing abilities. There was a statistically significant improvement in performance from students' pre-intervention to post-intervention literature review submissions, which suggests that they were able to apply some of what they learned during the writing intervention to make improvements to the final draft of their disciplinary writing task.

Although student perceptions are not direct evidence of the success of an intervention, they do serve as an indication of student engagement and participation, which are key to successful learning. Students were very positive about the writing aspects that were covered, the delivery of the content, and the fact that the materials were relevant to their field of study. Their responses indicated that they felt the intervention improved their understanding of the

writing aspects that were addressed, made them more confident in their writing abilities, and they felt that they were able to apply what they had learned to their literature review writing. Perceptions in this regard were supported by the improvement in students' scores on the APPMI from pre- to post-test, as well as the correlation between students' APPMI pre-test and final literature review submission scores. These findings are echoed by students' positive feedback concerning the value of the writing intervention in addressing their writing needs, although they did show a preference for face-to-face instruction. Importantly, students indicated that this kind of writing support is necessary to help them navigate the writing requirements in their discipline and that more regular support should be provided throughout their studies.

7. Limitations and recommendations

Some limitations apply to the study. The first concerns the small student cohort. Ideally, it would have been beneficial to focus on a larger postgraduate cohort to gain a more in-depth and comprehensive understanding of the writing issues faced by students transitioning from undergraduate to post-graduate studies. The student cohort, in this case, was limited to 15 students who were enrolled full-time, as per the department's request. It would have been beneficial to compare these students' final literature review submissions to those of the remaining part-time students enrolled in the URP course. This could have provided more insight into the potential effect of the writing intervention. A recommendation would be to expand the writing support offered to honours students, and investigate more definitely the extent to which their students benefit from such academic writing support initiatives.

The time that was available to address students' writing needs was the second limitation. Given the limited time available on the academic calendar for the year to cover the necessary course content, it is often difficult to negotiate an appropriate amount of time to focus on academic literacy and writing skills. A once-off initiative constituting three 2-hour face-to-face sessions, followed by five weeks of online workshop exposure, requiring approximately only two hours of student input per week, does not constitute a sufficient amount of time to address the writing needs of students at this level. For there to be an observable difference in students' writing skills, academic departments need to adopt a more writing-intensive, scaffolded approach to writing development. This kind of support needs to occur more frequently throughout the academic year and run concurrently with students' subject courses, from first year all the way through to honours year if we are to provide students with sufficient opportunity to develop their academic writing abilities before embarking on postgraduate studies.

A further limitation was that students completed the online learning components on their own and without individualised support, except for assistance with technical issues. Some students indicated that they preferred face-to-face instruction to the online format, which could have affected their engagement with the online learning materials and their effective

application of key writing aspects in their disciplinary writing. A possible recommendation would be to alternate face-to-face and online learning, in addition to allocating more time throughout the year for writing support, and adopt a more flipped-classroom approach, where "students receive a combination of traditional face to face (F2F) instruction in class and are also required to complete activities outside of the class, facilitated through a range of technological resources" (O'Flaherty & Phillips, 2015:85). This would allow instructors to expand on and address potential issues that may arise from online learning materials during successive face-to-face sessions.

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