Investigating the Literacy, Numeracy and ICT Demands of Primary Teacher Education

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Abstract: Pre-service teacher education programs are required to graduate students who meet externally determined standards in literacy and numeracy. However, little is known about the literacy, numeracy and ICT knowledge and skills demanded of teacher education students as they complete assessment tasks on which successful completion of their teaching degrees depends. This paper reports on the initial phase of a project that involved collecting and analysing assessment tasks across all subjects in a Bachelor of Education (Primary) program at a regional university in order to determine the range of task types. The findings of this project indicate that student teachers would be better equipped to meet assessment demands if provided with more support as they strive to respond to assessment tasks. Such support would also contribute to the ability of student teachers to meet externally determined standards of literacy and numeracy and information and communication technology required of graduate teachers.

Introduction

The pre-service education of primary teachers in Australia is currently being undertaken in a rapidly changing context of national reform, and curriculum and policy development. Graduates of pre-service teacher education programs will also be commencing their teaching careers in educational institutions that are undergoing continuous change at the local level. They will be expected to assist the schools, where they will be teaching, to respond to broad developments in national curricula and assessment regimes and the increased use of technology in all aspects of educational work.

Pre-service teacher education programs are required to enrol students who meet externally determined standards, including standards in literacy and numeracy, while graduate teachers are required to have achieved these standards. For example, the Australian Institute for Teaching and School Leadership (AITSL) (2013) stipulates that 'initial teacher education students are in the top 30% of the population for literacy and numeracy achievement', and has identified Year 12 results that 'can be used as proxy indicators of levels of personal literacy or numeracy'. Currently,

> [e]ach institution providing initial teacher education programs makes its own decisions about how applicants are admitted, and how students are assessed against the 30% literacy and numeracy standard.

> Institutions may still choose to admit students who do not meet the 30% literacy and numeracy standard when such students enter an initial teacher education program, but

institutions must work with students to ensure that they meet the benchmark by graduation.

… AITSL is working on the development of a national test that will assess whether students meet the 30% literacy and numeracy standard. It is due to be implemented in 2015.

The initiation of a project to understand better the literacy, numeracy (LN) and ICT demands of assessment tasks in a primary teacher education program at a regional university was partly prompted by the fact that some students, who may not initially meet the AITSL literacy and numeracy standards, are admitted to the program. For example, bonus ATAR points and flexible entry pathways are offered to promote social inclusion, especially for school leavers from regional, rural and remote locations, where school achievement is generally described as lower than in metropolitan areas (Roberts & Green, 2013; Pegg & Panizzon, 2007). These pathways are likely to increase the potential for students entering the university's teacher education programs, many of whom are from regional, rural and remote areas, to have levels of literacy and numeracy that do not fall within the top 30% of the population (Reid, 2010). Nevertheless, the university is required to provide support to ensure that on graduation these students have reached the required standard, as well as providing the necessary professional knowledge, practice and preparation for continuous professional learning after graduation.

Once students are admitted to teacher education programs there is a further requirement that they are prepared to meet the AITSL standards in literacy and numeracy (AITSL Standard 2.5) and ICT (AITSL Standard 2.6), not only because the teaching profession understands literacy, numeracy and ICT skills as fundamental to the work of teachers on graduation, but also because this expectation is shared by the wider community. Professional and community expectations of the literacy, numeracy and ICT levels achieved by graduate teachers have been compounded with the introduction of the *Australian Curriculum*, in which literacy, numeracy and ICT are not identified as separate components of the curriculum, but instead have been identified as *General Capabilities* 'made specific and extended to other learning areas' (ACARA, 2013).

There is a popular perception, one promoted in the media and culminating in policies such as the 30% standard, that students leave school with inadequate literacy and numeracy skills as traditionally understood, that too many of these students find their way into teacher education courses, and that these students graduate as teachers without meeting the literacy and numeracy standards expected by the community. This *deficit* view is not uniformly supported by evidence. The situation is further complicated by the very large cohort of mature-age students entering teacher education courses, as well as the claim that traditional views of literacy and numeracy standards do not adequately reflect the changing demands placed on teachers in schools and in teacher education with the advent and rapid adoption of increasingly sophisticated and ever-changing digital technologies in classrooms (Honan et al., 2013; Louden, 2008; Unsworth, 2014). As teacher education courses endeavour to respond to a variety of external pressures and inconclusive evidence, there is a risk 'that undergraduate degree programs … become *patchwork quilts* with traces of the old and new stitched together, sometimes at the expense of coherence and integrity' (McArdle, 2010 p.60).

A question yet to be explored is the effect on the experience of student teachers themselves as they navigate the assessment trajectory of teacher education courses that are constantly responding to shifting accreditation regimes, social and technological change and funding pressures. Despite the pressure to ensure that graduate teachers can meet specified standards in literacy, numeracy and ICT, there appears to be little known about how the 30% literacy and numeracy standard, and the expression of literacy, numeracy and ICT *General*

Capabilities in the *Australian Curriculum,* relate to the literacy, numeracy and ICT demands placed on students during their teacher education courses. Specifically, little is known about the nature of the literacy, numeracy and ICT knowledge and skills demanded of students as they complete the assessment tasks on which successful completion of their degrees, and therefore graduation, depends. To begin the process of investigating this relation, teacher educators at a regional university reviewed the literacy, numeracy and ICT demands of assessment tasks undertaken across the four years of the Bachelor of Education (Primary) program offered by the university, as well as students' experiences and perceptions of these demands.

Student attitudes to assessment practices in teacher education have not been widely studied, even though there is evidence that these attitudes have a significant impact on learning (Jong et al., 2011; Fletcher et al., 2012). A mismatch, such as reported by Fletcher et al. (2012), between students' perceptions of assessment practices in teacher education, and the beliefs of teacher educators about the purpose and value of these practices, has the potential to adversely affect attempts by teacher educators to design literacy, numeracy and ICT assessments that prepare pre-service teachers both to meet AITSL standards and to address the literacy, numeracy and ICT *General Capabilities* in the *Australian Curriculum* on graduation. Evidence cited by Fletcher et al. (2012) that there is often a discrepancy between the stated assessment goals of teacher educators and their actual practice is also significant in the context in which the project reported in this paper was initiated.

Early in 2013, following ethics approval, Phase 1 of the project was launched. This phase comprised a survey of student perceptions of assessment during their course and a review of the trajectory of assessment requirements across the four years of the course in order to:

- analyse the language, numeracy and ICT demands inherent in assessment tasks
- ascertain whether the tasks increased in complexity across the years of study
- identify any inconsistencies, gaps or other issues that emerged in relation to assessment.

The project involved surveying students about their perceptions and experiences of assessment tasks across their years of study in the Bachelor of Education (Primary). They were asked to consider the purpose, level of challenge and usefulness of assignments and to reflect on what types of support assisted them to understand the requirements of the assignments and to complete them efficiently and confidently. All 2012 assignments, across all subjects were collected in order to analyse the range of task types required and the similarities and differences in assignment instructions. A sample of student responses to these assignments was also collected. Initial findings from the first phase of this project are reported below.

A Survey of Student Experience and their Perceptions of Assessment Tasks

An analysis of information gathered through an online student survey was used to build a background picture of student experiences and perceptions of assessment tasks in the Bachelor of Education (Primary) program. The student survey was designed, using Qualtrics Survey software, to collect student perspectives on assessment requirements over the four years of the Bachelor of Education (Primary). The aim was to focus primarily on third and fourth year students who had completed a broader range of assessment tasks. Participation was voluntary and confidential, and participants completed the survey in the first half of the 2013 academic year. Sixty-one students participated in the survey and 59 completed the survey through to the end, although not all responded to all items. The first series of survey items collected information that was used to build a profile of the survey respondents. Table

1 presents a profile of the survey respondents with the number of students in each profile category listed in the third column.

Year of study	• First year	6
	• Second year	12
	• Third year	25
	• Fourth year	18
Gender	• Male	8
	• Female	53
Age ranges	• 18-24 years	13
	• 25-35 years	18
	• Over 35 years	30
Home language	All 61 respondents spoke English as the main language at home.	
Place of Year 12 completion	• At a rural high school –	21
	• At high school in a regional city	18
	• At a capital city high school	17

Table 1: Profile of student respondents to survey

Student Perceptions of the Frequency, Challenge Level and Usefulness of Assessment Task Types

A further series of survey items, both multiple choice and open response, were used to gather information about students' experiences and perceptions of assessment tasks. These items focused on the frequency, challenge level and effectiveness for displaying knowledge and skill of different types of assessment tasks the students had responded to over the course of their study. The open response items also asked questions about assessment items they found rewarding or frustrating.

Student responses to survey items about their experience of the frequency and challenge level of different types of assessment are summarised in Table 2. As Table 2 shows, the survey found that students experienced long written answers and digital responses (requiring ICT skills) as the most frequently used assessment task types in the program, with tasks involving numeracy skills and spoken presentations as the least frequent. At the same time, the assessment tasks that students experienced as the most challenging were those requiring literacy knowledge and skills. Tasks requiring ICT skills were experienced as less challenging, but more challenging than tasks requiring numeracy skills.

Frequency of assessment task types (in descending order)	*Challenge* level of assessment task types (in descending order)

- Long written answers - Digital response - Group/cooperative task - Short written answers - Practical activity - Single word and/or multiple choice answers - Problem solving - Design task using digital media - Task involving numeracy - Spoken response or presentation.	- Long written answers - Group/cooperative task - Practical activity - Design task using digital media - Problem solving - Digital response - Spoken response or presentation - Short written answers - Task involving numeracy - Single word and/or multiple choice answers

Table 2: Student perceptions of the frequency and challenge level of different types of assessment

Student responses to survey items about their perception of the *effectiveness* of different types of assessment tasks for displaying learning and for displaying skills are summarised in Table 3. The survey items enabled students to identify more than one type of response as effective. The number of students identifying each assessment task type as effective is included in the table in parenthesis.

Effectiveness of assessment task types for displaying *learning* (in descending order)	*Effectiveness* of assessment task types for displaying *skills* (in descending order)
- Long written answers (48) - Practical activity (42) - Design task using digital media (31) - Digital response (30) - Short written answers (24) - Single word and-or multiple choice answers (17) - Spoken response or presentation (14) - Group/cooperative task (9) - Problem solving (7 students) - Task involving numeracy (3)	- Practical activity (45) - Long written answers (38) - Design task using digital media (38) - Digital response (20) - Short written answers (14) - Group/cooperative task (14) - Problem solving (11) - Spoken response or presentation (11) - Single word and-or multiple choice answers (6) - Task involving numeracy (5)

Table 3: Student perceptions about the effectiveness of different types of assessment for displaying knowledge and skills

A comparison of Tables 2 and 3 reveals that while students identified tasks involving numeracy as being less frequent and less challenging than long written answers and digital responses, both response types with high literacy demands, at the same time they identified tasks involving numeracy as being less effective for displaying learning and skill than long written answers and digital responses.

Student Perceptions of the Frequency and Usefulness of Types of Assessment Support

Student responses to survey items about their perceptions of the *frequency* and *usefulness* of different types of support provided to assist with them with their responses to assessment tasks are summarised in Table 4.

Frequency of types of support offered in assessment tasks (in descending order)	*Usefulness* of types of support offered in assessment tasks (in descending order)
▪ Clearly worded and well-laid out assessment task ▪ Further explanation by unit coordinator/lecturer ▪ Step-by-step guide or procedure ▪ Model answer ▪ Graphic organisers/scaffold	▪ Clearly worded and well-laid out assessment task ▪ Step-by-step guide or procedure ▪ Further explanation by unit coordinator/lecturer ▪ Model answer ▪ Graphic organisers/scaffold

Table 4: Student perceptions about the frequency and usefulness of different types of support offered in assessment tasks

Student responses to a survey item about their perceptions of the *usefulness* of different types of additional support provided to assist with assessment tasks are summarised in Table 5. The survey item enabled students to identify more than one type of task as useful.

Most useful types of additional support in descending order of usefulness
▪   Supplementary materials from lecturer (40 students) ▪   Fellow student (39 students) ▪   Lecturer via website/email (37 students) ▪   Own research (27 students) ▪   Lecturer – face-to-face (13 students) ▪   Lecturer – by phone (10 students) ▪   Link to university support services (10 students)

Table 5: Student perceptions about the usefulness of different types of additional support

When asked in the survey to comment in response to open questions about the frequency, challenge level and effectiveness of assessment tasks, and the usefulness of support provided to them while undertaking these tasks, students generally gave considered responses. These comments provide a rich student's eye view of assessment requirements and processes in the Bachelor of Education (Primary) program. The comments were wide ranging, and at times students gave opposing opinions, but the following ten themes emerged.

1   Clear instructions and supplementary materials were experienced by students as the most useful form of support in enabling them to make satisfactory progress with their assessment tasks. Conversely, lack of clear instructions and poorly set out instructions were perceived by students as the greatest barrier to completing assessment tasks successfully.

2   University services providing student support and help with academic writing skills were generally perceived as helpful. Some students, however, criticised this support because they perceived it as being too general. In other words, advice was not directed at supporting them to meet the literacy demands of a specific subject area or a specific assessment task.

3   Interaction with a lecturer, both in person and by email, were perceived by students as the most useful forms of support while completing assignments.

4   Fellow students were perceived as a very useful means of clarifying any confusion with assessment tasks and of gaining support.

5   Group assessment tasks were strongly criticised by almost all students. Many felt that not all group members contributed equally to completing the assessment task and yet shared in the marks gained by the work of other group members. External students also complained about the difficulty of contacting other group members across different time zones and finding mutually convenient times to communicate.

6   Some students stated that *reflection* assignments were frustrating. This seemed to stem from a perception that responses or reflections were opportunities to share personal experience and so could not be legitimately assessed as either *right* or *wrong*. Nevertheless, students' personal responses or reflections were at times assessed as *wrong*.

7   Many students expressed a lack of confidence in writing essays, and questioned their value. Others felt that essays were difficult to tackle but in the end provided a useful opportunity to display what they had learnt.

8   Online tests and quizzes were criticised by students for taking up time and not really enabling them to display their knowledge. Exams were also criticised when no feedback was given, or when students had to travel long distances to sit for them.

9   Students stated that they were happy to complete assignments, if they were told the purpose for completing a particular type of assignment, and the format for presenting the assignment.

10 Students generally felt that most assignments assisted in preparing them to teach in schools. Practical assignments and professional experience were seen as the most helpful forms of assessment. Nevertheless, a few stated that, even after completing these assessment tasks, they still lacked the confidence needed to tackle teaching.

Assessment Tasks across the Four Years of the Bachelor Education (Primary)

As well as surveying student experience and perceptions of the assessment tasks of the Bachelor of Education (Primary), the first phase of the project mapped the distribution of assessment tasks across the trajectory of the course to investigate the consistency and variation in assessment task design, and the literacy, numeracy and ICT demands of these tasks.

All assessment tasks set across all years of the Bachelor of Education (Primary) were collected and collated for all units delivered in 2012. An initial analysis of the presentation of each assessment task identified components that were used consistently (e.g. due date, required length in number of words, assessment criteria), and components that were discretionary (e.g. overall purpose, formatting instructions). This stage of the analysis also determined the type of text students would need to compose in order to respond to the task effectively. Whether students were required to complete the task individually or in a group was also recorded.

Assessment Task Design

Assessment tasks in the Bachelor of Education (Primary) program are prepared by unit coordinators and made available to students at the commencement of the unit on a website accessed through the online learning management system [LMS]. The analysis of the design of these assessment tasks revealed a set of components used consistently in the design of all the tasks. These components, with explanations, are listed in Table 6.

Consistent components	
Unit code and name	Either as separate title or in header
Due date	The date by which the assignment must be submitted.
Weighting	Expressed as a percentage
Length	Stated as precise number of words or equivalence
Instructions/ description/ questions	States what students are required to do in terms of: ▪ the whole assignment overall or ▪ specified parts of the assignment
Assessment criteria	Mix of assessment requirements and criteria for displaying evidence of skills and knowledge – expressed as a list, in a table or as bullet points
Send for marking	Includes a warning about the need to click submit button
TurnItIn	Explanation
Availability date	The date from which the assignment can be submitted.

Table 6: Consistently used components of assessment task instructions

The analysis of the assignment instructions also revealed a number of discretionary components that did not appear in all assessment tasks. These elements, with explanations, are set out in Table 7.

Discretionary components	
Name of unit coordinator	
Assignment type stated	e.g. essay / profile analysis / case study
Study group	Off-campus or on-campus students
Purpose/task overview	Explanation of what the assessment task asks students to achieve
Presentation instructions	What to include and/or how to present the assessment task e.g.: use of appendix
Learning outcomes	Listing of unit LOs addressed by the assignment
Reference to standards/attributes	Integrated into the assessment task, or separate criteria accompanying the assessment task, or students directed to standards related to purpose of the assessment task but located elsewhere
Explanation of terms/ background info	Explanation given for terms used in the assessment task e.g. *Storysack* (Resource development assignment: English Language and Literacy, 1st year)
Links to websites	Links are provided to illustrative websites e.g. *Storysack*
Links to assignment policies	e.g. Assessment Submission, Marking Policy, Assessment Policy and Plagiarism.
Assignment tips	Provides advice about how to tackle the assessment task and what to avoid (e.g. Assignment 3: Educational Contexts, 1st year) can be in form of do/don't list (e.g. Assignment 2: Arts Education, 1st year)
Error/feedback codes	A guide or key to explain abbreviations or symbols used for correction or feedback.
Grade descriptions	Details of the university's unit grading system, as outlined in the University Assessment Policy
Scaffolded framing	Step-by-step guide to structuring assignment and/or advice on what must be included
Essential/required readings	A list of essential readings and/or advice on supplementary reading is provided
Referencing directions	Reference guidelines and/or link to referencing guidelines
Directions to support services	Statement about importance of proofreading and editing; reference to support available from Academic Skills Office
ICT instructions	e.g.: how to convert a text to PDF / how to take a screen shot / how not to breach copyright
Model text / example	A model or sample answer

Table 7: Discretionary components of assessment task instructions

The analysis of assessment task design revealed that assessment task components were presented in a range of *formats*, including variation in the presentation of *instructions*. In many cases the instructions were very dense and required students to scroll over long passages of text, making little concession to the students reading from small tablet or mobile telephone screens. This issue was reflected in a number of student comments collected in the survey. For example, in response to the survey item asking about the types of assessment tasks students found most frustrating, one student wrote:

- *Assessments that have pages and pages of confusing information so that it is easy to miss sections or I end up with no real idea of what is required. From these issues I end up frustrated and stressed.*

The same survey item also elicited responses from students frustrated by instructions they perceived were not clearly written or formatted, as illustrated in the following comments:

- *When assessments aren't set out well. We aren't given clear instructions. We haven't learnt what the assignment is about.*

- *The assessment tasks that are most frustrating are the ones that are wishy-washy, that are not clearly defined and that there is a lot of talk on* [the LMS] *about. And the ones that you have to read* [the LMS] *as the clarification is on there and if you understand what is being asked in the assessment outline and do it, it can often not match what has later been said on* [the LMS].

- *Assessment tasks where the lecturer does not explain the assessment task properly - cryptic, lecturer does not want to explain further or answer questions.*

- *Any with very broad or limited information. Tasks where the activity is not clearly explained and the lecturer offers minimal additional info or does not answer questions effectively to help students.*

- *Assessments where not enough detail is provided in the guidelines and where a marking rubric is not available. This makes it difficult to gauge what is actually required.*

The online teaching and learning environment, increasing use of smaller handheld screens and student perceptions of the need for more effective assessment task design and clearer instructions, raise the following questions:

- What components should be included in the design of all assessment tasks?

- What assessment task components should be at the discretion of individual unit coordinators?

- Would consistent formats and headings enable students to predict assessment task requirements more effectively?

- How can assessment tasks be formatted to account for small screen reading, for example, by signalling components through sectioning, headings and framing information?

- Should a well-designed PDF version of each assessment task be available to students?

- Should the instructions for all assignments suggest the most appropriate type of text to use for the response?

In summary, students perceive clear instructions to be the key component that enables them to complete assessment tasks efficiently and effectively. This finding suggests that assessment tasks could be made less frustrating for students if instructions could be written to a consistent and reliable template. An assessment task template would provide a degree of predictability for students as they interpret assignment instructions, particularly when reading the assessment task on small tablet or mobile telephone screens.

Distribution of Assessment Task Types and Response Text-Types

The assessment tasks across all four years of the Bachelor of Education (Primary) program were sorted according to task type and then analysed for the type of text the task demanded in response. The spread of assessment task types in 2012 across the four years of the program is summarised in Table 8. The number of each type of task used for assessment in each year of the program is also included in the table.

Year 1			
Task types	**Written tasks**	**ICT tasks**	**Other tasks**
Individual (15)	Extended writing (13)	Developing digital	Presentations (2)
Group tasks (3)	Sequences/plans (4)	resources (6)	Developing resources (2)
Mixed tasks (1)		Online tests (3)	
Year 2			
Task types	**Written tasks**	**ICT tasks**	**Other**
Individual (16)	Extended writing (12)	Posts on website (2)	Presentation (1)
Group tasks (2)	Sequences/plans (19)	Online tests (3)	Analysis (2)
Mixed tasks (1)			Teach a lesson (2)
			Collage (1)
			Critique (1)
			Examination (1)
Year 3			
Task types	**Written tasks**	**ICT tasks**	**Other**
Individual (15)	Extended writing (23)	Online tests (3)	Presentation (1)
Group tasks (3)	Sequences/plans (12)		Developing resources (4)
			Write article (1)
			Team role-play (1)
			Teach lesson (1)
			Student case studies (1)
			Management plan (1)
			Examination (1)
Year 4			
Task types	**Written tasks**	**ICT tasks**	**Other**
Individual (8)	Extended writing (10)	Online test (1)	Presentation (1)
Mixed (1)	Sequences (4)		Student text analysis (4)
			Portfolio (1)
			Bibliography (1)
			Action research plan (1)

Table 8: Spread of assessment task types across the four years of the BEd (Primary) program

No students responded to the survey item asking about their perceptions of whether the level of challenge and complexity of assessment tasks had increased over their years of study. However, the summary in Table 8 indicates that, while there is generally no increase in text complexity across the four years, the numbers of extended writing tasks and sequences/plans peak in the third year of the program. In addition, in the third year, extended writing tasks include for the first time critical evaluations and critical reflections, with an increasing number of critical responses required to respond to assessment tasks in the fourth and final year of the program (see Table 9).

Apart from online tests, the number of ICT tasks in which students develop digital resources is limited to eight and are set in the first and second years of the program only. The mapping also appears to indicate that literacy demands are more significant than numeracy

demands, even in mathematics education assignments. The project results point to the need for further investigation into the range, number and purpose of ICT and numeracy assessment tasks across the whole span of the Bachelor of Education (Primary) program.

The types of texts students need to produce in response to assessment tasks in the Bachelor of Education (Primary) are listed in Table 9 below. The number of each text-type set for assessment in each year of the program is also included in the table and where no number is listed, only one was set.

Year 1			
Extended writing	**Sequences**	**ICT tasks**	**Other**
Discussion essays (5)	Practical activity	Animation	Story-sack
Reflections (3)	Cognitive inquiry	Tool demonstration	Drama
Reports (4)	Visual arts	E-portfolio	Presentation
Question response	Drama	Online survey	Lead discussion
		Online posts	
		Artwork	
		Online tests (3)	
Year 2			
Extended writing	**Sequences**	**ICT tasks**	**Other**
Justifications (2)	Program	Online posts (2)	Collage
Synopsis	Lesson plans (10)	Online tests (3)	Analysis
Analytical reports (3)	Activity/teaching		Teach lesson (2)
Explanations (2)	sequences (8)		Critique
Rationale			
Report			
Reflection			
Description			
Year 3			
Extended writing	**Sequences**	**ICT tasks**	**Other**
Overviews (2)	Literary	Online tests (3)	Learning support role
Critiques/evaluations (3)	Lesson plans (3)		Portfolio
Persuasive text	Activity/teaching		Writing text
Explanation	sequences (3)		Presentation
Discussion texts (4)	Learning project		Magazine article
Reflections (2)	Inquiry sequences		Teach lesson
Descriptions (3)	(2)		Resource file
Question responses (4)	Education sequence		Reference list
Summary			Student case study
Rationales (2)			Management plan
Year 4			
Extended writing	**Sequences**	**ICT tasks**	**Other**
Analytical essays (2)	Unit of work (2)	Online test	Analysis of student text
Rationale	Teaching sequence		Seminar presentation
Explanation	Lesson sequence		Portfolio
Comparison			Bibliography
Summary			Action research plan and report
Critical reflection			
Report			
Question responses (2)			

Table 9: Text-types required to respond to assessment tasks

Table 9 provides an overview of the extent of the assessment burden faced by students enrolled in the Bachelor of Education (Primary) at the regional university. In addition to revealing the large number of assessment tasks that students are required to complete over the duration of the course, the distribution of assessment response types presented in Table 9 raises the following questions:

- Does the same term used to name a response type demanded by an assessment task mean the same across all disciplines and learning areas of the Bachelor of Education (Primary) course? For example, does the term *essay* mean the same in assessment tasks across all units of the course?
- Do similar terms indicate similar response types across all disciplines and learning areas of the Bachelor of Education (Primary) course? For example, when the terms *justification* and *rationale* are used in assessment tasks, are similar types of responses expected? Similarly, do the following terms refer to similar response types–*summary*, *synopsis*, *overview*, *critical reflection*, *critical evaluation*?
- Are students able to determine, from the instructions, the type of text needed to respond to each assessment task successfully? Is the type of text required made clear in the instructions?
- When an assessment task requiring a lesson or unit sequence is not accompanied by a *proforma*, template or graphic organiser, are students able to determine the format needed to present their work effectively?
- Would clarifying the terms used to name the type of response required to achieve the purpose of each assessment task and the expected text structure of each type of response, as well as using these terms more consistently throughout the program, enable students to complete assessment tasks more efficiently and effectively?
- Would the use of consistent and clearly defined terms to name the type of response required for each assessment task, and the expected text structure for each type of response, contribute to clearer explanations of the purpose of each assessment task, and clearer instructions for structuring and formatting responses to different assessment tasks?
- Would the use of consistent and clearly defined terms to name the type of response required, and the expected text structure for each type of response, provide more consistent and reliable support for students responding to assessment tasks, especially those students who, without this support, require additional assistance?

Assessment in Teacher Education

Assessment tasks in tertiary education are designed to achieve a variety of teaching and learning purposes. These include, following Coffin et al. (2003), one or more of the following:

- to assess course content, skills or knowledge
- to aid critical thinking, understanding and memory
- to extend student learning beyond lectures and other formal meetings
- to improve student communication skills
- to train students as future professionals in particular disciplines

The purpose of each assessment task influences the structure students are expected to use in their response to the task. If students do not recognise the purpose of a particular assessment task, they are less likely to submit their response using the expected type of text and format, and are less likely to be successful. Such students are, therefore, less likely to

perceive writing assessment responses as purposeful and of value to their learning, but instead 'as mainly an assessment hurdle' (Coffin et al., 2003, p.20).

Because the term *essay* is used for such a wide variety of assignment tasks and can refer to an equally wide variety of response types (Coffin et al., 2003), this term is particularly problematic. The term *essay* is the most common term used to label assessment tasks across the four years of study towards the Bachelor of Education (Primary) at the regional university. Yet, despite the term *essay* being used in many assessment tasks to indicate to students what type of response is required, in each case, a different type of text, made up of different elements, is required, depending on whether the *essay* is framed as a critique, evaluation, discussion, justification, rationale, reflection or exposition. An approach that teacher educators, who are responsible for designing assessment tasks, might use to reflect on this problem has been suggested by Coffin et al (2003).

> Our implicit knowledge of what to expect from text types in response to certain prompts, such as 'discuss', 'critically evaluate', 'compare and contrast', informs the judgements that we make about the success of students' texts as a whole. The way we can generalise text types enables us as teachers to isolate certain traits and make them explicit to students, but we need to bear in mind that text types vary in response to the function that a text performs, which is not always reflected in the descriptive term applied to it. (Coffin et al 2003, p.21)

Findings from the survey of students in the Bachelor of Education (Primary) program reported above reveal that students are often confused by the requirements of assessment tasks that demand an essay response and about the purpose or relevance of essays as a means for displaying their learning and skills effectively. The survey findings also reveal that many students lack confidence in their writing skills. Nevertheless, the survey responses also suggest that students perceive the essay in its various forms as a means for engaging with various disciplines and learning areas, and as useful for displaying their learning and skills. The student survey responses reported above thus resonate with the proposal that the essay is 'a key acculturation practice encouraging a critical and questioning attitude and approach to writing which involves making connections between theory and practice, drawing links between theories, evaluating research and arguing and reasoning' (Hyland 2009, p.132).

The types of extended written texts, or essays, that the Bachelor of Education (Primary) students at the regional university needed to produce in response to assessment tasks in 2012, are outlined in Figure 1 below.
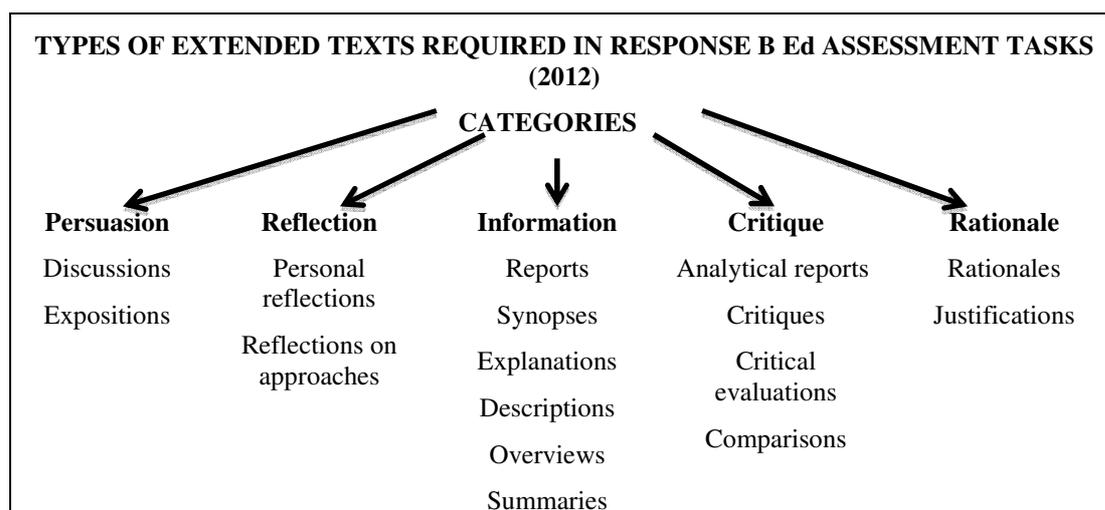
TYPES OF EXTENDED TEXTS REQUIRED IN RESPONSE B Ed ASSESSMENT TASKS (2012)

CATEGORIES

Persuasion	**Reflection**	**Information**	**Critique**	**Rationale**
Discussions	Personal reflections	Reports	Analytical reports	Rationales
Expositions	Reflections on approaches	Synopses	Critiques	Justifications
		Explanations	Critical evaluations	
		Descriptions	Comparisons	
		Overviews		
		Summaries		

Figure 1: Types of extended text required in response to 2012 Bachelor of Education (Primary) assessment tasks

If an overview of essay types such as the one presented in Figure 1, along with descriptions and models of text structures and the variety of academic writing required to compose essays of each type effectively, were shared by teacher educators and student teachers, this shared understanding would contribute to closing the gap between the responses expected by teacher educators to assessment tasks and the recognition by student teachers of what response is expected of them.

Academic Writing in Teacher Education

While some students enter tertiary institutions with a limited ability to deal with the *metadiscourse* of academic texts across the disciplines, it appears that students do 'actually develop the ways of writing valued by the discipline over time' (Hyland, 2003, p.131). It is therefore important that tertiary institutions build into their teaching systems ways of assisting these students to develop the written discourse skills that are essential for success in assessment tasks in each discipline. The review of assessment tasks set across all four years of a Bachelor of Education (Primary) program suggests that systematic assistance with academic writing skills for students teachers would be usefully based on an understanding of the following four characteristics of academic discourse: critical stance, rhetorical purpose, academic register and accuracy in spelling and grammar.

Critical Stance

An understanding of the value placed on critical stance in Western academic settings is particularly important for student teachers to grasp. Critical stance involves a 'systematic analysis based on a questioning attitude to the material being analysed and the methods being used, and [is] governed by the overall purpose of reaching a judgement' (Ballard & Clanchy, 1996, p.47 in Thomson, 2012). The need to take a critical stance is reflected in the wording of many of the assignments set in the Bachelor of Education (Primary) course at the regional university, as illustrated by the following examples:

- *This assignment requires you to work with your fellow students in groups to produce a constructive **critique** of the Unit Plan that is provided as a separate document.* (Assignment 3, Social Science Education, 3rd year)

- *The aim of Part A is for you to **critically analyse** some teaching resources relevant to science and sustainability. This is to make you aware of some of the resources available to inform your choice and/or development of appropriate teaching/learning sequences and help you to become an effective environmental-education-for-sustainability teacher. The first part of this assignment requires you to **critically analyse and evaluate** a COGS unit and one other teaching resource of your choice in relation to some of the issues we have looked at in this unit.* (Assignment 2 Part A, Science Education, 4th year)

To respond to these assessment task instructions effectively, student teachers need to understand that an 'individual critical and analytical stance is only valued if the criticism and analysis are based on the authority of tradition. If it is not based on previous knowledge, then it is not considered important or valuable' (Thomson, 2012, p.3). Understanding how to adopt a critical stance leads to an understanding of the type of evidence valued in particular disciplines and how this evidence should be incorporated into different types of assessment task responses.

Rhetorical Purpose

Students may enter university with a very limited school-based view of argument as a 'for and against debating model in which points for and against a particular position are listed, with a brief conclusion outlining the student's perspective' (Coffin et al., 2003 p.25). In contrast, student teachers need to understand that the function of academic texts, especially those identified as essays, is to persuade the reader by using the appropriate type of text, one that enables them to respond to assessment tasks with a logical argument, in which their points of view, rather than being expressed in terms of emotional response and personal experience, are expressed in terms of abstract values supported by appropriate evidence.

Academic Register

To compose extended written responses to assessment tasks, students are expected to be able to use the features of formal writing that together constitute an academic register. These features include well-crafted sentences, the use of technical and abstract vocabulary supporting a style that is more nominalised and dense than spoken language, the use of *impersonal* structures to limit the intrusion of a personal voice, and the strategic use of verbs and phrases to modify statements and temper claims (Coffin et al., 2003 p.28). If teacher educators in assessment task instructions clarified the degree to which an academic register is required in response to particular assessment tasks, student responses to these tasks would be more likely to succeed.

Spelling and Grammatical Accuracy

If the importance of editing and proofreading is emphasised in assessment task instructions, and students are alerted to common errors, the spelling and grammar errors,

which generate such negative responses from teacher educators, and later employers and the community, are more likely to be avoided (Coffin et al., 2003, p.31).

Conclusion

This project reported in this paper was designed to address a gap in understanding about the nature and distribution of assessment demands across the four years of a teacher education program. The findings so far indicate that student teachers would be better equipped to meet these demands if provided with more support as they strive to respond to assessment tasks. Such support would contribute to the ability of student teachers to meet the externally determined standards of literacy and numeracy (LN) and information and communication technology (ICT) required of graduate teachers. Furthermore, these graduates will be the teachers of students who will enter tertiary education in the future.

Student teacher responses to a survey about the assessment demands of their course and an analysis of the nature and distribution of assessment tasks across a whole teacher education program indicate the kinds of support teacher education providers might consider for improving the ability of their students to respond to assessment tasks successfully. These include:

1   clear and consistent presentation of task instructions that account for how these instructions may be read by students using a range of technologies
2   guidance within assignment instructions, particularly in earlier years of study, that indicate clearly for students the response types and structures required to respond to tasks successfully
3   online resources that detail the specific writing requirements across different subject and curriculum areas to which students can refer when completing assessment tasks
4   providing lists of words and grammatical structures to assist students to avoid errors that recur frequently in student responses
5   academic writing courses aligned to the specific writing requirements across different discipline areas, particularly for students who come from backgrounds that have not prepared them adequately for academic writing

The aim of the second phase of the project will be to clarify in more detail how effective support might be designed. This phase will include a text analysis of sample student responses to assessment tasks across the learning areas of the Bachelor of Education (Primary). This corpus of sample responses represents a spread of grades from *fail* to *high distinction*. Descriptions of the text structure and language patterns of sample responses to specific assessment tasks will be correlated with the grades assigned to the responses. Findings from this analysis have the potential to assist in the design of intervention strategies customised to the literacy, numeracy and ICT demands of the types of assessment tasks student teachers must respond to during their university study. One such strategy, for example, might be an inventory of response types, language varieties and formats students must master in order to meet the assessment demands of the Bachelor of Education (Primary) successfully. Such an inventory would link specific text structures, language varieties and formats with the purpose of different types of assessment tasks, providing the School of Education with a basis for developing systematic and targeted intervention, especially for those students who need support to meet the AITSL literacy and numeracy standards on graduation.

The student experiences and perceptions of the challenge level and usefulness of assessment tasks over the duration of the course, as documented on the basis of the initial survey, also indicate that further investigation is required in relation to the benefit of different types of assessment tasks to student learning and to the preparation of teachers. While an initial compilation of survey responses indicates that students found both extended writing tasks (essays) and group assignments challenging, they perceived extended writing tasks as more useful for displaying learning and skills than group assignments, which were almost universally criticised. That this result deserves further investigation is supported by Brew and Riley (2011) who report that, while participative assessment practices, including group assignments, are increasingly used in teacher education, the more students experience these practices, the less they appear to perceive them as valid.

Assessment in teacher education, as in all areas of higher learning, becomes effective when it engages students in productive learning, is embedded in teaching and learning, generates feedback that improves student learning and forges learning partnerships between students and teachers, and when the support is targeted and assessment practices are inclusive and trusted by both students and the profession (Boud et al., 2010). An understanding of the literacy, numeracy and ITC demands of the assessment regime of teacher education programs, and students' experience of these demands, will add to the resources teacher educators bring to the reform of assessment practices in the field of teacher education. Understanding how these demands shift and develop over the duration of a teacher education program from initial reflections, online tests, discussion essays to reflect on their own experience and tests of content knowledge, in the earlier years, to critical reflections and authentic 'capstone' performances, such as action research that engage students with the challenge of the profession, in later years, (Maxwell, 2012) is the first step.

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