

Improving Literacy and Numeracy

The



Way

The state of play

Nov

2010

Improving Literacy and Numeracy the JCU Way: The state of play as of November 2010

A draft report for the LitNum Group, James Cook University, 1st / 3rd Nov 2010

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Executive Summary

This report provides an overview of how the LitNum project stands as of November 2010. Participating faculties and schools provided data on their current literacy and numeracy assessment and support practices at meetings held in Cairns and Townsville at the end of September 2010. This data has been collated and reviewed to inform this report. A literature review of current numeracy and literacy testing and support practices within universities in Australian and, to a limited extent, overseas, is also provided. This report concludes by summarising the key themes emanating from the JCU data and the current literature. The predominant themes are: 1) the embedding of school/subject specific literacy/numeracy support, 2) the provision of generic online diagnostic testing for numeracy and literacy, 3) inter-departmental collaboration, and 4) motivating students to utilise diagnostic testing and support systems. These themes, then, provide the basis for discussions on the direction of the LitNum project for 2011.

Introduction: Re-visiting project outcomes and timeline

The JCU LitNum group was initiated in 2008 and received Learning and Teaching Performance funds through the Senior Deputy Vice Chancellor's (SDVC) office in May 2010. At that juncture, the stated outcomes for the research project were summarised as:

- 1.** Literacy and numeracy levels of commencing first year students in participating schools will be assessed and strategies for improvement of literacy and numeracy skills implemented through support strategies and refreshed curriculum.
- 2.** Commencing first year students will be given early feedback on their literacy and numeracy skills so that they can take action to improve their skills.
- 3.** All current JCU literacy and numeracy initiatives and intervention strategies will be documented and evaluated to provide a resource bank of strategies that can be adopted across the institution and inform research and publications by the staff involved in the project.
- 4.** Improved literacy and numeracy skills of JCU graduates.
- 5.** Improved retention of students deemed at risk due to poor literacy and numeracy skills.
- 6.** Provide pro-active strategies to address the needs of increased enrolments as a result of Bradley reforms.

The timeline for the achievement of these outcomes was presented as:

May – August 2010. Phase 1: Data gathering for the production of “Improving Literacy and Numeracy the JCU way”. The data gathering would include a concise summary of the diverse literacy and numeracy interventions currently underway at JCU.

A literature review of current initiatives in the sector also to be completed.

September 2010. Findings of the project shared as part of Teaching and Learning Week launch of “Improving Literacy and Numeracy the JCU way”.

August 2010 – January 2011. Phase 2: – Numeracy and literacy screening instruments developed in participating schools including ongoing curriculum development and integration of strategies to address literacy and numeracy needs of students.

February – May 2011. Phase 3: - Implementation of screening tests, evaluation and continued curriculum development as above.

This report will first inform LitNum stakeholders of the position of the research project as of November, 2010, by providing an overview of collated information delivered by the participating schools at the Cairns LitNum forum, 27th Sept, 2010, and the Townsville LitNum forum, 29th Sept 2010. Second, a preliminary literature review of current initiatives in the sector will be provided. Finally, LitNum initiatives for implementation in 2011 emanating from the conducted research and the literature review will be discussed.

How the LitNum research project presently stands.

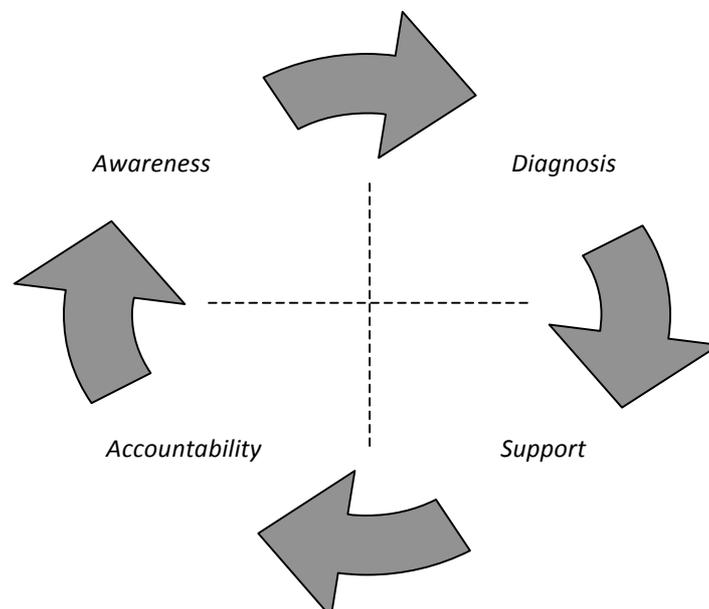
Literacy:

School of Education, Cairns. (Dr. Raoul Adam)

Overview

The First Year Literacy Initiative (**FYLI**) is part of a broader response by the School of Education to concerns about the literacy of pre-service teachers. It is a broad action research project that is designed to refine effective teaching and learning strategies related to the development of academic literacy. The FYLI's focus on academic literacy is sequenced to complement later emphases on pedagogy for school-based literacy.

Model for Academic Literacy Support



Action Taken:

Awareness

- Presentation of literacy initiative in teaching periods 1 and 2. (PPT, guide, T & L session distribution, Community Site visibility)
- Presentation of initiative in teaching periods 1 and 2. (PPT, guide, T & L session distribution, workshop, introduction to literacy tutor online and face-to-face, LearnJCU visibility)

Diagnosis

- Distribution of diagnostic tests in TP1
- Use of Literacy Assessment Rubric for some assessment in TP1 for diagnostic purposes
- Literacy data collection from TP1 and TP2 assessment
- Identification of students for support through diagnostic tests and assessment tracking

Support

- Distribution of Literacy Survival Guide and T & L session times
- Short academic literacy segments in core subject (ED1441)
- Face-to-face literacy support for identified students: General and assessment-based support. (Face-to-face literacy support open to general students)
- Community site with formative tests (TP1)
- LearnJCU academic literacy DB and resource link for core subject (ED1481)
- Scaffolded assessment and literacy guide for core assignment (ED1481)
- Lecture and tutorial modeling of assessment-based academic literacy (ED1481)

Accountability

- Use of literacy rubric to generate emails inviting student attendance at support sessions
- Emphasis on literacy criterion for markers

Ongoing Data Collection & Research

- Ongoing literature review of existing programs for academic literacy and literacy narratives
- Comparative analysis of diagnostics and subject performance

- Comparative analysis of TP1 and TP2 literacy performance on major literacy assessment
- Surveys of literacy support and resource usage
- Individual interviews concerning literacy support and engagement
- Quantitative analysis of academic literacy issues in qualitative diagnostic test
- Qualitative analysis of support staff involvement and perspectives

Interim Issues

- Use of early diagnostic testing for gateway or support identification
- Accountability of students for take-up of support
- Provision of sustainable funding affects model of diagnosis and support
- School, subject, and assessment-specific nature of literacy requirements
- Need for lecturer (content) – tutor (literacy) communication
- Definitions and understanding of literacy and privileging of particular understandings
- Literacy as a discriminating criterion

School of Education, Townsville.

A formative, diagnostic task of one paragraph is presented in the first tutorial, and marked by tutors. Feedback on common errors is provided in the following tutorial. This year, eight students were identified as requiring urgent assistance, while a further 22 required some form of support. Students were advised to seek assistance from learning advisors (LA), and the names of these students were provided to the Teaching and Learning Department.

The following common mistakes were identified:

- Apostrophes – very, very common error
- Subject-verb agreement
- Spelling – especially homophones like their/there, to, too, two; ‘sentances’; ‘writting’
- Construction/cohesion – e.g. no recognisable topic sentence, no concluding sentence
- Capitalisation – using capitals in the weirdest places

- Run on sentences – and on and on
- Informal language - I reckon, I nilly always....
- More than one paragraph – reading of the task
- Writing as spoken language

During the week 5 lecture, an assessable task in the form of an essay is presented, due in week 9. The lecture is devoted to essay writing. Students are advised that Helen Hooper is available for assistance in research and referencing, while Peter Hanley provides information on the availability and advisability of seeking assistance from Las.

Scaffolding is provided in the form of: 1) structure of a paragraph, 2) structure of an expository essay (handouts), and 3) structure of the essay. The assessment rubric includes literacy 20%, content 10%.

Learning Circles:

Reading and Writing Circles are an initiative of the School of Education, specifically staff members Angela Hill and Malcolm Hasse, and have run from Monday August 23 until week 13. The initiative was instigated for the retention of TP2 to TP1 (2nd year) students. The sessions were conducted as an hour session twice a week. The sessions were held throughout the semester, in a small group format, working through activities such as analysing the readings specific to a subject, as well as writing and assessment tasks for those subjects.

First and second year students were targeted through:

1. The ON Track Program (which identifies students at risk)
2. Lecturers in core subjects (ED1421, ED1481, ED 2990, and ED 1411) promoted the sessions with some emailing students or talking to individual students to suggest they attend.
3. Some students at risk with academic literacy were also emailed.

School of PHTMRS, Discipline of Physiotherapy and Occupational Therapy. (Keirra Lamb and Dr. Sally Ruston)

Reasons for providing a literacy program. Occupational Therapy (OT) and Physiotherapy (PT) students share a foundation subject, RH1004. The subject coordinator of RH1004 has the responsibility for the program. On average, the enrolment is between 150 and 160 students each year. The majority of students are high-school entry students with only a small percentage being later-entry or distance education students, or students enrolled in the general Diploma of Health Sciences which is a bridging course. The subject RH1004 has two written assignments; one assignment is a group task, and the other an individual task. The department has noticed that many students, as they progress through their respective courses, continue to have problems with basic literacy skills of grammar, punctuation and the structure of essay-type assignments. Staff within the two disciplines consider this subject to be ideally placed as a vehicle to identify students with learning and/or study skills problems.

Literacy Screening. Over the past 4 years, literacy screening has occurred in the first 3 consecutive lectures (Wks 1-3) of RH1004, delivered in TP1. Each week students are asked to write for seven minutes on a general topic associated with their home town. Feedback is provided by the subject coordinator each week. Students whose writing is identified as being unsatisfactory are encouraged to seek assistance from Learning Advisers.

In 2010, the first collation of outcomes from the screening occurred. It was found that after the first week of screening 25% of students were judged as having unsatisfactory writing skills. This decreased to 10% with the provision of weekly feedback, and perhaps also due to students becoming familiar with the requirements of the formative task.

Measuring the effectiveness of interventions. In the past three years of undertaking this activity there have not been the resources available to offer any remedial work, or to follow up if students access Learning Adviser resources or activities. Therefore, what impact those resources or activities may have had on the writing skills of students has not been measured.

Student response to screening and intervention. 2010 was the first year that student feedback was acquired since literacy screening commenced 4 years ago. In 2010, 87% of 98 respondents (full enrolment of RH1004 in TP1 2010 was 145 students) stated the feedback was beneficial and helped to improve their writing skills. This was achieved by allowing them to familiarise themselves with the level of literacy required at university. Of those that were directed to seek Learning Skills assistance, only 10% made contact with Learning Advisers. 13% stated they would attend a Learning Skills session, and a further 13% stated

that the feedback provided from the subject coordinator was sufficient enough to assist them. At present, there is no system in place to analyse whether this recommendation alone is enough to guide improvements in student's academic literacy.

Resources identified for the future development of literacy levels. The subject coordinator carries the full responsibility of screening the new cohort of Physiotherapy and Occupational Therapy students and providing weekly feedback on writing tasks, as well as collating any information gathered. Provision of weekly workshops from Learning Advisers is required for those students that are identified as having unsatisfactory writing skills. External staff/assistance to collate information and conduct follow up on screening/intervention outcomes should also be provided.

Additional support required from LAs. Possible provision of resources/staff to run one or two workshops for students identified as having significant literacy issues early in semester. This would have to be liaised with the new subject coordinator for RH1004, if it were to be carried out in 2011.

Advice given regarding academic literacy support. Reasonably high OP/TER for entry into the courses assumes a level of literacy skills evaluated at a secondary year level. Guidance is provided from a faculty level in regards to requirements for subject outline content and assignment guideline provision to students.

School of Business, Cairns and Townsville. (Chris Ware and Dr. Pierre Benckendorff)

Background. Feedback from staff delivering level 2 and level 3 subjects indicated that some students were not able to communicate their ideas effectively. The first year program was failing to develop students' writing skills. A major reason for this was that very few first year subjects had extended written assessment tasks because the large class sizes made these time intensive to mark. In 2005 the school introduced the literacy skills test to identify students who needed additional literacy skills development. When the BBus was redeveloped in 2008 this was further extended by deliberately embedding more writing tasks into core first year subjects.

Literacy screening. Literacy screening happens in the second lecture in week 2 of BU1005. Students whose writing is considered unsatisfactory are encouraged to attend workshops on academic writing. The school cannot force students to attend these workshops, they are encouraged to do so for their own benefit. Screening revealed that on average 20% of students entering the first year of the program are judged to have unsatisfactory writing skills but this varies from year to year and campus to campus. For JCU Cairns, the average percentage of students detected as being in need of assistance / up-skilling is in the vicinity of 30-40%.

Measuring the effectiveness of interventions. Students whose work is judged unsatisfactory in the first test are retested around week 11/12 of the study period. 75% of this group reach a satisfactory level of writing by the end of the study period. Students who fail the test the second time around are encouraged to enroll into the subject CU1010 in the following semester. Alternatively they can re-sit the test again the following semester. Students who do not pass this area of skills testing are awarded an RW for the subject BU1005 and if they do not pass this testing or complete CU1010 within six months have their grade amended to an N – Fail.

Student response to screening and intervention. A 2008 survey indicated that 60% of students either Agreed or Strongly agreed that the intervention was of benefit to them. 72% of students agreed or strongly agreed that the program should be retained for first year students in future years. Anecdotal evidence suggests that students are less hostile toward the Literacy Skills testing than is the case for ALEKS [numeracy] with a combination of two factors at play here. Firstly the Literacy Skills testing takes up a lot less of the students time and secondly, a connection and sense of relevance can be seen between this testing process and the subject BU1005 within which it is housed. [BU1005 is primarily a Business Communications subject].

Resources currently utilised. LA workshop and markers to mark the literacy test. A team of markers selected with the assistance / recommendation of LA staff are employed to mark the Writing Skills Tests. These markers are typically PhD / Masters students who are well known to the Learning Advisers as such deemed as being suitable markers with respect to this process

Resources identified for the future development of literacy levels. Workshops are provided by LA staff for Business students identified as being at risk in Cairns. These workshops follow a similar format to those run as part of the broader Writing Skills Workshop Series as provided by Bhama Daly. Bhama also offers individual consultation to students who have not passed the initial round of testing.

Responsibility for this program. The program is coordinated by the first year coordinator on each campus, and by the subject coordinators for BU1005. As with numeracy skills testing, the bulk of the onus for administering this program falls upon the subject BU1005 lecturer.

Additional support required from LAs. LAs are already providing the major aspect of support with respect to this initiative. The current system seems to be working acceptably well.

School of Law, Townsville and Cairns. (Jamie Fellows)

School's approach to literacy. LA1101 Legal Institutions and Processes: Literacy is addressed in each assessment item – specifically Blawgs (Legal Web Logs). Each student submits 3 Blawgs throughout semester, commencing from week 2. Risks are identified early and individual feedback given by lecturer. Also general feedback to the group is given showing common mistakes.

Literacy screening. Varying levels of literacy ability. Student cohort consists of young school leavers, mature students with a range of legal experience. Despite experience and maturity levels, general problems exist with referencing legal authorities. Grammar also tends to be an issue.

Measuring the effectiveness of interventions. Since there are 3 Blawgs, improvements can be identified. Also literacy is measured by the improvement in the sophistication of the student to use legal terminology in a structured argument.

Student response to screening and intervention. Students generally appreciate written feedback and there are some visible improvements throughout the semester for certain students.

Resources currently utilised. Emphasis on the Australian Guide to Legal Citation. Legal dictionaries, case authorities and a vast array of legal texts.

Faculty of Science and Engineering, Cairns and Townsville. (Prof Richard Pearson)

Bachelor of Science degree, Subject SC1101: Nature, knowledge and understanding, is a compulsory subject for all students in the faculty.

SC1101 – the graduate qualities fostered by this subject include:

- The ability to read complex and demanding texts accurately, critically and insightfully;
- The ability to speak and write clearly, coherently and creatively;
- The ability to communicate effectively with a range of audiences

As part of the tutorial program for this subject students are required to write a 200 word paragraph (worth 5%) to be submitted in Week 8. Feedback is given on this writing before the submission date of the main assignment worth 15% at the end of week 9.

The present course coordinator, Richard Pearson, discussed the desirability of introducing the first writing task earlier in the course (say week 3 or 4) to give more time between when the feedback is given and the due date of the essay.

Numeracy

Faculty of Science and Engineering, Cairns and Townsville. (David Godwin)

Faculty's approach to numeracy. MA1020 is provided by this faculty. This is the subject many disciplines use for students who have not completed Mathematics B. Students are told

to enrol in MA1020 if they do not come with the Maths B pre-requisite needed for all FSE courses. The faculty is the provider of this quantitative skills course, a service which is required university-wide.

Numeracy screening. No formal screening is currently in place. This year in Cairns, mastery tests for the Numeracy and Calculator Skills course (with learning support) were trialled as part of the MA1020 delivery. The first test of each was effective as a screening procedure.

Measuring the effectiveness of interventions. The grades students receive in MA1020 are used to measure the effectiveness of intervention. The progression of these students throughout the remainder of the quantitative aspects of their degree should be considered too, although this analysis is not presently done enough.

Student response to screening and intervention. Anecdotal comments of support and appreciation were received from quite a few students, and from teaching staff, at the end of the Prep Chemistry intensive, which followed MA1020 in TP1.

Resources identified for the future development of literacy levels. At present, screening and teaching materials are prepared by teaching staff. However, MA1020 needs to be redeveloped to cater for the very diverse student cohorts we now receive. The Numeracy and Calculator Skills intervention in Cairns this year will be developed into a serviceable package for inclusion in all MA1020 deliveries.

Additional support required from LAs. LA support is particularly required to develop student motivational strategies and the development of a stronger work ethic.

School of Business, Cairns and Townsville. (Chris Ware and Dr. Pierre Benckendorff)

Background. Prior to the introduction of this program in 2005, many students were failing their numeracy-based core subjects in business. Business does not require Maths B as a pre-requisite, but students do require some of the concepts typically taught in Maths B, and it was

necessary to find a strategy to both test and improve students' maths skills. A compulsory first year business maths subject was not seen as a solution because some students required very little additional assistance or development, while others require substantial remedial training. Other options that were considered included bridging subjects and an entry test in 'O' Week, but due to the short time period between QTAC offers and enrolment, this was not seen as practical.

Responsibility for this program. The program is coordinated by the first year coordinator on each campus, and by the subject coordinators for BU1005. The bulk of onus falls upon the lecturer teaching the subject BU1005.

School's approach to numeracy. ALEKS, a web-based, artificially intelligent assessment and learning system, is utilised. ALEKS tests students on a range of mathematical applications determined by the school. Students work through sample problems in areas where they are deficient, and are retested until they reach a satisfactory standard. Broad areas tested via the version of ALEKS that we have had customized for the School of Business, JCU, include: Integers, Rational Numbers, Percentages & Proportions, Basic Algebraic Operations, Linear Equations, Functions and Graphs, and Basic Statistics. Students need to prove their competence across 157 sub topics within the 7 modules identified above.

Numeracy screening. Students complete an initial test that determines which topics they need to revise, and the extent of that revision required. The online training is therefore customised for each student. Customisation, following the initial testing process and the demonstrated level of maths ability, results in quite some variance in the amount of time required by students to complete the program. The fastest Cairns based completion during past three years was 1.75 hours, the slowest completion to date has been 101.5 hours. On average, students tend to take between 20 – 25 hours to complete ALEKS

Measuring the effectiveness of interventions. By the end of semester, all students must achieve a score of 100%, which means they have mastered all topics. Students who do not complete ALEKS by the end of semester are issued with an RW grade and given an additional six months in which to complete the program. If they do not complete ALEKS by the end of this extended period, their grade is updated to an N, that is, Fail.

Student response to screening and intervention. A 2008 survey indicated that 66% of students either agreed or strongly agreed that the intervention was of benefit to them. Anecdotal evidence and email correspondence from students in Cairns indicate mixed feelings about ALEKS. Some students can see its benefit and are appreciative that the school has [in a way] forced them to address identified areas of weakness. At the other extreme, a number of students are quite resentful about being forced to complete ALEKS as part of a subject that has no perceived mathematical linkage or content at all. In extreme cases, students have withdrawn from the subject, and in some instances their degree or certificate, because of the need to complete ALEKS. It should be noted that as an incentive for students to complete ALEKS the school offers a bonus points system, whereby completion by certain set dates sees students earn bonus points that can be applied against one of the housing subject's such as BU1005. Staff teaching the subject BU1007 Business Statistics in Cairns have commented that students' ability to cope in that subject had improved since the introduction of ALEKS in 2008.

Resources currently utilised. ALEKS: each student has a personal access code used for online registration. The access code is included in the cost of the textbook for BU1005. Students who do not purchase a textbook are provided with a code paid for by the school. Codes cost about \$65 each, not a cheap solution. Once registered, teaching staff can track the progress of students at any time.

Resources identified for the future development of literacy levels. None other than admission to the ALEKS website. But the monitoring of ALEKS, and dealing with student's complaints, does create an administrative burden for whoever is overseeing the subject in which it is cased. There is also the issue of financial costs that need to be absorbed by the School as a result of HESA legislation. This situation sees the School needing to purchase approx 100 ALEKS codes each year, at a total cost of approx \$6,500.

Additional support required from LAs. Learning advisors play a critical role in providing one-on-one support for a small number of students who have major shortcomings in numeracy skills and who do not cope well with the online training interface provided by ALEKS.

Advice given to students regarding academic literacy support. ALEKS seems to be working quite well but perhaps the amount of time that students have to spend on it if they are less mathematically adept is excessive. A suggestion that I have here is that students somehow be forced to take the initial test by Week 2 of semester and if they score below a certain % on the initial test say 35% they are then forced to enroll into the subject MA1020 as opposed to completing ALEKS, with MA1020 being likely to take them less time to complete [+ face to face contact with lecturer / tutors likely to benefit this group]. There are however complications with this suggestion re timing and fact that for students doing some of our majors the flexibility to undertake MA1020 as a first year subject is problematic given rigidity of the subjects that they are required to complete at Level 1.

School of Nursing, Cairns and Townsville. (Dr. Elspeth Hillman)

School's approach to numeracy. In 2010 students sat the Grade 8 level numeracy test that was used in a number of schools. Students were then given practice questions to improve their Maths skills and directed to a number of Maths sites on the internet. Extra workshops were also offered by the Learning Advisors.

Numeracy screening. The median marks for students on both campuses was 18/30. This was a slight improvement on the 2009 results.

Measuring the effectiveness of interventions. We tested the students on the same test at the end of the study period. There was an increase in the average marks achieved. In the medication testing a much higher % passed on the first test in 2009 and 2010 than in previous years before this approach was adopted. Overall in TP1 approx 30 students across the 3 campuses required a third attempt. TP2 – only one student in TSV needed to be offered a third attempt.

Student response to screening and intervention. The students even though informed it's a screening test – face it with trepidation and nerves. Follow-up test was done in the last week – bit over numeracy as all had achieved mastery.

Resources identified for the future development of literacy levels. Looking at aspects at reducing the psychological response to doing a maths test. Encouraging those who need the assistance to make time to take up the supports available.

Resources currently utilised. Weekly sessions in tutorial focusing on numeracy – then moving to medication calculations.

Background to this approach. Poor performances in achieving mastery in the medication calculations (the 100% pass mark required no doubt adds to the stress levels of students). In 2011, rather than having paper based calculations each semester. In TP1 across the three years to do paper base test. In TP2, students do practical medication administration incorporating medication calculations.

Responsibility for this program. Practice subject co-ordinator for each year.

Organisational frameworks and policies underpinning your approach. Certainly for those not achieving mastery first time – policy requires students to attend remedial session on medication calculations and session with learning advisors on exam technique before being offered a second attempt to achieve mastery. Clearly stated in subject guide.

Faculty of Science and Engineering, Cairns and Townsville. (Prof Richard Pearson)

Bachelor of Science degree - Subject SC1102, Systems Modelling and Visualisation, is a compulsory subject for all students in the faculty.

SC1102 – graduate qualities includes:

- The ability to generate, calculate, interpret and communicate numerical information in ways appropriate to a given discipline or discourse;

Learning outcomes for this subject are

- through effective application of quantitative techniques, empower students with ability to enhance their knowledge of real world systems and solve real world practical problems;
- equip students with the capability of translating between verbal, algebraic, numerical, visual and conceptual characterisation of a system;
- demonstrate the advantages of being quantitatively skilled in a scientific environment;
- demonstrate the accessibility of mathematics and increase student familiarity with associated terminology.

Currently there is no numeracy skills screening for this subject, however, the course coordinator would be interested in some form of screening in 2011 and some assistance provided to students needing to improve their numeracy skills.

Literature Review

Introduction

The following quotes have been collated from contemporary journals and online sources to provide an overview of current literature describing numeracy and literacy testing and support practices occurring within the first year of university studies. The collator believes that as the quotes are largely self-explanatory, limited introductions are required.

Murray (2010) makes the observation that, “if they are to meet their moral obligation, universities need to identify those at risk and intervene in a timely fashion in order to ensure these students have every chance of success as students and graduates” (p. 62).

Dyson (2009):

Over the last decade, a range of procedures have been designed to diagnose the writing needs of international and local tertiary students (these are generically referred to as post-entry language assessments or PELAs). However, with growing interest in the English language development of international students (e.g. Bretag, 2007; Dunworth, 2009), these procedures are increasing in number and occupying a more significant role in policy making. Indeed, one of the ten “Good Practice Principles for English language proficiency for International students in Australian universities”

proposed by the Australian Universities Quality Agency (AUQA) (2009) focuses specifically on the need for improved language assessment. (p. A-52)

Bretag (2007):

In raising the entry requirements to the appropriate level, universities may suddenly find fewer international students enrolling in Australian programs. This may provide the impetus for the federal government to increase the public share of total expenditure on tertiary education beyond the present miserly 48 per cent to levels more in keeping with other OECD countries (such as the United Kingdom at 70.2 per cent, Germany at 87.1 per cent and Denmark at 96.7 per cent). 21 At present, with funding shortfalls filled by fee-paying international students, and few universities speaking openly about the decline in standards, there is no incentive for the government to change its policy (p. 19)

James, Krause, and Jennings (2010):

Over the past decade the proportion of students agreeing that the standard is higher than anticipated has declined significantly from 45 per cent (in 1994) to 40 per cent (in 2009). While the broader student body may feel comfortable with the standard of work expected, this is not the case for all students. Some key subgroup demographics may be summarised as follows: females, international students, students from low socioeconomic backgrounds and those who are in the lower achievement bands are significantly more likely than their peers to say that the standard is higher than expected. These are timely reminders of the value of ongoing efforts to monitor and address the needs and expectations of students from diverse backgrounds

Diagnostic assessment methods and support systems in current use

James et al (2010) described findings from a 2009 survey of first year experiences in Australian Universities taken from 2422 useable surveys across nine institutions of higher education, and state “Most universities provide extensive supports within and beyond the curriculum to help students to develop the requisite skills to assist with assignment preparation. These include online writing and referencing tutorials, examples of previous

assignments in the unit by way of providing positive and negative exemplars and various other preparatory sessions” (2010, p. 40). The following quotes describe diagnostic assessment methods and support systems employed within a selection of universities in Australia, New Zealand and South Africa.

Post-entry English Language Assessment (PELA)

Dunworth (2009) discussed a study conducted in 2008 and asserts that Post-entry English Language Assessments (PELA) are used in over one third of Australian universities, with a further twelve institutions planning to introduce them in the near future.

The following information on PELAs in use was provided. (p. A4)

- Source of PELA: In-house design: 8 External design: 3
- Delivery mode: Paper-based: 7 Online: 4
- Manner of delivery: Supervised: 6 Unsupervised: 4
- Compulsory: 10 Optional: 2
- Availability: At specific times: 6 (usually at the start of semester)
- Throughout the semester/year: 4
- Content of PELA: Reading: 7 Writing: 10 Listening: 2 Speaking: 0
- Other content listed: vocabulary 2; grammar 3; Australian culture 1; inference 1; spelling 1
- Target cohort: All students: 7 EAL students: 4

Dunworth (2009) points out that “it was believed that the constraints and limitations of such instruments should be made clear to decision-makers and that PELAs should not be accorded a greater significance in terms of their results than other indicators of student performance” (p. A7).

University of Melbourne: Diagnostic English Language Assessment (DELA)

Ransom (2009):

Developed by the UoM’s Language Testing Research Centre (LTRC), the Diagnostic English Language Assessment (DELA) was conducted upon university entry from 1999 to 2008 on a voluntary basis. DELA is a timed test (1 hour and 45 minutes) and is comprised of three subtests: reading, writing and listening. It is designed to test the academic language skills needed for university-level study. The 45-minute reading

subtest includes two reading passages totalling 1,500 words. Question types include true/false, information transfer, cloze, short answer, summarising, multiple choice and matching ideas. The 30-minute writing subtest is a 300-word argumentative essay based on information provided, to which students can expand with their own thoughts and opinions. The essay is assessed on vocabulary and grammar; coherence and cohesion; and content. The 30-minute listening subtest employs a short lecture from which students must recall main and supporting ideas in the form of short answers and the completion of a diagram. The reliability and validity of DELA, although important, fall outside the scope of this paper. (p. A15)

Curtin University: UniEnglish

Dunworth (2010):

At Curtin we introduced an institution-wide online PELA called UniEnglish (actually more of a screening instrument than a full-blown diagnostic) in 2008, which is optional and confidential. Students accessing it increased from 38% of new students in 2008 to 66% in 2009 but the full completion rate is only 15%. One key objective was promoting awareness about English proficiency, so it has been successful from that perspective. The reasons for low completion rates may be varied (e.g. not needed by great majority as intended for EAL students, too easy, too difficult, too long, too technically problematic) and will be explored this year.

University of Auckland - Diagnostic English Language Needs Assessment/Screening test (DELNA)

Read (2008) explained that the Diagnostic English Language Needs Assessment (DELNA) has been implemented at the University of Auckland in New Zealand and contains the following items (p. 183):

The structure of DELNA

Screening (30 min)

- Vocabulary
- Speed Reading

Diagnosis (2 hours)

- Listening to a mini-lecture
- Reading academic-type texts
- Writing an interpretation of a graph

Reid (2008) also pointed out that the DELNA “

does not function as a gate-keeping device for university admission, and students cannot be excluded from the institution on the basis of their results in either phase of the assessment it is not simply a placement procedure to direct students into one or more courses within a required EAP programme according to their level and areas of need. There is a range of language support options that students are recommended to participate in as appropriate. this approach is also based on the assumption that academic language support will be more effective if students recognise for themselves the extent of their language needs and make a commitment to attend to them it is centrally funded with a direct management line to the office of the Deputy Vice-Chancellor (Academic). (p. 189)

University of Sydney:

Measuring the academic literacy skills of university students (MASUS)

Bonanno & Jones (2007):

MASUS is a diagnostic assessment instrument designed to measure students' academic literacy. The whole MASUS procedure enables the creation of a literacy profile of a student cohort in terms of a set of specified criteria. This profile gives staff guidance as to where they can most effectively focus their resources in order to develop their students' literacy and generic skills. The procedure also identifies students who are at risk of failing their course because of poor literacy skills, thus enabling support to be made available to them. It has the potential to be integrated into the course curricula and assessment structure, and could be used as framework for individual student literacy profiles. (p. 1)

Bonanno & Jones (2007):

The assessment criteria are categorised into four main areas, which represent a spectrum of perspectives on the students' writing, from a macro level to a micro level as follows:

A. Information retrieval and processing of verbal, visual and numerical data - is this accurate and appropriate to the task?

B. Structure and development of text - is this clear and generically appropriate to the task and its context?

C. Control of academic style - does the grammar conform to appropriate patterns of written academic English?

D. Grammatical correctness - is the message communicated without the interference of grammatical errors?

Dyson (2009):

While MASUS takes function not structure as its departure point, Criterion D also recognizes the role of structure and how it can be connected to the role of meaning in linguistic assessment. The question addressed by Criterion D exemplifies this point: "Is the message communicated without the interference of grammatical errors?". (p. A-64)

Dyson (2009):

A PELA must reveal the precise strengths and weaknesses of student work so that "at risk" students can be identified and appropriate support provided. MASUS can do this in the grammatical area because, as the SLA evidence underlines, the selection of the criterion itself and its sub-criteria reflect major student difficulties. (p. A-65)

Scoullera et al. (2008) explained that the Faculty of Pharmacy at the University of Sydney has:

used the MASUS literacy diagnostic procedure over the last decade. In that time it has become an intrinsic part of the first-year program, and follow-up literacy support,

aiming to develop adequate literacy skills in students who did not reach an appropriate standard in the diagnostic procedure, has been embedded in the first-year second-semester coursework” and that “the MASUS diagnostic procedure is a discussion-based writing task integrated into course content and administered ideally after the first few weeks of semester. Content input for the task may be provided through readings, through lectures, or, increasingly, in any of a range of ways that students are required to process information in their particular discipline. This is usually done as a timed and supervised exercise within their subject timetable, using lecture or tutorial slots. (p. 167-8)

Scoullera et al (2008) added that “overall, approximately 19% (26 out of 135 students) received a total score of less than 10 (out of a possible 16) and failed their first attempt at the MASUS task. In this cohort, for any one MASUS skill area, at least 24% of students were found to be unsatisfactory, with students poorest in the area of *Structure and development of text* (42% unsatisfactory)” (p. 175).

University of Adelaide

Picard (2010):

The recommendations of our recent Working Group on English Language Assessment and Services at Adelaide Uni strongly supported research into and support of PELAs. In line with this, we are introducing a PELA as a trial into the Integrated Bridging Program-Research at Adelaide uni this semester. The PELA will consist of students reading and writing a short summary of an article using in-text referencing style appropriate to their discipline. The marking will consist of the IBP lecturers filling in a form recommending which of the 14 generic workshops we recommend students should attend (full participants in the program should attend at least 8) and a decision on whether a student should be a full participant in the program (attend at least 8 workshops and all 12 discipline-specific seminars and complete 2 drafts of the research proposal and a practice seminar presentation) or whether they can be a negotiated participant (complete a minimum of one draft research proposal and one individual meeting with IBP lecturer). We have always had this task, but we will now be formalising it as a PELA.

University of South Australia

Murray (2010):

UniSA is currently undergoing trials of a test (the AEST - Academic English Screening Test) developed at Melbourne Uni. Thus far the test seems to be a good, and potentially quite cost effective screening instrument - and, importantly, one that appears to discriminate between native speaker and non-native speaker students. This is critical given that we have to consider the language needs that often exist for ESB students. The test is only a screening test and is not diagnostic; however, it has a written component and this could be used to some extent for diagnostic purposes. Besides, most 'diagnostic' measures that I know of that are being used by universities are essentially based on a written piece anyway.

Whether UniSA ultimately goes with PELA in the form of a test remains to be seen. As we all know, there are real sensitivities around this and many universities are wary of university-wide interventions of this kind and also worry about being first out of the blocks - and the marketing implications that can bring with it, both good and bad. This is why cooperating and sharing this kind of info with each other can make our lives easier as we are more informed and so better placed to demonstrate that there is a concerted attempt by institutions to address the PELA issue and cite different pilots as evidence of more effective or less effective approaches (something which, of course, is context specific to some extent).

South Africa:

Weideman (2006):

Every year the academic literacy of about 14000 new students enrolling at three South African universities, Northwest, Pretoria and Stellenbosch, is tested by means of a standardised assessment instrument, the *Test of academic literacy levels* (TALL). Increasingly, instead of blaming the schools for the degree of underpreparedness of students, universities and other institutions of higher education see this as a challenge, and to overcome the problem focus rather on intervention strategies

Section 1: *Scrambled text* , Section 2: *Interpreting graphs and visual information*, Section 3: *Text type*, Section 4: *Academic vocabulary*. Section 5: *Understanding texts*. Section 6: *Text editing*. Section 7: *Writing*. This section is used to test the ability of the student to make a short argument, which is normally connected to the theme of the text(s) The challenge will be to design further task-based test items that score as high on the criteria for authenticity (level of engagement and resemblance to real discourse) used here, and that are also feasible, with strong discriminatory and predictive powers. This kind of initiative is most likely to yield results if it is tackled as a larger scale research project. (p. 1)

Online testing and support

Wingate & Dreiss (2009):

However, before recommending the online approach as a method of writing support for students in higher education, a note of caution is necessary. The approach is not enough to “fix” students’ writing. It provides an introduction to academic writing, and raises awareness of the discipline’s specific writing requirements. As developing academic literacy is a lengthy and complex process, the online method needs to be followed up by other methods. (p. A21)

Chanock, D’Cruz, & Bisset (2009) discussed the online writing skills quiz provided at LaTrobe University, and stated:

as a mode of teaching and learning delivery, the online writing skills quiz can be said to have accomplished the modest goal we set out to achieve: a means to *identify* grammatical problems for those who need to improve their written expression. Further, the resource allowed tutors to direct students to a readily accessible site, which was specifically designed to address the error correction that was highlighted in their essays. (p. A-10)

Embedding

Trounson (2010) in an article in the Age newspaper, discussed the adequacy of academic literacy support provided in Australian universities, and stated:

The lack of confidence is regarding whether universities are doing enough to ensure graduates have adequate English skills, says English language expert The University of Melbourne associate professor Sophie Arkoudis. Professor Arkoudis said embedding English should be part of the Australian Learning and Teaching Council's development of discipline standards. As has been revealed in the HES, the Department of Education, Employment and Workplace Relations is looking at extending its good practice guide for English to all students in higher education in a move that would likely encourage English to be embedded in programs. (para. 3-4)

Wingate & Dreiss (2009) suggested that “to offer students truly embedded and effective writing support, the involvement of subject tutors and the integration of academic writing into the time-tabled classroom activities are needed”(p. A21). Wingate and Dreiss (2009) continue by discussing that “The Pharmacy Department at King’s College London has recognised the necessity to include literacy support into the curriculum and provides a “Skills Week” on “Communicating Science” in the second year which encompasses reading and writing for university study and for continuing professional development” (p. A16).

Murray (2010):

The argument is, then, that all students—NESB and ESB, international and domestic—should receive tuition in academic literacy and professional communication skills, and that such tuition is best delivered strategically embedded within the curriculum. In addition, those NESB students deemed to be at-risk due to weak English should be offered additional tuition in proficiency, and their ESB counterparts’ tuition that focuses on modifying dialectal forms that are at odds with academic and professional expectations. (p. 62)

Murray (2010):

Not only are there a number of sub-literacies of which academic literacy is comprised but each discipline area has associated with it a particular set of literacy practices with

which those involved in the discipline need to become conversant and which effectively help define and differentiate that discipline. (p. 58)

James et al (2010) point out that “there is also a growing recognition of the critical importance of clear assessment guidelines and marking criteria so that expectations are explicitly communicated (p. 40).

Wingate & Dreiss (2009):

This extra-curricular approach to teaching writing has been frequently criticised as ineffective, because writing cannot be divorced from subject content and knowledge (Lea & Street, 1998; Lillis, 2006). When writing is taught outside the discipline, students have little opportunity to understand what their discipline requires and what their tutors expect. Therefore, the necessity of teaching writing within the discipline has continually been stressed by researchers of disciplinary genres (e.g. Hyland, 2000; Monroe, 2003; North, 2005). (p. A15)

Ransom, L. (2009) explain that “the Task Force (University of Melbourne) recommendations deemed that faculties should decide their own language enrichment programs and that they must fit with the degree structure from financial and time perspectives” (p. A17).

Student attitude, accountability and uptake

Dunworth explained that a PELA gave students “the power to understand their own language performance and take control of their own learning. An explicit link was made in many responses between students’ learning about their levels of competence and their intrinsic motivation to do something about it if the results required action” (2009, p. A6). However, Dunworth warned that there were concerns about the negative impact on students, that students also “ may perceive that they were being seen as “deficient” in some way when they had already met the university’s English language entry requirements (p. A8). Ransom (2009) expanded on this notion by stating that:

from a student perspective, faculties also reported that many, both local and international, were confused and questioned the need for a post-entry language

assessment when they had already met the minimum English language requirements. Others simply refused to sit DELA. That it did not affect admission did not register with either students or staff, many of whom believed the DELA was a condition of enrolment (it was not). (p. A-21).

Discussing the rate of uptake for academic skills support, Einfalt & Turley (2009) pointed out that “the raising of students’ awareness about their skill level and providing access to enablers for improvement, although critical for developing self-management skills, is also reliant on a students’ attitude and willingness to engage in that support or self-directed journey of learning” (p. A-114).

Ransom (2009) continued within this theme when stating “Compliance with regard to support was also fraught. Faculties reported that some students ignored the faculty-chosen support program and instead took up other support programs, or ignored the support requirement altogether (p. A22), and went on to point out “Problematic too, was enrolment into non-credit programs. As with many support programs that do not award credit, student attendance is not guaranteed, and often decreases over time. Although students in these programs were followed up by their respective student centres, many still chose not to attend, or attended sporadically” (p. A22).

Chanock, D’Cruz & Bisset (2009) discussed resultant statistics emanating from research conducted at LaTrobe University where:

eighty-three students, roughly half of the number that regularly attended, responded to questionnaires distributed in tutorials at the end of semester. Of these, 74 agreed that improving sentence structure and punctuation was a high priority in their study career. Four left this question blank, and 5 did not agree. There were no students who identified their written expression as poor, while 23 rated themselves as satisfactory, 40 as good, 17 as very good and 3 as excellent. When asked if they thought that it was a good idea to have a grammar exercise as part of first year assessment, 65 agreed, 4 disagreed, and 7 were indifferent (the rest left the answer blank). Most importantly, when asked if they had learned something from the quiz, 53 responded yes, 11 said no, 8 said that the exercises reinforced or refreshed what they had already learned, and the rest left the answer blank” (p. A-8).

Collaborative approach to the provision of academic skills support

Einfalt & Turley (2009) explored the impact of collaboratively teaching information literacy and academic skills in the first year Business program at the University of the Sunshine Coast (USC) and explained that the intervention was developed to improve students' skill levels, and emerged from a three-way collaborative model involving the Faculty Teacher, the Skills Advisor and the Librarian.

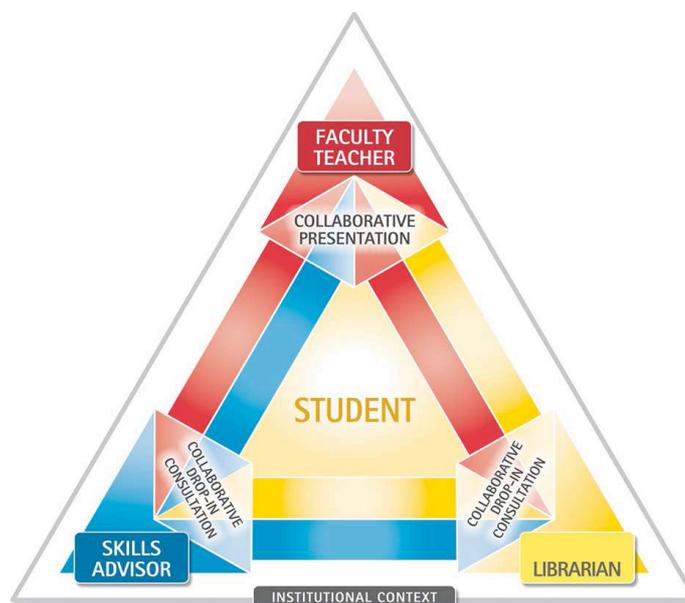


Figure 1. The three-way collaborative model. (p. A.107)

Einfalt & Turley (2009) explained that “central in the three-way collaborative model are students and an aim to engage them in both research and academic skill development in conjunction with their content learning (p. A-109). Also that:

the intervention was designed so that the Librarian and the Skills Advisor co-taught the presentation, which was embedded in the lecture delivered by the Faculty Teacher. The presentation for each subject was carefully timed to correspond with due dates for the students' written assessment task in each subject. The skills intervention aimed to raise awareness about the related nature of the two skill areas, highlighting the importance of approaching research as part of the writing process, as opposed to separate from it. The intervention presentation also aimed to facilitate self-regulated learning and self-evaluation, which are important for producing a quality assessment task” (p. A-110).

In appraisal, Einfalt & Turley said:

the intervention presentation helped to raise student awareness of the link between the research and writing process crucial to producing a required assessment task. However, results also indicated that the main impact of the intervention on the students was that it improved students' confidence to start the task and to think about the task as a process. It could also be concluded that the intervention did meet its aims of improving student meta-cognition, as it facilitated students to engage in reflection about their individual skill development. However, interviews with Faculty Teachers indicated that not all students choose to engage in a self-directed journey of skill development. Thus, the limitations of what the intervention presentation was capable of achieving were raised in interviews with the Faculty Teachers. (p. A-114)

Chanock, D'Cruz, & Bisset (2009), in describing the LaTrobe University collaborative project, stated:

The project was the initiative of a discipline lecturer, D'Cruz, who wished to develop her students' written communication more explicitly. Believing that correct grammar is very important to students' academic and professional success, D'Cruz invited Chanock, her Faculty's ALL adviser and Bisset, its education technology officer, to collaborate with her in building instruction in grammar and punctuation into her large, interdisciplinary first year subject "Sex, Gender, and Identity" (p. A-2). Chanock, D'Cruz, & Bisset continue by explaining that "The resource, which we called "Writing Skills Assignment", took the form of an Introduction plus seven lessons each followed by a brief quiz, which students would complete in their own time, for up to 10% of their semester grade. The lesson topics were: "Subjects and Verbs"; "Subject-Verb Agreement"; "Incomplete Sentences"; "Run-on Sentences"; "How to Join Sentences"; "Commas"; and "Apostrophes". Each lesson was comprised of segments including explanation, practice, answers, and a summary" (p. A-5).

In conclusion, Chanock, D'Cruz, & Bisset, discuss what was learnt from the project through collaborating on this resource and assert:

organisationally, the project brought together staff in different areas whose expertise could add to one another's pedagogical repertoire. Technically, the chance to work with an education technology officer was a valuable professional development opportunity for teaching staff whose acquaintance with technology for online delivery was at an early stage. And pedagogically, we succeeded in combining our ideas towards a shared goal: to provide a resource which is proving to be of some use to students trying to understand the mechanics of formal writing. (p. A-5)

Themes shaping the future of the LitNum project.

The following themes have been identified from the review of current literature and the information provided by the various schools and faculties within JCU. These themes are provided as the basis for the discussion of where the project is headed in 2011.

- 1) Embedding:** School/subject specific literacy/numeracy support within courses.
- 2) Generic online diagnostic testing:** online numeracy and literacy diagnostic testing aimed at providing newly registered undergraduate students with a tool to test generic numeracy and literacy skills. Feedback will identify areas in numeracy/literacy that require development and support, and will provide students with links to the online and face-to-face support structures available.
- 3) Inter-departmental collaboration:** Develop a university-wide integrated system that provides for communication and collaboration between faculties, schools, ICT, library and TLD.
- 4) Student uptake:** motivation/lack of motivation for the uptake of support and student responsibility for developing numeracy and literacy skills

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