LITERACY SKILLS OF BACHELOR OF EDUCATION (PRIMARY) STUDENTS

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This article describes a project which identified the skills and abilities in written literacy of pre-service teachers, as well as their needs in this area. An intervention to address their needs is evaluated and its outcomes assessed, using a combination of quantitative and qualitative analyses. Results show that it is possible to improve these students’ literacy skills and awareness even with such a short intervention as is described here. However, the intervention was most successful in dealing with lower-level linguistic variables such as punctuation and spelling, in contrast to higher-level text and paragraph structures.

INTRODUCTION

This project, undertaken in 2005, aimed to identify what skills and abilities pre-service teachers at one Australian university had in written literacy upon entry to the Bachelor of Education (B.Ed.) Primary program, what was being done to address any needs they had in this area, and what the short-term outcomes were of such intervention. Another purpose of the study was to make recommendations for future diagnosis and support of students’ literacy needs when they enter teacher education courses.

ETHICAL ISSUES

The project was fully approved by the University Ethics Committee.

METHODOLOGY

DATA COLLECTION

Data were collected from a wide variety of sources.

Data from the student record system were checked to determine the provenance of students and their pathways into university. On entry into the program, students were given a form to fill in requesting information on their cultural and linguistic backgrounds.
and their opinions of their needs as learners. In the first week of the “Multiliteracies” unit, students completed tests of their abilities in maths, science and writing; scripts and results of the writing tests were available for this study. Instructional materials and resources from the unit were also part of the data set.

At the end of the Multiliteracies unit, students were asked to provide written evaluations of the Writing component of the unit. Following the unit, records from the Learning Adviser regarding student attendance at workshops and consultations about academic literacy were accessed. Structured interviews were conducted with selected students from the B.Ed. (Primary) program and informal interviews took place with staff teaching in the unit. Finally, unit outlines and assignment scripts from Semester 2 of the B.Ed. (Primary) program were obtained.

ANALYSIS

Data were analysed both qualitatively and quantitatively. A linguistic analysis was performed on the texts (one and two pages long) which were produced as part of the writing pre- and post-tests. This took into account the texts’ generic structure, paragraph structure, sentence structure, sentence-level grammar and punctuation. See the “Discussion” section for more detail of the linguistic variables analysed.

Quantitative analysis was carried out using the statistical program SPSS, with the aim of identifying any differences between various groups of students and between the pre- and post-tests.

DISCUSSION

NATURE OF THE COHORT

Data from the student record system showed that 283 students accepted places in the program at the beginning of 2005. Of these, data were collected for 227 students who enrolled in the Multiliteracies unit. This report is based on these 227 students.

The largest group of these students (41%) had the Special Tertiary Admissions Test (STAT) 2005 as their basis of entry. This is an aptitude test used by many universities around Australia for determining entry for students who do not meet formal entry requirements. It consists of two parts. The first part is made up of 70 multiple choice questions, half of which are based on a passage of writing and the other half of which are stand-alone questions. The second part involves a one-hour test in which students produce written responses to two themes.
The second largest group of students (29%) had the state Tertiary Entrance Examination (TEE) as their basis of entry. This included those students with the 2004 TEE, those who had completed their TEE in previous years, those who had repeated a TEE subject and one with a mature age TEE.

The third largest group (12%) consisted of students from Technical and Further Education (TAFE) institutions. The record system does not record details of their TAFE qualifications (Bode, 2005), but the majority of them have a Certificate IV (Formentin, 2003).

Smaller groups of students, making up less than 10% of the cohort, included those with an incomplete undergraduate course and those from the university’s Preparation Course.

**NATURE OF THE PRE-TEST**

Students enrolled in the Multiliteracies unit undertook diagnostic tests in Mathematics, Science and Writing in the first week of Semester 1, 2005. They were given 50 minutes to complete each test. The Writing test consisted of 20 multiple choice questions, half on grammar and half on spelling, and another question which required two one-page written responses on two different topics. The multiple choice questions were based on features which Language Education staff had noticed undergraduate students often had difficulty with. Some sample questions are given in the discussion of the results.

**RESULTS OF THE PRE-TEST**

**GENERAL RESULTS**

The mean score in the Grammar and Spelling test was 12.9/20 and the benchmark was set by Language Education staff at 14/20, which represents a 70% score in percentage terms. At this level students were performing significantly above the average, and we could be fairly confident that those who met the benchmark did not need major help with these aspects of language. To achieve a pass in writing students also needed to display a satisfactory standard in their written texts, as interpreted from a checklist of the variables mentioned above in the “Analysis” section.

Pre-test results are available for 211 students, as some students had already withdrawn by the end of week 1 or had somehow managed to avoid the test. Of these 211 students, 73% (154 students) failed the test and were directed to attend classes on writing. 62% of students failed the Grammar/Spelling component of the test. The majority of students (66%) passed the text-writing component, however the markers commented that a one-
page text was perhaps insufficient evidence of their text-organising skills. Twenty-two per cent of students failed both test components, the Grammar/Spelling and the text-writing.

As part of this project grammar and spelling were analysed to determine where the most common errors lay. In the Grammar and Spelling tests students had to tick the correct answer(s), which are indicated in the examples below. For the Grammar test the most common error involved the use of pronouns, in Question 6:

<table>
<thead>
<tr>
<th>Rose gave the party for you and me last year. ✓</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last year, Rose gave the party for you and me ✓</td>
</tr>
<tr>
<td>Rose gave the party for you and I last year.</td>
</tr>
</tbody>
</table>

From discussions with the students afterwards, it appeared that they had a confused version of the relevant grammar rule, which dictated to them that they should avoid using the word ‘me’ in almost all circumstances, and that this was the cause of their error.

The second most common error occurred for the item which tested the use of dependent clauses, Question 8:

| While fixing the roof, a tile slipped and hit him on the head. |
| A tile slipped and hit him on the head, while he was fixing the roof. ✓ |
| Fixing the roof, a tile slipped and hit him on the head. |

This is quite a difficult concept for students to understand, as it involves knowledge of the grammatical Subject. It is also rather a common error, which can be seen for example in newspaper writing.

The third most frequent error, in Question 10, again involved pronouns, this time reflexive pronouns:

| Most of the training techniques used by myself were successful. |
| Most of the training techniques used by me were successful. ✓ |
This is a similar error to that for Question 6, in that students are applying a misguided rule that proscribes the use of “me”.

For the Spelling test, the words were placed in context in a sentence. The most common errors were for the following words:

<table>
<thead>
<tr>
<th>1 mischievous</th>
<th>2 mischievious</th>
<th>3 mischievous √</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 definately</td>
<td>2 definitely √</td>
<td>3 defiantly</td>
</tr>
<tr>
<td>1 separate</td>
<td>2 seprete</td>
<td>3 separate √</td>
</tr>
</tbody>
</table>

It should be noted that, while some of these items may appear difficult, students could make six errors in the 20 multiple choice questions and still meet the benchmark.

RESULTS BY GROUP

Pre-tests were analysed to determine whether basis of entry to the course, multilingualism or tutorial group had any relationship with the results.

A relationship was demonstrated between basis of entry and overall result (i.e. Pass/Fail) in the pre-test. The majority of students in all basis of entry groups failed the test. The highest pass rate (37%) was for those students who had entered with an incomplete undergraduate course. This may indicate that undertaking a university course can actually develop the writing skills of students. Alternatively, students who have previously entered another course may have had a higher level of writing skills in the first place, as many other courses have more stringent entry requirements. Students with TEE had the second highest pass rate (34%) and those entering via the STAT test the third (26%). Students from TAFE had a pass rate of 15%. The lowest pass rate (10%) was for students from the university’s Preparation Course. The numbers of students from other pathways was too small for results to be relevant.

These results do not necessarily reflect the calibre of programs students enter the course from, as the level of ability of the student is likely to influence which program they attend prior to this course.

Results were analysed for students who had identified themselves as bilingual or trilingual. These students made up 12% of those who completed the relevant item on the student background form. These multilingual students had a pass rate of 27.3% on the pre-test, with students identifying as monolingual having a pass rate of 27.6%. Thus, the differences between the two groups are clearly not significant (p > .6).
Data was coded for the class attended by the students. Some differences emerged in the overall pre-test results. Students in the Monday morning group had the lowest pass rate (17%), while those in the Friday morning group had the highest (40%) and the Friday afternoon group also scored highly (33%). It is possible that students attending later in the week had heard rumours about the nature of the test and that this may have affected their score. However, of the small group of 10 who attended the Thursday evening class, nobody passed. This was a group who could not be timetabled into any other timeslot and thus may have been of a different character to the other groups to start with, or who perhaps were feeling tired or lacking motivation due to the evening timeslot.

Means for each class in the Grammar/Spelling test ranged from 12.1 to 13.4, with standard deviations of up to 2.4, indicating a great deal of variation within each group.

COMPETENCE VS CONFIDENCE

It is interesting to compare the students’ views of their own abilities in literacy, as measured by the student background form, with their results in the pre-test. Responses to the question, “For this course, do you think you might need help with academic literacies (eg reading and writing)?” were coded. Of the students who completed the form, the majority (77%) indicated that they did not need any help. Twenty per cent of them stated that they did need help, with one adding that he was dyslexic. Another two per cent believed that they might need help or were not sure. One per cent of students did not answer the question.

Comparing their confidence in their own abilities with their pre-test results, it was found to be largely misplaced. The biggest group of students (54%) was made up of those who stated they did not need help but who failed the test. A smaller group (23%) accurately estimated their abilities in that they said they did not need help and did in fact pass. A third group (16%) were accurate in stating that they did need help; they also failed the test. Overall, as previously mentioned, most students failed the test, whether they thought they needed help or not.

Information on the mathematics test which was part of the same unit indicates the opposite result to writing: that students lacked confidence in their abilities even when they did well (B. Hamlett, personal communication, 17.11.05). Thus we are probably justified in taking a different approach to writing than to mathematics.
NATURE OF THE INTERVENTION

A three-week intervention had been designed by the Language co-ordinators in the lead-up to the unit, and information sessions held with Multiliteracies staff. As there were eight weeks available in which to give students help, the intervention ran twice over three weeks and was then adapted to a two-week slot. Thus students attended one “rotation” of two or three weeks in each of the subjects (Mathematics, Science or Writing) where they needed help.

The writing intervention was intended to be holistic in that it started from whole texts and moved down through paragraphs and sentences into lower level elements of writing. It was contextualised by introducing it with a section of a video showing student views about academic writing (Lawson, Nelson & Reese, 2004). The students were then familiarised with a computer program which worked through the levels of academic writing, giving sample texts from different genres, interactive exercises and definitions of some technical terms (Woodward-Kron & Thomson, 2000). This program was installed in the laboratories where writing was taught. Students were asked to purchase two textbooks to help them with their writing. Fox and Wilkinson (1993) is aimed at upper secondary students and covers effective writing mainly at the paragraph level and below. It contains cartoons and written exercises with answers. Paull (1999) is a colourful book aimed at primary students and deals with the clause level and below. Some handouts were also distributed with information and exercises, for example about summarising techniques, word classes and spelling hints.

During the Writing intervention there were demonstrations of the computer program, explanations of some teaching points, some group discussions and individual work at the computer and on paper, with assistance from the tutor. Students were given their test papers to raise their awareness of where their strengths and weaknesses lay. They were also referred to websites on spelling and grammar.

After the first three-week rotation, staff teaching writing requested that the second rotation be run “upside-down”, that is, starting at the word level rather than the text level, as they believed that students would find this more relevant. An attempt was made to do this in the second and third rotations. From the reaction of staff, we concluded that the designed intervention was perhaps too complex for tutors without a strong background in language study.
POST-TEST RESULTS

GENERAL RESULTS
The post-test was identical in layout to the pre-test, except that in the section on text-writing students needed to write a two-page text instead of two one-page texts. This was following a suggestion by staff that a longer text would give more evidence of their abilities at higher levels of writing.

Students had to sit only those test components which they had previously failed, i.e. either grammar/spelling, text-writing or both.

Results given below are for post-tests given after the first, second and third rotations of the Writing intervention. Due to some student withdrawals, of the 154 students who failed the pre-test, we have post-test data for 132 students. Of these, a large majority (86%) passed the post-test. However, it should be noted that for the spelling/grammar post-test (which 118 students sat) the benchmark was lowered from 14 to 12/20, giving a pass rate of 88%. The reason for this was that it was not clear to us where failing students were going to obtain assistance and we did not feel it was right to give a large number of students the impression that their literacy skills were insufficient without them having a clear pathway for help. Had the benchmark remained at 14/20, the pass rate would have been much lower (64%). For the Text-writing component, which 60 students sat, the pass rate was 83%. Thus a large number of students finished the Writing part of the Multiliteracies unit believing that their literacy skills had improved. Any improvement could be due to a number of factors, including the fact that because the unit had focussed on writing and spelling students had learnt to pay more attention to these areas.

Those students who did not pass were referred to the Learning Adviser, directed to work on their own and asked to sit another test during the examination week.

MORE SPECIFIC RESULTS
No significant differences between classes were found for post-test results in text-writing or grammar/spelling.

As the post-tests were held at different times, with the third one after only a two-week intervention, it was hypothesised that there might be a different pattern of results for each test, so this was also investigated. It should be noted that different versions of the post-test were used after each rotation, although they all had the same format. Results showed that the third test had the highest pass rate. However, differences between the tests were not significant (p > .1).
Analysis of the Spelling and Grammar results showed a greater mean improvement in the second and third tests (4.3 and 4.1 points out of 20 respectively) than in the first test (mean improvement 1.9 points). This would again suggest that the effects of time to study and familiarity with the test were more important than the length of the intervention. However, there was a good deal of variation within the results for each post-test.

The Text-writing results showed a different pattern, with the first post-test having the highest pass rate. However, differences between the tests were not significant (p > .1).

The written texts produced during the pre- and post-tests were analysed for different language variables, to see whether instruction had made a difference to students’ abilities to use their knowledge in writing connected texts, as opposed to answering questions about specific aspects. Errors in particular aspects were coded as a proportion of the number of words in the written texts, as this varied greatly.

Data for the ‘Genre’ variable measured students’ ability to write an appropriately organised text, for example with an introduction and conclusion. Results showed an overall improvement in this area, with the greatest improvement being for those students who had scored poorly in this variable in the pre-test. This result aligns with the markers’ impression that students did have an increased understanding of text structure, however the improvement could also be due to greater scope for displaying organisation in the longer texts required in the post-test.

Data for the “Cohesion” variable measured the degree to which the texts “hung together”. In this case improvement was shown in those who scored poorly in the pre-test, with those who had an average pre-test score largely remaining at the same level.

The biggest gains were shown in spelling, where 54% of students showed a noticeable improvement in their score. A large proportion of students (49%) improved in punctuation. Thirty per cent improved their sentence structure and 27% improved their grammar. Of those who did not demonstrably improve, most showed very little difference in their scores from the pre- to the post-test. A minority (maximum 19%) received an inferior score on some variables. These are mixed results which show that many students are transferring their learning to their text-writing, but acknowledge that two or three weeks is a very short time in which to address a complex area such as this.

**EVALUATION OF THE INTERVENTION**

Written evaluations designed by the Multiliteracies team were distributed at the end of each rotation. Students had the opportunity to complete these anonymously, but a large number chose to include their name. Evaluations from Early Childhood students are in-
cluded in this analysis, as well as the Primary students who are the focus of this paper, as it was not always possible to distinguish students from the different programs.

Quantitative information is available on the responses to the various multiple choice questions, however the present analysis addresses the qualitative responses and comments from the students, as these provide the clearest feedback on their attitudes.

**RESOURCES**

Students were asked to comment on the CD-ROM, *Academic Writing* (Woodward-Kron & Thomson, 2000). Unfortunately, in the form in which they accessed it, it was set up on the computers in the laboratories and many (35 people) appeared not to think of it as a CD, responding “not applicable” to the question. Of those who did comment on it, the larger number (9) described it as “good”, with some of them referring to “good structure” or “good tasks”. A further eight people described it as “(a bit) boring (at times)”.

It is possible that the CD needed to be contextualised more for the students, and tutors without a background in language study were not able to do this sufficiently.

For the Ladybird Spelling and Grammar book (Paull, 1999), the most common responses were that it was “good” or “useful” (13 people each). Students commented favourably on its appearance and said that it would be a useful resource for the future. Many students (11) found it easy or quick to use and understand. Some students (8) found it helpful with spelling and “grammar”. (Student spellings are replicated here to give the flavour of their comments.)

Of the students who commented on the English Essentials textbook (Fox and Wilkinson, 1993), the largest group (18) found it to be “good”. They liked its academic level and the activities in it, and found it useful for grammar and sentence structure. Some students (8) commented that it was “very helpful” or “helped a lot”, while other students (seven for each category) described it as “helpful” or “useful”.

The handouts distributed in class were commonly described as “good” (28 people). Many people (19) stated that they were “helpful”, and the spelling websites and mnemonics were particularly mentioned. A further ten people found them “relevant”, “purposeful” or “specific”.

**ACTIVITIES**

The most common description of the practical activities in class was that they were “good” (11 people), with the video and spelling tests specifically mentioned. Some students (8) found that this question was not relevant, perhaps contrasting the Writing module
with those for Maths and Science, which had a large number of hands-on activities. Others (6 people) commented that the practical activities were “helpful”, mentioning the websites and “working on the computer”.

MOST APPRECIATED ASPECTS
The most common response (25 people) to this question was that the tutor was the most appreciated part of the module. Respondents referred to their tutor’s “knowledge” and “enthusiasm”, as well as their being “approachable” and “understanding”. Many people (24) referred to “grammer” and/or spelling as the factor they most appreciated, with comments such as the following:

“Learning about proper grammar. Even if I had passed the original test, there is lots I need to know.”
“Going over what's required for a sentence to be a complete sentence.”
“The opportunity to start the journey of improvement about the theory side of grammar + spelling.”

A further ten students mentioned what they described as “self-learning” as the most appreciated aspect. They mentioned the freedom and flexibility of the unit, and appreciated working alone and at their own pace.

AREAS FOR IMPROVEMENT
Of the areas which were critiqued, the largest number of comments (17) were about the CD, which some people found difficult or boring. Some students (11) requested more time, one commenting that:

“three weeks isn’t enough to erase previous behaviour”

Nine students requested that the module be made more “relevant” to individual needs or more hands on. A further nine people indicated that there were no areas in which the module could be improved.

WHERE STUDENTS WOULD LIKE TO LEARN MORE
It was pleasing to find that many students did in fact wish to extend their learning in this subject. The most common area identified was “grammer” or “gramma” (18 people),
or, as one student described it, “nouns + verbs and all of that stuff”. One student commented:

“My grammar is terrible! Would like to understand how it actually works.”

This type of comment is very encouraging for staff. Many students (12) suggested "spelling and grammar rules" as the area in which they would like to learn more. Some students (8) requested more on different types of academic writing, for example summaries, essays and reports.

**GENERAL COMMENTS**

These were quite diverse, the most common one (seven students) being to thank the staff. e.g. for help, clearly presented information, patience and kindness. Two of the more interesting comments are included here:

“I … do not understand how TEE english (sic) students can not pass a yr 7 level of English”. (Written by someone with TEE.)

“(Learning Adviser’s) campus times … not sufficient enough… specific times …mainly at (the other campus).”

**INTERVIEWS WITH STUDENTS**

As part of this project bilingual and Indigenous students were targeted for interview, as these are important groups whom we would not like to see disadvantaged by our literacy policies. Indeed, one would expect that these students would have much to contribute toward enriching our course.

The number of Indigenous students in School of Education programs is quite small. This in itself is an issue to be addressed but which was beyond the scope of this project. The small numbers meant that it was necessary to go beyond the first year of the B.Ed. Primary to recruit students for interview.

Some important findings from the interviews were:

- Both bilingual and Indigenous students felt that there had been little or no recognition of their linguistic and cultural knowledge in their course so far.
- Students felt that coming from a different language or dialect background to the “mainstream” Standard Australian English culture commonly encountered at university meant that expectations about academic writing were not always obvious to
them. They said that they were gaining understanding in this area but that it took some time.

- Indigenous students felt that an emphasis on examinations was not always appropriate, and that credit should be given for participation in class, at which they often excelled.

**SEMESTER 2 ASSIGNMENTS**

As part of this project samples of some Semester 2 assignments were collected from the three core units in the Primary program. These assignments were analysed for writing features. It was observed that markers do not always correct the written expression in assignments. This has serious implications, as if students’ writing is not corrected, they, very reasonably, assume that they have no problems with any of the language features.

**ALTERNATIVE INTERVENTION**

As part of a Literacy Working Party, an Alternative intervention, “Literacy for Teachers”, has been developed. This is a full unit on academic reading and writing, running in the second semester of the first year. The unit is especially for those students who have not passed the Multiliteracies unit, but is open to other education students.

**RECOMMENDATIONS**

Following the study, a series of recommendations were made to the School of Education regarding the literacy skills of our Primary students. It is hoped that these recommendations might also be relevant to other universities.

**SELECTION OF STUDENTS**

1. Entry pathways to the course should be investigated to determine what they are doing to prepare students for the literacy demands of the program. In particular, Portfolio entry students should be asked to do some writing under test conditions as portfolios are not produced under such conditions and there is no guarantee that the students’ literacy standards are adequate.

**STAFFING OF WRITING UNITS**

2. Writing modules and literacy units should be taught by qualified language staff.
3. The Learning Adviser should be fully involved at all stages of the design and running of units in academic literacy.
TRACKING STUDENT PROGRESS

4. With their permission, information should be gathered on students’ linguistic and cultural backgrounds, as this is highly relevant to their academic writing.
5. Staff in all units should be vigilant about literacy standards and give students feedback on their written expression as well as assignment content.
6. Referrals to the Learning Adviser should be tracked so that student progress is monitored from year to year.

CONCLUSION

The literacy skills of teacher education students is an issue becoming of increasing national concern. This paper documents one attempt to address this issue. The author would welcome correspondence regarding strategies implemented in other institutions.

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