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Implications of the non-traditional student becoming the traditional

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The challenge that the new digital technologies brings to education today is in the shift to online education. Online education, as delivered through Open Universities Australia, is open access, and affords entry into Higher Education for many non-traditional students who are much more diverse in terms of academic skills than traditional-entry students. The aim of this study was to improve academic writing skills, specifically in the correct use of APA formatting for psychology research reports. A 'low-stakes' assessment task worth 5% replaced optional referencing, formatting and report writing exercises. The results found no improvement in student reports (i.e., no increase in assignment grades) in the intervention year compared to three other years where the tasks were optional.

Keywords: non-traditional student, online education, psychology, open-access

Transformation of higher education in Australia

The higher education sector in Australia is currently undergoing a transformation in terms of delivery of undergraduate and, to a lesser extent, postgraduate programs. Driving this change are the new digital technologies which have afforded the shift to online education. An online learning platform constitutes a valuable and necessary addition to an institution's offerings and one considered vital to the sector's long term future. The increasing popularity of online delivery, with the subsequent rise in student numbers, facilitates both an institution's viability as an educational provider in difficult economic times and supports the Australian Federal Government's vision (as outlined in the Review of Higher Education) that by 2020 the proportion of Australian adults who hold bachelor-level qualifications rises from 29% to at least 40% (Bradley, Noonan, Nugent & Scales, 2008).

Student diversity in online education

Accompanying the growth in online delivery of tertiary programs is the increase of students via the non-traditional mode of entry (Cantwell, Archer & Bourke, 2001). An online program offers the opportunity for students who, due to geographical remoteness, restricted program options of nearest educational provider, work or family commitments, have limited opportunities to access on-campus programs of their choice (Ludwig-Hardman & Dunlap, 2003). In addition, rather than students with the traditional educational profile of recent secondary school completion (indicating a homogeneous level of academic competency) found in most oncampus programs, cohorts of online students are often very diverse in terms of their academic skills (ACODE52, 2010; Dearnley, 2003). Therefore, the online student can be an early school leaver or a degree-holder wishing to change careers or complete more studies out of interest, working full- or part-time and living in remote, rural or urban areas. Moreover, diversity is also seen in cultural and family backgrounds with many online students being the first in their family to engage in higher education (Cantwell et al., 2001).
A quantitative growth in student numbers combined with an influx of non-traditional (less homogeneous academic ability levels) students is confronting educators today. Schuetze and Slowley (2002) propose that "the challenge to all universities and other higher education institutions is to meet the educational needs of an ever more diverse group of learners" (p.310).

Open access to a Higher Education Psychology program

Open Universities Australia (OUA) is Australia's largest open-access education provider (Open Universities Australia, 2009), and as such, gives many non-traditional students a pathway into higher education and professional development. As the majority of OUA undergraduate programs have no entry requirements (i.e.,

ATAR score; previous study or pre-entry examination), student cohorts are very diverse in terms of their literacy, numeracy and computer skills.

One of the strongest areas of student growth is in the discipline of psychology. An estimated 15,000 Australian secondary school students are currently studying psychology (Cranney et al., 2009). There is every indication that many of these students will expect to complete an undergraduate or even postgraduate psychology course (Reece, 2010). Therefore, to meet the projected demand for tertiary level studies, an online program in psychology was developed by Swinburne University of Technology (SUT). Delivered through OUA, SUT's Bachelor of Behavioural Studies (Psychology) is an undergraduate program incorporating an externally accredited major in Psychology.

Given the popularity of the psychology program, and the open-access admission to OUA programs, SUT has experienced very large cohorts in its first year online psychology unit (PSS110 Introduction to Psychology 1 has had up to 1600 students enrolled in one study period). This suggests that many of our students in the introductory psychology unit may not have engaged in study for a considerable amount of time nor have they studied online.

What is happening with Swinburne's OUA Psychology program is no different from what is happening in higher education worldwide, with many governments desiring greater participation in higher education by an increased diversity of student populations (Sambell & Hubbard, 2004). However, the flexibility that open access education affords means that many students are enrolling in tertiary studies lack skills in one or a number of areas (e.g., time management, computer literacy, writing, literature searching) because they have not followed (for whatever reason) the traditional study pathway of completing primary then secondary school before enrolling in higher level studies. Students without a history of previous academic performance will find it harder to succeed with studies in higher education (McKenzie & Schweitzer, 2001). Recent secondary school completers should have a good level of computer skills, be comfortable accessing the internet, and have achieved an adequate level of literacy and numeracy skills (Dearnley, 2003). Regardless of mode of entry, skills deficits in these specific areas are a major obstacle to academic success (Dearnley, Dunn & Watson, 2006) and would appear to compound difficulties in learning more discipline specific skills.

Discipline specific skills

A fundamental skill for any student is the ability to communicate in the language of the discipline, which in psychology is the language of the scientist/practitioner. Written communication takes the form of highly structured research reports which relate, in a logical and clear manner, the results of an investigation into a topic or problem related to psychology. Students learn how to write research reports through a step-by-step process beginning with formatting, referencing, and literature search tasks. The American Psychological Association's (APA) Style is the standard to which psychology reports in Australian universities adhere.

The teaching of discipline specific academic skills is particularly challenging in the online environment. To aid students' learning of APA formatting Hall and McCune (2005) found that including learning objects (e.g., Flash animations) encouraged students to actively participate in learning the formatting rules because it breaks down large and complex chunks of material into smaller more manageable bit-size pieces, and mastering smaller portions of materials sets up learners for success and motivates them to excel in other areas. The authors used flash animations to develop their students' APA formatting skills (e.g., drag-and-drop, sorting, multiple-choice questions, and resource material). Student evaluations were very positive, and student papers showed improvement.

Swinburne's online psychology students are taught by teams of teaching staff using specific tools embedded in the Blackboard Learning Management System, such as, synchronous chat sessions and asynchronous discussion forums. Teaching staff lead online chat sessions and moderate discussion forums to develop students' conceptual and structural understanding of their written assignments (see Fleckhammer & Wise, 2011 for a review of the team teaching method). To alleviate some of the tutors time spent on guiding students in basic but discipline specific activities, students are provided with a series of tasks to complete, such as, referencing or report writing activities.

The referencing and report writing tasks, up to now, have been optional. However, teaching staff observed anecdotally, when grading written assignments, that many students clearly did not take up the opportunity to complete these activities. It was noted that referencing and structuring of reports was quite poorly done and as a consequence students were losing marks that should have been easily attained. Therefore, in the desire to see an improvement in the discipline specific skills of our online students a 'low stakes' assessment was introduced.

The theory behind 'low stakes' assessment

Low-stakes assessments are based on expectancy-value theory which proposes that if a task is perceived as interesting, useful and/or important it is more likely to be attempted. Cole, Bergin and Whittaker (2008) reported that students who perceived tasks as useful and important tried harder, and that trying harder, even on low-stakes tasks, results in better performance. Moreover, motivation theory proposes that the desire to be seen as competent is one of our innate psychological needs. Thus the consequence of students who achieve a high level of competence in specific skills is that they develop an increased level of self-efficacy in their ability to achieve success in other tasks (Ryan & Deci, 2000). Students themselves perceive regular low stakes assessments as helpful for their learning (Sturniolo-Baker & Loiacono, 2012).

The low stakes intervention

In the first study period of 2012, an intervention program was initiated specifically targeting first year, online psychology students' referencing, researching and report formatting skills. In order to gain maximum uptake, it was important that the tasks were brief and promoted as directly related to the written assignments rather than just as skill development (Dearnley, et al., 2006).

The set of six Active Learning Assessments (ALAs) was allocated 5% of the students' overall mark (see Table 1 below). Five marks were allocated to the ALAs for the following reasons:

i) it was approximately the value of marks allocated in each written assignment to the formatting and referencing criterion, and
ii) it would be easily achievable. Students are typically time constrained and out of necessity are very selective in their learning activities and thus the ALAs would immediately be seen as a mark of academic success.

The ALAs were available from Week 1 and students could work through all six at once to achieve the maximum score.

In the first year psychology unit (PSS110 Introduction to Psychology 1), students are required to write two assignments, which when combined, form a complete research report. The first of these assignments introduces students to the practical side of writing in psychology e.g., APA referencing, good/poor research differentiation, library/search skills. The ALAs would directly target these skills.

Assignment 1: An introduction section of a research report. This first assignment is worth between 15-20% of students' overall mark and specific marks are allocated for correct formatting and referencing. Students are given comprehensive feedback by their tutor which informs their second assignment (see Fleckhammer & Wise, 2010).

Assignment 2: A complete research report. This assignment contains an improved version of the first assignment (i.e., the introduction) as students will have taken on-board their tutor's feedback. As for the first assignment, marks are allocated for correct formatting and referencing.

The aim of the two assignments is:

1) to teach students about design, analysis, interpretation, and reporting of experiments in psychology,
2) to teach students how to communicate psychological research in a standardised (i.e., APA) format.

Aim of the study

The aim of this intervention was to determine if the inclusion of a set Active Learning Assessments (ALAs), which were previously optional exercises, now worth 5% of students' overall mark, would result in improvements to students written assignments (i.e., increased overall grades).

The intervention

For Weeks 1 to 6 activities were set which directly targeted both discipline specific skills and more general academic skills. For example, students were required to watch short videos on topics specific to the week's lesson content, answer questions related to the video and then contribute to a discussion forum by commenting on the content of the video. Other tasks required students to conduct a websearch for psychological research

literature which met the requirements and for ethical research as per the Australian Psychological Society's Guidelines and report their findings to their tutor (via email) or add comments to a discussion board forum. Still other tasks required students to complete APA formatting activities to develop correct referencing and report structuring skills. Please see Table 1 for the series of ALAs for which students could earn up to 5% of their overall mark.

Table 1: ALAs for Weeks 1 to 6 from Study Period 1, 2012

Week 1	**Aim of ALA**
Watch short video on psychological research	Develop understanding of ethical considerations in psychological research
Conduct a web search to find a 'good' piece of research	Encourage good/poor research differentiation Develop computer literacy skills Develop literature searching skills
Complete referencing activities	Practice formatting references in APA style
Week 2	
Watch video on the brain	Develop understanding of biological basis of behaviour
Conduct a web search to find a piece of 'poor' research	Encourage good/poor research differentiation Develop computer literacy skills Develop literature searching skills
Complete referencing activities	Practice formatting references in APA style
Conduct a literature search two find 2 peer-reviewed journal articles which relate to the topic of the written assignment	Develop literature search skills Develop computer literacy skills
Week 3	
Watch video on the brain	Develop understanding of biological basis of behaviour
Conduct a web search and find out about Phrenology	Encourages critical thinking skills Develop computer literacy skills Develop literature search skills
Complete research report activities	Practice APA formatting conventions
Formulate two hypotheses related to topic of research report	Develop hypothesis formulation skills Develop critical thinking skills Develop writing skills
Week 4	
Watch video on stress management	Develop understanding of impact of stress
Complete report writing activities	Practice formatting reports in APA style
Week 5	
Conduct a web search to find information on repressed memories and hypnosis	Encourages critical thinking skills Develop computer literacy skills Develop literature searching skills
Complete plagiarism activity	Develop understanding of what constitutes plagiarism Develop critical thinking skills Develop writing skills
Week 6	
Complete dream activity	Gain experience in completing dream diaries
Watch short video on sleep	Develop understanding of different perspectives of why we sleep.

Students were allowed to undertake these activities at their own pace, however, they were encouraged to complete the activities in the week that they were set as many of the activities would directly support their first written assignment and consequently inform their second written assignment.

Results and Discussion

The response by students was enthusiastic to say the least. Tutors were swamped with an avalanche of emails, and discussion boards contained many more contributions by students than in previous iterations of the PSS110 Introduction to Psychology 1 unit. However, a true test of this intervention was to be whether there was an improvement in students' work by comparing Assignment 1 and Assignment 2 marks over four consecutive years.

The purpose of this intervention was to determine if the inclusion of the ALAs would result in a transfer of the skills learnt in these tasks to other areas. It was thought that this transfer of skills would be seen in an increase in the grades for two written assignments. It was expected that if a value was attached to a low-stakes task then students would more readily complete the task than if the task remained optional. This appears to be the case, as reported earlier, the response by students was enthusiastic and anecdotally many students reported how much they enjoyed the ALAs.

Comparison of Results Between Cohorts from 2009 to 2012

In terms of actual grade improvement, it was found that when comparing the 2012 results for the two assignments (see Table 5) with the 2011 results (see Table 4) that the results in 2011 (without the intervention) are better than the results in 2012 (with the intervention), in that, a greater percentage of the student cohort in 2011 achieved a grade of Credit and above in both Assignment 1 and Assignment 2 (without the intervention).

Taking into consideration that the 2011 cohort could have been a stronger cohort overall, comparisons among the 2009 (see Table 2), 2010 (see Table 3) and 2012 (see Table 5) cohorts find no real difference in the percentage of students who achieved a grade of Credit or above in both Assignment 1and Assignment 2. It is evident that the intervention is causing little impact on the marks achieved for the written assignments.

2009: The results for PSS110 Introduction to Psychology 1, first and second written assignments for Study Period 1, 2009 are displayed in Table 2. This Study Period had an initial enrolment of 270 students. Withdrawals and attrition resulted in a final active cohort of 130 with 99% of these students achieving a pass grade (only 1 student who completed every assessment failed).

Table 2: Distribution of grades for Assignment 1 and Assignment 2 - Study Period 1, 2009

Assignment 1				**Assignment 2**			
Grade	**No.**	**%**	**Credit & above**	**Grade**	**No.**	**%**	**Credit & above**
HD	6	3.8		HD	10	7.4	
D	24	15.3		D	33	24.4	
C	41	26.1	45.2%	C	38	28.1	60.0%
P	64	40.8		P	44	32.6	
N	22	14.0		N	10	7.4	

2010: The results for PSS110 Introduction to Psychology 1, first and second written assignments for Study Period 1, 2010 are displayed in Table 3. This Study Period had an initial enrolment of 776 students. Withdrawals and attrition resulted in a final active cohort of 338 with 98% of these students achieving a pass grade (6 students who completed every assessment failed).

Table 3: Distribution of grades for Assignment 1 and Assignment 2 - Study Period 1, 2010

Assignment 1				**Assignment 2**			
Grade	**No.**	**%**	**Credit & above**	**Grade**	**No.**	**%**	**Credit & above**
HD	29	6.3		HD	30	8.3	
D	99	21.7		D	97	26.8	
C	121	26.5	54.5%	C	106	29.3	64.4%
P	161	35.2		P	101	27.9	
N	47	10.3		N	28	7.7	

2011: The results for PSS110 Introduction to Psychology 1, first and second written assignments for Study Period 1, 2011 are displayed in Table 4. This Study Period had an initial enrolment of 637 students. Withdrawals and attrition resulted in a final active cohort of 265 with 99% of these students achieving a pass grade (3 students who completed every assessment failed).

Table 4: Distribution of grades for Assignment 1 and Assignment 2 - Study Period 1, 2011

Assignment 1				**Assignment 2**			
Grade	**No.**	**%**	**Credit & above**	**Grade**	**No.**	**%**	**Credit & above**
HD	23	6.1		HD	31	10.4	
D	79	21.1		D	82	27.4	
C	131	34.9	62.1%	C	104	34.8	72.6%
P	106	28.3		P	56	18.7	
N	36	9.6		N	26	8.7	

2012: The results for PSS110 Introduction to Psychology 1, first and second written assignments for Study Period 1, 2012 are displayed in Table 5. This Study Period had an initial enrolment of 396 students. Withdrawals and attrition resulted in a final active cohort of 141 with 96% of these students achieving a pass grade (5 students who completed every assessment failed).

Table 5: Distribution of grades for Assignment 1 and Assignment 2 - Study Period 1, 2012

Assignment 1				**Assignment 2**			
Grade	**No.**	**%**	**Credit & above**	**Grade**	**No.**	**%**	**Credit & above**
HD	11	5.7		HD	11	6.5	
D	34	17.5		D	49	29.2	
C	51	26.3	49.5%	C	43	25.6	61.3%
P	79	40.7		P	53	31.5	
N	19	9.8		N	12	7.1	

A comparison of the distributions can be seen in Figure 1. This indicates that the intervention is not facilitating transferability of skills learnt through the ALA tasks to the students' major written assignments.

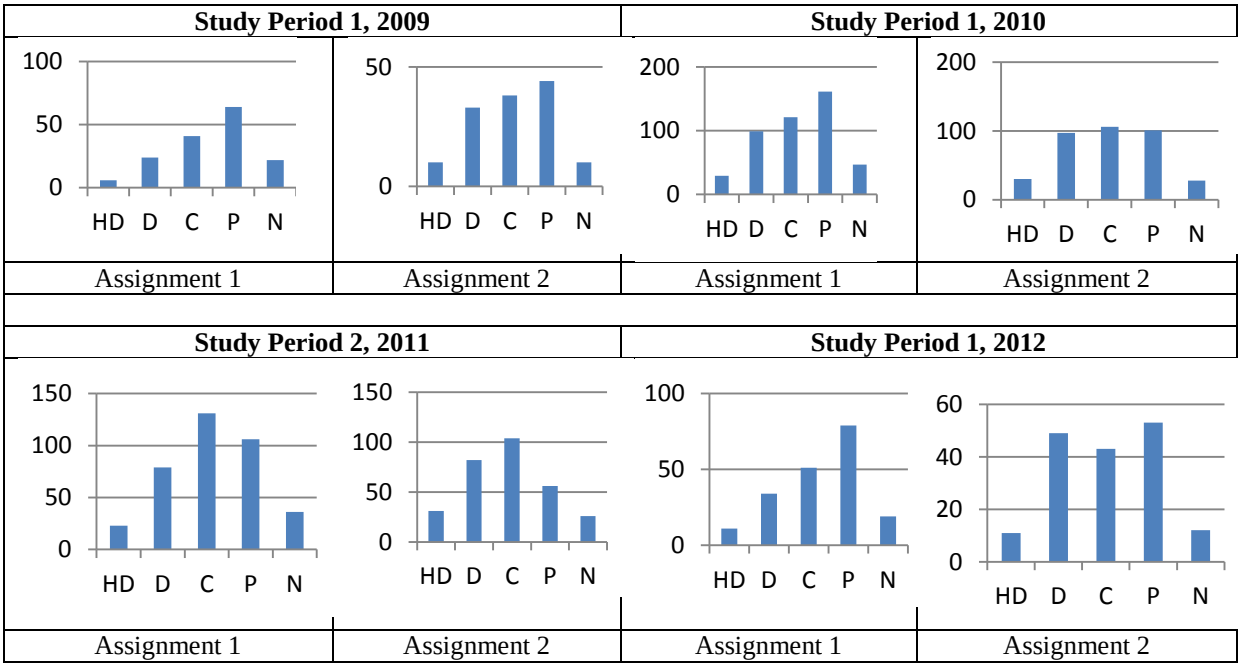

Figure 1: Distribution of Assignment 1 and 2 grades for 4 consecutive years

Concluding comments

The new digital technologies have provided access to higher education for many non-traditional students. As has been noted non-traditional students are very diverse in terms of academic literacies. In addition, non-traditional students are often time poor as they juggle work and family commitments and thus out of necessity are selective in their learning activities (Dearnley et al., 2006). When students, who may be time poor to begin with, are faced with new technologies to learn or learning new ways of using existing technologies, they may become overloaded with all that we expect of them. Cognitive Load Theory proposes that if learners become overwhelmed cognitively when they are expected to acquire complex skills, then they may fail to apply those skills in new situations (Kirschner, 2002). Learning activities which offer an easily achievable mark become the focus of the students' energies, sometimes to the neglect of other, more important but less achievable, elements in their course.

The skills that our students acquired in their ALAs have not readily transferred to their written assignments. Indeed, the inclusion of a further external demand on their time and cognitive capacity could well have interfered with their ability to produce their written assignments. Reducing external cognitive demands will actually lead to more learning (Bannert, 2002).

Rather than trying to increase discipline specific skills the intent is again/now to work on communication skills and to facilitate the development of students' relationships with their tutors and with fellow students. Students are more likely to succeed in their studies if they are socially integrated into the university and the more people they interact with the better chances of success in completion of their studies (Allen, 2006).

As Ludwig-Hardman and Dunlap (2003) observed, the challenge for online education providers is "not in recruitment but in retention" (p.1). Therefore, the sustainability challenge for us as online education providers is yes, to provide technical support for our non-traditional students who are new to Higher Education, but, more importantly to provide students with a sense of engagement and integration. The team teaching model, developed and used by Swinburne University (see Fleckhammer and Wise, 2011), facilitates student engagement in the online environment.

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