

Creating a Foundation for Generic Skills by Embedding Information Literacy in Commencing Student Assessment Tasks.

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Abstract

A number of studies have addressed issues relating to the role of institutions in the development of graduate outcomes including generic skills and how such skills may be effectively embedded into university curricula. This study reinforces and extends the discourse. It evaluates the embedding of specific generic skills into the curriculum of a first year marketing course in a Business School, and via pre and post– tests, identifies students' views on their own skills development, checking the changes with multiple choice questions. The overall findings confirm the literature based on the successful outcomes of simultaneously embedding generic skills into course curricula.

Keywords: Generic Skills, Information Literacy, Commencing Students.

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Introduction

The higher education sector is placing increasing value on its role in the development and embedding of generic skills into the learning experiences of students (Barrie, 2004; Bath *et al.*, 2004; Crebert *et al.*, 2004). For example, Bath *et al.*, (2004) indicate that the government, industry and institutions themselves are showing increased interest in the development of generic attributes. The university community in Australia has come to accept generic graduate attributes as being the knowledge, abilities and skills graduates should develop during their time with the university, beyond disciplinary content knowledge, which can be applied to a variety of contexts (Barrie, 2007; Bowden *et al.*, 2000). Thus, generic skills have important consequences at a number of levels and to a variety of stakeholders.

Definition of Generic skills

The Higher Education Council (HEC) defines generic skills as being those that:

“encompass critical thinking, intellectual curiosity, problem solving, logical and independent thought, effective communication and related skills in identifying, accessing and managing information: personal attributes such as intellectual rigour, creativity and imagination and values such as ethical practice, integrity and tolerance” (Higher Education Council 1992, p. 22).

Arguably, some of these skills are ‘higher order’ and require prior development of others. In this study, we have selected and targeted information literacy as a key skill that should be evident in first year students’ work.

Different stakeholders

A number of stakeholders, namely, academics, employers and students are attuned to different conceptions of generic skills due to their diverse circumstances and expectations (Lizzio and Wilson, 2004). Recent studies have shown that Australian university teachers hold qualitatively different understandings of the methods of learning and teaching of graduate skills (Barrie, 2004; Barrie, 2007) with some debate about whether generic skills should be embedded into the curriculum or be taught as a separate course. Hager, Holland and Beckett (2002) noted that employers point to a perspective that elaborates more on personal attributes (self organization) and interpersonal skills (leadership skills and teamwork). Students also share a common understanding of the importance of developing generic skills at university with the goal of improving their employability (Hager, Holland and Becket, 2002) and would prefer teaching staff to place more emphasis on generic skills in assessment tasks, and to make the links in the curriculum to workplace scenarios more explicit (Crebert *et al.*, 2004). The student view and its perspective in relation to employability, reinforces the important role of generic skills and the benefits of embedding them into the university curriculum.

Embedding Generic Skills

In embedding generic skills, the literature shows general consensus on the need to align generic learning outcomes with assessment criteria so that the value of graduate attributes is emphasized

to students and the importance for their future careers is highlighted (Bath *et al.*, 2004; Crebert *et al.*, 2004; Treleaven, 2008). The study by Bath *et al.*, (2004) is one of many that elaborate on the process of embedding generic skills into learning activities at university.

Information literacy

Information literacy (IL) is a concept that has evolved from the long-held concepts previously associated with computer literacy. The focus of IL education is the development of students' abilities to construct/collect and analyze information in a way that provides the basis for effective decision making (Hignette, Margavio and Margavio, 2009).

IL has traditionally been the domain of libraries and librarians, yet despite the increased importance of information, Johnston and Webber (2003) found that students seem to lack interest and awareness about the importance of library services, while others perceived the use of libraries as a simple task when they in fact needed support. De Arenas, Rodriguez, Gomez and Arenas (2004) suggest certain students lack respect for information specialists/librarians and perceive them as peripheral. Hauxwell (2008) states that the teaching of information skills within the context of students' point of need (e.g. locating a journal article, use of library catalogue) may offer more tailored and relevant IL training for students. Thus, a number of studies (Gutierrez and Wang, 2001; Hauxwell, 2008; Johnston and Webber, 2003) emphasise the essential role of academic staff in integrating IL into the curriculum by setting assessments to develop these skills. Given the above considerations, we propose two hypotheses with respect to the effectiveness of embedding IL skills into the curriculum:

H1-There will be a significant improvement in students' ratings of their ability to access information and understand sources of information before and after these generic skills are embedded into the curriculum.

H2- There will be a significant improvement in students' understanding of the most efficient way to locate journal articles and compare the validity of different sources of information before and after embedding these generic skills into the curriculum.

Method

Design

A pre-test post-test design was adopted. A sample of business students in a first year marketing course was asked to complete a survey questionnaire during the first tutorial of a semester and then again at the end of the semester. Data were collected by tutors who had no involvement in the study.

We identified specific courses where basic generic skills would be taught and assessed. Activity based learning methods and other specific interventions were used in the participating classes in order to develop generic skills. As the project emphasised sequential development of skills over the three levels of the program, it aimed to provide early building blocks for excellent higher level work. The building blocks included skills in accessing information and discriminating between scholarly and non scholarly information and understanding scholarly writing.

Sample

The sample ($n=209$) consisted of slightly more females (56%) than males (44%). While we targeted a first year course, we found that the final sample was spread across year levels because students can do the nominated marketing course at any time in their program. There was a relatively even spread across the number of years at university: first year (35%), second year (23%), third year (32%) and more than three years (10%). Students were predominantly in Business and Commerce programs (79%) with about one-fifth (21%) represented by students from other faculties who were studying a marketing course.

Measures

The survey was divided into three parts. Part A consisted of 26 items on a scale of 1 (strongly disagree) to 5 (strongly agree) in which students self-reported their skills in relation to accessing and using information. Part B was designed to test students' understanding of information sources, scholarly and non-scholarly. Part C collected demographic data, student number, gender, year of university study, number of years since completing high school, program and course details.

Method of analysis

Data were entered into SPSS and descriptive statistics used to generate tables of results for each item. Pre- and post-test means and standard deviations are reported for each item. The t -test procedure was used to check for differences between means on each item in Parts A and C. Changes were considered to be significant if the t -value demonstrated $p < .05$, that is, at 95% confidence level. Analysis and interpretation of responses to Part B was based on inspection of absolute frequencies and percentages.

Results

Skills in Information Literacy

Hypothesis 1 was concerned with students' self reported skills in accessing and using information. Strong support was found for this hypothesis because the absolute value of all items increased during the semester, and t -values for the differences between means were all significant. The biggest change was with regard to the ability to access a research journal in the catalogue (an absolute increase of 1.12). Table 1 provides the results.

Table 1: Accessing Information and Understanding Sources

<i>Self-reported skills in accessing information</i>		Pre-test		Post-test		t -test	
		Mean	SD	Mean	SD	t value	Sig
1	Know how to use library's catalogue system	3.15	1.24	4.05	1.04	-9.35	.000
2	Know how to use online databases	3.48	1.19	4.36	.85	-9.41	.000
3	Know how to find a research journal in the catalogue	3.06	1.28	4.18	.99	-11.49	.000
4	Know how the difference between the reference for a book and a journal article	3.44	1.27	4.28	1.06	-8.91	.000
5	Know how to use Boolean "and" and "or" to construct information searches	2.70	1.47	3.37	1.34	-6.44	.000
<i>Self-reported skills in understanding sources of information</i>		Pre-test		Post-test		t -test	
		Mean	SD	Mean	SD	t value	Sig

6	Understand meaning of a “scholarly” article	3.21	1.31	4.49	.82	-12.80	.000
7	Know what to look for when deciding whether an article is scholarly	2.93	1.39	4.30	.93	-12.60	.000
8	Know how to distinguish between fact and opinion in written work	4.02	.87	4.22	.85	-2.83	.005
9	Know how to decide if an internet source is academically sound	3.53	1.17	3.92	1.01	-4.13	.000

As well as seeking students’ self-reported skill levels, multiple choice questions were used to test students’ understanding of how best to locate journal articles and validity of different sources of information (Hypothesis 2). Tables 2 and 3 provide the results, and indicate that Hypothesis 2 was supported and, further that students’ self-reported skills (Hypothesis 1) were generally reliable.

Table 2: Journal articles

1	<i>The most efficient way to find a journal article on a topic is to –</i>	Pre-test		Post-test	
		Freq	Percent	Freq	Percent
a	Find a bibliography on topic	4	1.9	3	1.4
b	Search a journal database	131	62.7	160	76.9
c	Run a keyword search in the library catalogue	64	30.6	41	19.7
d	Browse the journals on the library shelves	3	1.4	2	1.0
e	Discuss with the tutor	5	2.4	1	.5

Students consistently responded as expected in relation to scholarly articles (Table 3); demonstrating their understanding of the need for scholarly articles to have an “expert” foundation, and the features that are likely to reflect this difference to popular literature.

Table 3: Scholarly Articles and Scholarly Writing

2	<i>When compared to a magazine, a scholarly article usually provides more valuable information for a university assignment because it -</i>	Pre-test		Post-test	
		Freq	Percent	Freq	Percent
a	Is easier to read	1	.5	2	1.0
b	Is intended for a wide audience	5	2.4	1	0.5
c	Is written by an expert in field	178	85.2	193	92.8
d	Usually contains figures and tables	4	1.9	11	5.3
e	None of the above	18	8.6	1	.5
3	<i>Scholarly writing can be recognized because it</i>	Pre-test		Post-test	
		Freq	Percent	Freq	Percent
a	Has in-text citations	11	5.3	7	3.4
b	Has a reference list at the end	4	1.9	4	1.0
c	Discusses theory	3	1.4	4	1.9
d	Provides evidence (data or statistics) for an argument	25	12.0	12	5.8
e	All of the above	164	78.5	180	96.5

Table 4 shows that students were generally wary about internet sources with most selecting options d and e. As only 57% of students selected item “e”, being the desired response, we suggest that training students in the use of internet sources still warrants considerable attention.

Table 4: Internet information

4	<i>Information from the internet should be used with caution because</i>	Pre-test		Post-test	
		Freq	Percent	Freq	Percent
a	It will never have been reviewed by another person	1	.5	2	1.0
b	Many internet sites are “.com” meaning they are commercial enterprises	3	1.4	4	2.9
c	It cannot be reliably evaluated	8	3.8	17	8.2
d	The accuracy of its content cannot be verified	93	44.5	64	30.8
e	The quality of its content is variable and may not have undergone a review process	101	48.3	119	57.2

Discussion

This study has demonstrated improvements in students’ self-reported skills in most areas, thereby indicating that specific instruction and embedding of skills in course outlines is worthwhile. A number of papers suggest the effectiveness of assessments in providing a stimulus for further learning amongst students (Boden and Holloway, 2005; Lizzio and Wilson, 2004). Finally, students’ self-reported skill levels were not always consistent with their responses to related items. This was evident by the mismatch between some data in students’ self evaluation of their skill development (in information literacy) and their ‘actual’ knowledge (assessed through multiple choice questions). This suggests that there may be social desirability bias in the findings and therefore some caution is necessary in their interpretation (Lizzio and Wilson (2004).

Limitations, Future Research and Conclusion

The focus in this study is on students’ self reported skill development in information literacy, therefore, as noted above, social desirability bias may have led students to overestimate their generic skills development. It is suggested that in future studies, more objective approaches should be used in conjunction with students’ self-assessments, including feedback and observations (Murphy 1988). Further, the sample size is still relatively small and careful consideration must be taken before generalizing findings to a population.

In summary, this project has enabled us to connect generic attributes with our discipline; students seem to feel that these skills exist outside the discipline content. Using interventions via objectives and compulsory assessment items gains the attention and commitment of students, and provides an opportunity to direct their attention to the processes and skills on which high quality learning and outcomes are built.

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