

How Integrated Learning and the Quality of Degree Teaching and Learning Can Help to Achieve Degree Outcomes

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Abstract

The purpose of this study was to find out how integrated learning, in the context of cooperative education, and the quality of degree teaching and learning can help to achieve degree outcomes. A total of eight bachelors' degrees were selected from a regional Institute of Technology. All final year students (3rd year) were asked to rate their perception on a questionnaire from 'agreed' (5) to 'don't know' (1) on 11 characteristics and outcomes of a bachelor's degree. These characteristics and outcomes were extrapolated from the definition of a bachelor's degree, agreed to by tertiary institutions and the NZ Qualifications Authority. A total of 82 responses, representing 47 percent of all final year students, were received. Weighted and total average means of each degree and each statement were calculated. The findings of the study showed three degrees and six out of 11 characteristics and outcomes were scored above the total average mean. The results of the study suggested that integrated learning in the context of co-op education and improvement in the quality of teaching and learning can help to achieve the definition of a bachelor's degree. The focus is on degree improvement based on what students perceive as important to them.

Introduction

A degree qualification is a powerful incentive for learning because of the doors it opens. A degree designation(s) at the end of someone's name usually evokes an aura of achievement. It stands for something (Smithers, 1997). Often degree qualifications obtained from certain institutions are looked upon more favorably than from others. In a report commissioned by Universities UK and the Standing Conference of Principals found that employers no longer rely on degree results as they believe them to be inflated and instead increasingly choose graduates according to which university they attended rather than how well they did in final exams (The Independent, 2004). Obtaining a degree from certain institutions, therefore, is both prestigious and rewarding because of the reputation and fame of such an institution.

A degree qualification has its own attributes and outcomes. It is defined variously depending on the focus of the degree. For example, NZQA defines an undergraduate degree as "a systematic and coherent introduction to the knowledge, ideas, principles, concepts, chief research methods and problem-solving techniques of a recognized subject" (NZQA, 2000, p. 15). It further expands on the characteristics and outcomes of such a degree. Collectively, they demonstrate that the definition of a degree is holistic, coherent and inclusive of all models and approaches to learning. In this context, concepts of integrated learning and co-operative education are inherent as many degrees include projects and research assignments that connect learning to workplaces.

Often student feedback on various aspects of degree study is used to measure several performance outcomes. Many institutions profile their degree qualifications differently as they do for their graduates. For example, the University of Otago surveys its degree students on a range of subjects, including the course outcomes, information technology, facilities and support systems. Their survey is based on Course Experience Questionnaire (CEQ), an Australian model used by all tertiary institutions' profiles as one way of measuring whether the students have achieved the minimum set of outcomes. Similarly, the polytechnic sector and many more individual institutions and other groups carry out annual graduate destination surveys. However, there is no one such study that matches what is espoused as degree characteristics and outcomes and what students achieve as part of their study. While opinion surveys provide useful information on a host of variables, they do

not match with the agreed definition of a bachelor's degree. In this study integrated learning in the context of co-operative education and the quality of degree teaching and learning were used to suggest how degree outcomes could be achieved from what students perceive as important in their degree study.

Methodology

This study was conducted at a regional Institute of Technology in New Zealand. The Eastern Institute of Technology at Hawke's Bay offers 10 undergraduate degrees and three postgraduate qualifications. For the purposes of this study eight undergraduate degrees were selected on the basis their delivery history. Program leaders from these degrees agreed to participate when approached about it earlier. A questionnaire was developed by extrapolating the characteristics and outcomes of a bachelor's degree, as defined by NZQA. The questionnaire included 11 statements for respondents to rate on a 5-point scale ranging from 'agreed' (5) to 'don't know' (1).

The degree program provided me with the opportunity:

1. to gain knowledge and skills in my major subject of study
2. to use problem solving techniques in my degree study
3. to gain research skills to solve problems
4. to acquire, understand and assess information from a range of sources
5. to engage in self-directed learning
6. for critical thinking
7. for intellectual independence
8. for analytical rigor
9. for the development of communication skills
10. for collaborative skills, and
11. to gain entry into postgraduate study.

In addition, students were provided with the opportunity to comment on anything else that they were expecting to gain from their study. Statistical information on gender, age group and ethnicity was collated to highlight any trends observed in the responses.

The questionnaire was administered by program leaders in the month of November, with the exception of one program where the forms were mailed to students. A self-addressed envelop was provided for the return of these questionnaires.

Analysis

A total of 82 responses, representing 47 per cent of total final year students in 8 selected degrees, were received from the survey. The collated responses from participants were summarized by each degree and then for each item. The last item in the questionnaire that asked students to comment on any other expectation from the study was eliminated from the study because very few comments were received. Table 1 summarizes the weighted and total average means of each degree and outcomes as follows:

Findings

Of the total of 82 students, 44% were males and 56% were females. Of these, 84% of them were in full time study and almost half of them were over the age of 28 years. The ethnicity of students

TABLE 1
Summary of weighted and total average means by degrees and outcomes (n=82)

Degree	Weighted mean on each degree and outcomes											Total Weighted Mean
	1	2	3	4	5	6	7	8	9	10	11	
<i>Bachelor of:</i>												
Computing Systems	50.0	50.0	75.0	45.0	65.0	55.0	60.0	25.0	65.0	60.0	15.0	51.3
Business Studies	85.0	65.0	85.0	85.0	75.0	85.0	70.0	55.0	75.0	80.0	65.0	75.0
Recreation & Sport	90.0	45.0	55.0	25.0	55.0	30.0	45.0	25.0	30.0	25.0	15.0	40.0
Nursing	80.0	55.0	85.0	95.0	90.0	75.0	45.0	45.0	55.0	80.0	70.0	70.4
Wine Science	100	71.4	64.2	64.2	42.8	14.2	-7.1	42.8	21.4	50.0	42.8	46.0
Viticulture	81.2	62.5	87.5	87.5	37.5	56.2	81.2	50.0	18.7	-12.5	12.5	51.1
Māori	100	92.8	92.8	92.8	92.8	85.7	64.2	71.4	71.4	64.2	78.8	82.4
Visual Arts & Design	25.0	50.0	62.5	47.5	72.5	62.5	52.5	40.0	32.5	17.5	30.0	44.7
Total Average Mean	76.4	61.4	75.8	67.7	66.3	57.9	51.3	44.2	46.1	45.5	41.0	57.6

NOTES:

Calculation of means was obtained by transforming responses on the 5-1 into a scale ranging from ± 100 to 0. On this scale, the value of each number is represented as follows: 5 = +100; 4 = +50; 3 = -100; 4 = -50; and 1 = 0. This was done to improve the strength of responses and to avoid the 'averaging' effect of a conventional scale. For example, on the given scale of 5 to 1, the weighted mean for 10 students is calculated as below:

	Agree		disagree		don't know
Standard Scale	5	4	3	2	1
Responses received	3	2	1	2	2
Weighted Scale	+100	+50	-100	-50	0
Weighted mean	$(3 \times 100) + (2 \times 50) + (1 \times -100) + (2 \times -50) + (2 \times 0) / \text{total responses} = 20.$				

indicated that over 60% were Europeans, 20% were others and the rest (15%) were Māori. The findings of this study needed to be treated carefully as the numbers of respondents in some degrees were small to make any generalizations. The findings of the study showed that the definition of a bachelor's degree was not reflected in five out of eight degrees. Table 1 above indicated that only three degrees exceeded above the total average mean. These included the Bachelor of Māori Studies, Bachelor of Business Studies and Bachelor of Nursing. Conversely, the Bachelor of Recreation and Sport and Bachelor of Visual Arts and Design scored poorly out of the remaining five degrees.

Of the total of 11 outcomes, only in five degrees these were scored below the total average mean. The outcome on the opportunity to gain entry into postgraduate study scored the lowest overall total average mean. However, this was not supported by the same three degrees, whose weighted means were above the total average mean. Similarly, the outcome on the opportunity to gain knowledge and skills in my major degree study was scored the lowest by students of the Bachelor of Visual Arts and Design. Likewise, students from the Bachelor of Viticulture and Bachelor of Wine Science achieved negative weighted means on two outcomes on 'collaborative skills' and 'intellectual independence'.

In summary, the results of the study showed that the definition of a degree was partly met by various degrees offered at EIT. More effort in the development and delivery of the degree by encompassing the concept of integrated learning and improvement in the quality of teaching and learning were seen as means of achieving degree outcomes.

Discussion

The concept of integrated learning is well-documented in literature (Braid, 2000; Shapiro, 2003). Integrated learning is seen as a set of highly integrated learning and assessment experiences designed to help students develop clearly defined outcomes (Shapiro, 2003). It is the sum total of experiences embedded in the outcomes of the degree that makes the whole. Such experiences are sub-sets of cooperative education as Hodges (2005) in defining cooperative education suggested that it is inclusive of integrated learning and is a part of any structured educational program. This definition takes a non-reductionist approach to learning, emphasizing the holistic view of degree study. The object is in not on how individual courses are designed and delivered but how they contribute to achieve the whole. Often the tradition of degree study is manifested in accumulation of knowledge and academic work at the expense of coherency in degree outcomes. Individual courses are more important than the whole. As such, individual lecturers are more concerned about the success of their own courses in the belief they contribute to a coherent program, befitting the definition of a degree. The common fault is they don't because learning outcomes expressed in individual courses are discreet and stand alone. They are independent and fail to connect all courses towards the holistic definition of a degree. Some may argue that each characteristic and outcome is an important thread to the whole and it can not be taught as per se. For example, 'intellectual independence' can not just be taught but developed through engaging in learning opportunities that inculcate this. Similarly, there are other outcomes that are transparent in the definition but hidden in the delivery of individual courses. Co-operative education is seen as one way of achieving the holistic definition of a degree. Boyer's thesis (1990) is not to focus on teaching in isolation, but on teaching as a part of the larger whole of academic work, implying there is an overlap between outcomes of courses and the overall definition of a degree. Only then the possibility of achieving the holistic definition of a degree is possible. In this study only three degrees met the definition of a bachelor's degree, suggesting that there is room for integrating course outcomes and degree outcomes in a planned way.

Teaching and learning is receiving greater attention in the tertiary sector now than perhaps ever before. The STEPS document (2005) lists four priority areas towards improving excellence, relevance, access and capability in education. On excellence it wants to promote effective teaching through the proposed National Centre for Tertiary Teaching Excellence. In the context of degree teaching, improvement in the quality of teaching and learning can help to achieve the outcomes of the degree definition. The results of this study showed that several characteristics and outcomes of a

degree were scored below the total average mean. One of the reasons attributed to this, and linked to cooperative education, was the ability of lecturers to emphasize all aspects of the degree definition in their teaching. Excellence in teaching and learning at a degree level, as expected, depends on the experience and enthusiasm of lecturers who make up the team. In such a situation, the ability of the team to critically reflect and share their experiences is imperative as Shulman (1993, p. 6) puts it as “communities of conversation, communities of evaluation, communities in which we gather with others in our invisible colleges to exchange our findings, our methods, and our excuses”. Within this context, individual perception and experiences of individual lecturers contributes to the understanding of the concept of teaching and learning. Trowler and Cooper (2002) and Healey (2000) suggest that theoretical understandings of lecturers’ approaches to teaching and learning tend to lie in one of the three domains of individualistic concept of learning, the disciplinary approach and the notion of reflective practitioner. They concluded that some of the factors like motivation, staff development, approaches to learning, and institutional support are necessary to foster excellence in teaching and learning. This opens the scope for more professional development and training that can help to improve the link between the quality of teaching and learning in achieving the outcomes of a degree. C-operative education, as a means to connect learning to education and work, is one way of bringing together of lecturers, courses and the outcomes as communities to achieve the definition of a degree.

Conclusions

Student feedback is a powerful means of measuring degree outcomes. In this study, they demonstrated what they perceived as important degree outcomes. It further illustrated that components of cooperative education like integrating course outcomes and delivery in a holistic manner and improving the quality of teaching and learning can help to achieve various characteristics and outcomes of a bachelor’s degree. However, there are challenges to it and, therefore, an appropriate balance between the theoretical and disciplinary-based knowledge and the practical know-how desired by the degree definition needs to be safeguarded and promoted in undergraduate degree study.

References

- Boyer, E. (1990). *Scholarship reconsidered: Priorities of the professoriate*. Princeton, NJ: The Carnegie Foundation for the Advancement of Teaching.
- Braid, B. (2000). Liberal education and the challenge of integrative learning. *Journal of the National Collegiate Honors Council*, 1(1), 53-58.
- Healey, M. (2000). Developing the scholarship of teaching in higher education: a discipline-based approach. *Higher Education and Development Journal*, 19(2), 169-189.
- Hodges, D. (2005, April). Towards a common understanding of cooperative education in New Zealand. Paper presented at the annual New Zealand Association of Cooperative Education Conference. Palmerston North.
- Lyons, P. (2005). Dubious diplomas and dodgy degrees. *The Education Review*, 10(1), 5.
- Ministry of Education (2005). *Priorities: Statement of tertiary education priorities 2005-2007*. Wellington, New Zealand: Government Printer.
- NZQA. (2003). *Registering qualifications in New Zealand*. Wellington, New Zealand: Government Printer.
- Scott, G. (2004, September 3). Using ‘CEQuery to analyse student comments on the Course Experience Questionnaire’. *QEM 9*, University of Otago, Dunedin.
- Shapiro, D. (2003). Facilitating holistic curriculum development. *Assessment and Evaluation in Higher Education*, 38(4), 423-434.
- Shulman, L. (1993). Teaching as community property. *Change* (November-December), 6-7.
- Smithers, A. (1997, July). *The New Zealand Qualifications Framework*. Wellington: The Education Forum.
- Sundar, A. (2003). The place of degree teaching and research in the polytechnic sector: What needs to be different about them? Paper presented at annual conference of the Higher Education Research & Development Society of Australasia (HERDSA), Christchurch.

- The Independent, (2004, November 10-16). UK considers US-style degree grade system. *The Education Review*, 9(44), 12.
- Trowler, P., & Cooper, A. (2002). Teaching and learning regimes: Implicit theories and recurrent practices in the enhancement of teaching and learning through educational development programmes. *Higher Education and Development Journal*, 21(3), 221-240.
- University of Otago. (2001). Student opinion survey 2000: Summary report. Dunedin, New Zealand: University of Otago.