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Development of integrated learning in business curriculum

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Abstract: Professional associations and business organizations today consider interdisciplinary perspective and cross-disciplinary knowledge as essential requirements for business graduates entering the workforce. Lack of cross-functional integration and integrated learning perspectives not embedded in the business curriculum are main reasons cited for this inadequacy of business graduates. A large number of business schools, generally entrenched in the 20th century functional specialization both in their organizational structure as well as in their curriculum design, are criticized for not living up to the challenges of 21st century business organizations. Recognizing this need, an attempt is made in a large Australian university to develop integrated learning in their undergraduate business curriculum. As business students' move from one unit to another across various disciplines in the business school, cross-functional integration and integrated learning perspectives are incorporated in the curriculum. Focusing on two core units offered by the disciplines of Accounting and Business Information Systems, this study in the first phase, proposed to analyse students' understanding of the concept, need and significance of integrated learning, within their broad career objectives and professional interests. After analyzing various approaches such as integrated case study, capstone projects, e-portfolios, and enterprise wide information systems adopted by various schools, this university has adopted 'scaffolding approach' and 'e-portfolios' to deliver this integrated learning and intend to measure the effectiveness. This paper explains the rationale and theoretical framework for this approach and discusses the research design.

Key words: Integrated learning, Business curriculum, e-Portfolios, Scaffolding approach

Background and literature review

The present curriculum in business schools is designed around traditional business functions such as marketing, human resources, accounting, logistics/operations etc and does not provide students business process perspective, which is vital in the present times. These different areas in the business are taught in unconnected pieces with no relationship to each other.

Recognizing this weakness in the curriculum, more than a decade ago, Porter and McKibbin (1988) and Karpin (1995) have emphasized the need to change the business curriculum and strongly recommended incorporating cross-functional integration. Karpin (1995) in a report sponsored by the Federal government in Australia pointed out that the business schools in Australia, though successful in providing functional skills, have precluded the development of integrative skills necessary to succeed in modern business. In fact, this report argued that the over-emphasis on functional skills and the competitive ethos of many functional specialist schools in universities act as a barrier to building better teamwork skills and integrated

approach to management of business (Karpin 1995). Despite considerable investment in management education since then, it appears that the universities are not adequately addressing the issues related to cross-functional integration. Recent reviews/reports pointed out the inability of a majority of 21st century business graduates to view and understand business organizations from an interdisciplinary perspective (Michaelson 1999; Cecez-Kecmanovic et al 2002; Boston Consulting Group (BCG) 2001).

Lightfoot (1999) noted that businesses seek people who can analyze problems by drawing on cross disciplinary knowledge. Major corporations such as IBM, Toyota, General Electric, Microsoft, Ford etc. have shifted the focus of management development away from specialization and towards integration of the different disciplines and functional departments (BCG 2001). Business school graduates view their careers from a functional perspective (e.g. as financial analysts, accountants, marketers and IS personnel) and cannot see the integrated viewpoint (Ethie 2003) until they are well into their careers.

The sophistication of the new, integrated, ever changing world of work requires high levels of self awareness, and the ability to critically evaluate situations and workplaces from multiple perspectives and not being shackled by the discipline-centric narrow focus of the business. Recent literature in the business in general, and particularly in the information systems and accounting disciplines has stressed the need for an integrated understanding at least between those disciplines. This paper explores the curriculum integration between these two disciplines - accounting and business information systems. Therefore, a review of the current state of curriculum in those two disciplines with regard to integrated learning is presented below.

Accounting curriculum

Similar to their impact on business operations, emerging trends in information technologies and information systems also have strong influence in the shaping of business curriculum. A study undertaken by Albrecht and Sack (2000) recommended a better information technologies instruction to better meet the needs of the accounting profession. Even though accounting professionals and accounting faculty ranked information systems as the second most important topic of study for an accounting major, few universities worldwide are incorporating this interdisciplinary style of delivering accounting curriculum (Albrecht and Sack 2000).

Most of the business schools curriculum promotes specialization rather than integration (Cobbin, et.al., 2005). A recent report by the professional association of accountants called for inclusion of information systems skills into accounting education (CPA Vision Project, 2003) In the US, while 65% of the schools offer Accounting information systems, only 57% made it a requirement for accounting majors, demonstrating a disparity between current business needs and the education received by students (O'Donnell and Moore, 2005). Such disparity can be attributed to several reasons including lack of financial resources, a perception that IT controlled knowledge is not an integral part of accounting program, and disincentives of IT research for non-tenured accounting professors (O'Donnell and Moore, 2005).

A survey in UK found that there was a 'gap' between what accounting students were taught about information technology/information systems vs. what employers wanted students to have (Ahmed 2003) and indicated that accounting education does not equip students with sufficient IT/IS skills for future employment. Trites (2004) argues that accountants must now be able to find, assemble and report data, contrary to the traditional role that involves

preparation and presentation of data in relatively fixed formats. Trites (2004) too calls for a cross disciplinary approach to delivering the accounting curriculum, in particular, adopting information systems in the accounting curriculum. Despite the above arguments and observations, there has been little progress in providing an integrated curriculum to students in Accounting and Information Systems disciplines. Accounting has been traditionally taught as a self-contained discipline encompassing accounting theories and practices and until recent times, information systems was viewed as a sub-set of computer science and typically offered by the Science/engineering schools.

Information systems curriculum

The early 21st century brought considerable debate as to what “information systems” is and its status as a reference discipline (Baskerville and Myers, 2002). The impact of information and communication technologies on all aspects of higher education has further fueled the notion of IS (information systems) being a service discipline for other subject areas (Challis, Holt and Rice, 2005). Recent studies such as Berghel and Sallach (2004) and Ethie (2003) note that information technology and information systems are relevant for many disciplines and argue for a cross-disciplinary approach in adopting these disciplines. Andrews and Wynekoop (2004) extend this by arguing that all business graduates must understand how the technology and systems work and also how technology can be used and misused.

However, several studies including Smith et.al. (2000) note that “incremental curricular changes (in business) have not taken full advantage of the international experience found in the liberal arts disciplines” (p.714). This criticism was also echoed earlier by Buckley, Peach and Weitzel (1989), Porter and McKibbin (1988), Berhman and Levin (1984) and Mandt (1982) who note that business schools have commonly been criticized for being removed from reality and practice of the business world. These critics have called for a greater integration across subject areas offered by the Business faculty. Andrews and Mynekoop (2004) notes that information systems programs have been criticized for a failure to respond to the business community and for offering too narrow a focus (Simon and Wang, 1999, p.437). Ives and Learmonth (1984) argue that there is some core knowledge that all business students should have. There is overwhelming research calling for an integrated approach to delivering the accounting/business information systems curriculum, and to increasing the level of general business awareness among students.

Inter-disciplinary approach

The success of business curriculum depends on the interdisciplinary research and instruction research (Evangelauf 1989 and Lincoln 1988). While there have been lots of debates on interdisciplinary collaborations (see for example, Toombs, Amey and Chen, 1991), Smith et.al. (2000) notes that little integration has been carried out. Difficulty in creating long-term alliances between various disciplines due to frequent changes to curriculum and continuous expansion of functionally focused content, and current teaching schedules and responsibilities make the exercise difficult (Lamal and Croy 1985). The need for functional integration is well articulated by the AACSB International (2005) in their document on procedures and standards for business schools accreditation.

The information systems discipline, with its focus on business processes and information is well positioned to impart process-orientation and integrative view of the business to students. Business information systems are considered the most common link between various functional disciplines such as marketing, production, finance, human resources etc (Duplagia and Astani 2003, Hershey 2002, Leidner and Jarvenpaa 1995). With the emphasis on

information flows, data and business processes, information systems discipline is the only discipline that deals with issues that cut across various functional disciplines in the business school (Ethie 2003, Leidner and Jarvenpaa 1995).

For example, integrated enterprise systems, with their focus on business processes and information flows across various functions, act as an underlying link between various disciplines and facilitate integration of curriculum in business schools (Seethamraju 2004, Joseph and George, 2002; Hershey et al 2002). In addition to providing a platform for integrating the curriculum at the university business school level, the information systems also assist in the development of integrative skills to graduates (Watson and Schneider 1999, Leonard and Seethamraju 2004).

Burrack and McKenzie (2005) in their study argued that a cross disciplinary approach encourages students to increase their understanding by working within each discipline to focus on concepts that the disciplines share. They also argue that a discipline focused education limits the understanding of students. Barret (2005) points out that deep understanding often depends upon the intersections and interaction of the disciplines. This is in line with what Hirschheim (1994) terms as emancipatory knowledge.

Students armed with knowledge of both his/her discipline and other disciplines will have *critical or emancipatory knowledge* and hence *empowered* to view problems through different disciplinary lenses. The goal of 'emancipatory' learning is to free learners from the forces that limit their options and control over their lives and to move them to take action to bring about social and political change (Inglis 1997). *Emancipatory knowledge* is the personal, subjective knowledge of one's self, acquired through critical self reflection. Since processes, technology and people are all involved in information systems; critical approaches could explore the domination of technology or people (Oliver and Romm 2002).

Modifying Hirschheim's (1994) argument, emancipatory discourse for integrated learning involves supporting an active process for individual and collective self-determination, critical self-reflection and associated self-transformation. Thus, the development of an integrated approach to learning through emancipated discourse might entail the self-reflection of students' perception of themselves within the employment market and possible communication distortions due to power in the information systems environment. These would include intra-organizational perceptions of power from knowledge which would be directly addressed by the integrated curriculum.

For example, questioning the right of IT people to make system changes that impact others because of their exclusive IT knowledge, or questioning the right of accountants to make SOX compliance changes that impact others because of their exclusive accountancy knowledge. They would also include inter organizational perceptions of power where, for example, an IT supplier is more powerful than the organization it "serves" (as is the case with SAP, MicroSoft), or the customer is more powerful than the vendor in a supply chain (eg Woolmart).

Different approaches

Several approaches have been suggested for providing integrated understanding to business students. These include a process based approach (Walker and Ainsworth 2001; Hershey 2002), integration across different units of study (Cecez-Kecmanovic 2002, Leonard and Seethamraju 2004), a capstone project/unit (Johnson et al 2004), and using ERP systems as a

vehicle to stress the integrated nature of business (Becerra-Fernandez et al 2000, Seethamraju 2004). While such strategies can provide a more integrated curriculum to students, it does not address the issue of how students see that curriculum in relation to what they believe they have come to University to learn. If students see themselves as functionally defined - "I want to be an accountant/engineer/HR specialist/logistics personnel/IT project manager etc." then attempts to provide them with an integrated curriculum may not succeed.

The term 'scaffolding' has been interpreted and applied in different ways in educational research and practice since its introduction by Wood, Bruner and Ross (1976) and was being used for some time in Australia (Hammond and Gibbons 2001). First developed by Vygotsky, "it is an approach to teaching and learning that, while careful to provide an initial framework, leaves it to the learner to establish longer term structures" (Crotty 1998). It is a socio-cultural approach; viewing an individual's development as a result of his or her culture (Reiber et al 2004). The emphasis is that the "scaffolding" is there to help students until such time as they have developed their own mental frameworks to integrate their learning.

As argued by Gibbons (2002) the implication of Vygotsky's theory is its focus on teacher-student relationships and the importance given to the different but complementary roles of teachers and students in the learning process. Since Vygotskian theory is primarily concerned with mediation of culture, effective teaching is not simply the transmission of information from one to another in the class room, but rather a collaborative and negotiated process where knowledge is constructed between individuals (Hammond and Gibbons 2005). Thus, using an emancipatory approach to the teaching of an integrated curriculum involves increasing students' self-awareness of their role in critically evaluating business organizations, provision of a 'scaffolding' to facilitate their own construction of integrated understanding and the introduction of 'integration' concept as an emancipated discourse between disciplines.

Originally started in teacher-training institutions, portfolio is a systematic and purposeful collection of work and achievements (Temple et al 2003). Portfolios over many years were used for recording range of individual talents and achievements, giving visual presentation of skills, for assessing and reporting purposes in education, and for professional accreditation in teaching and nursing professions (Leece 2005). Evolved into electronic forms in mid 1990s, this e-portfolio is increasingly used as a reflective learning tool for students showcasing their demonstrable skills and achievements, for assessment purposes and as career development tool (McCowan et al 2005).

The IS portfolio project designed in this course will allow students to apply their knowledge of business information systems into a single project, and gives them an opportunity to validate acquisition of certain demonstrable skills and communicate them effectively. Thus, the e-portfolio, by embedding certain key employability skills more deeply into the curricula and student assessment, will help in bridging the gap between education and work (Curtis and McKenzie 2001).

Research design and approach

Whilst there may be several ways of imparting integrated learning to business students, as discussed in the earlier section, it is, however, not clear whether students really understand and appreciate the need and significance of such multi-disciplinary perspective and integrated view of the business. With most of the students starting undergraduate business course having no industry experience and very little life experience, it is important to know firstly whether

students consider understanding of other disciplines as important for their learning and for their progression towards becoming ‘professional’ in a particular discipline (say accounting, or human resources or logistics).

Cross-functional perspective and integrated view of business is a necessary attribute to business graduates. Considering its importance, this research study aims to impart integrated view of business to students using two different approaches - ‘scaffolding approach’ and ‘e-portfolios’ across two core units offered by the disciplines of Accounting and Business Information Systems. Using an educational philosophy that stresses student self-awareness, this ‘scaffolding approach’ empowers students to adopt a multi-disciplinary approach to learning through critical or emancipatory learning. This study aims to develop an understanding of the importance of such integrated view among business students through curriculum redesign and delivery and measure the effectiveness of two specific approaches. Within this broad objective, this study specifically attempts to address the following research questions.

- What level of understanding do the students have on the need and importance of integrated learning?
- What factors influence the development of such integrated view of business and cross-functional perspective?
- How do two specific approaches - ‘scaffolding and e-portfolio’ assist this learning?
- How effective are these two approaches in imparting an integrated learning perspective to business students?

Considering the exploratory nature of the research questions (what and how), the formative stage of the research on integrated learning in business educational context, qualitative methodology that involves semi-structured interviews (Yin 1994, Burns 2002) will be used in the first phase of the study. Semi-structured interviews are particularly useful in educational research and would offer rich insights on the topic because of their ability to produce data and information (Burns 2002). These interviews can be in the preliminary or exploratory stages of the study to generate hypotheses and develop questions or concepts for questionnaires (Burns 2002).

A semi-structured questionnaire will be designed to collect information about the individual perceptions of the issues involved in integrated learning and the effectiveness of various approaches such as ‘scaffolding and e-portfolios’ employed in the curriculum design and delivery. In the second phase, a data collection instrument will be designed based on the information collected from the semi-structured interviews. The effectiveness of the above two approaches in developing an integrated view of the business, and students understanding of the integrated view of business will then be measured based on self-assessment. Students tend to take more responsibility for their learning while doing self-assessment (Boud 1995) at the end of the course (in weeks 11 or 12). In this phase, students will be asked to rate their knowledge and understanding with reference to various statements in a ‘Likert’ scale of 1 to 7, to gauge the difference in knowledge and understanding gained during the course. Participants will be asked to rate their knowledge before enrolling in the particular unit and after 10 weeks of learning using the above mentioned two approaches to learning.

In addition some demographic data will be collected. Appropriate ethics approval will be obtained before embarking on this study and necessary protocols for data collection and semi-structured interviews will be followed. The data will be codified and analyzed and findings

will be presented for dissemination in national and international conferences. The study will be extended further to other units in the two disciplines and to other disciplines.

Conclusions

This study is significant because of its cross-disciplinary approach in the curriculum design and delivery, student-centered perspective it takes while imparting this integrated learning and cross-functional integration concepts, and the collaborative nature of the project that requires implementation of 'innovative and interdisciplinary teaching and learning strategies' across two disciplines in the School. This study contributes to the limited current research and knowledge available on the effectiveness of those approaches and provides empirical evidence for researchers. The insights and knowledge emerging from this research will help the academics and administrators in managing their curriculum redesign efforts and teaching and learning strategies. The findings of this study will reassure the Australian organizations and professional associations such as ACS (Australian Computer Society) and CPA (Chartered Professional Accountants of Australia) of the 'contemporary and professional relevance' of the programs offered by the universities.

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