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Graduate attributes: Innovative knowledge management or a quality aberration?

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Abstract

Expectations of what constitutes competent and capable graduates from Universities and Colleges have been reported in a number of significant reports in Australia, eg. Mayer, Finn and Karpin. However, until recently there have been few significant attempts to use graduate attributes as either a knowledge management strategy or quality process in Australian Universities. This paper outlines and discusses the development of generic graduate attributes at an Australian University as a first stage to using competency profiling as a leadership strategy for 'knowledge' management. It also draws attention to the possibilities for knowledge management by focusing on quality processes to develop specific competencies, at discipline levels. This is done by the use of generic graduate attributes as the primary focus for a detailed audit of the attributes being developed, as well as auditing the teaching and assessment strategies being utilised to attain those attributes. Four relevant educational leadership theories are then identified and discussed in terms of the situational issues that are raised in the paper. Those theories are strategic leadership, organisation-wide leadership, educative leadership, and teacher centred leadership.

INTRODUCTION

The basis for this paper centres on considering a set of graduate attributes that have been identified by an Australian university as the basis for its 'knowledge' management of under-graduate programs. There is a focus on outlining how generic and specific competency development can be used to identify and develop the attributes in a business studies faculty. Finally, the paper identifies relevant educational leadership theories that relate to the quality process and knowledge management approaches being taken to attain the graduate attributes and it discusses these theories in terms of potential strategies to achieve the knowledge management and quality process issues that are raised in the paper.

BACKGROUND

Although this paper does not propose to consider and evaluate the relative issues and merits of the respective inquiries and investigations that have been undertaken on competency profiling in Australia, there are some assumptions and points that need to be mentioned at the outset. Firstly, there is a regular flow of media about the 'needs of employers' and the 'deficiencies of graduates'. For example, *The Australian* reported, "Employers want creative and critical thinkers but find that graduates lack creativity and flair…" (Illing 2000:33). Secondly, there are a significant number of university courses that are accredited by the respective professional bodies and associations. For example, courses for accountants,

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doctors, lawyers, architects etc. are usually vetted and accredited by their respective professional associations. Thirdly, there appears to be considerable uniformity in the expectations of both students and potential employers that universities will turn out graduates who are 'close to operating temperature'. Finally, the usage of competency profiling continues to be a contentious issue in Universities, not the least because competency development is often associated with training and skills development.

In the Australian context, the most often referred to set of graduate competencies are arguably those that were proposed in the 1992 Mayer Report (cited in Ryan http://www.det.nsw.edu.au/publications/pilot/index.html accessed 20/10/2001), viz.

- Collecting, analysing and organising information
- Communicating ideas and information
- Planning and organising activities
- Working with others and in teams
- Using mathematical ideas and techniques
- Solving problems, and
- Using technology.

A deficiency with the Mayer competencies, when trying to apply them to specialised professions is that they are generic competencies rather than specific competencies for graduates. An example of specific competencies are those developed by the Hong Kong Institute of Human Resource Management, shown in figure 1. However, these are also deficient when applied to graduates because they do not adequately cover the non-professional competencies and capabilities that many employers expect.

Figure 1.
Conceptual Framework of Human Resource Competencies
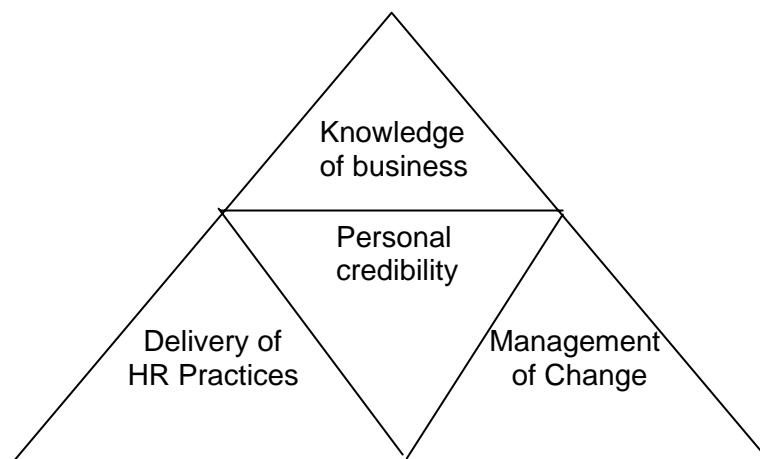
Source: Pickett, 1999:23.

Pritchard (1997) has defined competencies as the knowledge (bodies of information, such as engineering), skills (such as problem solving), abilities (capacities to perform), personal characteristics (such as decisiveness) and other person-based factors that help distinguish superior performance from average performance under specified circumstances. They are linked to the work of one or more jobs/roles (current or future), business/technical domains (narrow or broad), or other focal points (such as teams).

In the absence of an identifiable existing set of under-graduate business studies competencies, a 'draft' set were developed by Pedersen, based on Department of Employment, Education, Training and Youth Affairs (DEETYA) recommendations (1998). This set of competencies comprised:

- Self-Management - including self directed learning, and time management.
- Interpersonal Skills - including writing, communication, presentation, and conflict handling.
- Problem Solving - including creative thinking, holistic thinking, diagnosis of problems, and information management.
- Teamwork
- Leadership
- Professional Ethos - including ethics.
- Acquisition of Discipline Knowledge - including concepts and techniques.
- Application of Discipline Concepts and Techniques.

There was considerable scope within each of these competencies to accommodate the needs of the academic program and University rules, student perceptions, employer expectations, the overall ethos of the relevant professional association, and the individual academic staff. However, none of these prospective stakeholders had a direct contribution to the formulation of the 'draft' competencies developed by Pedersen. This strategic leadership approach is supported by Bailey & Dangerfield (2000) who argue that business schools should adopt a market-oriented perspective while recognising that there are many 'customers' whose interests and needs (including expressed, unexpressed, and future needs) must be kept in balance. Although each stakeholder may not have equal weight in determining educational directions, content and process, balance dictates that each voice be heard. No one customer group should be allowed undue influence on strategic decisions about such things as course requirements, contents, and other issues of importance to the education of business education students.

The 'draft' set of eight competencies was to be used to conduct an exploratory audit of eleven specialised subjects from the double major available as part of a Bachelor of Business program. It was expected that the audit would determine if the competencies were being developed, at what level (first, second or third year), and whether there were any significant gaps. The underpinning intention for this activity was to chart the competencies in terms of knowledge, skills, attitudes and experiences (KSEA's).

DEVELOPING GENERIC GRADUATE ATTRIBUTES (COMPETENCIES)
Before an exploratory audit could be conducted, the University, through the Deputy-Vice Chancellor, sought feedback in May 2000 about what the respective Faculties were doing to attain the 'Attributes of a Graduate' (which were published in a document outlining the University's strategic plans and directions). This process formed part of the changes that continue to be implemented as a consequence of reforms to tertiary education (funding) by the current Federal Education Minister, Dr David Kemp and in preparation for the University's place in the inaugural Australian University Quality Council (AUQC) audit in 2002.

A cursory examination of the 'Attributes of a Graduate' raised concerns that many could not be attained because they were written in terms that were neither 'teachable nor developable'. Further, there appeared to be significant repetition. The attributes were re-worked (refer to

figure 2) into a set of generic attributes (competencies) with the aims of making them applicable to teaching and suitable for University publicity. This was done by grouping attributes, linking related skills, and ensuring that they can be taught through specific teaching strategies. The attributes were structured according to three key categories (competencies): Learning and thinking capabilities; Workplace capabilities; and Social and ethical responsibilities. The redraft only redefined the original attributes – no new attributes were added. Care was taken to ensure that these were capable of being applied to all discipline areas within the University without the need for further redefining to suit specific discipline requirements. In other words, it comprised a generic set of competencies that the University could apply to all graduates. It also provided scope for further expansion at discipline levels to ensure that specific competencies were incorporated and developed.

Figure 2.
Generic attributes of a Graduate

'The University aims to create and maintain a learning environment that provides the basis for developing graduates who are independent learners with inquiring minds; who possess practical and relevant skills; who are creative, innovative and effective problem solvers, and who can function effectively both independently and in a team.'

To this end, the University will strive to ensure that its graduates possess:

Learning & Thinking Capabilities
- extensive knowledge and skill in a chosen discipline
- defined practical professional skills, where appropriate
- sound research, analytical and critical thinking skills
- problem solving skills, including creativity and flexibility
- lifelong learning skills and an awareness of the need for continual self-improvement.

Workplace Capabilities
- high level written, oral and computer based communication skills
- information acquisition, organisation and presentation skills
- well developed teamwork and interpersonal skills
- an awareness of relevant business and work practices
- time management skills, including task application and strategies for working efficiently and effectively
- a capacity for leadership and decision making based on open-mindedness, objectivity and reasoned analysis

Social & Ethical Responsibilities
- the capacity to define, pursue and achieve goals
- an awareness of the value of diversity
- high professional standards and ethical behaviour
- the capacity for individual responsibility and accountability
- an awareness of the need to contribute in a positive way to society

Source: Pedersen & Willcoxson (cited in Pedersen, 2000)

The University Council subsequently approved a diluted version of the attributes with a stipulation that programs leading to the award of a Bachelor's degree would how to demonstrate how students would graduate with the stipulated attributes (http://www.usq.edu.au/vc/planstats/PS/graduateattributes.htm).

AUDITING SPECIFIC BUSINESS STUDIES UNDER-GRADUATE COMPETENCIES.
Before further expansion of the generic attributes occurred at a discipline level to develop and incorporate specific competencies, an auditing process was developed to ascertain which of the generic attributes were being developed, and what teaching and assessment strategies were being used. The auditing process was addressed by Willcoxson and Pedersen (cited in Pedersen, 2000) by the development of a two phased document: firstly, the 'Graduate Attribute Development Grid', and secondly, 'Strategies for developing Graduate Attributes' (refer to Appendix 1). The Graduate Attribute Development Grid was especially constructed to demonstrate how the sequential development of graduate attributes could be defined or tracked throughout a degree program or at a Departmental level (typically this involves discipline levels). The Strategies for developing Graduate Attributes was especially constructed to demonstrate how an outline of teaching and assessment strategies could be used to substantiate claims regarding the development of graduate attributes, and also to eliminate repetition, identify gaps in teaching/learning etc.

A trial audit process was undertaken at a business studies departmental level and included unit leader analysis of the attributes being developed, teaching strategies and assessments that are used for twelve undergraduate subjects offered by that Department. This data requires further analysis to determine:
- What (relevant) attributes are not currently being developed?
- Are there any attributes that are being over developed?
- Are there any attributes that are being under-developed?
- Is there an appropriate chronological development of the attributes over the duration of a three-year program?
- Is there (or should there be) equivalence between the development of day, external and on-line graduate attributes?
- What range of assessment instruments is appropriate (valid) for verifying the respective attributes? and
- How to ensure assessment instruments reliably determine that attributes have been attained?

The processes that have been outlined raise a number of issues in terms of educational leadership theories and their strategic applications to using graduate attributes and competency profiling as a either a knowledge management strategy or quality process strategy by the University.

EDUCATIONAL LEADERSHIP THEORIES AND THEIR POTENTIAL APPLICATION TO UNIVERSITY KNOWLEDGE MANAGEMENT STRATEGIES

Strategic Leadership: Thompson & Richardson (1996) argue that 'a key role of the strategic leader is to ensure that their organisation possesses a wide range of generic competencies (to an appropriate degree) in order that the organisation can develop and sustain more specific competencies in learning, change management and product/service competitive competency" – 'layers of competency'. They also propose that 'while it is content competence which

ultimately produce successful competitive outcomes, other competencies in learning and change management are needed…'

The University is operating in an increasingly competitive environment and it must convince both potential students and potential employers that it has the most appropriate graduates for a global and extremely dynamic environment. At the micro-level, Bailey and Dangerfield (2000) suggest that business schools should adopt a market-oriented perspective while recognizing that there are many 'customers' whose interests and needs (including expressed, unexpressed, and future needs) must be kept in balance. Although each stakeholder may not have equal weight in determining educational directions, content and process, balance dictates that each voice be heard. No one customer group should be allowed undue influence on strategic decisions about such things as course requirements, content, and other issues of importance to the education of business education students.

There are also the increasing issues, under the guise of quality assurance, of justifying to and compliance with government funding provisions. A bold strategic leadership initiative available to the University and which might provide a competitive advantage in the marketplace would be to certify graduates as having the generic attributes that have been developed and promulgated by the University. This may have a partial manifestation in the Australian Universities Quality Audit (AUQA) which will occur at the end of 2002.

Organisation-wide Leadership: Senge (1990:10) comments that 'few acts of leadership have a more enduring impact on an organization than building a foundation of purpose and core values'. In terms of the academic development and outcomes for a University, it is arguable that the development of a generic set of graduate attributes is demonstration of organisation wide leadership. However, Senge (1990:12) goes on to say that 'leaders as teachers help people restructure their reality to see beyond the superficial conditions and events into the underlying cause of problems – and therefore to see new possibilities for shaping their future'. In a university context, this is conducive to the assumption that this might be done through knowledge management and quality processes.

There is organisation-wide leadership evident whereby the University is endeavouring to develop a set of generic graduate attributes that can then be used as the foundation upon which to build and develop its academic programs - to manage knowledge. The obvious manifestation of organisation-wide leadership is the pursuit, through each Faculty, of debate and feedback on what each is doing to attain the generic attributes proposed by the University.

Organisation-wide leadership, concerning graduate attributes and competency profiling, would involve compliance issues and a level of bureaucracy. Firstly, every course accreditation and re-accreditation proposal could have an explanation of how the graduate attributes will be attained by that particular course. Secondly, standards could be encapsulated by ensuring that objectives in every subject specification addressed the attributes and that the learning objectives for all distance learning study modules also addressed the attributes. Thirdly, all course-marketing materials could contain the attributes statement. Fourthly, the quality assurance programs could have the attributes as key objectives to be attained.

Educative Leadership: Smyth (1989:191) proposes 'if leadership has little to do with hierarchical impositions, then it has a lot to do with enabling the 'best' ideas to emerge wherever they come from, through a process of informed and rational debate' and

imperatives in management pedagogies need to become the reduction and standardization of knowledge; the measurement of attainment against predetermined objectives and standards; and the allocation of teaching resources so as to maximize output.

At the time this paper was prepared, all under-graduate specialist subjects in a double major offered by a business studies department had been self-audited by the respective unit leaders using the 'Graduate Attribute Development Grid' and 'Strategies for developing Graduate Attributes' (for an example, refer to appendix 1). Each had been explained and then discussed at the departmental level. The trial audit process included unit leader analysis of the attributes being developed, teaching strategies and assessments that are used. This is an example of practical educative leadership by the department concerned because Smyth (1989) maintains that if educative leadership is present, it should result in management of pedagogical issues to accommodate development of specific competencies, assessments and to maximize outcomes.

Teacher Centred Leadership: Crowther (1996:317) concluded that 'teacher leadership is a concrete and identifiable entity' and developed a theory of teacher leadership against theories of transformational leadership, educative leadership and organisation-wide leadership. This proposal is supported by a definition of teacher leadership advanced by Crowther and Olsen (1997:12) that 'teacher leadership is essentially an ethical stance that is based on views of both a better world and the power of teaching to shape meaning systems. It manifests in actions that involve the wider community and leads to the creation of new forms of understanding that will enhance the quality of life of the community in the long term. It reaches its potential in contexts where system and school structures are facilitative and appreciative.'

There is arguably teacher-centred leadership involved in the development of the graduate attributes and the competency profiling that has occurred, in that the initiatives taken at the business studies departmental level has been done with the intention of providing a chance for innovation in curriculum, teaching, and development of links and application of the disciplines to the 'real world'. Investigating the development of specific discipline competencies as a complement to the broader, University proposed, generic graduate attributes has done this.

CONCLUSION
This paper has highlighted the development of generic graduate attributes at a regional Australian University as a first stage to using competency profiling as a knowledge management and quality process strategy. It has also drawn attention to the possibilities for developing specific competencies, at discipline levels. There was an outline of the use of generic graduate attributes as the primary focus for a detailed audit of attributes being developed, as well as the teaching and assessment strategies being utilised to attain those attributes. Finally, the paper identified four key educational leadership theories - strategic leadership, organisation-wide leadership, educative leadership, and teacher centred leadership - and discussed these in the context of their potential application to university knowledge management strategies and quality outcomes.

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Appendix 1. Graduate Attribute Development Grid and Strategies for developing Graduate Attributes

Please note: This grid is illustrative only. It has been especially constructed to demonstrate how the sequential development of graduate attributes can be defined or tracked throughout a degree or Department

1) Graduate Attribute Development Grid

Unit	Learning and Thinking Capabilities	Workplace Capabilities	Social & Ethical Responsibility	
	Attribute Developed	*Attribute Developed*	*Attribute Developed*	
51375	Discipline knowledge Analytical and critical thinking skills An awareness of the need for continual self-improvement Problem solving skills	Written & oral communication skills Teamwork & interpersonal skills Awareness of career planning, training & performance management techniques Time management skills – attendance, punctuality & task completion Decision-making based on objectivity & reasoned analysis.	Professional standards & ethical behaviour Individual responsibility & accountability Awareness of the value of diversity Awareness of the need to contribute in a positive way to society	

Please note: This grid is illustrative only. It has been especially constructed to demonstrate how an outline of teaching and assessment strategies can be used to substantiate claims regarding the development of graduate attributes, and also to eliminate repetition, identify gaps in teaching/learning etc.

2) Strategies for developing Graduate Attributes

Unit	Learning and Thinking Capabilities		Workplace Capabilities		Social & Ethical Responsibility	
	Attribute Developed	*Teaching strategies*	*Attribute Developed*	*Teaching strategies*	*Attribute Developed*	*Teaching strategies*
51375	1. Discipline knowledge 2. Analytical and critical thinking skills 3. An awareness of the need for continual self-improvement 4. Problem solving skills	1. Modules are discreet topic based (ie. 5 modules) & vary from 2 – 4 weeks each. 2. Lectures, tutorials, private study & assessments. 3. Heavy focus in Module 2 (Changing Nature of Work & Careers) 4. Module 3 content & assessment.	1. Written & oral communication skills 2. Teamwork & interpersonal skills 3. Awareness of career planning, training & performance management techniques 4. Time management skills – attendance, punctuality & task completion 5. Decision-making based on objectivity & reasoned analysis.	1. Assessments & tutorial small groups work. 2. Tutorial activities. 3. Modules 2, 3 & 4 content. 4. Day students expected to attend & lectures & tutorials. All students encouraged to meet assessment timelines. 5. Major assignment.	1. Professional standards & ethical behaviour 2. Individual responsibility & accountability 3. Awareness of the value of diversity 4. Awareness of the need to contribute in a positive way to society	1. Continual examples in lectures & tutorials. 2. Module 2 content about avoiding obsolescence and Module 4 content about Performance Management. 3. Module 5 has content and one exam essay question. 4. Use of contemporary paradigm framework and emphasis that change is the underlying reason why HRD exists.

ASSESSMENT.

All assessment is weighted equivalently to the unit Module content weighting in the Unit Specification.

All Modules in the course are assessed by either assignment work or final examination and use the Unit objectives and individual module learning objectives as the basis for the assessments.

All unit assessment is designed to demonstrate four key competency areas:
- the relevant theory and conceptual knowledge
- application of the relevant theory and conceptual knowledge
- critical analysis, synthesis and recommendations of how the situations could be improved, and
- ability to write in an appropriate manner (essay, report, training plans).
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The unit is assessed by two written assignments and a three-hour exam. This comprises:

1) **Minor Assignment** – 1500 word essay with weighting of 15% of overall unit assessment and marked out of 100. Deals with the underpinning HRD theory & concepts covered in the first module.

2) **Major Assignment** – 40% of the overall unit assessment and marked out of 100. Based on a case scenario. Comprises two 1000 word reports on two separate training theory issues and a 5 day (or module) training plan dealing with a specified scenario. The reports require explanations of relevant theory and concepts and then recommendations of what should be done (and linked to the training plan). The training plan is prepared using a prescribed - usually including overall objectives; session times; learning objectives; instructional techniques and media; instructional resources; and assessments. Deals with theory and practical aspects covered in third module.

3) **Final examination** – 45% of overall unit assessment and marked out of 45. The exam comprises 3 multi-part essay questions (one each from modules 2, 4 and 5 with an either/or option on module 5) that include coverage of some Selected Readings and material from the prescribed texts.