

Education for Sustainability: Creating Skills in Human Capital Analysis

Carol Royal

*School of Organisation and Management
Faculty of Business, University of New South Wales, Sydney, Australia
c.royal@unsw.edu.au*

Loretta O'Donnell

*Macquarie Graduate School of Management, Macquarie University
Sydney, Australia
l.odonnell@unsw.edu.au*

Abstract. This paper presents the role of an innovative university masters' degree program as a basis for skills development in human capital analysis for finance and business students in their core degree programs. The program uses general systems theory to provide a framework for describing two components of the sustainable organisation: firstly, the inter-relationships of organisations to their context; and secondly, to describe the configuration of internal management systems. In the subject, the students take the role of human capital analysts in order to focus on defining, assessing and measuring the human elements of corporate sustainability. This postgraduate business subject has been developed within the framework of the UNSW guidelines on teaching and learning, designed to encourage innovation in both content and process. The authors conclude that the role of education is instrumental in creating a community of practice which uses sustainability principles as a basis for investment decision making amongst business students, who will be the next generation of executives and financial analysts.

Keywords: Sustainability; human capital analysis; finance industry; securities analysts.

1. Introduction

This paper is divided into three parts. Firstly, the authors present a background to the forces for change on universities to develop innovative curricula for and about sustainability, in terms of both content and process. Secondly, the paper presents a theoretical framework for studying sustainability, using general systems theory, which sees the organisation as a series of subsystems of human capital, which can link together to create a foundation for the future financial performance of the firm. Thirdly, the paper describes a specific masters level subject, *Towards Corporate Sustainability: Effective Human Resources and Organisations*, offered by the University of New South Wales (UNSW), Australia, which

develops skills in human capital analysis for the purposes of more transparent investment decision making. It assists postgraduate students to define, assess and measure the human elements of corporate sustainability, as distinct from the financial or environmental aspects. The paper concludes with suggesting that future research in this field will need to explore investor activism, and corporate and higher educational responses to that activism.

2. Pressures on Universities to Develop Innovative Curricula: In Content and Process

Universities are increasingly pressured to deliver innovative curricula to meet demand for courses on organisational sustainability (ARIES, 2006). The UNSW Masters subject, *Towards Corporate Sustainability: Effective Human Resources and Organisations*, is one example of a range of initiatives on education on sustainability within the Australian higher education sector. Several programs developed across business schools (ARIES, 2006) tend to have a theme of education *about* sustainability, rather than a focus on education *for* sustainability, that is developing skills to work within and improve the quality of sustainable organisations. Within UNSW, initiatives on aspects of education *for* (rather than *about*) sustainability also include: a Masters in Business and Technology subject, *Managing for Organisational Sustainability*, and the Masters in Environmental Sustainability program. To emphasise education for sustainability, some Australian universities host active sustainability networks, such as the University of Technology, Sydney (UTS), which hosts the Corporate Sustainability Network, a forum for speakers engaging in

practitioner-based and theoretical debate on all aspects of sustainability. In the corporate sector, sustainability initiatives include education programs, seminars and research projects (ARIES, 2006). These sustainability initiatives tend to have an environmental, rather than human capital or social focus. However, some Australian firms see sustainability in much broader terms, with a high degree of interdependence between environmental, social and economic forms of sustainability; in other words, firms which are operating at Level 6 in Dunphy's (2000) model (Table 1). For instance, Michael Hawker, CEO of Australian insurer, IAG, defines sustainability in this way:

... the sustainable corporation is one that can prosper over the long term, has a clear and compelling business purpose, and creates positive environmental and community outcomes ... We have set up an executive culture & reputation team, whose role is to make sure that everything we do in terms of external stakeholders, internal communication and HR align with an economically, environmentally and socially sustainable outcome.

... we are looking at how our suppliers impact on the environment when they are supplying goods and services to us. At the other end of our business we are looking at issues like the environmental friendliness of the goods we supply to our customers ...

... [we] explain to the community the likely costs of environmental warming, and therefore trying to change behaviours to prevent that cost occurring. And that message is more credible if we are implementing environmentally and socially sustainable business practices in our own organisation ... One major change has been in remuneration and reward systems ... people only see that you are serious when you change these systems around the new values ... The changes we are making are basically about broadening the criteria on which performance is assessed, away from simple financial outcomes and towards looking at the total performance of the business ... This is all about having a more sophisticated view of performance, rather than simply looking at the numbers from the last 6 or 12 months. The reality is that, if you don't continue to perform on the people, customer/community and risk management dimensions of your role, it will erode your business in the medium term. You are not running your business in a sustainable way, you're simply cutting corners (Hawker, 2007).

Other firms, such as Westpac Bank, also see the three elements of sustainability as interdependent. As CEO, Dr David Morgan, noted in his introductory comments to the first Westpac Sustainability Market Briefing:

... when we talk about corporate responsibility and sustainability, we're talking about:

- Managing long — in terms of avoiding the pitfalls of short termism. And in terms of resisting market demands to maximise near term value thereby putting future value and our resilience at risk;
- Managing broad — in terms of taking account of stakeholders other than shareholders, because they have such a fundamental impact on our business in terms of risk, resilience and revenue upside;
- Leading according to a core set of values — which simultaneously meet the needs of the organisation and our people.” (Morgan, 2006)

While environmental issues are increasingly popular (Gore, 2006), firm reporting on corporate social responsibility, including social issues, has increased over recent years. KPMG (2005) found that 53% of top 250 companies of the Global Fortune 250 companies issued separate corporate responsibility reports, and these incorporated not only environmental, but also social and economic issues. This suggests that it is important to create a distinction between the financial, social and human elements of the sustainability agenda. This paper focuses specifically on the human capital or social element of sustainability, as demonstrated in Fig. 1, because, environmental and economic issues are treated in detail in a variety of higher education programs. However, just as organisations need financially and environmentally sustainable practices, organisations also need socially sustainable practices to prosper in the long term (Senge, 1992; Glendon, 1998; Turner and Crawford, 1998; Dunphy, 2000; Elkington, 2001). For the purpose of this paper, the term “human capital” is defined using Royal and O'Donnell's (2005) terms as *the systems by which people are managed*. It is a departure from the more commonly used term “social capital” as defined by Dunphy and Griffiths (1998: 167) who suggest that “Social capital consists of information about relationships among people. Who you know becomes as important as what you know, and networking is critical to effective knowledge development and application to specific problems.” While this is a useful concept, the broader Royal and O'Donnell (2005) definition of human capital can be considered as more closely associated with levels four, five and six of the Dunphy model in Table 1.

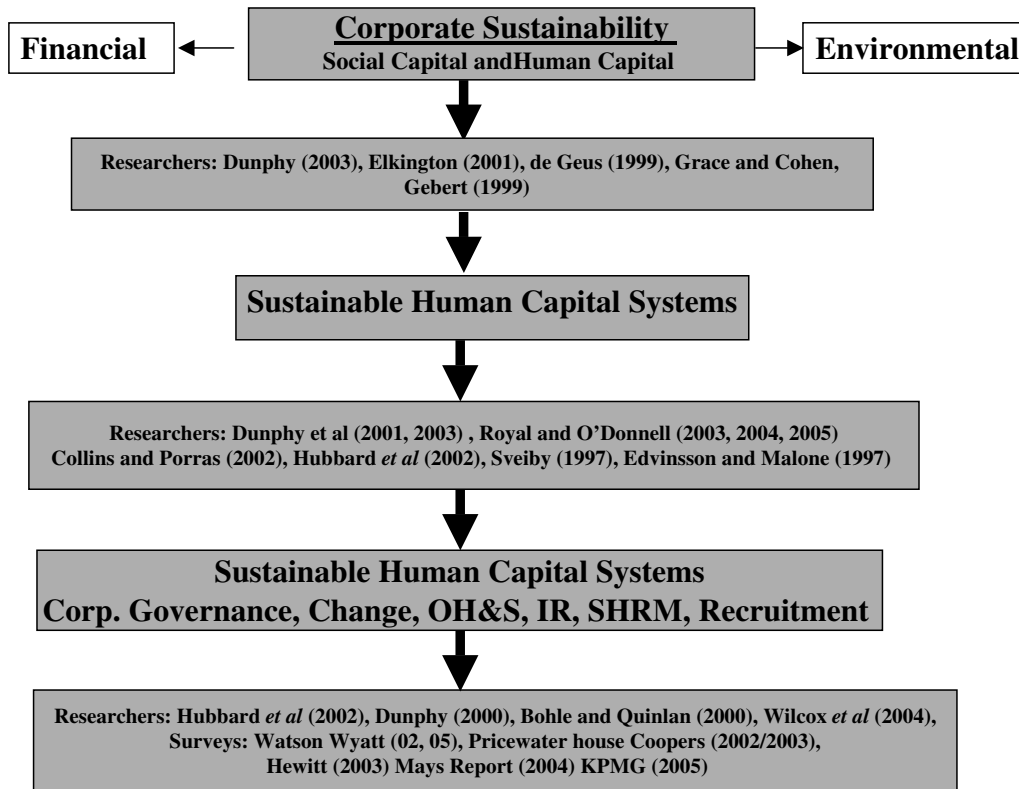


Fig. 1. The three main streams of sustainability research with focus on selected key researchers in human aspects of sustainability.

In Table 1, Dunphy compares and contrasts the human and ecological dimensions of sustainability, and locates them on a six level taxonomy.

Dunphy’s (2000) view is that sustainability has a symbolic rather than a purely scientific role, providing a context for a value debate about the shape of the future, and appropriate strategies to adopt to implement change. While the environmental perspective on sustainability is has taken much of centre stage in recent years (Gore, 2006), Dunphy *et al.* (2000: 6) describe human and ecological phases in the development of sustainability (Table 1) highlighting their interdependence.

In terms of economic sustainability, there have been increasing amounts of literature concerned with how organisational and financial performance can be sustained in the face of massive and unpredictable change (Karpin, 1994; Hubbard *et al.*, 2002; Sarros, 2004). The globalisation of business, economic turbulence, international competition and pressure for increased productivity has made organisational survival dependent on rapid organisational reshaping and continuous transformation (Nonaka, 1991; De Geus, 1999; Drucker, 1999; Senge, 1999). Corporate sustainability, predicated on organisations recognising and implementing sustainable human capital policies and practices, which reinforce their values

Table 1. Phases in the development of sustainability Dunphy, 2000.

		Human (HS)	Ecological (ES)
1	Rejection	People as resources to be exploited	Environment as “free good” to be exploited
2	Non-responsiveness	Financial and technological factors dominate strategy	Efficiency dominates, ‘free’ resources wasted
3	Compliance/risk reduction	Legal compliance plus benevolent paternalism	Minimise potential obvious liabilities
4	Efficiency	Systematic attempt to integrate HR functions	Ecological issues systematically reviewed
5	Strategic sustainability	Skills mix, diversity, intellectual & social capital	Proactive ecological sustainability
6	Ideological commitment	Org. accepts responsibility for knowledge in society	Active promotion of ecological values

and principles, will be fundamental to long-term corporate success (Schuster, 1986; Collins and Porras, 2000; O'Reilly and Pfeffer, 2000; Bassi and McMurrer, 2007).

Social sustainability implies building human capability and skills for sustainable high level organisational performance, and for community and societal well-being (Wilcox *et al.*, 2004). But, including sustainability in the content of courses is not adequate to prepare students for the future, as the ARIES research suggests, students need to be skilled for sustainability, not just about sustainability. Therefore, the Masters subject, *Towards Corporate Sustainability: Effective Human Resources and Organisations* conforms to the UNSW Guidelines on Teaching and Learning (Appendix 1) which have sustainability of process, as well as content, as an implicit target.

Before examining the innovations in process and content, it is worthwhile to provide a theoretical framework for teaching and learning about and for sustainability, via the prism of systems thinking.

3. Systems Thinking: A Theoretical Framework for Teaching for Sustainability

Before the term “the sustainable organisation” became widely used, many researchers and managers were defining issues of sustainability using other terms. These include best practice, the living company, stakeholder corporations and sustainable development.

The human sustainability and the environmental sustainability models have several antecedents, including best practice and total quality management (Wilcox *et al.*, 2004). The idea of creating best practice in management as seen in the total quality movement, prominent in management thinking and practice in the 1980s and 1990s (Wilcox, 1996). Best practice management incorporated the pioneering work of the late W.E. Deming, and focused on root causes of problems by using statistical process control, which implied fixing the problem not blaming the people. This focus on measurement clarifies the comparisons between total quality management and the sustainability debate. For listed companies, a quality perspective means that innovation, timeliness and market responsiveness, as well as perceived value, are measurable. In the public sector, this means that the organisation will be driven by measurable perceptions of client satisfaction and community well being rather than the convenience of the organisation. In each case this implies a commitment to problem prevention, self-reflection and continuous improvement within the organisation. This is equally true of the sustainability agenda. Sustainable organisations

take these principles into a new dimension, as per the Dunphy model in Table 1.

Sustainability principles are closely associated with a view of organisations as part of open systems, rather than closed systems. Traditionally, organisations were able to act as if they were operating more in closed than open systems. They could use tunnel vision to pursue economies of scale or compete on innovation or in new ways, such as speed of service (Porter, 2004). However, contemporary organisations tend to require more than just pure economic models of competition to be sustainable over the very long term (Dunphy, 2000). Metaphors such as the network organisation become relevant to overall financial performance (De Geus, 1999; Senge, 1999). Companies are increasingly being seen as more than economic entities or even as strong networks. At the “open systems” end of the debate, De Geus proposes that organisations are, in essence, living entities. In his view, this approach often results in financial as well as social benefits to the organisation’s stakeholders. The principle of “doing well by doing good”, especially by managing one’s own employees using sustainable processes and practices, is at the heart of the Masters subject on social sustainability.

In one sense, sustainability is recognition of the permeability of the organisation and its environment — all systems of human, financial and other forms of capital are highly interconnected with the external environment. At the most fundamental level, as Roome (1998: 61) argues, “Social and environmental sustainability are inseparable”. In the case of this postgraduate subject, *Towards Corporate Sustainability*, an underlying premise is that social sustainability needs to be considered equally with environmental and financial forms of sustainability. Students are presented with specific human capital analysis frameworks to analyse the social component of sustainability. In particular, one of the key themes of this Masters subject is for human capital analysts to be able to assess at which level of human and ecological sustainability a listed company is operating (see Table 1) as that will help inform the professional observer as to the potential future financial performance of the firm. Other models view the firm as a series of subsystems of human capital, each of which are intimately interconnected, which build to create an engine for the future financial performance of the firm (O'Donnell and Royal, 2006).

In this systems view, a firm is seen in the context of its broader environment, and tacit internal and external connections and interdependencies are made explicit (Senge, 1992; Lewin and Regine, 1999; Trevelyan and O'Donnell, 2001).

Systems theory offers several principles which provide a context to a study of sustainability. Open systems

exchange information with the environment in which they exist; this exchange is dynamic and keeps the system “alive.” Closed systems do not exchange information, with the environment. They are suboptimal or even “die” because of lack of the give and take required for interdependent relationships. This has been an implicit mental model embedded in many organisations in the past. Firms such as Union Carbide in Bhopal in 1984 are testament to this mental model (Reisch, 2004). In contrast, an open system interacts with and is part of the environment. Open systems have permeable boundaries, whereas closed systems have rigid boundaries. Feedback helps the system remain open and responsive to change; it keeps the system moving toward a state of balance. The idea of seeking multiple goals is especially important in social systems. Because the system comprises individuals who have different ideas, values, attitudes and objectives, the larger system of which the individuals are a part, has multiple goals which accommodate these different “parts.” (Flood and Jackson, 1991; ATOD, 2004). As an extension of this approach, Ghoshal and Bartlett (1997) argue that self-renewing capability is as a primary element for understanding the sustainable organisation. They note that that an organisation’s capacity for regeneration, self-renewing capability, organisational flexibility and strategic challenge and managing creative disequilibria is fundamental to its success. Senge (cited in Beer and Nohria, 2000) noted that the traditional linear view of optimising resources is no longer appropriate because we live in a non-linear, complex environment. Paradoxically, a focus on value maximisation will “almost always lead to short-term profit maximisation, unless it is linked to efforts to build better causal theories” (p. 66). Yet, financial analysts still traditionally use primarily financial modeling to place a value on a firm (O’Donnell and Royal, 2006). This then creates the need for formal, university courses in systematic human capital analysis.

In the disciplines of accounting and knowledge management, several researchers have created non-financial measures of firm value (Roos *et al.*, 1997; Sveiby, 1997; Lev, 2001; Mayo, 2001; Boedker, 2005; Marr, 2005) and proposed that intellectual capital in its various forms can be measured. However, Stacey (2001: 221) critiques several intellectual capital approaches, suggesting that while they use apparently valid quantitative financial methods, such as number of hours spent in training sessions, knowledge itself genuinely exists only when it is used in the context of communication processes between people.

These approaches to analysing future firm value provide a challenge for external observers of listed firms, including financial analysts. They need to derive and use tools which discriminate between knowledge which exists

in theory, and knowledge which is actually used within the organisation. In other words, analysts need tools to distinguish between the rhetoric and the reality of human capital. This Masters subject, *Towards Corporate Sustainability: Effective Human Resources and Organisations*, is based on this challenge.

4. Case Study: Postgraduate Masters of Commerce Subject — Educating Human Capital Analysts About and for Sustainability

4.1. Innovation in process

In November 2003, the UNSW Academic Board approved principles on teaching and learning. In part, the guidelines suggest that learning is more effective when students’ prior experience and knowledge are recognised and built on. Students become more engaged in the learning process if they can see the relevance of their studies to professional, disciplinary and/or personal contexts. In terms of the Masters subject for human capital analysts, the practical outcomes of a transparent investment process are important to most students, either directly or indirectly. The educational experiences of all students are enhanced when the diversity of their experiences are acknowledged, valued and drawn on in learning and teaching approaches and activities.

The UNSW learning guidelines suggest that learning can be enhanced and independent learning skills developed through appropriate use of information and communication technologies. Learning cooperatively with peers — rather than in an individualistic or competitive way — may help students to develop interpersonal, professional and cognitive skills to a higher level. Group-based learning is particularly effective in this specific postgraduate Commerce course, in which students, working in groups are expected to lead the lecture session.

A second guideline notes that effective learning is facilitated by assessment practices and other student learning activities that are designed to support the achievement of desired learning outcomes. In the UNSW postgraduate business course, *Towards Corporate Sustainability: Effective Human Resources and Organisations*, the major assessment task challenges the students to take on the lens of human capital analysts, which provides real time, meaningful and timely feedback to assist their learning. The field research project is based on using qualitative metrics to analyse sustainable patterns of human capital. This project challenges the student to analyse patterns of human capital of a selection of Australia’s largest organisations listed on the Australian Stock Exchange using qualitative metrics. The data is be

gathered from publicly available sources, available from all sources including annual reports, websites and media reports including interviews with CEOs and senior executives and academic sources such as case studies, books and journal articles. The final presentation, which is partly peer reviewed, is the culmination of the work throughout the entire subject, developing presentation skills as well as content specific skills.

In Semester 2, 2003, a new subject, called *Toward Corporate Sustainability: Effective Human Resources and Organisations*, was presented to Masters of Commerce students for their first time, and has since been presented in 2004, 2005 and 2006. For a summary of student evaluations from 2006, see Appendix 2. The subject looks at the three elements of sustainability: environmental, financial and social, but the focus is on the social element, or human capital (Royal and O'Donnell, 2005). A range of research is presented to students to develop the theme that companies with superior human capital systems are more likely to have stronger financial performance than companies with below average human capital systems (Schuster, 1986; O'Reilly and Pfeffer, 2000; Bassi *et al.* 2001, 2006, 2007; Royal and O'Donnell, 2003, 2005). So, students are challenged to develop skills in human capital analysis, using publicly available information, to give them insights into potential future financial organisational performance.

As a practical outcome of this theme, the third assessment task challenges students to examine the human capital of a group of five ASX listed companies. Students rate human capital systems within each of their target firms according to one of the human capital metrics models. They then provide recommendations for improvement. In 2003, this subject had an enrolment of 40 students, from backgrounds in Accounting, Finance, Environmental Management, Management and Human Resources. The subject is now an elective for students in the Masters of Environmental Science. Fundamentally, this subject helps students, from a range of disciplines, to bridge the gap between the ideology of sustainability and the ideology of the marketplace.

4.2. *Innovation in content*

The theoretical underpinnings for this subject have come from systems thinking, as discussed above, as well as from organisation studies, human resource management, organisational behaviour and change management literature. Students examine human capital as a prerequisite to organisational change, which can be sustained within the complexity of changing organisational systems. Sustaining change by building organisational capability involves highlighting management systems which have the

potential to sustain the organisation's ability to enable continuous adaptation. The subject emphasizes a number of emerging corporate competencies required to sustain change which need to be embedded in every organisation. The concept of corporate sustainability is located within a framework of human capital management systems; by examining the ways in which management systems, such as recruitment, training and career management, can have an impact on the overall performance of the firm. Students identify patterns within human capital in listed firms, as one variable affecting future firm performance. This implies viewing the organisation from the lens of a human capital analyst. In other words, students are challenged to respond to the questions, "What human capital systems are required for the organisation to sustain high performance over the long term and to execute corporate strategy? What are the consequences for the organisation if it fails to capitalise on its human capital? What can we learn from case studies of companies which engage in high quality and low quality human capital practices? What are the recommendations for change?" The students are presented with a range of models by which to analyse a firm's human capital, including Fitz-Enz and the Saratoga Institute (2000), Kaplan and Norton's Balanced Scorecard (1992), Skandia Navigator by Edvinsson and Malone (1997), Ulrich, Huselid and Becker's HR Scorecard (1999), Sveiby's Intangible Assets Monitor (1997), Watson Wyatt's Human Capital Index (2002), Royal and O'Donnell Star Rating system (2003, 2005). Based on their human capital analysis, students make judgements on the investment potential of selected listed firms.

This focus on human capital analysis from an investor's perspective is important for postgraduate business students as these intangibles are increasingly being analysed by investors in order to make more transparent decisions (Boedker, 2005). As one portfolio manager noted, "Sustainability issues affect companies performance [sic] positively and negatively, especially over the long term. Investors that have a systematic process for understanding and assessing sustainability issues will have a better understanding of companies as a whole and generate better returns as a result" (McCluskey, 2006).

Given the increasing intangible value within listed firms (Roos *et al.*, 2005) pressure is on contemporary financial market analysis to use tools other than traditional financial analysis tools, which typically focus on tangible assets. For instance, as noted earlier, Lev (2001: 17) observes that there is currently intense interest in intangibles, including systems of human capital, even though many companies, or indeed the financial institutions which are the professional observers of

organisations, have not traditionally developed systematic ways of valuing intangibles. Lev stresses that this is important as intangibles are fundamental drivers of innovation and deverticalisation. Accounting researchers (Boedker, 2005; Mayo, 2002) provide alternative ways to measure the intangible value of firms. However, as noted by Royal and O'Donnell (2002) it is more the value created by human capital, rather than the costs of managing and accounting for human capital, which is the more compelling instigator for systematic human capital analysis in the financial markets. One outcome of this traditional focus on tangible assets has been for securities analysts to focus on mathematical models of earnings forecasts, rather than a broader analysis of the context in which each firm operates (O'Donnell and Royal, 2006). This can be problematic as the uniqueness of each stock may be minimised in the process of mathematical modeling (Royal and Althausser, 2002). However, information on intangibles needs to be authentic and able to be interpreted by analysts. As Bernstein (2001) describes, there has been an increase in the level of reportage on firms, but this may serve to increase the "noise", or extraneous data, available to investors, without an associated increase in insights on the value of the firm.

Recent attempts to draw principles of sustainability into the finance industry have some practical outcomes for analysts. In Australia, the Reputex Index (Reisch, 2007) is one process which attempts to value the reputation of a firm within the market, based on its social capital among other variables. While providing useful data, using a methodology which involves a range of stakeholders commenting on the social capital of the firm, this index does not analyse the unique systems of human capital and how it is configured within each organisation, which can then give rise to finer estimates of future financial performance.

The large sample based qualitative and quantitative research by Watson Wyatt (2002, 2005) indicates superior human capital management is a leading, rather than lagging, indicator of improved financial success. Using survey data from 51 organisations in North America and Europe, administered in 1999 and 2001, and in 2005, the researchers divided organisations into three groups based on their overall Human Capital Index (HCI) scores, and found that superior human resource management practices have a positive effect on the future share price of companies.

Bassi *et al.* (2001) and Bassi (2007) have found that non-financial insights make up a large proportion of investment decisions. Therefore, securities analysts need to distinguish and to report on the capability of the

management team to execute strategy. So, the imperative to understand the "information on the human capital function that helps them assess rate of return on investment in human resources and predict future performance" is a critical factor for success for themselves as individual professionals, and for the credibility of the industry as a whole.

Previous work by the Royal *et al.* (2003) challenged the largely quantitative financial basis of investment decisions and recommendations. Their work highlights the need for existing investment analysis practice and processes to be supported by more qualitative research in the form of a complementary research tool based on human capital analysis. Royal *et al.* (2003) noted that securities analysts, and the finance industry, would benefit from more systematic analysis of human capital. This postgraduate business subject adopts key principles of human capital analysis, to provide skills for business students, and by inference, future executives, analysts and investors, to make more transparent investment decisions based on sustainability principles. This subject is a step towards a more qualitative and comprehensive analysis of the potential future financial performance of listed organisations, using human sustainability principles.

5. Conclusions and Further Research

The concept of organisational sustainability is, by definition, an ongoing part of understanding how organisations survive and prosper in the long term. More qualitative subjects on the topic are needed in universities, incorporating additional models, frameworks and expert systems designed to codify and accelerate the insights from the principles of sustainability. Once the finance sector, in particular, is more fully and systematically educated on sustainability principles, pressures on listed companies to improve their sustainability practices will increase.

In response to the pressures on universities to respond to the calls for innovations in the process and the content of learning, and in light of the UNSW guidelines on teaching and learning, the authors have made a small step in the journey towards educating postgraduate business students in the important principles and practices of social aspects sustainability. The role of education is instrumental in creating a community of practice which uses sustainability principles as a basis for investment decision making amongst the finance professionals. Future research will need to incorporate additional forces for change, including investor activism, and corporate and higher educational responses to that activism.

Appendix 1: UNSW Guidelines on Teaching and Learning

Creating an				
ENGAGING	CONTEXTUALISING	INCLUSIVE	DESIGNING	TEACHING
Students in learning	Students' learning experiences	Learning and teaching experience	An engaging, contextualised and inclusive curriculum	An engaging, contextualised and inclusive curriculum
<ol style="list-style-type: none"> 1. Effective learning is supported when students are actively engaged in the learning process 2. Effective learning is supported by a climate of inquiry where students feel appropriately challenged and activities are linked to research and scholarship 3. Activities that are interesting and challenging, but which also create opportunities for students to have fun, can enhance the learning experience 4. Structured occasions for reflection allow students to explore their experiences, challenge current beliefs and develop new practices and understandings 	<ol style="list-style-type: none"> 5. Learning is more effective when students' prior experience and knowledge are recognised and built on 6. Students become more engaged in the learning process if they can see the relevance of their studies to professional, disciplinary and/or personal contexts 7. If dialogue is encouraged between students and teachers and among students (in and out of class), thus creating a community of learners, student motivation and engagement can be increased 	<ol style="list-style-type: none"> 8. The educational experiences of all students are enhanced when the diversity of their experiences are acknowledged, valued and drawn on in learning and teaching approaches and activities 9. Students learn in different ways and their learning can be better supported by the use of multiple teaching methods and modes of instruction (visual, auditory, kinaesthetic and read/write) 	<ol style="list-style-type: none"> 10. Clearly articulated expectations, goals, learning outcomes and course requirements increase student motivation and improve learning 11. When students are encouraged to take responsibility for their own learning, they are more likely to develop higher-order thinking skills such as analysis, synthesis and evaluation 12. Graduate attributes — the qualities and skills the university hopes its students will develop as a result of their university studies — are most effectively acquired in a disciplinary context 	<ol style="list-style-type: none"> 13. Learning can be enhanced and independent learning skills developed through appropriate use of information and communication technologies 14. Learning cooperatively with peers — rather than in an individualistic or competitive way — may help students to develop interpersonal, professional and cognitive skills to a higher level 15. Effective learning is facilitated by assessment practices and other student learning activities that are designed to support the achievement of desired learning outcomes 16. Meaningful and timely feedback to students improves learning

Appendix 2: 2006 Summary Measures of Overall Student Satisfaction (Edited)

Mean student rating	Percentage of students who indicated satisfaction with the overall quality of the course
3.4	93%

Appendix 3: Course Coordinator's Report/Notes

I first taught this course in 2003, and this was my second time teaching it. Generally, most students are extremely keen, with several expressing a desire to work in this field, or related fields. One has approached me to do a PhD in the field.

Good feedback from students, including one who suggested that more time be given to field report

presentations, and they should have a longer written component. Several commented on the value they found in students presenting their overviews of the readings in the tutorial sessions, and emphasised that we need adequate time for deep discussion of the themes.

Several noted that they liked the assessments, including the idea of a take home exam.

Some suggested that some students need more work on presentation skills. Other suggestions included that students find it hard to choose partners for the field research project in week 1 as they do not know each other very well at that stage.

The guest lecturer, from Ecos Consulting, received very positive comments.

Some noted that the aim and content are very clear, and they really enjoyed the new concepts and the opportunities to discuss them in class, particularly the session on human capital metrics. They liked the assessment structure and were kept interested in the tutorial and lectures for 3h. They liked the variety of case studies as this kept them up to date with the business environment. This course has a mid-semester break for students to work on their take home exam, and two students were not sure that the break was necessary.

The tutorials were in two parts: firstly, the students chose a week in which to present an overview of key themes from the readings; and secondly, the rest of the students responded to their questions in small groups, often using mind maps to present to the rest of the class. This worked best when the presenters asked clear and compelling questions of the class. Mind maps work well with most, but not with all, students, so other forms of responses to the tutorial questions need to be considered. One student noted that the study atmosphere is interesting and the teaching “games” were effective and classmates are friendly and approachable. One student mentioned that they liked the fact that students’ opinions were heard often in the tutorials. Some wanted longer and more directive lecture sessions.

Appendix 4: Planned Improvements

This should include definite changes/enhancements for next offering and, if relevant, longer term and/or desirable changes.

One good suggestion was to link this subject more closely to subjects from the School of Accounting, on the management of intangibles. This is worth considering in the long term.

Also, it may be worth considering providing more general discussion time in the tutorial sessions, which

may be possible with slightly larger groups presenting each week. Some students also would prefer longer presentations for the final assignment, which may be possible with some rescheduling. More use of WebCt is also possible.

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Carol Royal is the Director of the Masters of Technology Management in the Faculty of Business at the University of New South Wales. She is researching and teaching in human capital, corporate sustainability and the process of evaluating these themes in publicly listed companies. She is principal and director of Research 7 Pty Ltd and a Fellow of the Australian Human Resources Institute. Carol was adjunct faculty at the Australian Graduate School of Management for 12 years. She has 20 years consulting experience in sustainable human capital and change management strategies for public and private sector organisations. Prior to her academic roles, she held senior line human resource management positions with the manufacturing, retail and banking sectors.

Loretta O'Donnell has been adjunct faculty at the Australian Graduate School of Management in the University of NSW since 1991. She also lectures in the Faculty of Business at the University of New South Wales. She is a director of Research 7 Pty Ltd. As well as teaching and researching in sustainable human capital analysis and systems for managing change, Loretta consults in human capital analysis and change management. Her clients include: university faculties, outsourcing firms, professional services firms, construction and building products companies and private schools. Prior to her academic work, Loretta was with the international change management division of Accenture in Sydney and Chicago. She is completing her PhD at Macquarie Graduate School of Management (MGSM) on human capital analysis in the Australian biotechnology industry.