

December 2002

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## Recommended Citation

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<http://aisel.aisnet.org/acis2002/20>

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# Critique as Information Systems Academics' Core Competency?

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## Abstract

*The object under study in this paper is the distinct core competency of information systems (IS) academics. The author is concerned that, while many would agree that it has more to do with thinking skills than technical expertise, thinking skills are poorly defined. This paper will suggest a definition using the multiple perspectives literature that is growing in popularity both in IS and the theory of knowledge. More specifically, this paper will explore the argument that the core competency of IS academics be recognised as applied critical thinking where this is defined as offering unique and useful perspectives on industry related problems. While there is some recognition of this role for IS academics already, the lack of explicit definitions of 'critique' and practical examples may be blocking its development as a feasible core competency. The idea being that academics would develop ways to critique management practice constructively rather than invent more classroom based methodologies. In this way, academics would have a useful service to offer busy developers. Examples of possible critique methods are presented with some discussion about how they might be applied.*

## Key words

Core competencies, critical thinking, multiple perspectives, IS academics

## THE PROBLEM

There is a near endless debate in IS about relevance of research and how to integrate it with lecturing. This stems from a concern that IS academics and their research are not relevant except in providing primary training for future developers. Many IS academics are not respected as potential consultants. There does not even appear to be much concern by the IS academics for what research is undertaken. A quick survey of the teaching materials used in first year undergraduate courses soon reveals a lack of research or critical thinking culture. The majority of IS textbooks use the dogma of 'trust me, this is how you do it.' Nor do they introduce ideas such as how managers might reasonably conduct inquiries, how they might identify rhetoric or how they might deal with the opinions of powerful consultant corporations. They often present current techniques but few offer 'life skills' such as how to critique new business system designs.

A call for IS academics to 'get relevant' may best be interpreted as 'understand our current problems', 'offer us something'. IS academics will never be able to appreciate fully current business design problems even though many do have some middle-management experience. This is because they now work and learn under a different organisational culture. They are on different paths and practice experience quickly becomes out of date. Moreover, the two different organisational cultures mean movement between industry and academia is difficult because of attitudes reflected in work processes. For example, each operates on different time scales. The three-year time scale of academia clashes with the three-month timescale of industry. Moreover, academia pays lip service to the critical development of the individual, whereas industry is focused on the development of its financial bottom line.

The author of this paper searched for a new perspective on how best to integrate academic teaching and research with the classroom and with industry. The core competency approach arose from consideration of the clustering literature in economics, that deals with developing networking between the tacit core competencies of locally based industries. This raises the question, "What is the core competency of IS lecturers and how would that help clustering between industry and academics?" What is IS academics' distinct competitive advantage? For a historian or philosopher, clearly it is history or philosophy. However, appreciating

business problems is at its most intense by those struggling amidst its day-to-day demands; i.e. managers. Business knowledge is not born and nurtured in universities (as might be true with knowledge of history), but rather, in business. IS academics need to identify their place in the supply chain.

## **CO-EVOLVING A UNIQUE CORE COMPETENCY**

I would like to suggest that 'thinking' is the core competency of the academic, more specifically, 'applied critique'. An ability to critique contemporary business problems systematically and constructively has the potential to be evolved, with industry, as our unique core competency. There is now an extensive, mainly economics, literature that discusses core competencies, typically in relation to innovation (Belussi and Fabio, 1998; Lawson, 1999; Prahalad and Hemel, 1990). My interpretation of their work suggests that core competency in business education is some knowledge that can stand the test of time and that provides the skills to evaluate any particular technique, fad or conventional-wisdom. Examples of these fads and techniques include e-Commerce, how to calculate a critical path, designing a spreadsheet, drawing supply curves and citing the four Ps. These techniques are merely the 'momentary expression' of a deeper knowledge graduates require to tackle any new problem as it arises. IS academics could develop a competency to critique these ever changing problems constructively.

The alternatives to critique as a core competency have been tried. Enthusiastic teaching of the latest techniques is neither rare, appropriate, nor sustainable as anyone can read the Internet textbooks, and techniques change. A more long term, stable and deep-rooted competency is required to assist the graduate to deal with the ever-changing world. Wade (2001) reviewed the core competency management literature and argues that the characteristics of competencies that lead to the creation of a competitive advantage are value, rarity, appropriability and sustainability. This aligns with "critiquing skills" to be considered as IS academics' core competency.

It is rare, in the sense that there are still very few people thinking about thinking, to solve human activity problems. The designing systems for problem solving writers, such as Checkland, Ackoff, Churchman, Mitroff and Mason are still not in mainstream IS teaching. Constructive critique is appropriate to University and separates the role of the academic from that of the developer. It is sustainable because clever thinking will always provide a competitive advantage. But critiquing methods will offer a competitive advantage only if they are relevant and offer more insight than common sense thinking. Most non-graduate managers have reasonable, but untrained, thinking skills. Developing a unique set of thinking methods will be essential. Thinking outside, and in a different dimension to, the 'square' will be required. It is believed that the three-year undergraduate course, if better structured, should be sufficient time for those with six years of university training, and numerous years of practice developing thinking methods, to pass on their expertise. Creative thinking is expected to be durable over time and hard for non academics to imitate given it will be in a constant state of development. It is believed that there is no substitute service for good thinking and it is not really a tradable commodity.

### **Business Studies Lecturers: The Competency Owners**

By IS lecturer, it is meant those at any level involved in the undergraduate and postgraduate education of those seeking expertise in undertaking a career in managing technology. It also includes those who wish to provide students with the skills to develop and grow as individuals in an increasingly technology dominated world. The education of IS academics has traditionally been first from their own studies as undergraduates, then a short period in commerce in some junior or middle management position, followed by a Masters degree. Increasingly, this is being supplemented later by a mid career PhD. studied while being involved in educating others. In most cases, this learning experience is not refreshed by the lecturer undertaking ongoing published research. For many, there will have been very limited discussion about thinking methods beyond school level discussions about logic, scientific experimentation and research methods for their postgraduate thesis. Unlike subjects like psychology, most undergraduate information systems courses contain little discussion about tools for thinking. At best, some academics may have taken a University

wide critical thinking subject that discusses good argument applied to some generic social issues.

For the majority of IS lecturers, their new knowledge comes from the course textbooks, reinforced by articles and spasmodic conversations with practitioners. Of course, this does not apply to all business lecturers but the author feels it does summarise the majority. The textbooks typically do not include any discussion about thinking methods, the source of the evidence and conclusions provided, nor do they provide contrasting views. Moreover, they assume the managerial perspective of 'do this and your boss will make more profit'. While science has very strict rules of evidence, and many lecturers would know these, much of the educational material is closer to 'absolutism' than scientific method. There is a dominance of dogmatism by business-school professors not accustomed to having to provide evidence to justify their opinions beyond salary level or personal contacts with multinational directors. It is a very 'unscientific' approach. While experience is important, accepting it without question deprives students from developing their evidence collection and justification skills. This has also led to a non-critical acceptance of the efficiency-effectiveness managerial perspective. In modern times, the power of the relative stakeholders that enable projects to succeed has shifted from being at the sole discretion of the company Board. Suppliers, customers, unions, consultants and skilled employees can all act to construct a project to their perspective. Managers, as representatives of the project owners, need to accommodate alternative perspectives and present their views using convincing evidence that is not a skill developed under a dogmatic epistemology.

The result of the dominance of a dogmatic epistemology is that IS lecturers are not well informed about thinking *per se*. The author estimates that this is less so for lecturers in the other humanities such as history, sociology, geography or literature. This may explain the attraction of getting business students to take humanities studies to increase their analytical skills. If thinking skills is to be a core competency, then it will need to be made very explicit and well integrated with lecturer notes, course design requirements, journal article design requirements and thesis write ups.

## **PERSPECTIVES AND APPLIED CRITIQUE**

Perspectival thinking provides a useful way to think about thinking. It suggests a separation of perceptions used to think about the object being studied. For example, if employee motivation were being critiqued using the multiple perspective method, then it would encourage personal, organisational and technical questions. Using a social critical theory (emancipation) critique would promote questions such as, "Do they want to be motivated?" and "Is employee motivation too divisive and not in their best interest?" As a metaphoric analysis, the roots of the words 'employee' can be contrasted with 'colleague', 'mate' and 'expert'. Motivation would appear to have engineering roots, as in 'motion' and 'locomotion'. Perhaps a more social concept like encourage (from courage) would be more humane. The Marx and Engel's dialectic approach would be to ask what the underlying tensions are that have created this condition of lack of motivation. A systems approach would be to make explicit the purpose of the group, the purpose of studying the group and focus on the members' relationships with themselves and relevant technical artefacts. Developing an understanding about these alternative critique methods for thinking may be a service only academics can offer.

Therefore, it is being argued that the core competency of IS academics is, or should be, about understanding and improving different perspectives that can be applied to any system design problem. Of course I am not the first to suggest this (see Settle, 1971). Perspectival critique methods have a myriad of names such as conceptual schemes, ways of thinking, underlying assumptions, paradigms, diagnostic methods, mental models, lens, frames, filters, critical skills, inquiry systems, worldviews and concern appreciation.

I am arguing that the ongoing education of IS academics should focus on their developing a clearer appreciation and application of the range of critique methods available to help deal with system design problems. This should enable academics to provide a unique education for undergraduates and thereby assist both them and industry to utilise this knowledge to deal with the myriad of highly complex organisational design problems. Making these methods explicit should help identify the essential difference between IS expertise and IS-

academic expertise. However, it needs to be emphasised it is not being advocated academics merely 'think about thinking' but rather become very aware of contemporary problems facing industry and use these to validate their toolshed of 'applied critique' methods. As the action learning literature points out (Argyris and Schon, 1996), the thinking about an action and the action need to interact. Provided there is effective 'town and gown' communication, academics can develop, ponder and try to apply the critique methods whilst industry supplies the problems. The complexities of how the brain thinks, coupled with the complexity of designing business systems, should provide plenty of challenge for academics.

This division of labour also works for those 'critical-social' business academics that prefer to think of an education as being about students' personal development rather than merely providing trained feedstock for industry. The same diagnostic thinking skills that could make a student an effective manager should be useful in assisting the student in thinking about his or her own quality of life, ethics, equity and the impact of industry on culture and the environment. Business system design problems include business as a problem. This is consistent with the generic advice that the role of the academic is not to tell people what to think, but to assist in how to think about important and complex social issues.

Therefore, the metaphor that is being invoked is for business academics to become developers of critique methods and their role to be focused around improving these methods for application on real business problems. Business makes the product, suppliers provide the raw materials and machine tools and Business Schools provide the critique methods either through consulting activities or well-educated graduates. These graduates, with their critique skills, can also elect to consider the impact of business on the wider society.

### **Some Examples Of Perspectives**

A further expansion of what is meant by 'applied critique' may be overdue. Fundamentally, it is about structuring thinking. Thinking is defined in the Oxford Dictionary as 'to meditate on a problem'. It is systemic in inquiry, problem solving and system design. Walker (1983) argues that vertebrate animals without language can think, process and store information, but most likely cannot reflect on the tools they are using to think. Humans can do this, which makes them unique – this defines human intelligence. By 'applied critique' methods, it is meant methods, techniques, aids and schemas to structure thinking. Kant (see Blumenau, 2001) argues that the brain structure may force us to think in certain ways, such as in terms of cause and effect, and therefore judgements (ethically). The argument literature (Crosswhite, 1996) child psychology (Piaget, 1973) and evolution theory support this view (Crosswhite, 1996) by suggesting that, as information processors, humans have a tendency to jump very quickly to conclusions often prior to a full and careful evaluation of the evidence. Critique methods that structure thinking need to appreciate the idiosyncrasies of the brain and complement its behaviour by such things as processing information more carefully and in different ways.

The best-known critique method for helping us process evidence and test quickly formed conclusions is the scientific method. It is a tool designed for discovering the physical world. The way this method is applied is well known to most High School children through considerations of logic and exercises such as chemistry experiments. Moreover, it is not merely a method for scientific discovery but can be used on a day-to-day basis. For example, a builder can have a problem with something not fitting correctly and can use falsification experiments to help clarify the problem. However, many people are not so clear about the underlying assumptions of the scientific method as a tool for thinking. These include observer independence, universal laws, disaggregation, repeatability (maybe falsifying), logic and innate objects of study (not self consciousness). The universal law and objectivity aspects encourage it to advocate 'oneism' – a belief in there being only one truth and one dominant correct critique method. While this may be beneficial in discouraging alternative 'sciences' when used in social inquiry, it suppresses alternative ways of seeing moral and social preferences, such as indigenous knowledge about the meaning of life. The scientific method is undoubtedly the most pervasive critique method for structuring thinking in the academic business domain.

Critical thinking (scientific) can be presented as another critique method for thinking that aligns with the scientific method. Critical thinking is a tool designed to evaluate claims, first considered by Plato when writing about Socrates. It is not designed to provide ideas or solutions directly, but can do so as a result of being critical about another claim. Lett (2000), who sees criticism as a scientific tool, summarises its underlying assumptions as 'rules' that need to be applied to any evidence. These are falsifiability, logic, comprehensiveness, honesty, repeatability and sufficiency. Used in reverse, these rules can advise on how to write up science.

Argumentative critical thinking has been expanded upon by Aristotle, Hegel, Habermas, Toulmin (1958) and many others (see Walton, 1998) into a more pragmatic, dialectic, rhetorical and argumentative form that allows for reasoned persuasion. In this form, it more closely reflects how science and human inquiry is really done. Argument appears to be the means by which humans create and test knowledge, for example, when setting and enforcing legislation. It acknowledges that a debate is being set up between two humans each with very different backgrounds and biases. Emotion and power are acknowledged as real influences. It has been discussed extensively in the management literature in modern times from Mason (1969) in titles such as, "The Dialectic Approach to Strategic Planning" that suggests setting up a two team debate. Myers *et al.*, (1989) and Metcalfe (1995) are more recent writers. See also the journal, 'Argumentation'. This critique method is particularly useful for thesis and report writing as it provides strategic advice on how these should be structured.

Critical social theory (e.g. Turner, 2000) is a sub set of argumentative critical thinking that is usually assumed to have emerged from the Frankfurt School that includes Adorno, Habermas and Marx. While originally designed to critique the establishment, it has evolved into highlighting the perspective of "workers" or 'dis-empowered persons" on business activity, and so exposing implicit power structures. It is, therefore, a very person-level analysis rather than that typical of economics or sociology that undertakes study at the level of nations or the whole of 'society'. Turner (2000) argues that the focus on 'empowerment' needs to be widened to view business problems as resulting from individual human needs (psychological and physical). He believes that critical social thinking should be using the perspective of humans as sensory individuals who are striving for food, relationships and their place in a community. As a result of this 'state' being similar for most humans, various powerful stakeholders 'institutionalise' these needs, foibles and wants into organisations. For example, the need for safety becomes the police force or the army. Institutions of society should be examined and evaluated for the underlying human need and for how they became institutionalised.

Marx and Engel's tool for thinking (Sowell, 1985; Nielsin, 1999) was to consider the 'underlying dialectic forces'. In their case, this was mainly to examine the underlying political and social forces resulting in the class struggle. For modern business, not only is this still a viable tool for thinking but it still remains a very useful one. For example, in understanding e-Commerce in terms of the political, economic, social and/ or technical forces, drivers could be very informative to business students.

Systems Design (for example Churchman, 1971; Ulrich, 1983) is a critique method that places much emphasis on relationships and boundaries. The boundary concept can be particularly enlightening and can be used as either a 'scientific' (hard) or 'social' (soft) tool for thinking. The hard form is most often used for 'engineering' systems like computers or railways, while the soft systems are usually people and artefact combinations. The soft system is assumed to be self-conscious and purposeful, both in itself and for the person observing the system. So, for example, the systems tool provides a useful way of thinking about such 'things' as Venezuela, an organisation or a marketing strategy. If thought about systemically, rather than as inanimate objects, then a different perception emerges.

Another critique method, advocated by Mitroff and Linstone (1993), is the Multiple Perspectives approach that argues that business systems be 'seen' through three perspectives; objective, subjective and personal. These three align with the theory of knowledge from philosophy. The Multiple Perspectives approach is embedded in the systems thinking approach, the dialectic and stakeholder analysis that argue for systems to be perceived from different users' points of view. This extends the critical social view beyond

'the un-empowered' to all stakeholders. The multiple view means that it also overlaps with the metaphoric analysis tool for thinking.

Metaphoric analysis (Richards, 1936) sees the social construct of artefacts as being achieved through the use of constantly refreshed linguistically derived images. The classic study in business is Morgan's 'Images of Organisations', with the mechanical, organism, psychic prison and so on metaphoric perspectives of organisations. Each image powerfully reveals a different way of seeing the management issues related to organisational life. Even social constructs like accountancy, marketing and other business disciplines can be better appreciated using this critique method. It is particularly effective as it is embedded in language.

The evolutionary view (Dennett, 1996; Schumpeter, 1942) is related to Marx and Engel's underlying dialectic forces, as reflected in the famous saying, 'You cannot understand the caterpillar if you don't know about the butterfly'. Given the impact of Darwin's work on Europe, and that Marx was writing immediately after Darwin, the connection would be expected. While the evolutionary view has been used as support for right wing politics, it remains still a very useful way of understanding some problems, especially those involving biological entities. Where did the problem come from? What are the forces over time acting on the problem? The power problems endemic in human systems can be understood in terms of our being a hierarchical species, as can competitive cooperation and people's motivation, both being rooted in their gene pool needs rather than just themselves.

There are numerous other possible methods. It is assumed that they will fall under the general classifications of objective or subjective (hard and soft). Emergent/ complexity science is an example. Indeed, it is sometimes difficult to determine what is not a possible method, particularly under metaphoric analysis. It is this type of issue that those claiming critique methods as their core competency need to consider. As an example, consider SWOT analysis. It is possible to perceive this as a sub-set of the dialectic tool. Strengths vs. Weaknesses, Opportunity vs. Threats, Internal vs. External analysis that, in turn, is related to the powerful 'compare and contrast' critique method. Strict classification is not considered helpful, but some consideration of these methods relative to each other seems wise.

Awareness of these methods must surely be important education to any IS graduate to equip him or her to deal with new problems. These problems include how best to undertake an inquiry deciding on the usefulness of a new technology, whether to enter a new market or to support a proposal for new regulation. Practice at applying methods to the design of business systems seems essential and should not be taken for granted. It is being argued that it is business academics' core competency to know about these methods and be able to compare and contrast them. For example, a metaphoric analysis of gravity may explain how humans understand gravity, but it would be of less use to understand the physical force. Which are the useful methods for which problem? If they are tools, then what are their attributes and relationships to the other methods? Exposing this often requires some practical applications, or 'doing' activity.

## **SO WHAT IN THE CLASSROOM?**

*...I think there is less of a distinction between the core and non-core competencies – the "core" can only be honed and tested 'for real' through design and implementation in the "non-core" techniques.*

Andrew Martin, University of Warwick

There is extensive management literature on 'learning by doing', action science, double loop learning or action learning (Agyris and Schon, 1996). This presents the argument that learning (inquiry) is best considered a reflective dialectic, with two interactive elements. The first is what this paper has been calling critique methods, most of the action learning literature calls 'theory'. The second is some 'action' (doing activity). A looped process is suggested so that the learning is to:

- Think about the task,
- Try to apply that thinking to doing the task,

- Perhaps note a difference between what you had thought will happen and what actually happened,
- Reflect on this difference,
- Maybe modify your thinking about the task and try doing the task again.

In the classroom, this may come out as first introducing students to one of the critiquing perspectives such as the 'underlying dialectic forces' method. Then get them to read a corporate case study, or listen to a manager recount a current real system design problem, or learn a technical skill such as mastering a computer package. Next, ask the students to try to use the 'underlying dialectic' to critique the task (e.g. the manager's problem). Alternatively, different students could use different critique methods and present their thoughts to the rest of the group. This process of both applying and honing the critique methods (core competency) against real pragmatic tasks is considered essential for relevant deep learning.

The second element in the action learning loop suggests the need for direct sensory inputs. This 'doing' element is particularly relevant in a professional discipline such as business studies where course designers feel under some pressure to provide graduates with a reasonable level of specific hands-on skills, for example, chairing a meeting or drafting a spreadsheet. However, it is important to remember that these tasks are being done as part of trying to organise some very complex, purposeful, social systems. In the 'action world' of commerce, these 'doing' things can easily dominate the day-to-day routine of managers to the extent that even they can fail to appreciate what perception is being used to deal with this complexity. Plans need to be drafted, meetings concluded and analysis completed; this is the 'doing' that will involve only surface or 'first loop' learning if some thought is not given to altering the 'doing' and refining the perception. For example, learning a few new spreadsheet commands is considered surface learning, compared to thinking about a systematic approach to learning how to use any new software that comes along in the future.

Another example would be to consider teaching first year students how to use Excel spreadsheets after first outlining the systems thinking critique perspective. The system thinking can be used to ask how spreadsheets might be used as part of a corporate electronic information system, or how to think systematically and systemically about both learning new software applications and new financial models. It is important that both parts of the learning loop be present at the same time. There is an essential co-evolution between the two.

It must therefore be possible to construct a hierarchy of useful activities for someone seeking an IS education. At the lowest level would be general knowledge. Thus, the development of critical skills against activities, such as 'whom to vote for' or 'whether to recycle' may be a good starting place, but not as useful as developing those skills specific to business design problems. Not only is there a need for students to usefully criticise how the spreadsheet is designed, but also its role in the planning process. With chairing meetings, there is a need to be critical about how the meeting is designed, how contributions are to be evaluated and how to critically appraise the effectiveness of the meeting. The problems then become more complicated; how to design a well balanced critical report; how to critically appraise an organisation's strategic planning; and how critically to appraise the functioning of an organisation in a global marketplace or under a regional government. While there are rudiments of how to think critically, they need to be honed on very relevant activities.

Although the textbooks and present courses abound with examples of techniques for students to master, it does seem important that lecturers be very aware of contemporary issues in their discipline. This means that there is a very strong need for business academics to keep in touch with business or the community and so appreciate contemporary problems to which the critique methods may be applied. The problem becomes how best to maintain these links between business and Business Schools.

## **SEEKING PERSPECTIVES**

Without mentioning critique skills, I asked 2,715 subscribers to ISWORLD, an IS academics email listserver, for their thoughts on the core competency of IS academics. Extracts of their

replies are summarised below. Of course, it is not being pretended this is any sort of sample. Rather, the aim is to seek unique perspectives or interpretations of the issue of IS academics' core competency. As Churchman (1971) suggests a new perspective can provide new knowledge.

I asked:

*...What constitutes the core competency of... academics. What is their long term, deep knowledge? It needs to be slightly different from practitioners, and be something that graduates can apply to every trendy new development. It also needs to be something that enables academics to be able to offer a unique service to undergraduates and to managers. My first guess is something like*

- *Being able to spot bulldust (i.e. develop critique skills).*
- *How to design systems, or*
- *Inquiry methodologies.*

*This I would contrast with non-core competencies such as*

- *Application knowledge,*
- *Specific (technique) knowledge.*
- *Moreover, how do academics hone these core competencies over the lifetime of their teaching career?*

At least one respondent agreed that academics should stop thinking their expertise lies in 'specific technical knowledge' as per physics or history lecturers.

*Would tend to agree with your preliminary conclusions that specific technical knowledge would not be a source of sustained advantage [Wade].*

Many of the replies did focus on the issue of 'thinking' as academic core competency but few explained what this was in much detail. Respondent "Tingling" is an example that sides with critical and rigorous thinking without providing definitions of these...

*...I think that being much more critical and rigorous in our thinking should be what separates us from the non-academic pop or faux science that is foisted on the industry by many of our non-academic pundits (not to mention anyone by name but there are a few eponymous research firms that come to mind... [Tingling].*

Chua's take on thinking is an ability to spot 'bulldust' that may also be roughly translated as 'critical thinking'.

*[Re] Being able to spot bulldust (i.e. critical skills).*

*While I would strongly support the notion that... academics SHOULD be able to do this, I have not seen strong evidence that we actually do spot the bulldust, or if we do, we do not alert practitioners to the fact.*

*...Literature suggest that we [academics] are as susceptible to the bulldust as the practitioners are.*

*I believe that as academics, we can sometimes discern the bulldust from the truth... Furthermore, I would suggest that the group of academics that can discern the truth changes from bulldust to bulldust. As such, I cannot subscribe to the notion that we are better than the practitioners in this regard.*

[Chua]

Glasson focuses on academics having an overview and a greater appreciation of context...

- *Understanding the importance of context and how to select inquiry and analysis methods to fit the problem*
- *Understanding the interconnectedness of problems and the subjectivity of problem-definition.*

*When I was a practitioner, these were the main things that I did not understand. I understood how to design a system for a particular environment, but I did not understand all the contextual and subjective issues that surround this. Now that I am an academic, I realize that it is management of these issues that tend to distinguish successful projects from unsuccessful ones.*

*...Academics should be able to take an overview, in whatever area they work. They should be able to apply this "meta-knowledge" to other application areas (i.e. courses or research projects) and see the patterns that connect these disparate parts...*

[Gasson]

Is it reasonable to equate appreciation of context with 'theory'? ...

*I am weary of having practitioners teach without theory [Peter].*

If this is suggesting, 'that academics are able to take a bigger picture', then it may be problematic. Their having an analysis of what 'most' companies do, or having read about some interesting cases, does appear to give them an edge. This is particularly so if practitioners have become too inward looking on their own business. The author, however, is not convinced that academics do have such an advantage over practitioners who read the professional/ consulting press and have good social networks. Couple this with the mobility of many modern managers, and the tendency for academics to have gained their knowledge from formal write-ups then thoughts of academics fades somewhat.

A couple of respondents suggest that our core competency may be research methodology.

*... [It is] understanding research methodologies [Subramani].*

The author is not comfortable with 'research methodology' as academics' core competency. Having some experience of business reports compared to academic research thesis, the author agrees that academics can be more rigorous in how they collect evidence but this is countered by academics often not being current, well-funded or having the scope of practitioners' reports.

Subramani's angle on thinking is one of "abstraction"...

*Ability to translate lay/ managerial cause and effect models (that tend to be very context specific) to more basic/fundamental relationships among theoretical constructs. This involves abstraction and knowledge of theory and is the critical skill that I believe differentiates researchers from practitioners and excellent researchers from good researchers... [Subramani].*

Andy's angle is that academics should be able to think differently which I am tempted to interpret as able to offer new perspectives which is what this paper has been defining as critique...

*...University staff, whilst perhaps lacking in cutting edge skills, can offer industry and business a different skill set, often the solution to a problem comes because we decided to think about it differently! [Andy].*

Peter summarises, but still does not provide any definitions of 'thinking'.

*...We are a university and should be helping people think not teach them what will be obsolete when they leave [Peter].*

However, McBenoy provides a word of warning that it cannot simply be assumed that academics are naturally better, more critical thinkers...

*I'm tempted to say that the best spotters of bulldust are the practitioners and not the academics... There's nothing like having to make something work to bring home the reality of its application... [McBenoy].*

Chua above made the point that academics 'should' be able to spot "bulldust" but need to think about how that is to happen. The author with his many years of switching between business and academia believes that academics should not automatically assume their core competency is being 'cleverer' than practitioners. They need a system to make them more critical.

So there did seem to be some agreement from the 32 respondents, of which a few are presented above, that it is something to do with 'thinking.' However, there was a lack of suggestions as to what constitutes thinking beyond 'use of theory', unbiased, putting ideas into context, overarching, able to stop bulldust and thinking differently. This last one may come the closest to what is being suggested here, that applied critical thinking is about being able to provide a unique and useful perspective on a contemporary business problem. Moreover, the perspective needs to be logically and rigorously investigated for its limitations and hidden assumptions.

## **CONCLUSION**

This paper has sought to argue that IS education needs a core competency that is distinct yet complementary to generic management core competencies. Applied critique methods appropriate to business system design were suggested. These critique methods were defined as being able to draw on a range of well-scoped perspectives like critical social theory, metaphoric analysis and use of the dialectic applied to the latest management problem from organisational change to implementing a ERP package and using a spreadsheet. Importantly, it was suggested that critical perspectives be co-evolved with current business problems. This means that academics must maintain constant interaction with industry. The 'doing' knowledge of IS is believed to be in industry, the work of research and developing applied critique perspectives relevant to these problems could be done in the academic environment with its longer time frame and more reflective work ethic. Using the learning by doing concept, it is being suggested that academics develop the thinking part of the loop so as to be able to assist practitioners see their problems in different ways.

Unfortunately, it is also believed that many IS academics lack the skills to make these sorts of critique skills explicit and to be able to develop them systematically. It is believed that there are at least two reasons for this. The dominant academic style in business studies textbooks is 'absolutism', whereby eminent consultants pronounce the fad of the day without being required to be either rigorous or critical in terms of supporting evidence. This style, understandably, discourages thinking about thinking. Secondly, IS academics have been too distracted by 'glitz' of new technical toys, most of which are introduced to them from industry. Given they are not in a position to afford, apply and test these toys to the same extent that practitioners are forced to, they have struggled to play catch up and lost focus on developing a unique core competency of their own that could complement industry.

The idea that critical thinking means providing a new perspective on a problem is complex and hard to comprehend, especially for those who have not been introduced to them through a good academic education. However, it is a potential core competency for academics, one that is badly needed if we are to regain the respect of practitioners. It will not be an easy task to re-educate academics mid career. The lead needs to come from those who gate-keep journals, grants and course reviews.

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