

Structured Inquiry for Masters Students: A 'Philosophical' Approach

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Abstract

Feedback from three Masters courses in which students were required to produce assessments in the form of a 'balanced argument' suggested that a significant number of students found this to be an extremely difficult task. It would appear that they had not previously developed the ability to present a balanced and critical view of a topic, instead being more used to presenting a single, uncritical view that typically supported their own view of the issue at hand. Given the rapid growth and availability of information in general the ability to critically reflect on the value of data, information or argument is a skill that increasingly needs to be developed in order that sensible interpretations are applied to that information. This paper outlines an approach based upon the work of two philosophers that will be tested in future versions of the courses to help students explore and develop these skills.

Keywords: teaching, philosophy, information systems, critical reflection, inquiry

Introduction: the Problem

This paper considers a problem that has been encountered in the teaching of a number of information systems Masters courses in which the students were required to investigate and to then present a balanced view of particular topics. Rather than producing the balance requested they tended to present a single sided view, often reflecting only the students' personal view or the 'received wisdom' of other courses studied. This problem had been encountered with final year undergraduate students studying an MIS degree but was rather unexpected in the context of Masters students. The three Masters subjects themselves, namely E Business, Collaboration and E Commerce (C&EC) and Information Systems Development Methodologies (ISDM), are all rich in the sense that it is not difficult to find new, speculative and polarised views in a wide range of literature sources. E Business lends itself to exploring the validity of 'older' models of marketing, business structures, products and services, development and communication methods and so on. Similarly ISDM contains 'hard' and 'soft' views of the world as well as the problem of choosing a methodology from the wide range available, and C&EC allows for consideration of modes of communication in distributed organisations. All of these subjects offer possibilities for bringing literature from a wide range of fields into the information systems domain to generate 'new' views of the world. Despite these rich possibilities students tended to present a 'remembered' (from previous subjects studied), simplistic, single-source and overly optimistic view. They felt that the use of a single 'expert' view

was sufficient, even though it was possible to demonstrate to them that alternative, and sometimes contradictory, views could often be obtained from an equally 'expert' source. For example, in the case of such areas as Business Process Re-engineering they were usually able to parrot early Hammer and Champy views, but failed to recognise their later writing, and also tended to state that BPR was a

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'guaranteed' way to obtain competitive or strategic advantage rather than recognise the reported levels of failure in practical BPR activities. When pressed, they were unable to give a coherent explanation of the concept of a business process. Their research tended to be shallow, tightly bounded and 'satisficing', ceasing when they found an item that appeared to confirm their view of the topic.

Students who have never been exposed to the workplace have no real frame of reference to help them decide what evidence they uncover in their investigation of a subject is, or is not, credible. In this case they are likely to fall into the trap of selecting the first option that is encountered during their research unless they adopt a critical, reflective process that leads them to test the evidence they have located. On the other hand, students who do have extensive experience of the workplace may find themselves locked into a fixed interpretation and actively seek materials that affirm their current practice. Both groups tend to oversimplify problem areas, ignoring such complexities as organisational structure, history and change, political and environmental issues. This oversimplification leads to weak arguments being put forward or to generalisation rather than consideration of the ways that a perceived view of an issue may change in the context of specific settings.

Not a new Problem

The observations above echo the findings of many educators in the past. For example in the 1970's, four main limitations were identified in a wide range of undergraduate fields of study (Beard R, 1976). These limitations were, firstly, a lack of clarity about concepts; secondly, an expectation of a greater degree of accuracy than is reasonably attainable; thirdly a belief that theories are 'true' or that authorities are above criticism; and finally difficulties in considering evidence in an unbiased way that resists the temptation to manipulate or misrepresent a writer, reaching premature conclusions or failure to acknowledge the authors or readers biases. Beard commented that the previous approaches to education, which often assumed that the acquisition of a 'body of knowledge' was sufficient, were no longer adequate in an increasingly information rich world.

Sixty years earlier Dewey had been concerned that students should be taught critical reflective skills, expressing the view that if the first suggestion offered is accepted without question or reflection then the uncritical thinking that results may serve 'only to avoid mental unrest' and would not reveal the absurdity or irrelevance of the suggestion. (Dewey J, 1910) He recognises the difficulties inherent in reflective thinking, remarking that 'Reflective thinking is always more or less troublesome because it involves overcoming the inertia that inclines one to accept suggestions at their face value; it involves willingness to endure a condition of mental unrest. Reflective thinking, in short, means judgment suspended during further inquiry; and suspense is likely to be somewhat painful'.

A learning approach that forces students to challenge personal or cultural values or to face the possibility of discarding ideas that they had previously been led to believe to be true is certainly going to be 'somewhat painful' and the reaction to this pain may generate a negative view of the subject or the member of staff. This is therefore a somewhat dangerous strategy to adopt in those educational settings that see students as customers to be satisfied and where standardisation and risk aversion is the norm. The potential risk of damage to the educator's career when 'non-standard' approaches, which may be painful for students, are adopted explains why the problem is still in existence. An approach is needed that offers students some support and direction during the early part of the course but which is removed as quickly as possible to let them develop their own views in as free and reflective a way as possible.

Towards a Solution

For good argument to be developed there is a need to read widely and to look for links within the chosen field and between that field and other fields, and to seek affirmations and contradictions of expressed

views. Given that some of the fields explored may be novel or unexpected there is a need to have a mechanism that supports assessment of the depth and credibility of the sources used. In the case of information systems the literature explored could be expected to range from 'hard', engineering or computing related areas, through to the 'softer' areas of business, management, sociology, psychology and philosophy. Clearly, however, one could not realistically expect a student on a ten week course to be able to explore such a wide range of literature to any great depth, and there is an argument that reading "all" of the literature in the field before developing ideas may 'increase the probability of brutally destroying one's potentialities as a theorist' (Glaser B and Strauss A, 1967).

An approach is required that helps students find a balance between impossible, and possibly damaging, attempts to read everything in a chosen field, and premature termination of investigation that leads to an incorrect, misinterpreted, biased or weak position being presented. At the very least the approach should help students recognise the likely strength, or otherwise, of their arguments within the context of the actual literature that they have used. The reading needs to be carried out in a structured manner to manage the scope of the reading within the available time, it needs to be driven by the student to ensure freedom of bias from the 'teacher' in the selection of the readings and it also needs to be undertaken in a critical and reflective manner.

Developing the Inquiring Environment

Students need to be helped to recognise that in fields where an interpretive approach is adopted there may be no right or wrong answers or theories. This is particularly true in the information systems field where the adoption of an interpretive stance reveals 'interesting and less interesting ways to view the world' (Walsham G, 1993) rather than a more positivistic view of 'truth' and rationality. The problem that faces students when they meet with a problem having no 'right' answer (or, more challengingly, many 'right' answers) is that they feel that any form of assessment will be based on the subjective views of the member of staff and that they have no real way of knowing in advance what mark they are likely to obtain as a result of their efforts. One can argue that exploring an area of a field and gaining insight and understanding is the key aim of education but many students indicate that they measure their performance and learning by way of the marks and grades that they gain. They therefore need a learning environment that encourages risk, debate, and creativity that is achieved through student directed actions, but still has a visible and understandable framework that provides them with the confidence that they will be fairly treated when marks are allocated. This suggests that they need to be exposed to literature that assures them that in the information systems domain there may not be, and may never be, a 'best' theory, as theory represents our 'chronically inadequate attempt to come to terms with the infinite complexity of the real world' (Walsham G, 1993) and that our real target is improved, rather than best, theory that fits with the prevailing environmental business and social circumstances.

A 'scaffolding', or guiding framework, may need to be erected to provide confidence and support for students as they take their first steps into an approach that may challenge the 'truth' of writers they may formerly have felt to be the sole experts in the domain.

A Guiding Framework for Inquiry: Locke

Exploration of meaning through inquiry could be regarded as the domain occupied by philosophers, and as such could be construed by students as being too esoteric or theoretical to be of value in the information systems area, particularly when the students bring with them a worldview that is strongly positivist in nature. However, it may be possible to offer basic guidelines from philosophical inquiry that are sufficiently 'structured' for students to appreciate them and sufficiently pragmatic to help them use methods of inquiry without the need for a deep understanding of the philosophical foundations. For example, Locke considers that the everyday act of balancing the probability of a particular piece of knowledge being true

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or not can be regarded as the ‘perception of the connexion and agreement, or disagreement and repugnancy, of any of our ideas’ (Locke J, 1976). This process of establishing the likelihood of any evidence presented as having credibility and usefulness has two components, the first of these being a basic test of how well that evidence conforms to our own existing knowledge.

Students do of course use their existing knowledge, or the beliefs that have been conveyed to them in previous studies, as a starting position against which to judge new evidence. The problem here is that this process by itself may simply lead to the discarding of new evidence if it severely contradicts existing perceptions. To generate a genuinely critical and reflective interpretation requires Dewey’s notion of ‘judgment being suspended during further inquiry’. This dissonance between the existing and the new information could be regarded as the area of ‘pain’ that students face and they need a process that will help them take a structured approach to overcoming this situation. Locke suggests the use of the testimony of others to examine the presented evidence, the elements that form the basis for the examination being:

- (1) The number [of items presented].
- (2) The integrity of the items.
- (3) The skill of the witness.
- (4) The design [purpose] of the author, where it is a testimony cited out of a book.
- (5) The consistency of the parts, and the circumstances of the relation.
- (6) Contrary testimonies (Locke J, 1976)

It is intended that these items will be drawn up as a ‘check list’ for students to help them work through the process of testing their own interpretations of a topic against a range of available data drawn from books, journals, conference papers and web sources. This will probably be an individually assessed item and will also form the basis for group debate.

This process should enable students to gain a reasonable impression of the various possible views of the topic under consideration and to gather a range of evidence that can sensibly support the development of a structured argument.

A Guiding Framework for Inquiry: Toulmin

The framework discussed above provides a basis for the gathering of a variety of evidence that can be used to support debate in a balanced and informed manner. It does not, however, provide a clear structure for the presentation of that evidence and for that we can turn to the work of Stephen Toulmin, an English philosopher.

Toulmin suggests that our first intellectual obligation is to ‘abandon the Myth of Stability that played so large a part in the Modern age’ and to return to ‘reasonableness’ rather than rationality. He suggests that the future will not be served by the ‘optimistic daydreams of simple-minded calculators, who ignore the complexities of life, or the pessimistic nightmares of their critics, who find these complexities a source of despair’ (Toulmin S E, 1999). It is the reflective practitioners, in his opinion, steering a middle way between the extremes of abstract theory and personal impulse, who will be able to contribute most to the future. He describes a clear structure that helps frame an argument in such a way that a Claim (C) can be tested by detailing the foundation of the claim (the Data, D), the rules, principles and inferences that connect the Claim to the data (the Warrant, W). Qualifiers (Q) are used to indicate the strength of the Warrant (eg possibly, probably) and Rebuttals (R) are used to indicate those conditions that might be capable of defeating the warranted conclusion. The Warrant is justified by the backing, (B). The basic ‘T’ shape of the argumentation structure is shown in Figure 1.

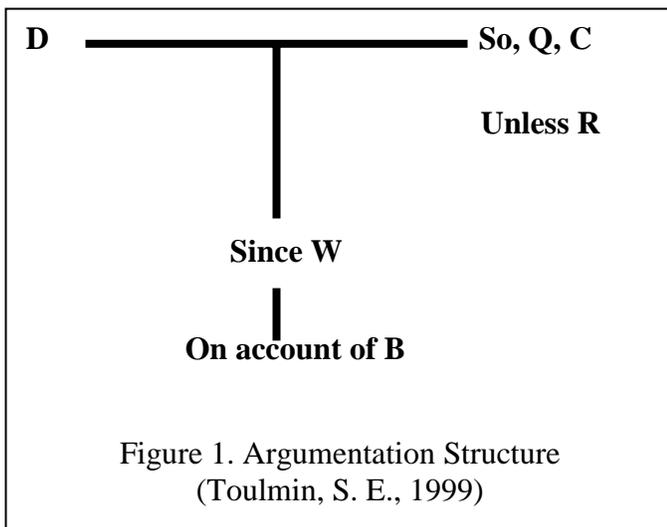


Figure 1. Argumentation Structure
(Toulmin, S. E., 1999)

This structure provides a basic framework to guide the exploration of claims the materials already partially tested by the use of the Locke framework. Linking individual written argument based exploration of topics with group-based debate sessions should permit students to test ideas expressed in the literature in a highly structured way, even though there is considerable philosophical theory underpinning what they are undertaking.

Conclusion

Students on the Masters courses considered here tend to arrive with a 'hard' view of the world which sees the world as a collection of discrete systems

that can be engineered and where there are clearly identifiable links between simple cause and effects. One of the key aims of the course is to try to move them towards a softer view that recognises complexity, confusion and change and helps them develop skills that aid their exploration of problem situations in a critical reflective manner that can generate improvements in those situations. (Checkland P B, 1999)

This move from a positivistic position towards a more interpretive one can become a rather theoretical and abstract experience that exposes students to the need critical reflection and possible abandonment of previously held ideas, knowledge or values. The 'pain' of such a process is quite real, as evidence gathered via feedback from students on previous versions of these courses has indicated. They express a need for structure and for guidance and these do need to be provided for them, but not at the risk of 'spoon feeding'.

This paper suggests that the use of strong philosophical foundations to inquiry can provide appropriate frameworks that will encourage students to develop a critical reflective view of subject areas without too much pain arising from the need to challenge their existing worldviews. The approaches described here will be tested in one of the Masters subjects (Information Systems Development Methodologies) in term one of 2002.

References

- Beard, R. (1976). *Teaching and Learning in Higher Education*, Penguin Education.
- Checkland, P. B. (1999). *Systems Thinking, Systems Practice*, Wiley, Chichester, UK.
- Dewey, J. (1910). *How We Think*, Heath and Co.
- Glaser, B. and Strauss, A. (1967). *The Discovery of Grounded Theory: Strategies for Qualitative Research*, Aldine Publishing, Chicago, US.
- Locke, J. (1976). *An Essay Concerning Human Understanding*, Dent, UK.
- Toulmin, S. E. (1999). *The Uses of Argument*, Cambridge University Press, Cambridge.
- Walsham, G. (1993). *Interpreting Information Systems in Organisations*, Wiley, Chichester, UK.

Biography

David A Banks is a lecturer in the School of Accounting and Information Systems at the University of South Australia, Adelaide. He has taught a variety of subjects including Information Systems Policy, Business Systems Implementation, and E Commerce at undergraduate level, and E Business, Information Systems Development Methodologies and Collaboration and E Commerce at masters level. He moved to Australia in January 1998 from the UK where he worked in the telecommunications industry for sixteen years and in higher education for twelve years. His current research interests are IS education, decision support systems and project management.