The Business Case Study: A Suitable Candidate For Blended Learning?

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'The present problems in case study development
cannot be solved at the level of thinking at which they were created.'
Adapted from Albert Einstein

ABSTRACT

The essential feature of the business case study is that it introduces a slice of realism into the learning experience. For the lecturer the answer to the question 'Why do we teach?' lies in the recognition that we are attempting to change students' knowledge, aptitudes, abilities and attitudes. To this end the business case study is an ideal vehicle especially, if it is harnessed to new technologies which allow greater realism to be tapped into. These interactive, multimedia, business case studies add value to the learning experience by aiding the achievement of deeper learning. However, an interactive, multimedia, business case study is, in itself, insufficient to drive student learning to the highest levels of deep learning. For this, blended learning, combining elements of both traditional teaching methods and the new technologies are called on

INTRODUCTION

The object of this paper is to examine the role the interactive, business case study plays in deep, experiential, learning. To do this I draw both on experience built over twenty years of writing and teaching by the case method and empirical study over a three year study with MBA students. Although the fundamentals of case development may not have radically changed expectations of quality, undoubtedly have. The tools of analysis available to the user of the case demand better quality inputs. This has been aided by technology, information systems, and communication systems that have enhanced both the quality and timeliness of data available to both the writer and user of the business case study. Likewise, expectations of the case developer have also undergone a paradigm shift from passive and content-transfer oriented teaching methods to active and problem-based learning approaches which address interdisciplinary perspectives.

In his book "The Name of the Rose" Umberto Eco wrote that the Bible, was not meant to be read rather, it was meant to be interpreted. A sentiment reinforced by Bauman(1) when he wrote "…..we have 89,000+ laws on the book to apply the basic ten commandments". Case studies may be seen in a similar light. They are generally written to reflect real life situations and like life, do not supply perfect information. Instead, they require the reader to read between the lines, make assumptions after re-ordering and combining the information provided, and by drawing on experience generate solutions. It is, therefore, through this combination of stimuli, this marriage of theory; practice; and experience that conclusions are generated. These conclusions provide the key to good case solution generation for it is they that provide the underpinning and justification for the actions and resolutions chosen. So, 'case studies are not meant to be read rather, they are meant to be interpreted.'

It would be all too easy to intellectualise case studies and their solutions. But this is not the object of the exercise. Case study solutions should be viewed as a process, or a systematic, contextualised, approach to problem solving. This does not, however, mean that systematizing solution generation will provide good solutions rather, it will allow the materials presented in the case to be listed, prioritised, and analysed in conjunction with the individual's and group's experiential knowledge as a basis for rational decision making. It will not guarantee selection of the best solutions but it will help to avoid gross errors of judgement. The process of case study analysis is simply a means of

making sense of large, complex, unstructured, problems. It provides insight into the building blocks and the relationships which bind and influence them and which in turn, are used by the individual in conjunction with his or her own intellectual and intuitive abilities to form these rational solutions.

The following quote, given to the author when a student; as part of his guidance notes for case study solution generation, helps illustrate how 'intellectualisation' can obfuscate what is really being said :

What there is to be said about anything at a given time is a finite quantity defined by persons' experience of past events and expectations of future events as increasing or decreasing their potential for their purposes. Repeated activities (practices) tend to the condition of arts, governed by accepted commendation criteria, and statements about them to criticism given by persons recognized as to various degrees competent critics. Dr. Scott, Strathclyde Business School Strathclyde Division

Although the above quote leaves a lot to be desired, in terms of plain English, it does nevertheless, throw-up some interesting points and helps to illuminate what case studies are not about.

When asked what made a good case study David Hunger (2) replied that, "a good case study had to be `sexy'. It had to have something that grabbed, held the attention and then drew you into it". There is a great deal of truth in this but in itself it does not tell us how to choose the material that will lead to a good case.

Case studies have no definitive solution. Each person will arrive at his or her solution based on the intellectual, and experiential baggage that they carry with them when trying to analyse a case study. As Taieb Hafsi commented (1993) "One of the epistemological factors of the case method is the affirmation of the relativity of knowledge… knowledge is relative…not only is knowledge relative, but the organisation is a highly complex system where all components interact sensitive to the interrelationships." Learning by doing; increased familiarisation with the application of analytical techniques and appreciation of their implications; exposure to a number and variety of cases and their solutions; will help hone analytical ability. Likewise, exposure to peer group solution generation and lecturer driven solutions will also enhance the learning process.

Paul A. Lawrence, (1953) (1) rightly points out that "nothing in any one case inherently makes it a good case" The test of a good case lies with the instructor, the situation and its setting. If the case produces an exciting and provocative learning experience for those participating in its use then that is a good case.

Traditionally, on MBA courses, the paper based case study method would be used as the vehicle to develop student learning and understanding as the case study is predisposed to facilitate the marriage of theory and practice (Diagram 1: A). To this end the business case writer has the decision of whether to write a 'live' case study on a real company or to create a fictional case study geared to the exploration of a given piece of theory. In Diagram 1 both forms of case study would be represented in section A. However, having a guest speaker (Diagram 1: B) from the 'live' case study company to address the class lends a certain verisimilitude to the learning experience. A further area of consideration for the business case writer is recognition of the importance of structural elements such as:

- what is the target group? (accountants, business studies, marketing):
- what level (first year, final year, MBA) are you writing for?:
- what is the degree of complexity? (beginning of the course, middle, final examination/evaluation):
- what outcomes do you want to achieve with the students? (pedagogical, social group interaction, research methodology)?

It is crucial therefore, to keep in mind your audience (Diagram 1: C) and its dynamics when developing a business case study.

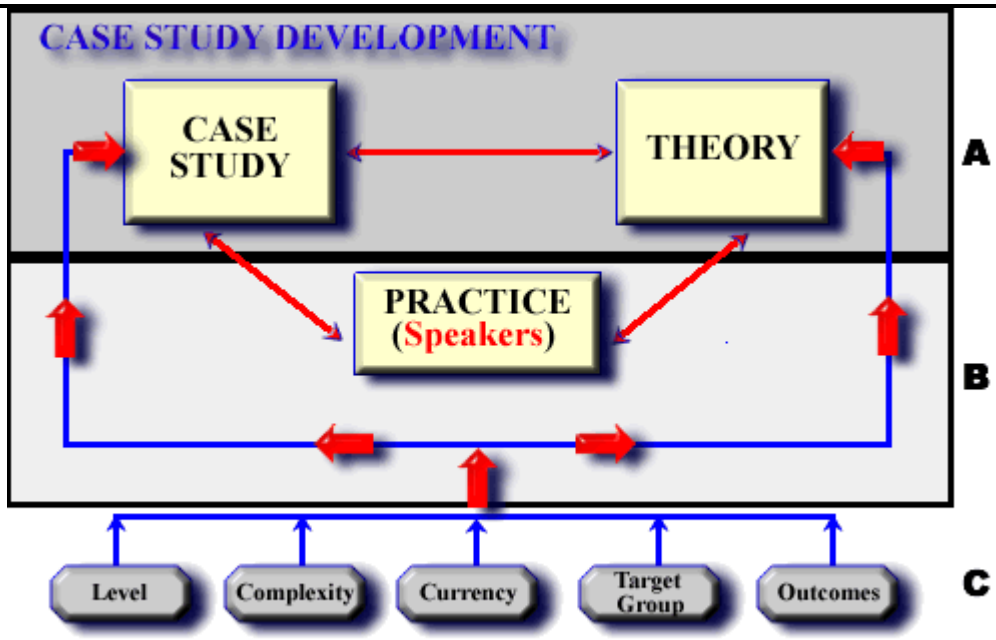

Diagram 1

Finally, in my experience, case studies have a limited shelf life before they lose their currency. Four or five years tends to be the limit. Beyond this students are liable to question the relevance of the case to match the current climate.

BUSINESS CASE STUDY CATEGORIES

There is no standard form for a case study. Case studies will vary in length, style, format, and data presentation. However, the common feature of the case study is the route to understanding and arriving at a resolution for it. This resolution is simply a process, driven not by the search for answers per se, but rather, by continually asking questions such as,

- Why?,
- What was the cause?
- What was the effect? and
- What impact does this have on performance?

If these questions can be answered then solution generation and justification for such are well underway. For the business case writer then, the aim is to create a vehicle that, through the application of judicious questioning, fosters a learner centered and action oriented experience geared to producing a stimulating and challenging learning pedagogy for the student.

Shaw (1982) categorised case studies as:

- Descriptive Case Studies: study of outcome.
- Analytical Case Studies: study of the process as well as the outcome.
  Studies of Deliberation: studying process directs attention to how changes are invented and brought about, not what changes are.

Yin (1981) also categorised case studies, as descriptive, explanatory and exploratory. Here a descriptive case study is one that documents a particular action or series of action. An analytical/explanatory case study is one which tries to explain or analyse the strategy that resulted in the particular business action. An exploratory case study tries to understand the thinking or vision behind the strategy illuminated in the case study (Béchervaise 200?).

For the business case writer and the lecturer who uses the case studies there are a further two categories of case studies:

- factual ones (Diagram 1: A + B) based on real organizations, their personnel and their problems and
- fictional ones (Diagram 1: A) that draw on ideas, concepts and business historiography as the basis of their construction.

Advantages of factual case studies lie in their street credibility, their wealth of detail, the situational colouration they portray and their currency. From these factors reality is brought into the classroom and analysis is predicated on live formulation.

Charles Warner (199?) wrote that:

When discussing factual cases, analysts tend to focus on the accuracy of the details rather than on the appropriateness of the solutions. Factual cases tend to become outdated as organizations, strategies, problems, and people change over time. Also, if a factual case portrays real organizations or people in a negative way, questions of taste, fairness, and even libel can arise. Finally, in a factual case writers must obviously stick to the facts, which means, that they are limited to dealing with only those management topics that are implicit in the case.

In essence, Warner is probably correct in his observations when applied to analysts but for the business case writer differences do occur. Accuracy of the detail is, for the business case writer, as with the analyst, paramount. However, solution appropriateness is without doubt equally crucial for the business case writer. This is witnessed by the number of case repositories, such as the European Case Clearing House (ECCH); which requires a teaching note when a case study is registered with them. Furthermore, case study competitions such as the European Foundation for Management Development (EFMD) judge the case study not just on the case study but on the teaching notes (solution) which must accompany it. A good, appropriate teaching note (solution) is a prerequisite today for the serious business case writer. However, as will be seen, there are no definitive solutions to the complex, unstructured, problems that are business case studies. The users of business case studies, as a minimum, require signposts on possible solutions and the more appropriate the information the better. Generally, this information will not be the solution used in the class by lecturers but, in this raw state it will provide the skeleton upon which the meat of the lecturer's personal solution, reflecting his teaching and use of the case study, will be hung,

In regard to Warner's point about shelf-life of a case study he is also fundamentally correct. However, if one views case writers as a species (or sub-species) of academia then within this population there is a high instance of serial case writers who will revisit their case studies and develop longitudinal studies based on a series of transgression events on the same organisation. On my MBA Strategic Management module three such longitudinal case studies are used, with excellent feedback emanating from the module questionnaires. These longitudinal cases provide the teaching backbone in each academic session to which are added more specific structural case studies.

Furthermore, factual business case studies are written either with the approval and participation of the case study, target-company or from published secondary sources. In the case of the former the company is informed that the case study will be written as honestly as possible but they will have the opportunity to review it for accuracy and interpretation.

Warner in his last comment probably obfuscates the point of business case study writing and analysis. Like the common cold it would be wonderful to have a magic bullet cure-all. But the cold virus adapts and changes and mankind continually strives to develop a cure. Essentially though, most cold and flu remedies treat the effect not the cause. Business case studies are developed on a similar basis they deal with the specifics of that company, in that industry, at that time, they are historic by nature. It is the responsibility of the business case writer on reporting these historic situations to stick to

the facts. The specificity of the management topics are therefore embedded and contextualised in the generality of the environment within which they operate. There is no universal case study that encompasses all management topics but does this truly diminish the business case study as a pedagogic vehicle. The strength of business case studies lies not in their panacea abilities but in their specificity and situational generalisability.

EXPERIENTIAL LEARNING (action-driven learning environment) AND THE CASE METHODOLOGY

Lawrence (1) also wrote " A good case is the vehicle by which a chunk of reality is brought into the classroom to be worked over by the class and instructor." (Erskine, 1981; Szpiro, 2001) At first sight it would appear that in fifty years little has changed in this situation. The core of a good case is still founded upon real life situations, ones that allow theory to be used in a meaningful and proactive manner. It still requires an understanding of these complex, unstructured problems to be achieved by breaking them down and then rebuilding them after careful analysis. Finally, it is still the sounding-board against which the expression of attitudes and ways of thinking can be brought more meaningfully into the classroom. However, it would not only be presumptuous but naive of us to say that changes have not occurred in the development, analysis and use of cases. Changes have occurred. But their occurrence has been one of refinement and adaptation to new settings, situations and requirements. The core however, of a good case essentially remains intact. The primary reason for developing the case method as a teaching strategy was "to transfer much of the responsibility for learning from the teacher on to the student, whose role, as a result, shifts away from passive absorption toward active construction" (Boehrer, 1990). Simply, the student has to apply theory in 'anger'. He can no longer be passive in the learning process.

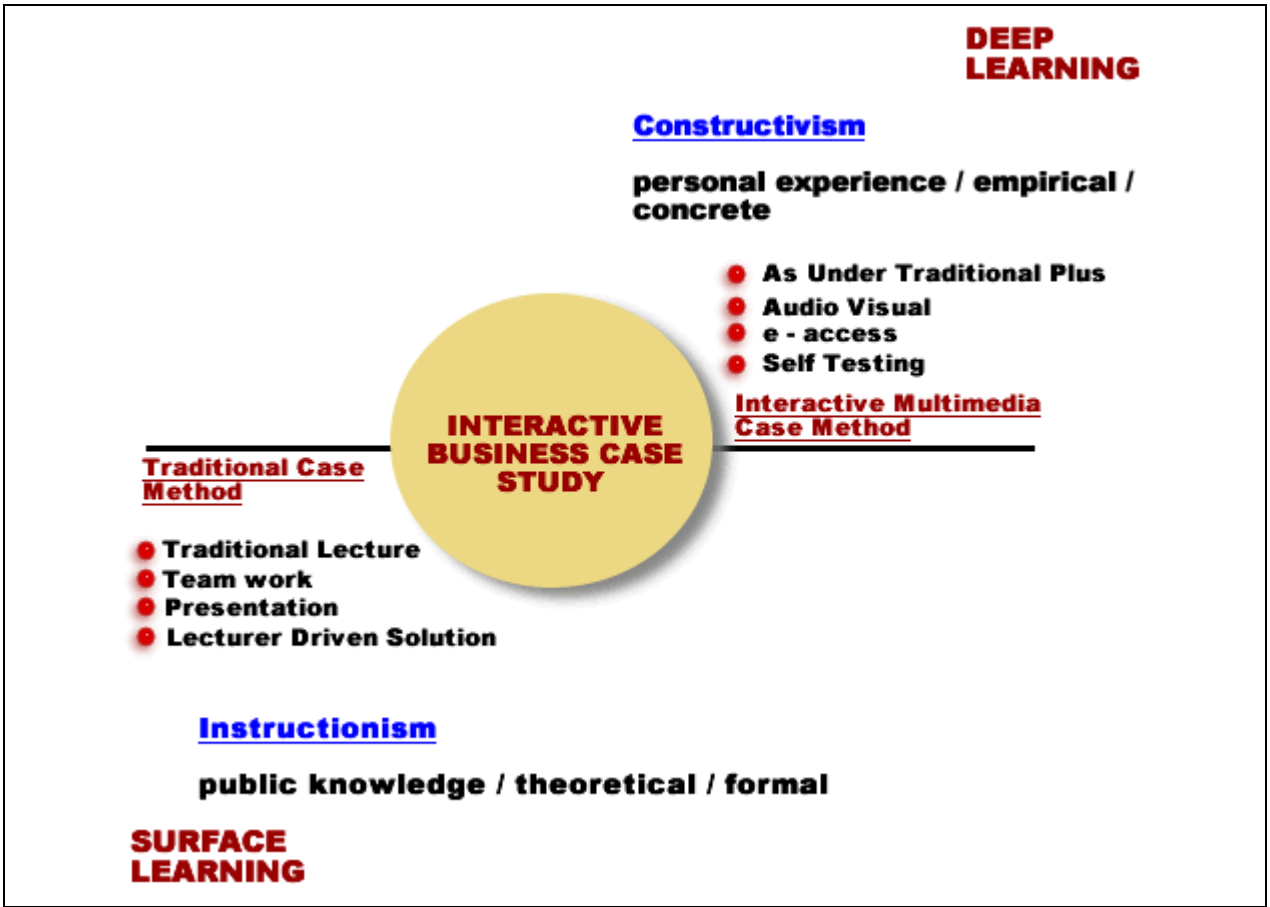

Diagram 2: Experiential And Blended Learning

Experiential education, in this instance use of the business case study, is the process of dynamically engaging students in a realistic experience that results in them acquiring both positive and negative knowledge. This knowledge is self discovered and from this the students' reflection and evaluation on these experiences allows them to develop new skills, theories and ways of thinking (John Dewey (1938), David Kolb and Roger Fry (1975: 35-6)). This type of learning, constructivism, differs from much traditional education (instructionism) in that lecturers first immerse students in action and then ask them to reflect on the experience (Diagram 2). In traditional classrooms, lecturers start by setting knowledge (including analysis and synthesis) before students. The hope here is that students will later find ways to apply the knowledge in action. However, this process still sees the lecturer as the source of knowledge and the student as the passive recipient of it.

Merrill (1991) attempted to identify the assumptions of constructivism as follows:

- knowledge is constructed from experience;
- learning is an active process;
- learning is collaborative with meaning negotiated from multiple perspectives;
- learning should be situated in realistic settings;
- testing should be integrated with the task, not a separate activity;
- interpretation of reality is personal – there is no shared reality.

Essentially, learners actively build their own knowledge structures based on their own [iterative], mental activity (Piaget). Representation of this for the individual is shown in Diagram 3 where constructivism and experiential learning are combined to illustrate the underpinning for business case study pedagogy. Group representation is shown in Diagram 5.

Constructivism And Experiential Learning

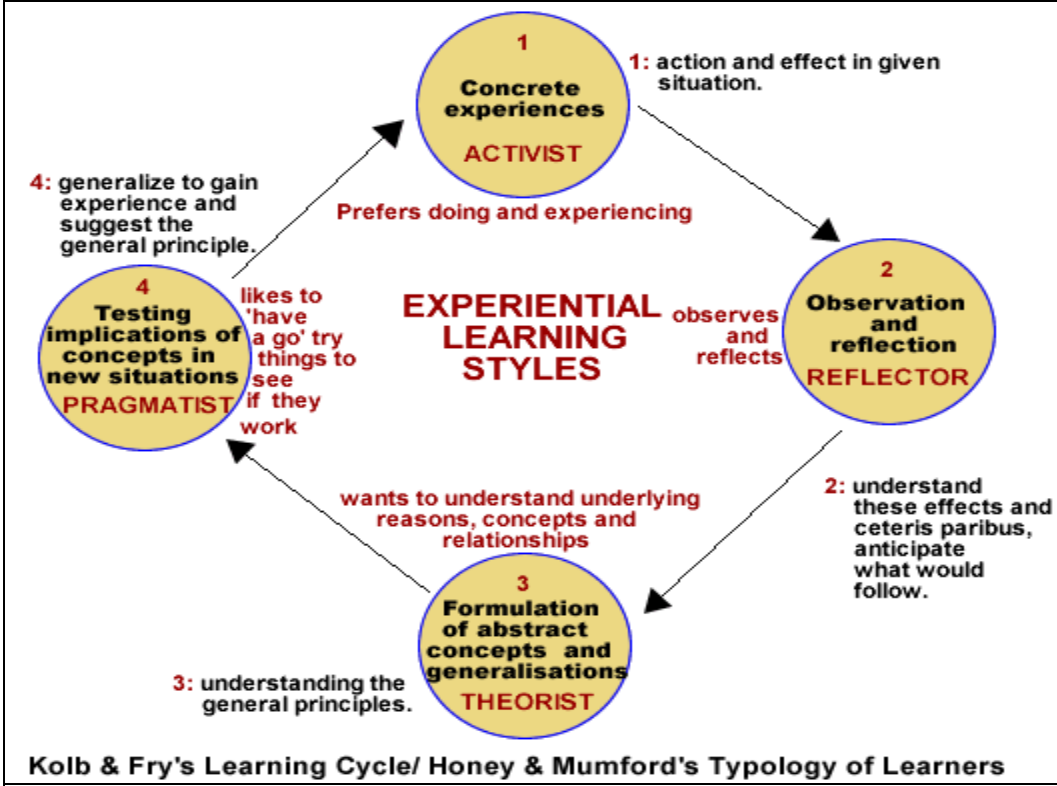

Diagram 3: Adapted from Kolb 1984, Atherton 2006, & Honey & Mumford 1982

The unadorned use of the Kolb model, when applied to business case study development, lies probably in its ability to allow the lecturer to focus his/her attention on each stage of the model and design appropriate questions that ensure that these encourage student reflection, conceptualisation and ways of testing ideas. There are also implications for team membership selection when cases are used within the classroom situation. The dynamics within the group will have a key role to play in achieving a successful and meaningful outcome in case study pedagogy.

As diagram 3 shows the learning process tends to begin with (1) the student carrying out a particular action and then observing the effect of the action within the situation. For the student predisposed towards an activist disposition there will be a preference for doing and experiencing, a willingness to engage. Next (2) is to understand these effects in the particular instance so that if the same action was taken in the same circumstances it would be possible to anticipate what would follow from the action. The predisposition here is that of reflector whose focus is observation and reflection. The third step, lies in understanding the general principle under which the particular instance falls. Here, the predisposition is that of the theorist with the desire to understand the reasons, concepts and relationships of the general principles. Finally, (4) generalizing may involve actions over a range of circumstances to gain experience beyond the particular instance and suggest the general principle. The pragmatist predisposition likes to try things to see if they work. (Coleman 1976: 52; Atherton 2005).

The business case study as pedagogy is, to some extent, founded on the notion of experiential learning where students direct their own learning by formulating questions and taking responsibility for their study. Diagrammatically this may be shown by applying Kolb's Experiential Learning with Bloom's taxonomy within a case study setting (Diagram 4).

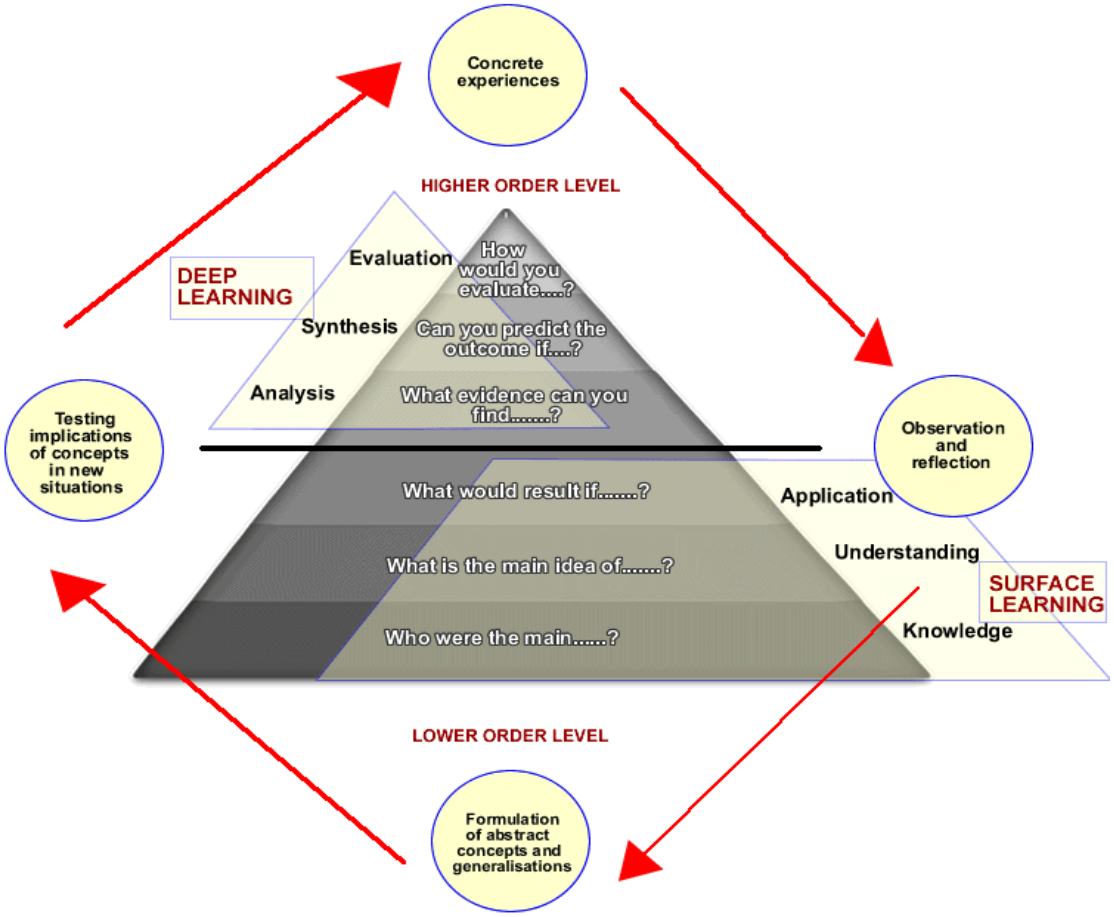

Diagram 4: Kolb's Learning Cycle, Bloom's Taxonomy

The objective of business case study use is to achieve deep learning, (the upper half of diagram 4), on the part of the student by addressing, to some extent, the higher order level constituents of Bloom's taxonomy. This entails achieving analysis through the student breaking down the case study materials into their constituent parts, examining (and trying to understand the organizational structure of) such information to develop divergent conclusions by identifying motives or causes, making inferences, and/or finding evidence to support generalizations. This the lecturer may aid by setting questions such as ' what evidence can you find…..?' or 'what is the relationship between . . . ?' Synthesis occurs through creatively or divergently applying prior knowledge and skills to achieve a new or original whole. Here questions such as 'how would you estimate the results for . . . ?' or 'can you predict the outcome if..…?' should be posed to encourage amalgamation. Finally, evaluation of materials based on personal values and opinions that culminate in an end result with a given rationale but without right or wrong answers should be encouraged by posing questions such as 'what judgment would you make about . . . ? or 'how would you evaluate…..?'

CRITICAL THINKING AND THE BUSINESS CASE STUDY METHODOLOGY

One of the problems the business case writer/lecturer faces is how to stimulate critical thinking in order to generate deep learning. MBA students come from diverse backgrounds not all of which allow them to immediately immerse themselves in business case study analysis. Fear, manifesting itself in the question 'where do I start?', is a common plea posed by students. Often, therefore, it is necessary to provide the students with a platform from which to launch themselves into diagnostic analysis through an emersion in the materials. Essentially, this is achieved by directing the student through the stages of sizing-up, systematising, and prioritising of said materials. Fundamentally, this addresses the lower order levels of surface learning of Blooms taxonomy (Diagram 3) knowledge; understanding and application.

Through careful examination, and discussion of various cases, students learn to identify actual problems, to recognize key players and their agendas, and to become aware of those aspects of the situation that contribute to the problem" (Merseth 1991). In addition, students are encouraged to "generate their own analysis of the problems under consideration, to develop their own solutions, and to practically apply their own knowledge of theory to these problems" (Boyce 1993).

If the business case study is a multi-faceted problem, open-ended in terms of solution then the objective of the business case study lecturer is not to seek 'right' answers but rather to encourage student's thoughtfulness, thoroughness and logic in the problem solving process that support answers which they can substantiate. For example, at the beginning of the module session I give the student the simple sentence 'This is your wife?' to read and ask them what it means. Generally, their answers run along the lines that 'this woman is the person you are married to'. A fair enough answer, but a limited one. I then ask four students to read the sentence aloud but with each student choosing a different word on which to place an emphasis. Thus, we have the same sentence but with a different meaning – 'This is your wife?' Asking the question again on what the sentence means elicits a different response. The point here is that communication is not simply based upon the written word. The more information and exposure to interpretation a student experiences then generally the better the quality of the answer he/she will give.

Interactive multimedia materials add substantially to the learning experience. In terms of diagrams 4 and 5 they aid the transition from surface learning to deep learning. Diagram 5 however, shows the constituent elements involved in a successful interactive, business case study experience:

The holistic nature of business case studies facilitates deep learning cycles. However, these cycles are not easily achieved. They have to be worked at on the part of the student, the lecturer and the administration. Each group/participant has to reassess its contribution to the deep learning cycle as new ways of thinking, methods of operation and structural strictures are challenged and amended. Blended learning architecture (see diagram 6) encompassing formal lectures; e - delivery of teaching materials; e - assessments; web communication demands more from all three groups but, when achieved provide a rewarding experience for all. In relation to deep learning student 1 interfaces, on an iterative basis, with the lecturer who provides the business case study; the questions; the lecture materials; the diagnostic tools and the interactive, multimedia architecture. In addition, he interfaces with his peer

group which allows broader and deeper analysis to be developed. On the basis of these two groups' inputs the student takes action and steps into the cycle of iteratively doing, reflecting, deciding and connecting. Deep learning is supported by the constructivist architecture and by the lecturer feedback loop which allows the student to review and reappraise the actions taken.

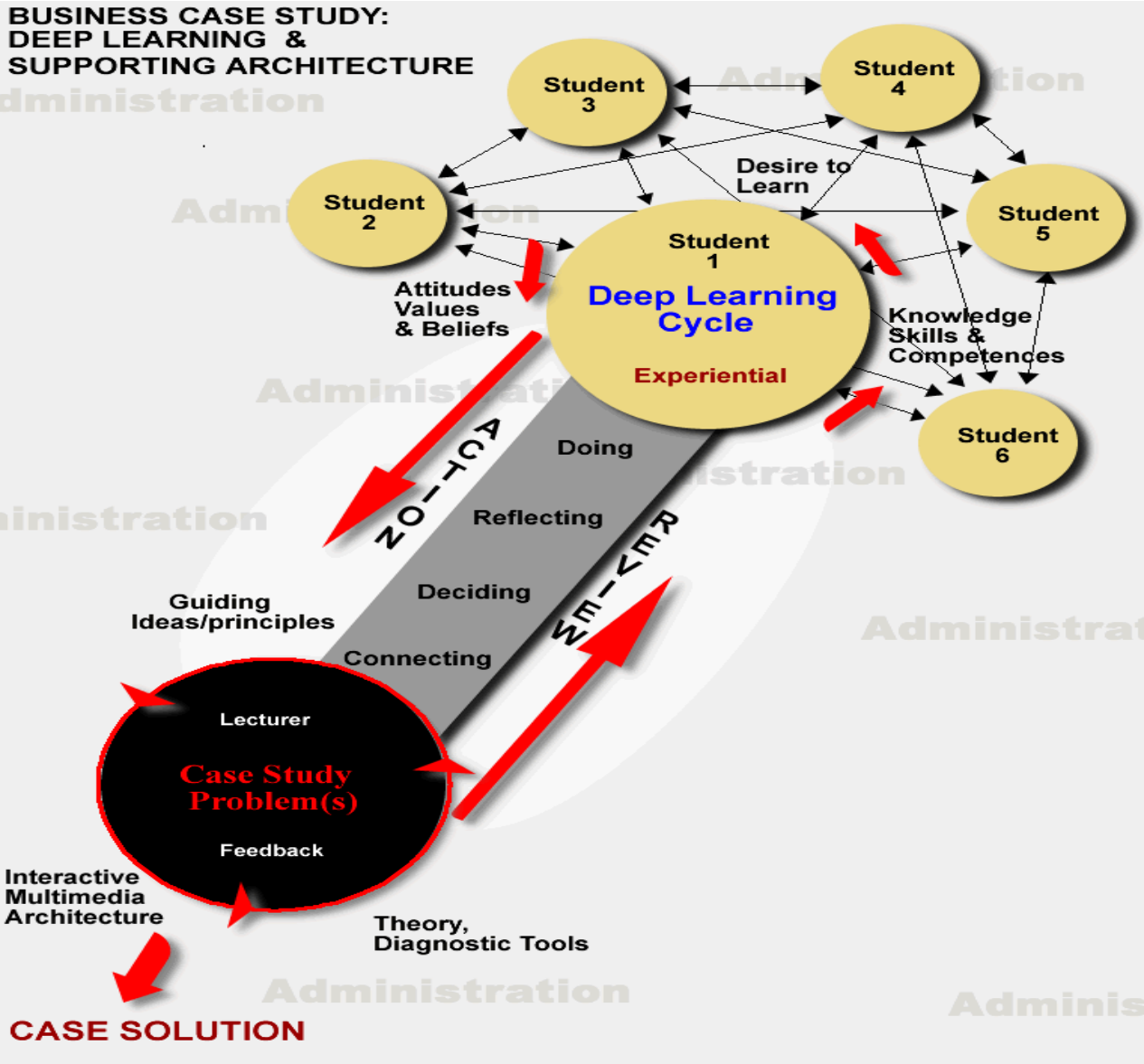

Diagram 5:

For the student new skills and competences have to be developed. This requires the development of a capability to see broader perspectives. To this end the ability to identify those forces at work, and to orient toward what is required whilst reflecting on the deep assumptions and patterns of behaviour which influence decision making.

These can be seen in:

- Desire to learn: motivation is key to achieving deep learning. Students must have a desire to learn, to seek new knowledge. At a very basic level MBA students generally have this desire the more so on capstone subjects such as strategic management.
- Attitudes values and beliefs: All three groups are affected by their cultural norms and values. Each group must attempt to suspend their embedded beliefs and assumptions in order to explore alternative perspectives. In the case of the student these will directly arise from his/her peer group.
- Knowledge skills and competences: Developing new knowledge, skills and competences have the effect of increasing student confidence in their own abilities whilst reinforcing, on a personal level that, learning is happening.

For the peer group: Each of us is defined by our relationships with and reactions to other people and things. One objective of business case study teaching is team building and its associated network learning. Here the students are put into groups and when confronted with case study problems hopefully, realise that the synergy of the collective with its ability to freely develop and exchange ideas is generally more effective that the individual. The interactive, multimedia case study tends to reinforce new knowledge and build confidence.

For the lecturer: Initially, the provision of the online business case study had the appeal of offering reducing class contact time between the lecturer and the student. It seemed to offer the student the ability to assess his/her progress through the embedded hypertext links, tests and quizzes. Furthermore, it allowed the student to access articles and ancillary notes and associated flashcards with the ability to check their comprehension and direct them to appropriate theory if a problem were detected. However, as Dede comments, "Although presentational approaches transmit material rapidly from source to student, this content often evaporates quickly from learners' minds [therefore], to be motivated to master concepts and skills, students need to see the connection between what they are learning and the rest of their lives and the mental models they already use…….most people don't know how to apply the abstract principles they memorized in school to real-world problems." . In other words, students wanted a physical community through which to learn. The result for the lecturer was the adaptation of the delivery methodology stemming from the recognition of the need to teach in different ways, to become both an enabler and manager of student learning (Twigg, 2004). To this end, online teaching alone cannot suffice. It rapidly became apparent that to successfully use interactive, multimedia case studies it was necessary to develop a blended learning approach encompassing traditional teaching; electronic delivery of interactive materials; team work; testing –both self and assessed; and e - support systems. It was crucial therefore, to develop the information systems, control systems and communication systems that are adaptive to the student body's needs.

Feedback: If deep learning is to be achieved then feedback, in all its guises, is essential. Once a student has taken an action then it is imperative that feedback whether negative or positive is given so review can be undertaken. The consequence of this is that increased demands are placed on the lecturers' time as information, communication and control demands are increased.

For the administration: Architecture both covertly and overtly supports, directs, and communicates with the users of an infrastructure. It underpins the efficacy of interactive business case study applications by acting as the lubricant for information systems, communication systems and control systems. Architecture is perhaps one of the most difficult aspects to construct and yet one of the most easily over-looked areas when developing on-line multimedia applications. There can be little doubt that growth and change are only achievable where there is a supportive organisational system architecture.

Interactive multimedia architecture: Infrastructures are the mechanisms by which an organisation makes material and other resources available to the stakeholders in the organisation whether they be lecturers, students, businesses people or support staff. Innovative infrastructures are needed to build deep learning without them changing students' knowledge, aptitudes; abilities and attitudes cannot readily be achieved. Nor can lecturers efficiently implement the changes in teaching methodology which add value to the learning experience.

Guiding ideas and principles: How the organisation sees itself, its ethos, is fundamental to achieving its stated goals. Guiding ideas should reflect what an organisation stands for. If deep learning through new technology applications are espoused then support of such should be embedded in organisational policy. Lip-service is not an option.

Theories, methods, diagnostic tools: Pedagogical content is fundamental to developing longevity in interactive business case studies. It is a tool which when combined with the right content provides a teaching and learning vehicle that significantly contributes to the learning process. For the business case study and deep, experiential, learning there is a symbiotic relationship between the three elements.

TRIGGER QUESTIONS AND DEEP LEARNING INITIATION

We all formulate questions on the basis of what we believe we want to know.

Hugh Laurie, 'House', Channel 5 December 12 2005

The platform provided to the students to unlock the mysteries of business case study analysis and allay fears is a set of trigger questions (Diagram 6). Essentially, they provide a means by which to diminish the 'I don't know' mentality and stimulate critical thinking. For illumination of the role questions play in critical thinking and case study analysis recourse to the 1958 film 'Teacher's Pet', where Clark Gable playing a city newspaper editor, gives a lecture to a class of would-be journalists is useful. In the lecture he enumerates the necessary questions all good investigative journalists should ask: Who?; What?; When?; Where?; Why?; and How? These questions may equally and effectively, be applied to case study analysis. However, one further question, paraphrased from Karl Marx's Das Kapital might, usefully, be added to this list – Who Benefits. (Diagram 6) Although these questions would tend to be surface level questions they nevertheless bolster the student's confidence for systematising, rationalising and prioritising the case materials and help drive the student towards deeper learning.

In addition three broad questions may be asked of any case study:

- Where are we now?
- Where are we going?
- How do we get there?

In attempting to answer these questions an holistic approach is adopted. The objective being to bring together all the available information in such a way as to allow its examination in the most meaningful and productive terms. In each of these areas there are a range of questions or points which can act as a framework for analyses. They can conveniently be listed as criteria to be addressed, and consequently this allows a methodology to be built up which can be used in any case study or business situation.

Combing critical thinking and experiential learning in diagram 6 allows the gulf between the two to be bridged by the application of interactive learning materials. Kolb and Fry contend that the learning cycle can start at any one of the four points (diagram 3) but it should really be approached as a continuous spiral (diagram 6). Bridging the gap between critical thinking and experiential learning in business case study analysis lies in the encouragement of this iterative spiral of deep learning, motivation and creativity. This, for the students, was aided by developing an interactive, multimedia architecture based on blended learning, (diagram 6) encompassing traditional lectures; interactive e- case studies; e – course material; interactive diagnostic aids; self testing and assessments as well as e-group activity and lecturer support.

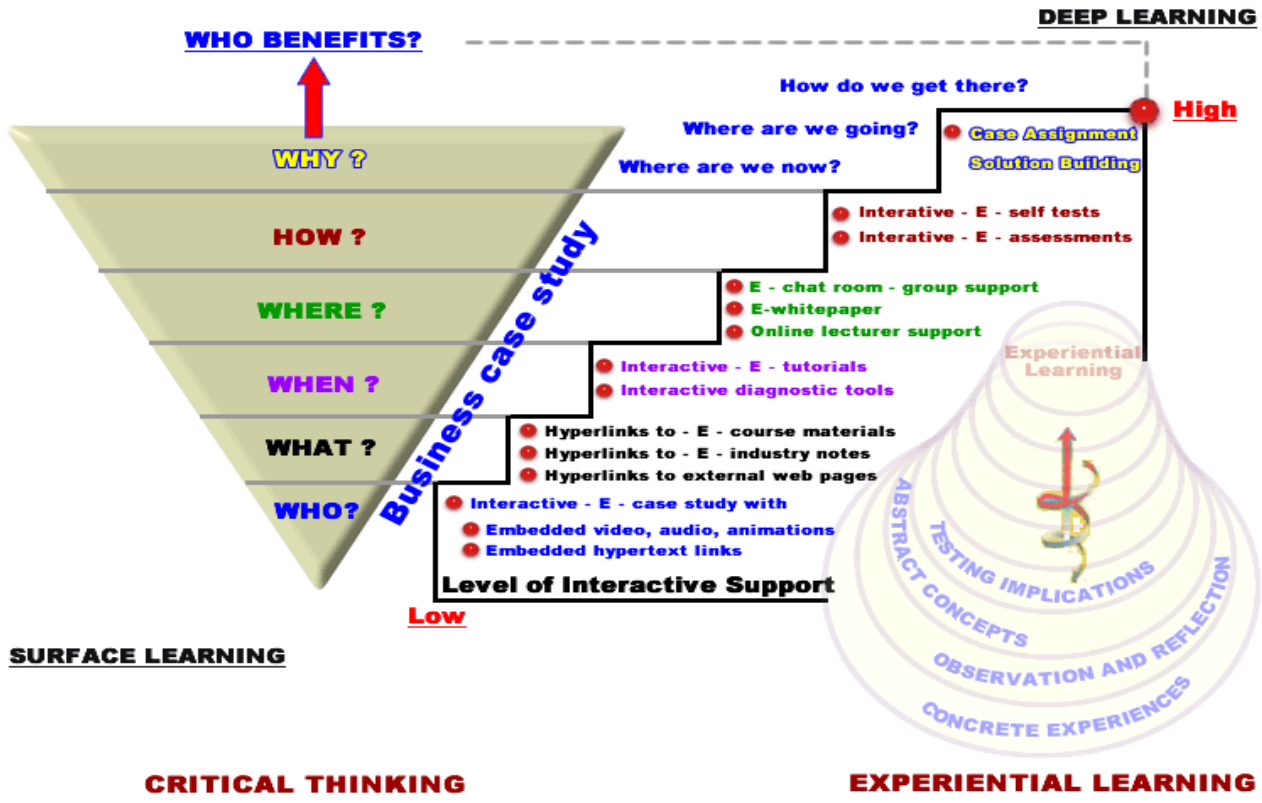

Diagram 6: Business Case Studies, Critical Thinking And Experiential Learning

CONCLUSIONS

The essential feature of the business case study is that it introduces a slice of realism into the learning experience. For the lecturer the answer to the question 'Why do we teach?' lies in the recognition that we are attempting to change students' knowledge, aptitudes, abilities and attitudes. To this end the business case study is an ideal vehicle especially, if it is harnessed to new technologies which allow greater realism to be tapped into. These interactive, multimedia, business case studies add value to the learning experience by aiding the achievement of deeper learning.

However, an interactive, multimedia, business case study is, in itself, insufficient to drive student learning to the highest levels of deep learning. For this, blended learning, combining elements of both traditional teaching methods and the new technologies are called on. Didactic, constructivist concepts are, in a sense, super-charged by the introduction of a multimedia architecture whose structural elements of information systems, communication systems and control systems are geared to supporting the deep learning experience. In this way interactive, multimedia business case studies bridge the gap between critical thinking and experiential learning by encouraging the iterative spiral of deep learning, motivation and creativity to kick-in.

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