

## Lesson 2 - Principles of Enquiry

Enquiry | Enquiry Systems - I | The Learning Cycle | Enquiry System - II | Unbounded System Thinking  
The Multiple Perspective Concept

The purpose of this lecture is to open your minds to the different ways in which issues can be viewed and investigated. It should encourage you to develop an approach in which you can explore your own unacknowledged assumptions and apply objective analysis in a *problem* situation.

Don't think of "a" single approach to enquiry, but accept that there are many other approaches of equal or greater validity.

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### Enquiry

*... The action of seeking for truth, knowledge or information concerning something; search, research, investigation, examination.*

*Source: OED*

The first lecture ended with the question:

**How can we know what we need ?**

The Information Systems field is no different to most other areas of production activity in this; unless the question is answered correctly, no subsequent activity will be worthwhile.

Unless we truly know what we need, we will be unable to provide it, no matter how sophisticated our development methods are or how good the technologies we use are. We would simply be producing the wrong thing, and it would not matter how well we produced it - it would be **useless**.

***We derive the necessary knowledge by means of enquiry.***

If we accept the above as a reasonable definition of enquiry, so an ...

*Enquiry System (ES) is a system for producing this knowledge.*

Note: You may come across the abbreviation IS which is the American abbreviation for the same thing, i.e. Inquiry System. ES is far less confusing !

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### Enquiry System - I

**How do we learn ?**



**How do you learn ?** To assist you...

Download and Complete the Activity: Preferred Learning Styles Self-Test before the Chat Session.

Are you ...

- a Pragmatist
- a Theorist
- a Reflector
- a Activist



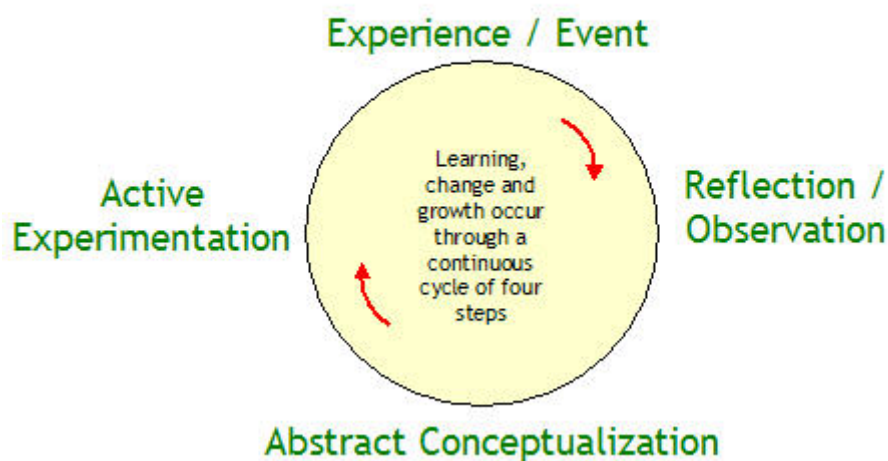
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## The Learning Cycle

David Kolb suggests that *learning*, *change* and *growth* occur through a continuous cycle of four steps (Experience, Reflective/Observation, Abstract Conceptualization and Active Experimentation)

The first step in the cycle would be an *event or experience*, which is then *reflected upon*, possibly in the light of other *observations*.

### The Learning Cycle (Kolb)



Source: Experiential Learning, David Kolb

Analysis of these steps is intended to *formulate possible new ideas, potential changes* of the planning of the *collection of further experiences*.

This can apply at an organizational level as well as at the personal level.

What follows is concerned with a set of methods by which the learning cycle can be instantiated.

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## Enquiry Systems - II

As discussed in "Unbounded Minds" (Mitroff & Linstone):

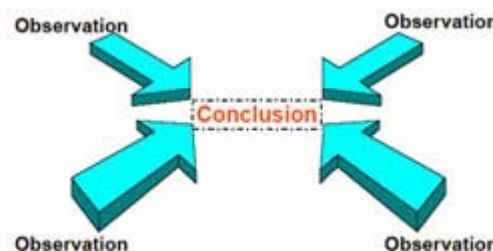
- Simple Systems
  - Inductive - Consensual
  - Analytic - Deductive
- Complex Systems
  - Dialectic
  - Multiple Realities
- Innovative Systems
  - Unbounded Systems Thinking



## Inductive - Consensual Enquiry

... derives a conclusion from a limited set of observations, which may be:

- **analogous**
  - for example, the situation is a bit simpler than this one, but a little more complicated than that one
- **historical**
  - for example, in the past, the answer has always been such-and-such, within these tolerances
- **multiple independently sourced**
  - for example, an average derived from a group of experts



The conclusion is likely to be: *a single number*, *a fixed strategy*, or *a single course of action*.

**Discussion Question 2.1:** What are the weaknesses with this approach ? Post your answers on the Discussion Board.

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## Analytic - Deductive Enquiry

The Analytic - Deductive process share many difficulties with the inductive-consensual process.

In particular, there is a belief that there is always one single answer - a *number*, or a *truth* - which can always be found if only we look hard enough.



They both share the fallacy that the definition of the problem itself is unproblematic, when in fact it is making this very definition:

- what question *are* we asking ?
- what question *should* we be asking ?

which is the heart of the problem itself.

**Discussion Question 2.2:** What are the weaknesses with this approach ? Post your answers on the Discussion Board.

When you discover the weaknesses of this approach, try to understand - **emergence** (that the problem *whole* will inevitably be greater than the sum of its parts due to *messiness*, the interaction between its components).

Initially you might find the criticisms of the two simple enquiry methods difficult to accept, after all the approaches used unquestioningly are used by most people.

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## Dialectic Enquiry

From Socrates through the British system of parliamentary democracy to adversarial judicial enquiry in the courts, the dialectic has been a mode of enquiry which probes deeply into issues and acts as a practical decision making tool.

Rather than challenge the data, dialectic challenges the subjective assumptions, models and theories by which problems are defined and solutions postulated, and it is the debate itself that an objective solution, compromise or

synthesis will be reached.



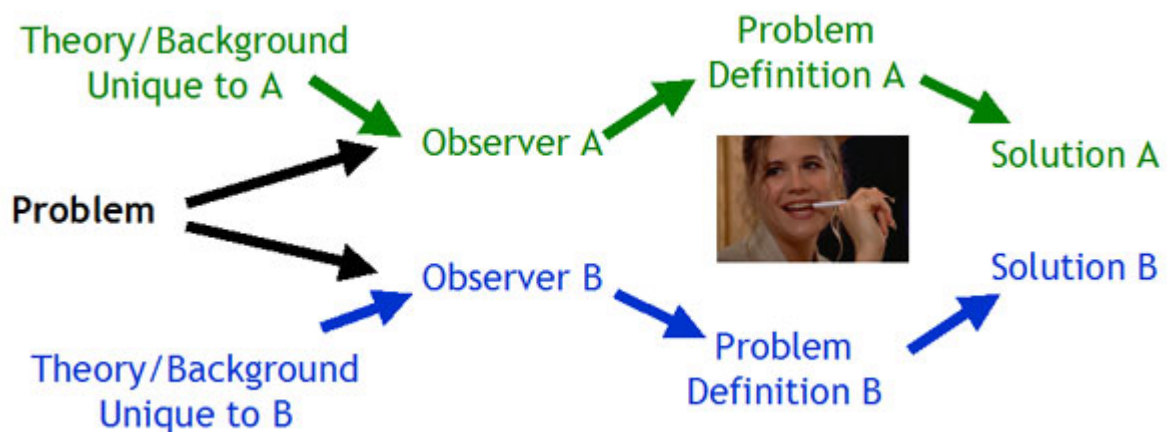
**Chat Session:** During the chat session you will be split into two groups, you will be asked to debate the issue of "the need (or not) for an independent, separate IS department in a business organization."

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### Multiple Reality Enquiry

The key element in the multiple reality enquiry system is the understanding that the observer or analyst actively participates in the definition of the problem by placing the observed problem data against a theory or model which is personalized and unique to her/him and makes sense of the problem in these terms.

The observer and problem are not therefore, detached - but properties of the whole context problem domain.



The results of multiple reality enquiry is a range of representations of the problem and an equivalent range of solutions, which can be applied, synthesized or discarded.

The decision maker is informed on a board basis, and is thus better able to interpret the range of possible views and select a course of action. (Of course, this decision maker will also have her/his own unique theory and background and the decision will always be subjective to a certain extent.)

### Concept of Risk in Enquiry

The two simple enquiry systems discussed previously appear to be *low* risk, in that they produce one single answer.

The complex enquiry system has the potential for multiple answers and therefore decisions based upon them seem more *risky*. Is this true ?

**Discussion Question 2.3:** Is this true ? Post your answer to the Discussion Board.

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### Unbounded Systems Thinking

The need for systems thinking is grounded in the understanding of problems as *messes* - uncultivated and apparently unrelated entities, rather like patches of weeds and wild flowers - each affecting the other and resulting in a *whole* which is incapable of the rigid definition and identification required by the enquiry methods we have so far discussed.

These *messes* give rise to *emergence* - attributes which are functions of the whole, but are not apparent at an individual component level.

Messy problems demand a creative approach to their solution; during the next lecture we will consider *systems thinking* in a much greater depth.



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## The Multiple Perspective Concept

The technical perspective refers to analysis and agreement - the logical aspects of a problem. In a sense this is the *single perspective* from which the earlier enquiry systems approached things.

The *multiple perspective concept* adds two other perspectives:

- The *social* or *organizational* perspective, which enquires from a structural viewpoint.
- The *personal* perspective, which takes the individual view.



Unless all perspectives are employed, the outcome will be, inevitably, unstable. To paraphrase (and extend) the book:

*"technologies... fail to understand how T solutions to T problems become the O issues next time around, managers fail to understand how O solutions to O issues become P problems, and so on."*

The need is to recognize *interconnectedness* in the systems with which we, as *information professional*, are concerned.

Therefore, we need to develop our enquiry abilities appropriately to the *whole* rather than just to the component, taking account of mess and understanding and enquiring upon emergent issues.

It is this which will form the base of the next lecture session.

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