Learning Styles

What is a learning style?
It is a unique collection of individual skills and preferences that affect how a person perceives, gathers and processes information.

Why find out about learning styles?
It has been recognised that learners have a variety of individual learning styles. On the one hand, for all learners to have a maximum chance of success, learning environments have to be flexible in order to accommodate different learning styles. On the other hand, good learners have to develop strategies to adapt to using a variety of environments. If there is a mismatch between your learning style and the way learning materials are presented to you, then:

- You are less effective
- You may lose motivation
- You are more likely to give up

Knowing about your learning style will help you to:

- Make a successful APEL claim
- Plan for learning tasks
- Learn more effectively
- Be more satisfied
- Be more motivated

Being aware of your natural weaknesses will help you to:

- Understand why you are not performing adequately
- Develop strategies to cope with certain activities
- Set targets for improvement

Remember!
No style is better than another, but being aware of your personal preference will help you to adapt to others and react appropriately to environments and methods which are not compatible with your style. It is unlikely that your style of learning will be the same as anyone else you know.

ACTIVITY TWO

Try this out with a friend. Ask your friend to memorise these groups of letters:

t c e s c e
y i r t e i l

Now ask them how they went about the task:
did they make the letters into words, and memorise the sounds ‘’tech-eske” and “u irit-I-il”?
did they memorise the visual pattern made by the letters?
did they make a mnemonic, like ‘three cats enjoy sitting carefully erect’ or ‘your insides rate the eggs in London’?
did they use some other strategy?

Each of us has our own strategies for such mental tasks. Would you have done it differently from your friend? Does it tell you anything about ways of approaching learning?

Now we can reveal that if you read the two groups of letters (starting with the bottom right letter and zig-zagging as you read towards the left) it spells ‘leicester city’. Once you understand that, you will find you do not need anything else to help you remember the arrangement of letters.

In fact, the better you understand something, the easier it is to remember.

Activity THREE

Cover up the answer, and ask your friend to try and spot the pattern in another group of letters:

a c e g i j l n p r t v x z

Answer: Every second letter has been omitted until 'i' which is immediately followed by 'j', then the pattern resumes from there.

How did your friend go about spotting this pattern?

This next pattern is visual rather than based on letters:

Answer: the round blob is missing from the third appearance of the pattern. Which of these patterns did your friend find it easier to spot — with letters or with shapes? How about you?

This exercise is important because of the volume of information you will be faced with in higher education. The better you are at identifying and remembering patterns in the information you study, the more successful you will be.

You are likely to have a preference for one of these types of mental activity — but we can all develop strategies for dealing with both of them.

People thus have different ***learning styles***--characteristic strengths and preferences in the ways they take in and process information. Some people tend to focus on facts, data, and algorithms; others are more comfortable with theories and mathematical models. Some respond strongly to visual forms of information, like pictures, diagrams, and schematics; others get more from verbal forms--written and spoken explanations. Some prefer to learn actively and interactively; others function more introspectively and individually.

Functioning effectively in any professional capacity, however, requires one to be working well in all learning style modes. For example, competent engineers and scientists must be observant, methodical, and careful (characteristics of the *sensing* style in one of the learning style models to be described) as well as innovative, curious, and inclined to go beyond facts to interpretation and theory (characteristics of the *intuitive* style in that model). Similarly, they must develop both *visual* and *verbal* skills. Information routinely comes in both forms, and much of it will be lost to someone who cannot function well in both of these modes.

If a course is delivered exclusively in a manner that favours your less preferred learning style modes, your discomfort level may be sufficient to interfere with your learning. On the other hand, if a course is taught exclusively in your preferred modes, you may not develop the mental dexterity you need to reach your potential for achievement in academia and as a professional.

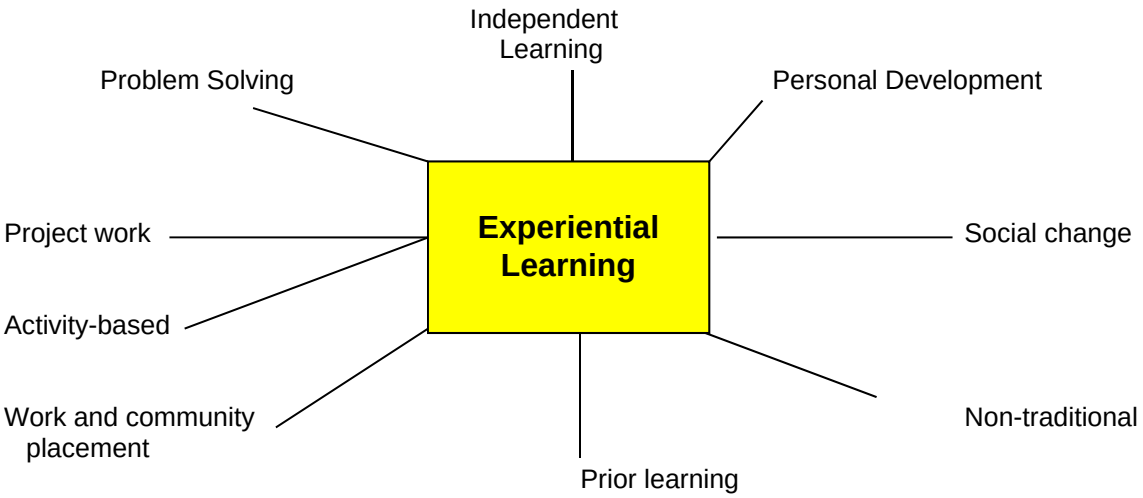
An objective of education should thus be to help you build your skills in both your preferred and less preferred modes of learning. The goal is to make sure that the learning needs of learner in each model category are met at least part of the time. This is referred to as "teaching around the cycle."

Experiential Learning

What is "experiential learning"?

Experiential Learning as a field of practice is vast. If we look at the range we see everything from farming to conflict resolution; from assessment to youth development; from practical skill training to theoretical models; and from personal growth to workplace training and development. All are labelled experiential learning - all are presented as being part of the experiential learning family.

What then counts as experiential learning? For some people it is all of education - for others it is narrowed down to a specific practice or curriculum model. The vast array of educational activities using the term experiential learning can be seen in Jane Henry's work.



(Henry, Jane (1989) "Meaning and practice in Experiential Learning" in Weil, Susan and McGill, Ian (1989) Making Sense of experiential learning, SRHE & Open University Press, Milton Keynes, pp.29-33.

Another useful categorisation of the field of "Experiential Learning" was developed out of the work of the First International Conference on Experiential Learning in London in 1987. "Experiential learning refers to a spectrum of meanings, practices and ideologies which emerge out of the work and commitments of policy makers, educators, trainers, change agents, and "ordinary" people all over the world. They see "experiential learning" - with different meanings - as relevant to the challenges they currently face: in their lives, in education, in institutions, in commerce and industry, in communities, and in society as a whole. Across such diversity, however we discern four emphases for experiential learning. Each emphasis forms the basis for a cluster of interrelated ideas and concerns ... We have chosen to refer to these clusters of people and ideas as "villages" ... we see the four villages as follows:

	Description	Purpose of Learning
Village One	Is concerned particularly with assessing and accrediting learning from life and work experience as the basis for creating new routes into higher education, employment and training opportunities, and professional bodies.	Accreditation of prior and experiential learning
Village Two	Focuses on experiential learning as the basis for bringing about change in the structures, purposes and curricula of post-secondary education.	Reform of post-compulsory education and training
Village Three	Emphasises experiential learning as the basis for group consciousness raising, community action and social change.	Social change or community development
Village Four	Is concerned with personal growth and development and experiential learning approaches that increase self-awareness and group effectiveness"	Personal growth and development

(Quote from Susan W Weil and Ian McGill, "A Framework for making sense of Experiential Learning" in Making Sense of Experiential Learning, Susan S Weil and Ian McGill (eds), SRHE/OU Press, Milton Keynes, 1989, p.3. This book contains an edited selection of the papers presented at the First International Conference on Experiential Learning in 1987.)

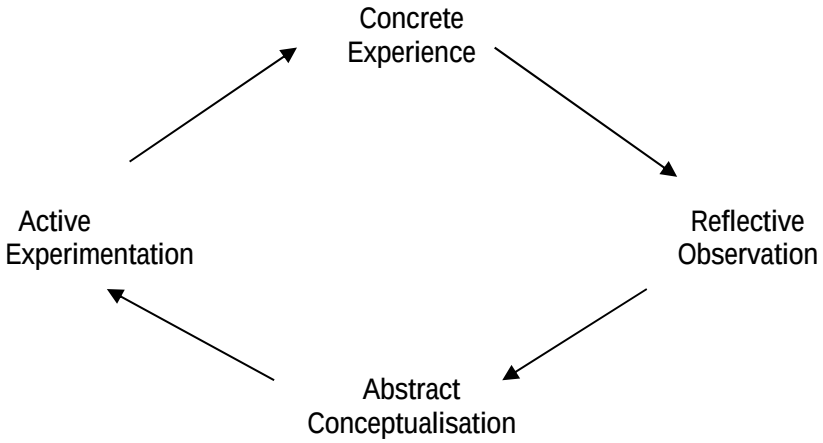
Experiential Learning Theory

It is common for courses to be described as either practical or theoretical: as either involving doing or involving thinking. Learning is seen to take place either 'on the job' or in the classroom. Even in courses which contain both elements they tend to be sharply divided. It is not sufficient simply to have an experience in order to learn. Without reflecting upon this experience it may quickly be forgotten or its learning potential lost. It is from the feelings and thoughts emerging from this reflection that generalisations or concepts can be generated. And it is generalisations which enable new situations to be tackled effectively.

Similarly, if it is intended that behaviour should be changed by learning, it is not sufficient simply to learn new concepts and develop new generalisations. This learning must be tested out in new situations. The learner must make the link between theory and action by planing for that action, carrying it out, and then reflecting upon it, relating what happens back to the theory.

It is not enough just to do, and neither is it enough just to think. Nor is it enough simply to do and think. Learning from experience must involve links between the doing and the thinking. In terms of learning “experiential learning” can be described as a process by which the experience of the learner is reflected upon and from this emerge new insights or learnings. Most models of Experiential Learning are cyclical and have three basic phases: an experience or problem situation; a reflective phase within which the learner examines the experience and draws learnings from that reflection; and a testing phase within which the new insights or learnings, having been integrated with the learner's own conceptual framework, are applied to a new problem situation or experience. The most established model of experiential learning is the one developed by David Kolb (a constructivist).

The four-stage model of learning by doing which is elaborated below is that of Kolb. Quite a few theorists have proposed cyclical models to explain how people learn from experience, but they all share the important features of Kolb's model which is itself derived from Lewin. Learning from experience involves four stages that follow each other in a cycle, as illustrated in the following diagram.



Kolb’s model portrays two dialectically related modes of grasping experience – Concrete Experience (CE) and Abstract Conceptualisation (AC), and two dialectically related modes of transforming experience – Reflective Observation (RO) and Active Experimentation (AE). According to the four stage learning cycle illustrated above, immediate or concrete experiences are the basis for observations and reflections. These reflections are assimilated and distilled into abstract concepts from which new implications for action can be drawn. These implications can be actively tested and serve as guides in creating new experiences. The model is a recurring cycle within which the learner tests new concepts and modifies them as a result of the reflection and conceptualisation. *(Kolb, David, et al, Organizational psychology: an experiential approach, Prentice-Hall, New Jersey, 1971).*The cycle can be entered by the learner at any point, but its stages must be followed in sequence.

A closer examination of the learning model suggests that learning requires abilities that are polar opposites, and that the learner must continually choose which set of learning abilities he or she will use in a specific learning situation. In grasping experience some of us perceive new information through experiencing the concrete, tangible, felt qualities of the world, relying on our senses and immersing ourselves in concrete reality. Others tend to perceive, grasp or take hold of new information through symbolic representation or abstract conceptualisation – thinking about, analysing, or systematically planning, rather than using sensation as a guide. Similarly in transforming or processing experiences some of us tend to carefully watch others who are involved in the experience and reflect on what happens, while others choose to jump right in and start doing things. The watchers favour reflective observation, while the doers favour active experimentation. Each dimension of the learning process thus presents us with a choice. Since it is virtually impossible, for example, to simultaneously drive a car (Concrete Experience) and analyse a driver's manual about the vehicle's functioning (Abstract Conceptualisation), we resolve the conflict by choosing. Because of our past life experiences and the demands on our present environment, we tend to develop a preferred way of choosing. In other words, we resolve the conflict between concrete or abstract and between active or reflective in some patterned, characterised ways. We call these patterned ways "learning styles".

Approach Dimension

- *Feeling*: Being directly involved in a learning experience, vs.
- *Thinking*: Stepping back to think or formulate theories about logically what has been learned

- Response Dimension
  - *Watching*: Stepping back to observe and listen, vs.
  - *Doing*: Applying what has been learned in a new situation

Each person has a preferred learning style, which is measured from the interaction between your preferred approach and response to learning tasks. Based on this, four learning styles are expressed.

Activists (AC/CE) • Prefer a hands-on, trial-and-error approach • Ask: "What would happen if I do this?" • Are good at learning from specific examples where they are directly involved, and at seeing relationships among concepts • Enjoy being involved in new and challenging experiences	Reflectors (RO/CE) • Prefer to observe rather than to do • Ask: "Why?" • Good at looking at things from different perspectives • Like to gather information and to reason from concrete specific information • Like to explore what a system has to offer
Pragmatists(AE/RO) • Prefer technical tasks to interpersonal ones • Ask: "How?" • Are good at using learning for problem-solving	Theorists (AC/RO) • Prefer knowing the right answers to random exploration • Ask: "What is there to know?" • Good at understanding and consolidating vast amounts of information • Like accurate, organised delivery of information • Trust knowledge of the expert

"Experiential learning" can be defined therefore in terms of a learning model "which begins with the experience followed by reflection, discussion, analysis and evaluation of the experience. The assumption is that we seldom learn from experience unless we assess the experience, assigning our own meaning in terms of our own goals, aims, ambitions and expectations. From these processes come the insights, the discoveries, and understanding. The pieces fall into place, and the experience takes on added meaning in relation to other experiences. All this is then conceptualised, synthesised and integrated into the individual's system of constructs which he imposes on the world, through which he views, perceives, categorises, evaluates and seeks experience." *(Wight, Albert, "Participative education and the inevitable revolution" in Journal of Creative Behaviour, Vol 4, No 4, Fall 1970, p. 234-282.)*

The theoretical work done on “experiential learning” has established it as a method of learning which is useful to both educators and learners. This methodology helps learners to develop capacities to reflect on experience and appropriate significance through such reflection.

Examples of different learning styles

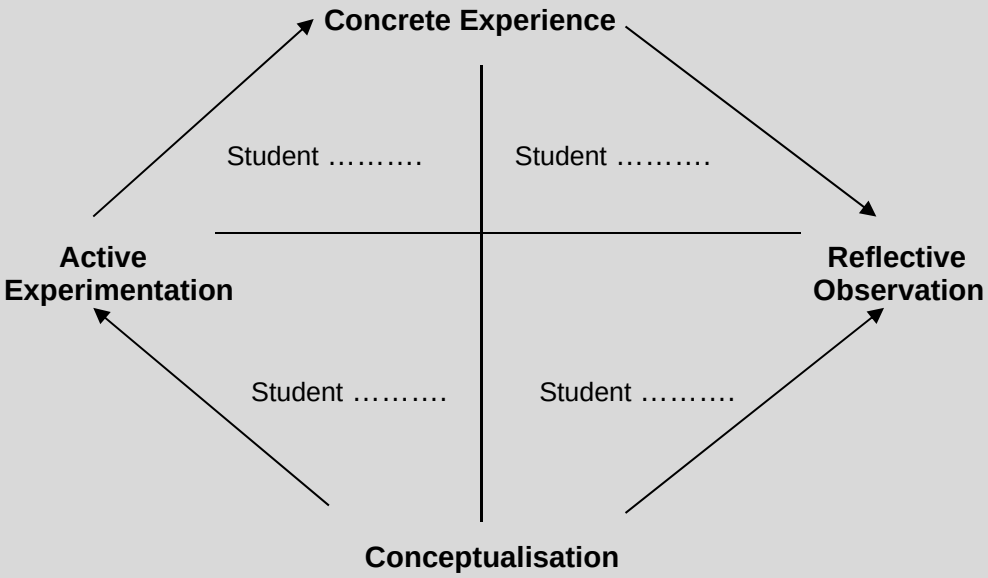
Just as courses may be seen to be either mainly practical or mainly theoretical, so individuals may have particular preferences in their learning. While one person might prefer to formulate plans and define potential problems, another might prefer to get on and carry out the plans. There are distinct learning styles associated with each of the stages of the experiential learning cycle.

These differences in style can be illustrated by the following example. At the start of a computing course students were set an open-ended computing problem to work on alone over the next four weeks. They then met to compare solutions to the problem, but also to compare the different ways in which they went about working on the problem. Three of the students displayed dramatically different styles:

> Student A went straight to a computer keyboard and started keying in segments of a program. She didn't analyse the nature of the problem. As soon as it became apparent that the programming routines being written didn't work, new routines were written out and immediately tested in a trial and error way: mostly error. This student had created dozens of programming routines, none of which got close to solving the problem. She seemed not to learn from her mistakes.
>
> Student B appeared to start off like student A, going straight to the keyboard. He selected a procedure which he knew and implemented it. He wrote an extensive, detailed and complete programme which ran successfully, but which solved a problem quite different from the one which was set. He was unaware that he had tackled the wrong problem because he was so busy getting on with the task.
>
> Student C became intrigued by the problem itself and its underlying features. She started reading about this kind of problem and the reading led her into related areas which also contained intriguing problems. She could talk animatedly about the topic in general in an abstract way but hadn't even started writing any programming code to produce a solution.

In terms of the experiential learning cycle, these students were stuck at one part of the cycle to the virtual exclusion of the other three.

ACTIVITY FOUR



Locate students A, B, and C on this diagram, and explain your reasons for each:

Student A: ……

……

Student B: ……

……

Student C: ……

……

Each student failed to solve the problem posed. Why?

……

……

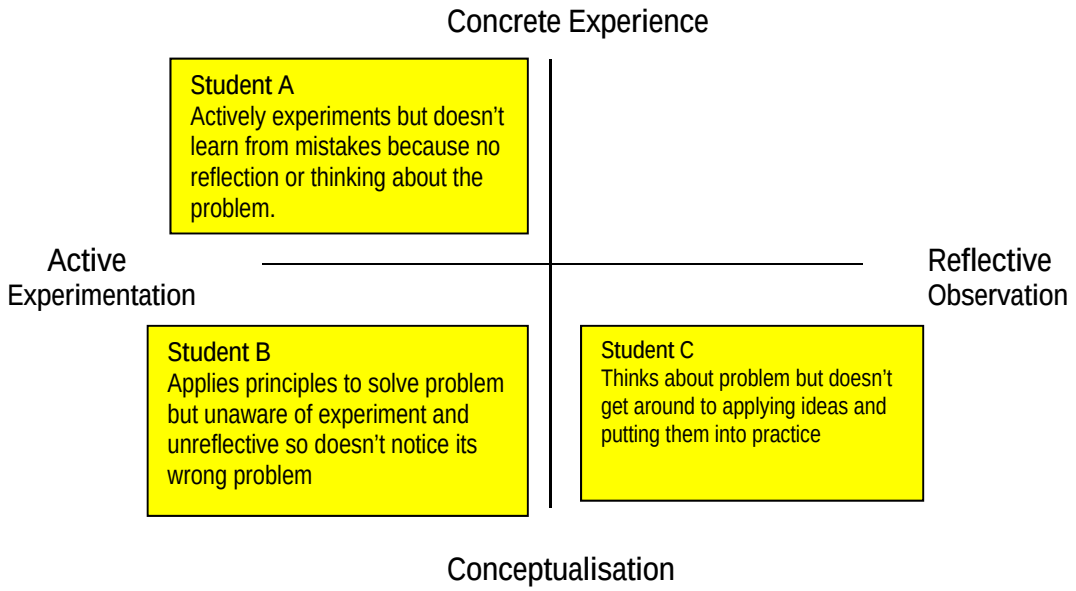
……

……

……

……

……

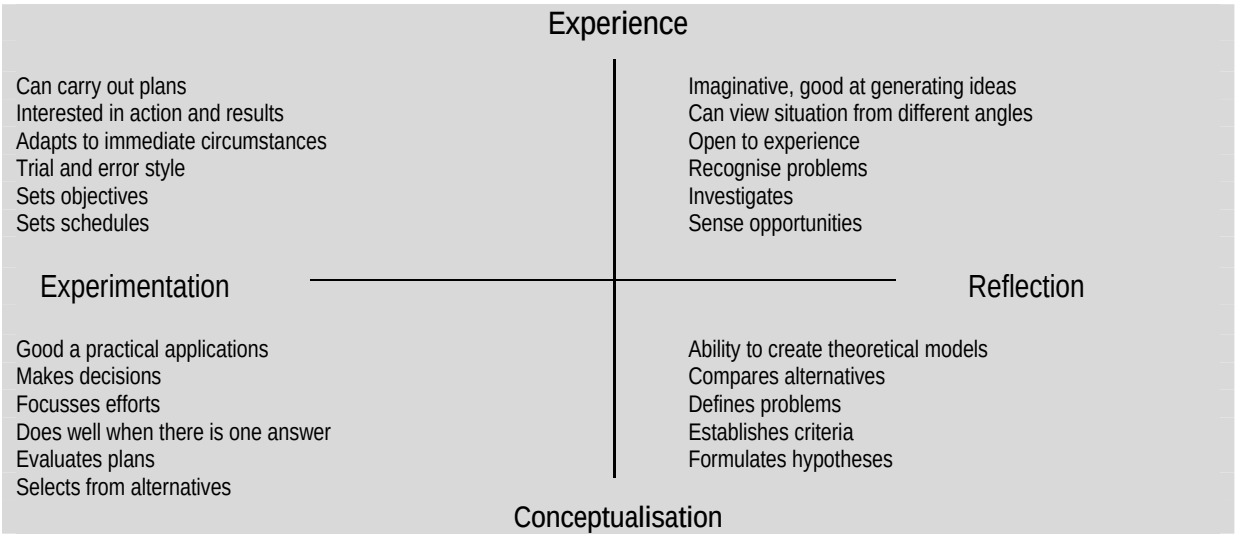


Student A failed because she experimented without learning from her mistakes. She didn't start from an analysis of the problem (conceptualisation) and didn't seem to reflect on the outcomes of her experiments (reflection). All she did was try things out (active experimentation) and change tack when she experienced things not working out (experience). She might be quite good at practical work and experimentation, but she won't learn from this,

Student B failed because he didn't even notice that his solution was solving the wrong problem: he was not aware of his own experience. This style characteristically involves "premature closure" or rushing to a single solution without generating or considering alternatives. He might be very good at working through procedures which apply theory to a specific situation , but this won't necessarily help him.

Student C might be quite creative and admirably thoughtful about what she is doing, but until she gets down and tries her ideas out in practice she isn't going to get anywhere. At some point she has to narrow down the scope of the possibilities in front of her and get her hands on the keyboard and see what happens when she tries things out.

In order to learn effectively from experience it is necessary to utilise the abilities associated with each of the four learning styles in turn. These abilities are illustrated in the diagram below:



Rather than have extreme styles, therefore, it is preferable to be adaptable and to operate in the style appropriate to each successive stage of the experiential learning cycle at different stages in a learning task. It can be valuable for you to recognise your own habitual learning style and to recognise the characteristics of learning tasks as this may help you to become more flexible in meeting the varied demands of learning situations .

TASK ONE - KNOW THYSELF

You are required to complete the questionnaire given below, plot your results and briefly comment on your findings.

What is your predominant learning style?

Honey and Mumford (1982; http://www.peterhoney.com/main/) devised an influential self-test, which indicates whether you are predominantly an activist, a reflector, a theorist, or a pragmatist. There are websites where you can take the test (for a price!). Below is an alternative to the Honey and Mumford questionnaire - which is free of charge! This questionnaire allows you to create a profile of yourself as a learner, and so provide you with information which could help you to design ways of learning particularly suitable to your own needs and personality.

Read the explanation below for advice on completing the first part of the questionnaire.

You can find out by taking the test at the end of this section. It is worth noting that the test should not be regarded as diagnostic, but more as a guide to understanding yourself, particularly as a learner.

The alternative terms for each learning style are listed below:

Alternative Learning Style References				
Concrete	=	Accommodator	=	Activist (Doer)
Active	=	Diverger	=	Reflector (Watcher)
Reflective	=	Assimilator	=	Theorist (Thinker)
Abstract	=	Converger	=	Pragmatist (Feeler)

Knowing your own preferred learning style might help to explain why you face difficulties in learning certain subjects (but remember motivation and discipline play important roles too). For example, some subjects are by nature more theoretical, which may contradict your own preferred activist learning style. What should you do then?

LEARNING STYLE QUESTIONNAIRE

The following learning style questionnaire is adapted from
Preferred Learning Style
Look at the four statements (a – d) in each section and decide how they refer to you. Allocate marks to each statement in the corresponding boxes (a – d), using the scale 1– 4 as follows:

- 4 marks for the statement which best refers to you
- 3 marks for the second best
- 2 for the third
- 1 for the statement which describes you least well

Complete this section before looking at the summary section or the information on evaluation.
For convenience you can also produce your own printable plot, online.
Questions

1.	a I like to get involved	a =
	b I like to take my time before acting	b =
	c I am particular about what I like	c =
	d I like things to be useful	d =
2.	a I like to try things out	a =
	b I like to analyse and break things into parts	b =
	c I am open to new experiences	c =
	d I like to look at all sides of issues	d =
3.	a I like to watch	a =
	b I like to follow my feelings	b =
	c I like to be doing things	c =
	d I like to think about things	d =
4.	a I accept people and situations the way they are	a =
	b I like to be aware of what is around me	b =
	c I like to evaluate	c =
	d I like to take risks	d =
5.	a I have gut feelings and hunches	a =
	b I have a lot of questions	b =
	c I am logical	c =
	d I am hard-working and get things done	d =
6.	a I like things that I can see, feel, touch or smell	a =
	b I like to be active	b =
	c I like to observe	c =
	d I like ideas and theories	d =
7.	a I prefer learning in the here and now	a =
	b I like to consider and think about things	b =
	c I tend to think about the future	c =
	d I like to see the results of my work	d =

8.	a I have to try things out for myself	a =
	b I rely on my own ideas	b =
	c I rely on my observations	c =
	d I rely on my feelings	d =
9.	a I am quiet and reserved	a =
	b I am energetic and enthusiastic	b =
	c I tend to reason things out	c =
	d I am responsible about things	d =

Summary

The grid below is used to summarise your scores. Complete it by writing in the mark 1- 4 you gave for each question a-d. In the first box in the first column, for example, you write the mark which you gave to each sentence. Please not that not all the marks are recorded here; this is to prevent patterning and to allow for the inclusion of distractors.

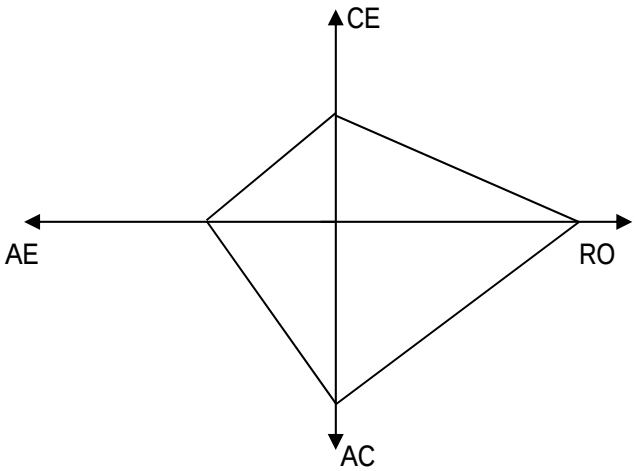
CE	RO	AC	AE
1a =	1b =	2b =	2a =
2c =	2d =	3d =	3c =
3b =	3a =	4c =	6b =
4a =	6c =	6d =	7b =
8d =	8c =	8b =	8a =
9b =	9a =	9c =	9d =
Total =	Total =	Total =	Total =

Total scores:

CE = RO = AC = AE =

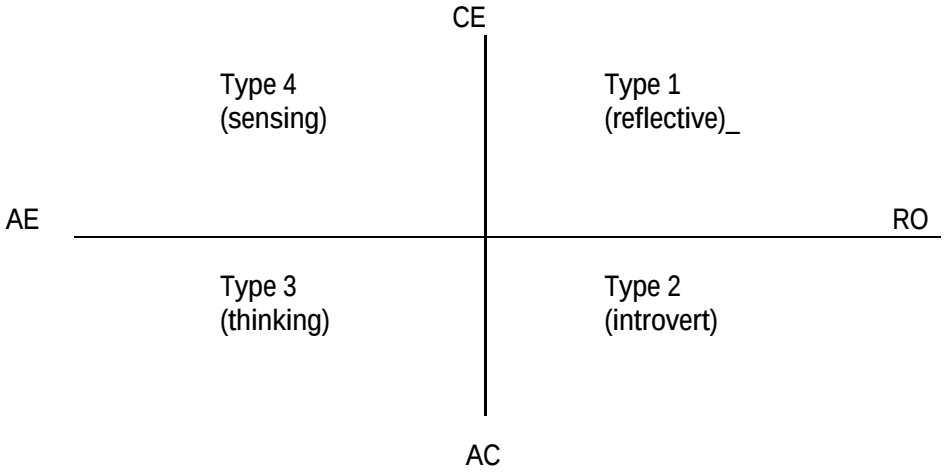
Now plot the total scores on the four axes in the personal diagram given at the end of this Section. You can then produce your own personal "kite" by joining the four scores, as shown in the example diagram, below.

Example of kite



For convenience you can produce your own printable plot, online.

The four axes provide us with four quadrants which indicate the kind of person you are (Kolb D.A. 1976).



The four axes:

CE – Concrete experience
You are more interested in experiencing reality than looking at theory. You are good at relating to others and are good at making intuitive decisions. You are open-minded about life.

RO – Reflective observation
You prefer to understand rather than apply ideas. You prefer to know what is true or how things happen rather than how things work. You value patience, impartiality and thoughtful judgement.

AC – Abstract conceptualisation
You are logical and like new ideas. You prefer to think a situation through rather than rely on instinct. You like precision and the discipline of organised life.

AE – Active experimentation
You like to influence people and change situations. You prefer to learn things that have a practical application. You are willing to take a risk to achieve your goals. You like to influence people and see results.

Take the quadrants in which your two highest scores occur and read the appropriate passages below.

Learner type 1: the reflective learner
You seek hidden meaning and need to be involved personally. You learn by listening and sharing ideas. You are interested in people. You excel in viewing concrete situations from many perspectives and model yourself on those you respect.

*Strengt*h: innovation and imagination
Goal: self-involvement in important issues, bringing unity
Favourite question: Why? /Why not?
Careers: counselling, personnel and humanities

Your preferred strategies may include:
- organisation in advance
- allowing time for reflection
- self-management
- self-evaluation
- group work
- discussion group
- deduction

Learner type 2: the analytic learner

You seek facts. You learn thinking through ideas. You perceive information abstractly and process it reflectively. You are particularly interested in ideas and concepts. You are thorough and industrious. You function by adapting to the experts.

*Strengt*h: creating concepts and models.
*Goa*l: self-satisfaction and intellectual recognition.
Favourite question: What?
*Career*s: basic sciences, maths, research, planning departments

The strategies you might like include:

- organisation in advance
- directed teaching
- systematic note-taking
- testing yourself regularly
- receiving regular feed-back from experts
- constructive research

Learner type 3: the common-sense learner

You need to know how things you are asked to do will help in real life. You learn by testing theories in ways that seem sensible. You perceive information abstractly and process it actively. You use factual data to build designed concepts; you need hands-on experiences and enjoy solving problems by yourself.

Strength: practical application of ideas.
Goal: to bring your view of the present into line with future security.
*Favourite questio*n: How does this work?
*Career*s: engineering, physical sciences, nursing, technicians.

The strategies you might like include:

- practical work
- project work
- working towards
- self-evaluation
- experimenting
- deduction/inferencing

Learner type 4: the dynamic learner

You need to know what can be done with things. You learn by trial-and-error and self-discovery. You like variety and excel in situations calling for flexibility. You tend to take risks, are at ease with people and sometimes can be pushy. You often reach accurate conclusions in the absence of logical justification.

Strength: action, carrying out plans.
Goal: to make things happen, to bring action to concepts.
Favourite question: What can this become?
*Career*s: marketing, sales,

The strategies you prefer may include:

- concrete project work
- setting short-term targets
- interacting with tutors and peers
- physical activities
- variety of learning environments and activities
- independent work

What type of learner am I?

You will have probably realised that you do not fit neatly into one particular category. You are more likely to have strong tendencies and preferences rather than being a typical activist or analytic learner. In order

to help you to build up your own profile write down about ten short statements that express the way you feel you learn best.
e.g. *I like working in groups. I like discussing ideas.*

How can you maximise your learning?
Once you are aware of your own preferences you can work at adapting the course presentation or content to suit your own learning styles. The following are some examples taken from The Study Skills Handbook published by Macmillan (Cottrell: 54)

Example 1
If you prefer to work with others, organise a study group, or arrange to work with a friend. Work in libraries and get involved in student activities.

Example 2
If you like to work to your own agenda, focus on time management so that your time feels like your own. Look for articles that nobody else is likely to use. Find examples that others might not think of.

Example 3
If you prefer to work by ear, tape lectures and read extracts from books onto tape, listen to them on the bus, record your own ideas onto tape, form a support group so that you can learn through discussion.

Last but not least!
Don't forget to use your awareness of your learning style to make a conscious effort to work at developing the skills that do not come naturally to you.

4.4 FURTHER READING

Boud, D. et al (eds.) (1985) *Reflection. Turning experience into learning*, London: Kogan Page. 170 pages. Good collection of readings which examine the nature of reflection.
Boud. D. and Miller, N. (eds.) (1997) *Working with Experience: animating learning*, London:
Fraser, W. (1995) *Learning From Experience. Empowerment or incorporation*, Leicester: National Institute of Adult Continuing Education.
Jarvis, P. (1987) *Adult Learning in the Social Context*, London: Croom Helm. 220 pages.
Johnson, D. W. and Johnson, F. P. (1996) *Joining Together: Group theory and group skills*, 6e., Boston, Mass.: Allyn and Bacon. 612 pages.
Keeton, M. T. (ed.) (1976) *Experiential Learning,* San Francisco: Jossey-Bass.
Kolb, D. A. (1984) *Experiential Learning*, Englewood Cliffs, NJ.: Prentice Hall. 256 pages. Mezirow, J. (1991) *Transformative Dimensions of Adult Learning*, San Francisco: Jossey-Bass. 247 + xix pages.
Weil, S. Warner & McGill, I. (eds.) (1989) *Making Sense of Experiential Learning. Diversity in theory and practice*, Milton Keynes: Open University Press.

On-line Learning Style Questionnaires
There are many learning style questionnaires available on-line- a comprehensive list can be obtained by simply typing the phrase "learning style questionnaire" in the Google Search Engine. A couple of good sites are given below:

http://www.engr.ncsu.edu/learningstyles/ilsweb.html
http://www.vark-learn.com/english/index.asp
http://adulted.about.com/library/weekly/aa110799.htm

Personal Learning Style Diagram