

LEARNING AND TEACHING BRIEFING PAPERS SERIES

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THEORIES OF LEARNING

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There are many different theories of how people learn. What follows is a variety of them, and it is useful to consider their application to how your students learn and also how you teach in educational programmes. It is interesting to think about your own particular way of learning and to recognise that everyone does not learn the way you do.

Burns (1995, p 99) 'conceives of learning as a relatively permanent change in behaviour with behaviour including both observable activity and internal processes such as thinking, attitudes and emotions.' It is clear that Burns includes motivation in this definition of learning. Burns considers that learning might not manifest itself in observable behaviour until some time after the educational program has taken place.

SENSORY STIMULATION THEORY

Traditional sensory stimulation theory has as its basic premise that effective learning occurs when the senses are stimulated (Laird, 1985). Laird quotes research that found that the vast majority of knowledge held by adults (75%) is learned through seeing. Hearing is the next most effective (about 13%) and the other senses — touch, smell and taste — account for 12% of what we know.

By stimulating the senses, especially the visual sense, learning can be enhanced. However, this theory says that if multi-senses are stimulated, greater learning takes place. Stimulation through the senses is achieved through a greater variety of colours, volume levels, strong statements, facts presented visually, use of a variety of techniques and media.

REINFORCEMENT THEORY

This theory was developed by the behaviourist school of psychology, notably by B.F. Skinner (Laird 1985, Burns 1995). Skinner believed that behaviour is a function of its consequences. The learner will repeat the desired behaviour if positive reinforcement (a pleasant consequence) follows the behaviour.

Positive reinforcement, or 'rewards' can include verbal reinforcement such as 'That's great' or 'You're certainly on the right track' through to more tangible rewards such as a certificate at the end of the course or promotion to a higher level in an organisation.

Negative reinforcement also strengthens a behaviour and refers to a situation when a negative condition is stopped or avoided as a consequence of the behaviour. Punishment, on the other hand, weakens a behaviour because a negative condition is introduced or experienced as a consequence of the behaviour and teaches the individual not to repeat the behaviour which was negatively reinforced. Punishment creates a set of conditions which are designed to eliminate behaviour (Burns, 1995, p 108). Laird (1985) considers this aspect of behaviourism has little or no relevance to education. However, Burns says that punishment is widely used in everyday life although it only works for a short time and often only when the punishing agency is present.

Burns notes that much Competency Based Training is based on this theory, and although it is useful in learning repetitive tasks like multiplication tables and those work skills that

require a great deal of practice, higher order learning is not involved. The criticism of this approach is that it is rigid and mechanical.

COGNITIVE-GESTALT APPROACHES

The emphasis here is on the importance of experience, meaning, problem-solving and the development of insights (Burns 1995, p 112). Burns notes that this theory has developed the concept that individuals have different needs and concerns at different times, and that they have subjective interpretations in different contexts.

HOLISTIC LEARNING THEORY

The basic premise of this theory is that the 'individual personality consists of many elements... specifically ... the intellect, emotions, the body impulse (or desire), intuition and imagination' (Laird, 1985, p 121) that all require activation if learning is to be effective.

FACILITATION THEORY (THE HUMANIST APPROACH)

Carl Rogers and others have developed the theory of facilitative learning. The basic premise of this theory is that learning will occur by the educator acting as a facilitator, that is by establishing an atmosphere in which learners feel comfortable to consider new ideas and are not threatened by external factors (Laird 1985).

Other characteristics of this theory include:

- a belief that human beings have a natural eagerness to learn
- there is some resistance to, and unpleasant consequences of, giving up what is currently held to be true
- the most significant learning involves changing one's concept of oneself

Facilitative teachers are:

- less protective of their constructs and beliefs than other teachers
- more able to listen to learners, especially to their feelings
- inclined to pay as much attention to their relationship with learners as to the content of the course
- apt to accept feedback, both positive and negative and to use it as constructive insight into themselves and their behaviour

Learners:

- are encouraged to take responsibility for their own learning
- provide much of the input for the learning

which occurs through their insights and experiences are encouraged to consider that the most valuable evaluation is self-evaluation and that learning needs to focus on factors that contribute to solving significant problems or achieving significant results

EXPERIENTIAL LEARNING

Kolb proposed a four-stage learning process with a model that is often referred to in describing experiential learning (McGill & Beaty 1995). The process can begin at any of the stages and is continuous, ie there is no limit to the number of cycles you can make in a learning situation. This theory asserts that without reflection we would simply continue to repeat our mistakes.



Figure: Kolb's experiential learning cycle

Kolb's research found that people learn in four ways with the likelihood of developing one mode of learning more than another. As shown in the 'experiential learning cycle' model above, learning is:

- through concrete experience
- through observation and reflection
- through abstract conceptualisation
- through active experimentation

DIFFERENCES IN LEARNING STYLES

As already discussed, the idea that people learn in different ways has been explored over the last few decades by educational researchers. Kolb, one of the the most influential of these, found that individuals begin with their preferred style in the experiential learning cycle (see above). Honey and Mumford (1986 cited in McGill & Beaty 1995 p 177), building on Kolb's work, identified four learning styles:

- Activist (enjoys the experience itself),

- Reflector (spends a great deal of time and effort reflecting)
- Theorist (good at making connections and abstracting ideas from experience)
- Pragmatist (enjoys the planning stage)

There are strengths and weaknesses in each of these styles. Honey and Mumford argue that learning is enhanced when we think about our learning style so that we can build on strengths and work towards minimising weaknesses to improve the quality of learning.

ACTION LEARNING

Action learning is the approach that links the world of learning with the world of action through a reflective process within small cooperative learning groups known as ‘action learning sets’ (McGill & Beaty 1995). The ‘sets’ meet regularly to work on individual members’ real-life issues with the aim of learning with and from each other. The ‘father’ of action learning, Reg Revans, has said that there can be no learning without action and no (sober and deliberate) action without learning.

Revans argued that learning can be shown by the following equation, where L is learning; P is programmed knowledge (eg traditional instruction) and Q is questioning insight.

$$L = P + Q$$

Revans, along with many others who have used, researched and taught about this approach, argued that action learning is ideal for finding solutions to problems that do not have a ‘right’ answer because the necessary questioning insight can be facilitated by people learning with and from each other in action learning ‘sets’.

ADULT LEARNING (ANDRAGOGY)

Malcolm Knowles (1978, 1990) is the theorist who brought the concept of adult learning to the fore. He has argued that adulthood has arrived when people behave in adult ways and believe themselves to be adults. Then they should be treated as adults. He taught that adult learning was special in a number of ways. For example:

- adult learners bring a great deal of experience to the learning environment. Educators can use this as a resource
- adults expect to have a high degree of influence on what they are to be educated for, and how they are to be educated
- the active participation of learners should be encouraged in designing and implementing educational programs
- adults need to be able to see applications for

new learning

- adult learners expect to have a high degree of influence on how learning will be evaluated
- adults expect their responses to be acted upon when asked for feedback on the progress of the program

Burns (1995, p.233) says:

‘By adulthood people are self-directing. This is the concept that lies at the heart of andragogy... andragogy is therefore student-centred, experience-based, problem-oriented and collaborative very much in the spirit of the humanist approach to learning and education... the whole educational activity turns on the student.

ADULTHOOD AS A SOCIAL CONSTRUCTION

Pogson and Tennant (1995) provide a perspective of adulthood as a social construction. They say that the concept of a life’s course varies for different individuals and different cultures; therefore trainers and adult educators should be wary of definitive views of adults and their behaviour.

Burns would probably support this view as he discusses the notion that ‘definitions of the adult are not clear’ and says ‘the same is true of adult education.’ He discusses the ‘petrol tank’ view of school education: ‘fill the tank full at the only garage before the freeway, then away we go on life’s journey’ (1995, p 227). He goes on to discuss that problems can arise when people have not had their tank filled completely at school and he extends the metaphor to suggest that there should be service stations along ‘the length of the highway of life.’

The question could be asked – when is maturity complete? Is there no further development after a certain stage in life?

Some authors think that while children at approximately the same age are at approximately the same stage of development, the same cannot be said of adults. Adults would vary in levels of knowledge and also in their life experiences. There could be said to be tremendous variation in adult experience.

AN ADULT’S EMOTIONAL RESPONSE CAN AFFECT LEARNING

Some adults can approach formal educational settings with anxiety and feelings of high or low self-efficacy. Their approach to new learning contexts can be influenced by how they appraise or evaluate the new experience.

For example: given two adults in a classroom where an exercise is about to begin, one individual may interpret the exercise in such a way that leads to a feeling of 'excitement', while the other person interprets the exercise in such a way that leads to the feeling of 'embarrassment'. It is self evident that the way the individual interprets the situation and the subsequent emotion that arises, will affect the kind of action the individual is to take (Burns, 1995, p 16). Burns considers that such appraisals, coupled with labels such as 'fear' or 'anxiety' can lead some learners to emotionally disengage from the source of discomfort that is the learning experience. However, when coupled with labels such as 'excitement' or 'challenge' the learner is led to take actions that focus on the task.

WHY CONSIDER LEARNING THEORIES?

This short paper has summarised a range of learning theories that can be applied in educational contexts. Teaching and learning activities can be designed and implemented to take principles of learning into account. Also, it is interesting to think about individual differences among learners and to work towards including activities that have variety and interest for all the learners in educational programs.

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