

CHAPTER 1

INTRODUCTION

The progress of the Sri Lankan economy is linked with the rate of advancement in agricultural production. In Sri Lanka 80% of the total population of 18 million live in rural areas, and 55% of the economically active population in Sri Lanka are employed in agriculture and allied occupations, and about 60% of the export earnings are generated from agriculture (Central Bank Report 1994). Realising the scope and importance of agriculture, the government has given high priority to agricultural development. The more productive technologies developed through research must be adopted by the majority of the farmers to reduce rural poverty.

The pressing needs today in the agricultural sector in Sri Lanka are to produce the country's essential food requirements, generate more employment opportunities, and raise both the incomes and profits of rural people. Therefore the primary objective of the agricultural development policy of Sri Lanka is to increase the production of major food crops including rice, fruits, vegetables, grain legumes, and condiments. These come under the food crops component of the Department of Agriculture (DOA). To achieve this objective DOA

operates an integrated island-wide Research, Extension and Human Resources Development program.

In present-day Sri Lanka, where accelerated development programs seek quicker, as well as definite results, every cent spent on any activity has to earn optimum benefits. Since all development activities or projects have human resource development as a major component in the total activity of the project, training has a vital, as well as major, role in the development process.

The DOA is responsible for the generation and dissemination of research findings and farming techniques for the farming community in order to facilitate increased agricultural production. The role of human resources development in the agricultural sector has been and will continue to be a very significant one. The challenge faced by the DOA is to keep abreast with information, innovations and technologies, and to communicate and develop appropriate skills in the extension staff and the supporting staff of the DOA and other institutions.

To accomplish this, officers of the DOA and other institutes are trained to improve their knowledge and skills. The efficiency of the large number of extension field staff and the supporting staff depends on their competencies, which in turn depends on well designed and regular in-service training programs. There is also increasing demand for training of staff from other departments and agencies like the Education Ministry, Agrarian Services, Department of Export Crops, Sugar Cooperation etc. Therefore, the main responsibility of the DOA is to organise systematic and comprehensive training programs to improve their performance.

But since the farmer is to be the principal user and beneficiary of the new and better ideas passed through change agents, the training offered to these officers should be designed with the farmer in mind.

BACKGROUND TO THE STUDY

Agricultural research in Sri Lanka was expanded on the basis of agro-ecological regions. Provincial councils were established and extension staff were deployed in accordance with this organisation. In order to link research and extension for rapid transfer of new technology to farmers, and field problems to research officers, regular updating of field staff through an in-service training program was mandatory. Consequently, In Service Training Institutes (ISTIs) were established at Gannoruwa, Maha Illuppallama, and Bindunuwewa; two more were set up at Killinochchi, and Agunakolapelessa in the late 1970s. With assistance from the World Bank, the existing training institutes are being improved and three more have been created at Karadianaru, Bobuwela and Makadura. These training institutes link with Regional Agricultural Research Centres (RARC) in each of the eight agro ecological regions.

The agricultural extension system covers all agro-ecological regions. All extension officers who are working in these areas receive three to four days pre-seasonal training from the training staff at the ISTI before the beginning of the cultivation season. Additional in-service training programs in different disciplines are conducted during the season to meet any deficiencies. During the last few years various training programs have been introduced according to the agro-ecological conditions and needs identified by the trainers (Appendix 1).

To provide farmers with profitable technology, the extension officers should possess relevant skills: they should be able to perceive farmer problems, offer useful advice, develop good relations with farmers, and communicate effectively. How can they best be trained to do this? For effective extension, continual training of field officers is necessary. To meet these requirements, training should aim to improve the skills and technical knowledge of extension staff and to generate the desired attitudes and values among them.

If training is a one way process delivered from the teacher to the learner, it never becomes sustained and self generating. Experience has shown that training gives best results when it is a well planned product of partnership between the work organisation, the participants, and the training institution in an atmosphere of flexibility in practical arrangements, understanding and regard for each other, and the deep involvement of every one. Under these circumstances, it has become necessary for the training institutions themselves to be models of development to the trainees. The institutions, therefore, have to carefully implement the training model in light of the goals and perspectives of training set in consultation with the work organisations.

In Service Training Institutes have been conducting in-service training programs for two decades. During this period, the number of training centres, and trained officers, have increased. The number of officers trained at seven ISTIs from 1990 to 1995, clearly indicate the increasing demand for human resources development (Appendix 2). Most of the training programs now originate in the field through discussion with extension officers rather than at the head office. Although many changes have taken place over the past few years, however, problems still develop

in extension field activities. Most of the higher officers in the DOA state that the programs conducted by the ISTIs are not effective in changing the knowledge, skills, and the attitudes of extension officers.

...village level extension officers are expected to motivate farmers to adopt new technologies, Are these officers given in-service training which will enable them to do this effectively? We see little progress in the adoption of technology despite an expansion of training programs. The basic question we should ask is whether training programs are relevant?

Wirasingha (Deputy Director Extension) 1984.

Training programs should bring about behavioural change in the person who is being trained. Extension officers who have completed training should be able to perform certain tasks with proficiency. The development of new skills is important. This can not be done by "telling how". It is often claimed that the training programs offered by the ISTIs are not improving the skills of the extension officers in most agricultural operations.

A study conducted in 1987 to find out the usefulness of the training programs offered by the ISTIs (Gunawardena, 1987:94) indicated only 40% of the trainees found training programs useful for gaining skills or acquiring changed attitudes. Approximately 35% felt that training programs did not provide any useful skills and 21% stated that training programs did not contribute to attitude change. Another study conducted

by the same researcher to find out the most frequently used training method, found that the lecture method was most widely used, but not a single respondent amongst the trainees favoured it (Gunawardena,1987;95).

This indicates that training programs urgently need improvement, since by definition, training aims to achieve desirable behavioural changes. As behavioural changes are brought about by the development of knowledge, skills, and attitudes, training programs need to be very carefully designed.

AIMS OF THE STUDY

The aims of this study are to examine the training model used by the In Service Training Institutes (ISTIs) in order to identify any weaknesses in its implementation which limit the effectiveness of training, and to consider whether there are principles of adult education which might be applied in order to overcome these deficiencies

The questions to be investigated were:

1. What are the problems in implementing the present training model?
2. Are there principles of adult learning that are relevant to training agricultural extension officers?

3. If so to what extent are those principles evident in the present implementation of the training model?
4. What changes should be made in order to strengthen the implementation of the present training model?.

It is expected that the findings of this study will aid in the strengthening of the training model currently used by the ISTIs and that it will ultimately help with the development of future training programs that will be more successful in raising the level of knowledge and skills of the agricultural extension officers and of other officers with an educational role in related departments and agencies in Sri Lanka.

SIGNIFICANCE OF THE STUDY

Decentralisation of research activities on the basis of agro-ecological zones, adaptive research in farmers' fields, and consideration of farmers' experience constitute a positive step in the generation of new information.

A successful extension system requires adequately trained and supported extension staff. The effectiveness of extension field staff depends on systematic in-service training and availability of current information from research and other sources.

Therefore this research study is mainly significant:

- a) for the improvement of the Sri Lankan agriculture.
- b) for the strengthening of training extension staff in Sri Lanka.
- c) for the possible implications for training agricultural extension officers in other developing countries.

(a) Improving Sri Lankan Agriculture

The transition of Sri Lanka's traditional subsistence farming to modern commercialised agriculture is bringing it in to the economy's limelight. The use of new varieties, better quality seeds, fertiliser, irrigation practices, pest and disease control, equipment and machinery, and new technologies are common in Sri Lankan agriculture. Farmers are producing commodities for local markets and even for export. Many farmers are profit motivated and are keen to increase net farm income. Some farmers grow multiple crops to increase farm returns.

Multinational and local companies are interested in agricultural enterprises in Sri Lanka. New irrigation schemes are making more land available for agriculture. Government subsidy programs for agricultural enterprises and credit facilities for farmers encourage production. Today farmers are knowledgeable, profit-oriented and business-minded. They seek new knowledge and technologies for successful agriculture. Therefore those who are involved in technology transfer should be

familiar with sources of new findings, policy changes market behaviour, and changing technologies. This study will help identify ways of raising the knowledge and skills of the agricultural extension officers which in turn will help to improve Sri Lankan agriculture.

(b) Strengthening of training extension staff

Technology transfer in agriculture from research to extension takes place through education and training. Farmers receive information and advice on new technologies from agricultural workers who are educated and trained at ISTIs. Thus ISTIs have to play a key role in providing the additional knowledge and skills required by officers of the DOA and by agriculture staff of the provincial councils for improving their job efficiency. In order to achieve this, HRDC developed a five year plan for human resources development. According to this each ISTI has to fulfil more than 4000 man days per year. It means each ISTI has to organise 35-75 training programs on various disciplines per year.

The training function is not a simple process and it needs a lot of energy, resources, time and consideration, and involves a sequence of activities such as planning, implementing and evaluating training programs. Hence the cost of training is almost always very high. However it is the responsibility of a training institute to plan and implement effective training programs to meet the interests and requirements of the training institute, client organisation and individuals. This study will help identify ways of improving the training of agricultural extension staff to make the training more cost-effective.

(c) Possible implications for other developing countries

From the experience with a number of extension services in World Bank-assisted projects in Third World Countries, Galgali and Lindt (1984,67) suggested several shortcomings of training. Therefore this study may well be relevant to those developing countries in similar situations and may suggest possible lines of action for them.

METHODOLOGY

This research study was conducted to find out the changes which should be made in order to strengthen the implementation of the present training model. To accomplish this the problems of implementation of the present training model were identified, and compared with the principles of adult learning which relevant to agricultural extension practices. Therefore the research was based on:

- available data from Sri Lanka
- a search of adult education literature
- the researcher's experience

Available data from Sri Lanka

Very little research has been conducted by the DOA on adult education, and most of the research findings are unpublished. Most of the available data were supplemented by information provided by senior DOA colleagues who were also undertaking Master Degree programs at the

University of New England. These colleagues have each had more than fifteen years experience in the field of extension and training as senior managers.

Search of adult education literature.

The accepted principles of adult learning were collected through the literature review. The study was mainly a review of literature which included all the accessible published studies and texts, and some unpublished research papers. Most of the literature reviewed from the materials available at the Dixson Library at the University of New England, including through its computer databases.

Researcher's experience

The author has had ten years' experience in training as an adult educator, and five years' experience as an officer-in-charge in one of the ISTI in the Department of Agriculture, as well as one year's experience in the field of agricultural extension. So the researcher relied heavily on his own personal experience to examine the present training situation of the ISTIs.

LIMITATIONS

With the limited time and budget the author was unable to collect information from the senior officers, trainers or others who are involving in the training process. The focus of the study is not a critique of the present training model but a discussion of how the implementation of the model might be more effective. Also, this is a model of the training undertaken within the In Service Training Institutes and so the study is about the training of government officers rather than about agricultural extension itself.

STRUCTURE OF THE THESIS

Chapter one introduces the research study. It briefly describes the purpose of the study, the research problems, significance of the study, and limitations of the study. Chapter two of the thesis reviews the related literature in adult education with special reference to the differences between learning in adulthood and in childhood, changes relating to learning in adults, teaching learning theories, characteristics of the adult educator, training methods and adult learning principles. Chapter three briefly discusses the role and purposes of the Human Resources Development Centre of the Department of Agriculture. It also describes the types of training programs offered and the present situation of the training programs conducted by the In Service Training Institutes. The present training model used by the In Service Training Institutes is also described in order to identify the implementation problems.

Chapter four examines in greater detail the existing training model and compares that process with the accepted adult learning principles in order to strengthen the present training programs of the In Service Training Institutes. Chapter five summarises the findings of the study, outlines the conclusions that can be properly drawn from it, and presents recommendations for strengthening the training programs.

CHAPTER 2

REVIEW OF RELATED LITERATURE

INTRODUCTION

The present and anticipated growth of In Service Training in Sri Lanka can be attributed mainly to the pressure springing from technological change and the knowledge explosion. Almost any worker in the society has the problem of keeping up with new knowledge and skills.

The In Service Training Institutes' concern with change is particularly in the field of agriculture. New discoveries are made; new practices come in to being; new ventures gain priority over traditional ones; new ideas are accepted. The ISTIs, as part of the Human Resources Development Centre of the Department of Agriculture (DOA), have to keep abreast of new information and technologies, and to communicate such changes and develop new skills in the extension staff and the supporting staff of the DOA and other institutions. The target group of the ISTIs is therefore only adults.

Peterson (1983:3) states that "adult education is significantly distinguished from other forms of educational provision by reference to the nature of its clients". A

considerable body of literature has been developed having implications for the design of educational programs for adults.

The purpose of this chapter is to review some of the available literature on adult education, particularly that related to teaching/training and learning, in order that it might be considered later in this thesis for its relevance to strengthening the training programs conducted by the ISTIs of the DOA.

WHO IS AN ADULT?

In Sri Lanka procedures used in the teaching of adults have been largely derived from the experience of teaching children in schools. However, recent research and theory suggests that many adults learn somewhat differently from children. Some views of how adults learn have been subsumed in to the term 'androgogy' by Knowles (1970). Hough (1982) says the term refers to the principles of adult learning, "as a contrast to the term 'pedagogy' which describes the principles of child learning"

There are many definitions of 'adult' in the present literature. The dictionary definition of an adult is 'fully developed and mature; grown up' (Webster). Simpson (1995:91) states that the *"most spontaneous answer to this question is to suggest that adulthood is in some way delineated by a particular age. While there is considerable attraction in this, unfortunately it simply does not seem to do the job on its own"*. Furthermore, he explains *"the problem arises because the word 'adult' in reality incorporates a range of concepts, only one of which involves age. Another status, whereby society acknowledges that the individual has*

reached a level of full participation in the system with all its rights and responsibilities".

Knowles (1984:55) explains four definitions of "adult". First there is the biological definition: *"people become adult biologically when they reach the age at which they can reproduce - which is usually is in early adolescence"*. The second is the legal definition: *"people become adult legally when they reach the age at which the law says they can vote, get a driver's license, marry without consent, and the like"*. Thirdly there is the social definition: *"people become adult socially when they start performing adult roles, such as the role of full time worker, spouse, parent, voting citizen, and the like"*. Finally the psychological definition suggest that *"people become adult physiologically when they arrive at a self-concept of being responsible for their own lives, of being self directing"*.

Rogers (1986:6-7) states that three characteristics underpin any conception of adulthood. The first of these is the idea of full development. He elaborates on this by the use of the word 'maturity', which he says *"not only describes a state but also an ideal. An adult therefore is not only expected to have reached a stage of personal growth, but also to be pursuing further levels of it. The second element he lists is that of possessing a greater sense of perspective. This enables adults to make sounder judgments about themselves and about others. The final element that he includes is autonomy, by which he means that adults are responsible for themselves"*.

DIFFERENCES BETWEEN LEARNING IN ADULTHOOD AND IN CHILDHOOD

"Learning has many definitions. A lot of study and research has been carried out by various scholars concerning learning and how it relates to our lives. Although learning has been defined in a variety of ways, most definitions include the concepts of behavioral change and experience" (Merriam and Caffarella, 1991;129). For the purposes of this study, the definitions of adult learning is the one used by Brundage and Mackeracher (1980;5): "Learning is most often defined in the literature as a relatively permanent change in behavior as the result of experience and as the activities involved in this process of change".

"The term 'pedagogy' is derived from the Greek words 'paid' meaning 'child' and 'agogus' meaning 'leader of'. Thus pedagogy literally means the art and science of leading children. 'Andragogy', which is based on the Greek words 'aner' means 'man', and 'agogus'. Andragogy is, therefore the art and science of helping adults learn", according to Knowles (1984;52 and 1970;38).

Knowles' definition of androgogy implies that learning is completely the responsibility of adults. In the learning process the adult educator is the helper. In fact, the literature of adult education often does not mention the word 'teacher' but uses instead such terms as leader or facilitator. These particular terms imply that there are certain special characteristics of adults as learners. On the other hand, the term 'pedagogy' implies that the teacher transmits knowledge to children. Knowles (1970;37) originally explained pedagogy and androgogy as opposing approaches. He held that the pedagogical model gives the teacher full responsibility for all decisions about learning and places the learner in a

dependent role, following the teacher's instructions. But in later editions Knowles (1980) places pedagogy and androgogy on a continuum

The androgogical model is based on several underlying assumptions which have been presented in slightly different forms in different publications. According to Knowles (1984:53) androgogy is based on the following six assumptions about the characteristics of the adult learners that are different from the assumptions about child learners, on which traditional pedagogy is based.

1. The need to know
2. The learner's self concept
3. The role of the learner's experience
4. Readiness to learn
5. Orientation to learning
6. Motivation

According to the literature on adult education, learning in adulthood can be distinguished from learning in childhood. Merriam and Caffarella (1991:25) state that *"learning in childhood can be distinguished from childhood in terms of the context, the learner, and the learning process. Furthermore, it is not just that differences can be seen in these areas. Equally important, the configuration of context, learner, and process together makes learning in adulthood distinctly different from learning in childhood"*.

THE NEED TO KNOW

Knowles (1984;53) explains that the *"learners only need to know what the teacher teaches if they want to pass and get promoted: they do not need to know how what they learn will apply to their lives"*. The adults on the other hand are essentially volunteers in learning. They are strongly motivated to learn in areas related to their current development tasks, life crises and social roles.

Tough (in Knowles, 1984;55) argues that *"when adults undertake to learn something on their own they will invest considerable energy in probing in to the benefits they will gain from learning it and the negative consequences of not learning it"* Paulo Freire, the great Brazilian adult educator, has developed an elaborate process for what he calls *"the 'consciousness - raising' of peasants in developing countries in his 'The Pedagogy of the Oppressed' 1970. But even more potent tools for raising the level of awareness of the need to know are real or simulated experiences in which the learners discover for themselves the gap between where they are now and where they want to be"* (Knowles, 1984, 56).

THE LEARNER'S SELF CONCEPT

Self concept is one of the organising principles that individuals use to understand their own behavior. The self concept emerges gradually during childhood and progressively changes over the life span. Individuals attempt to balance their own perception of self with how others perceive them (Birren, 1981;665). Knowles (1984;55) argues that

...the process of gaining a self concept of self directedness starts early in life and grows cumulatively as we become biologically mature. start performing adult like roles. and take increasing responsibility for making our own decisions. So people become adult by degrees as we move through childhood and adolescence. but at different rates and in different dimensions of life.

Darkenwald and Merriam (1982;76) argue that "chronological age does not provide a reliable indicator for differentiating adults from children. More central to the concept of adulthood is the idea of independence". Kidd (1973;36) states *"young children are dependent upon others for their well - being. During the course of his childhood and youth. the dependence is reinforced as decisions are made for him in the house. at school. in the play ground. and everywhere he turns"*. Adults on the other hand, accept the social roles and functions that define adulthood. For instance, the role of wage earner, marriage partner, parent, and citizen, all denote the independence characteristics of adulthood.

Brundage and Mackeracher (1980;25) argue that the adult has a "firmer and more fully formed" self concept than does the child. Educational practice reflects the differences between children, who are learning to be independent decision making roles. The main function of childhood education is to prepare young people to function as adults. Thus society, through the educational system, decides what knowledge, skills and attitudes a child must have to participate well in the world. That is, learners are "prepared" to become economically, socially and psychologically independent.

Darckenwald and Merriam (1982:77) assumed that *"students are already functioning as adults in society. Thus its (adult education's) mission is not preparatory, so much as it is one of assistance helping adults to realise their potential, make good decisions and, in general, better carry out the duties and responsibilities inherent in the adult role"*.

According to this approach, the adult learner chooses what to learn, what he/she needs to know, but it is important to recognise that self-direction in learning has not been proved to be uniquely associated with adulthood. Moreover some adults prefer to be passive learners: those who prefer the traditional teacher - student relationship in the class rooms. In fact, the role of the adult teacher is most similar to the traditional teaching role in the more formal programs. In the less formal settings, where problem - solving is a principal concern, where self direction is necessary, the adult teacher is expected to arrange conditions to facilitate learning rather than the transmission of the knowledge and skills. Thus whether the learning process is done in a formal setting is determined to some extent by the characteristics of the adult learner.

THE ROLE OF LEARNER'S EXPERIENCE

Eduard Lindeman (in Smith, 1982:41) argues that the *"chief purpose of learning is discovering the meaning of the people's experience, calling this effort a 'lifelong quest of the mind'. In this view, one learns in order to make sense out of the vast experience inevitably accumulated through living -- certainly a major purpose for learning"*. It seems clear that past experience will affect a person's orientation towards and response to education.

"Adults come in to an educational activity with both a greater volume and a different quality of experience from youths" (Knowles, 1984:57). Smith (1982:40) argues that "much of this experience is qualitatively different from that of children. It derives from a wide range of roles and responsibilities".

Brundage and Mackeracher (1980:33) go on to say that an adult's fund of past experience brings about a learning process that "focuses on modifying, transferring, and re-integrating meanings, values, strategies, and skills, rather than forming and accumulating as in childhood".

"There is a difference between children and adults as regards to their experiences. To a child, an experience is something that happens to him; that is an external event affects him, not an integral part of him. But an adult's experience is what he has done" (Rogers, 1986:26).

Knowles (1970:44) argues that these differences in experience between children and adults have at least three consequences for learning:

1. Adults have more to contribute to learning.
2. Adults have a richer foundation of experience with which to relate new experiences.
3. Adults have acquired a larger number of fixed habits and patterns of thoughts.

A final effect of the adult's accumulation of experience is to make adult learners themselves very important resources for learning.. and learn a great deal from

each other. This assumption leads to advocating the use of experience as a resource for learning and the employment of experimental learning techniques.

Tennant (1990:21) argues that *"all learning should make use of existing experiences, irrespective of their degree and kind. As such, experience may well be a characteristic that sets children apart from adults, but it is not a characteristic which is relevant to distinguishing educational practice for adults and children"*. Elias (1979:252) also argues that *"experience - centered education may actually in many cases be more possible for children than for adults"*.

READINESS TO LEARN

...adults become ready to learn those things they need to know and able to do in order to cope effectively with their real life situations. An specially rich source of "readiness to lean" is the developmental tasks associated with moving from one development stage to the next. The critical implication of this assumption is the importance of timing learning experience to coincide with those developmental tasks (Knowles, 1984:58)

Furthermore Knowles explains that *"it is not necessary to sit by passively and wait for readiness to develop naturally. There are ways to induce readiness through exposure to models of superior performance, career counseling simulation exercises, and other techniques"*.

"Children as well as adults learn within a social context. The emphasis in childhood is upon socialisation; that is, learning to live with others in ways expected by society and culture. The 'teachable moment' for a child depends upon his or her psychological development, and what is learned either forms the basis for more knowledge, or is stored for future use" (Darkenwald and Merriam, 1982;87).

Knowles' fourth assumption concerns readiness to learn arising from developmental tasks. He states that "when a person matures his readiness to learn becomes oriented increasingly to the developmental tasks of his social roles". Elias (1979;251) argues that this is also not an educational basis for distinguishing between andragogy and pedagogy. He says that children also have developmental tasks and a readiness to learn arising therefrom.

ORIENTATION TO LEARNING

Knowles (1980;53) states that *"adults enter in to education with a different time perspective from children, which in turns produces a difference in the way they view learning. Children tend to have a perspective of postponed application on most of their learning"*. To a child, education is "essentially a process of the accumulation of a reservoir of subject matter, knowledge and skills, that might be useful later in life". Children tend, therefore, to enter any educational activity in a subject - centered frame of mind. They see learning as acquiring subject matter content. Therefore, learning experiences are organised according to the logic of the subject matter content. Adults on the other hand, according to Knowles, gain new knowledge, understanding, skills, values and attitudes more effectively when

they are presented in the context of application to real - life situations. Therefore, adults are task - centered in their orientation to learning.

Elias (1979;252) and Tennant (1990;23) argue that Knowles' fifth assumption also does not provide adequate basis for distinguishing between androgogy and pedagogy. They point out that experience centred education of children can easily be present - centred in their time perspectives'

MOTIVATION

One of the most used terms in adult education is 'motivation'. One definition is: "that which tends to move a person to a course of action" (Kidd, 1973;101). *"Motivation is usually defined as those factors that energise and direct behavioral patterns organised around a goal. It is frequently seen as a force within the individual that moves him or her to act in a certain way. Motivation in education is that compulsion which keeps a person within a learning situation and encourages him or her to learn"* (Rogers, 1986;61).

Kidd (1973;101) implies that "the interest that has been aroused in all fields of education is a form of recognition that learning is performed by the learner is a single step in understanding and improving learning".

"The interests, needs and motivations of any learner-child or adult- are primarily a matter of the emotions, not of the intellect. Any learner in a class room or elsewhere brings to the learning transactions such feelings as: esteem, fear, respect for authority, need for states and prestige, and so on" (Kidd, 1973;94).

Knowles (1984;61) argues that, while adults are responsive to some external motivators (better jobs, promotions, higher salaries, and the like) the most potent motivators are internal pressures (the desire for increased job satisfaction, self esteem, quality of life and the like).

On the other hand, he claims, "children are motivated to learn by external motivations such as: guards, teacher's approval, awards, parental pressures". Though (in Knowles, 1984;61) found that *"all normal adults are motivated to keep growing developing. but that this motivation is frequently blocked by such barriers as negative self concept as a student. inaccessibility of opportunities of resources. time constraints. and programs that violate principles of adult learning"*. Tennant (1988;23) argues that "children and youth are naturally more motivated by intrinsic rewards than by external pressures, and that it is schools that have conditioned them to be otherwise".

Wlodkowski (1985;60) divides learning sequence according to a time continuum. There is always beginning, middle and an end. Furthermore he states that "there are effective things that can be done during each of these phases to enhance learner motivation". The continuum model of motivation organises motivational strategies according to this rationale (Figure 2.1).

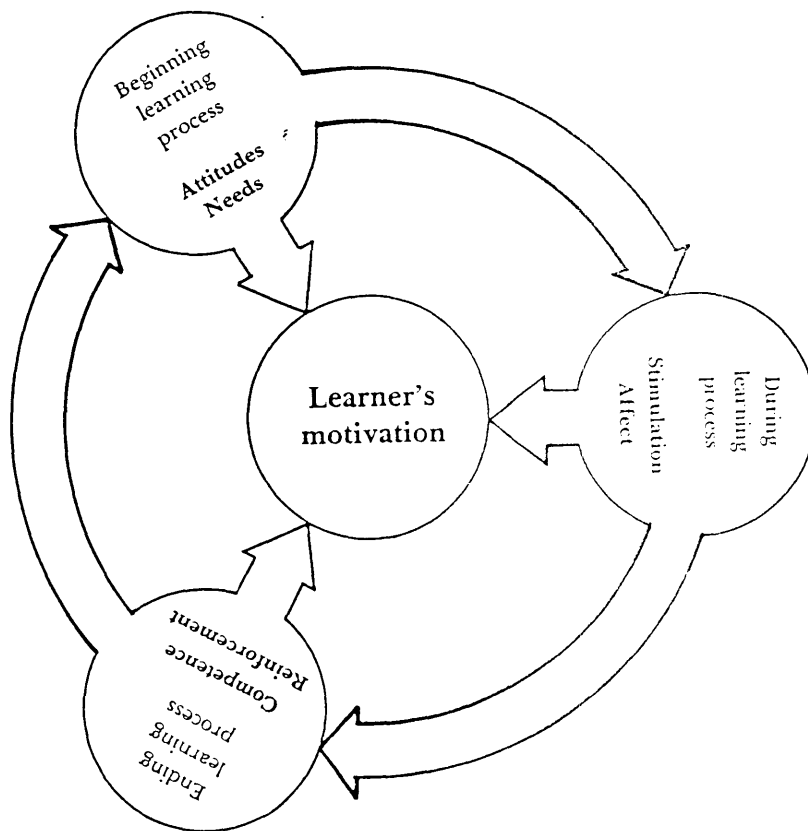


Figure 2.1 The continuum model of motivation

"For each of these critical periods, there are two major factors of motivation that serves as categories that can be applied with maximum impact during those period of time" (Wlodkowski, 1985;61).

- * Beginning - attitude and needs
- * During - stimulation and affect
- * Ending - competence and reinforcement

CHANGES RELATING TO LEARNING IN ADULTHOOD

Ageing is a lifelong process: Growing up and growing old, starting with conception and ending with death. Efforts to integrate development and learning have focused on why and how we physiologically age, our physiological make-up and the role transitions play in our lives. A basic knowledge of adult development and learning has several uses for facilitators who are working with adults.

Merriam and Caffarella (1991,97) discuss the developmental characteristics of adults from three major perspectives: physical ageing, psychological changes, and socio cultural factors. Furthermore they explain "each perspective through illustrative theories and ideas; the major focus is on how the broad themes of learning and development are intertwined".

PHYSIOLOGICAL AGEING

Many of the physical characteristics of adult learners are easy to identify. But there are some characteristics which are not significant where learning is concerned, such as gray hair, wrinkles crows feet and so forth.

Apps (1934, quoted in Merriam and Caffarella, 1991;85) states that the "ageing process has an effect on our visual ability and reaction time. And of course, all three of these functions are related to the teaching learning process". Merriam (1987;85) also points out that there are three specific physical changes that have been shown to affect learning in adulthood. These are changes in two senses,

changes in the central nervous system, and changes as a result of major disease processes.

CHANGES IN SENSES

"Vision and hearing are two major sensory processes, with approximately 85% of all learning occurring through vision, and 10% through hearing" (Clark, 1985:2) Apps (1981,85) states that *"our ability to see increases rapidly during childhood, peaking at about age eighteen. From eighteen until about forty there is a gradual decline. For many people there is a sharp decline from about forty to fifty five, and the decline continues, but less rapidly throughout life"* Furthermore, Kidd (1973,62) states that "vision deteriorates to the extent that there is a gradual decline until age fifty five, beyond the age of twenty, every one will show some decline in visual acuity; beyond forty, the decrease is considerable". There is an increasing incidence of defective colour vision.

People rely greatly deal on hearing. Cavanaugh (1990:151) points out that "one of the most well known changes in normal ageing is the decline in hearing ability, which is quite dramatic across the life span".

...The peak hearing performance appears around age fifteen, and rather steadily declines throughout the rest of life. For persons under the age of twenty five, the decline of any hearing loss about one percent. The rate of decline begins to increase around age forty five. For those between ages sixty five and seventy four, the rate of

hearing loss in about ten percent, on average. Most of the hearing loss is in the high sound frequencies (Apps, 1981;86).

According to Merriam (1987;100) "great hearing losses are noticed in the seventh decade. An estimated 45% of the population has some detectable amount of hearing difficulty by the age of seventy five, and 75% by age eighty". Bee (1987;89) points out that the "*basic cause of this loss appears to be gradual degeneration of the auditory nerves and structures of the inner ear*". *The decline in hearing and sight affects learning by reducing the quality and quantity of input to the learning process (Brundage and Mackeracher, 1980;22).*

Hearing problems can reduce intelligently, especially when rapid sound is involved, and present problems with pitch, volume and rate of response. Some adults develop strategies that enable them to cope with reduced hearing and vision (Kidd, 1973;63), and most adults can obtain hearing aids and vision spectacles, so there is no major problem for individuals.

"The ageing of the eyes serves as a good example of how the effects of ageing need not interfere greatly with the capacity for learning" (Cross, 1984;156), because we can compensate for it.

Changes in reaction time

"Reaction time is the time it takes for a person to respond in some way when he or she sees, hears, feels, tastes, or smell something. Some where our adulthood, our reaction time peaks. It slowly declines during middle and old age. Peak

reaction time is about age twenty. At fifty, most people have about the same reaction time they had at fifteen" (Apps, 1981;86).

"This decrease of reaction time can be sizeable--from 20% for simple tasks, to as much as 50% on more complex ones" (Welford, in Merriam and Caffarella, 1991;101). Schaie (in Merriam and Caffarella, 1991;101) states that "*numerous explanations have been posited for this change, such as overall cell deterioration and the lessened co-ordination of the body's arousal system with actual brain activity*". It has also been found that such factors as the nature of the task and a person's previous experience with it also effect one's reaction time (Knox, 1981;286).

Other diseases

"Changes in health can effect our ability to learn at any age. The greatest effect is felt in older adulthood where it has been estimated that after the age of seventy, some where between seventy five and 86% of the elderly have chronic health problems. The most common problems stem from cardio-vascular diseases, cancer, and arthritis" Merriam and Caffarella, 1991;102).

Furthermore Merriam and Caffarella (1991;102) states "*in addition to these effects diseases process indirectly influence an adult's ability to learn. Pain and fatigue often accompany both acute and chronic illnesses, leaving one with little energy or motivation to engage in learning activities*".

PSYCHOLOGICAL EFFECTS

Psychological age refers to the behavioral capacities to that people use to adapt to changing the environmental demands. According to Birren (1964) these abilities include "intelligence, memory, feelings, motivation, and other skills that foster and maintain self-esteem and personal control". Intelligence is defined in a number of ways. Merriam and Caffarella (1991,140) argue that the *"intelligence is often equated with "being smart" - that is, being able to act intelligently when dealing with every-day life. But there is also another definition of intelligence that most adults have carried with them since their elementary school days. "Intelligence is a specific measurement of the ability to learn"*.

What appears to be decline in the intelligence of older people may be a change in the knowledge and skills defined by the culture (Clark, 1985:4). La place (1984,262) suggests that *"intelligence does not decline with age because losses of speed and memory are offset by gains in reasoning and understanding. Any lessening of intelligence is related to failing health. Social isolation and poor formal education, rather than the ageing process. Memory does not decrease, it simply takes longer to retrieve information"*.

...most intellectual abilities are well maintained through early and middle adulthood, beginning to decline only in the 60's. Although the decline is measurable in our 60s, it is initially small enough in most cases to have relatively little impact on our daily functioning. By our 70s and 80s, however, the decline has reached a sufficient magnitude that it may effect our ability to solve daily problems, to

learn new things, to recall ordinary bits of information (Bee, 1992;188).

A slowing down in the speed of response appears to be responsible for the lowered intelligence test scores of older adults (Clark, 1985;4). *"When power rather than speed is stressed, there is little difference between age groups. Whilst the elimination of speed in tests reduces the age discrepancies, it does not totally eliminate them; but even between the ages of sixty and seventy five there is little differences"* (Cross, 1984;158).

Merriam and Caffarella (1991;143) state that *"Catell conceptualised intelligence as consisting of primary factors, each with different origins. The first factor--fluid intelligence--has more of the characteristics that used to be equated with the old innate biologically determined concept of the IQ: where as crystallised intelligence is influenced more heavily by education and experience"*. Also Kidd (1973;84) states that *"crystallised intelligence increases with age, whilst fluid intelligence declines"*. Older person may also be more concerned with correct rather than quick responses, and whilst learning rate decreases, efficiency of learning does not" (Kidd, 1973;61).

...Memory is based on the assumption that much of learning is the accumulation of knowledge, facts, and information, whatever we want to call it, for later recall and use. Memory includes three phases, which are commonly referred to as: (1) registration, (2) retention, (3) recall. Registration is becoming aware of something through seeing, hearing, smelling, feeling or tasting, and storing it for future reference. Retention is the persistence of the material that

has been encoded. And finally, recall or remembering, is the process by which a search and retrieval takes place for the information that has been stored (Apps, 1991;91 in Merriam and Caffarella).

"With increasing age comes a more rapid decay in memory. It takes longer to register impressions and recall is best elicited under conditions similar to those of the registrations" (Knox, 1986;86). There are no problems with recognition memory but meaningless material, complex material, complex material and new materials pose problems for adults (Cross, 1984;163 and Kidd, 1973;90).

SOCIO CULTURAL EFFECTS

Social class background is highly associated with many types of activities. Adult function within a socio-cultural environment of family, community and nation, which influences their development and learning (Kimmel, 1974;10). Therefore social class is a factor which requires consideration when discussing adult learning ability. Long (1983;67) states that "social class subsumes a number of variables such as educational opportunity, cultural experiences, home environment, diet and health care".

Knox (1981;331) argues that engaging in learning activities is one way in which adults cope with life events. According to Knox (1981;539), when a change of events occurs, the need of some adaptation produces, for some adults at least a heightened readiness to engage in educative activity. Smith (1982;43) explains that categories of transition trigger learning their major ways,

1. A change in our life more occur unexpectedly, requiring us to learn rapidly in order to adapt to the situation
2. Slower transitions may allow us more comfortable accommodation to change by stimulating us to learn as the transition occurs
3. After a period of life review, we may choose to make changes and these through anticipatory learning. Merriam and Caffarella (1991:11) argue that the "social roles have been a major focus of the sociological perspective which views change as a product of lifelong socialisation experience"

LEARNING THEORIES

Merriam and Caffarella (1991:124) state that "learning as a process focuses on what happens when the learning takes place. Explanations of what happens are learning theories". Knowles (1984,109) explains *..if you are planning an educational activity you going to have to make decisions about content, techniques, to be used, unit of instructions and sequences, time and place and standards for evaluation. For each decision you will be determined by some idea of what will make best, that is a theory".*

The above explanations show that learning theories depend on why, what, and how we organise training programs, and this is also related to the philosophy of the organisation. Knowles (1955,30) argues that "one basic philosophy of

education is derived from the concept of education as an instrument of social development". It states that the ultimate objective of education is to produce individuals who are effective members of the society to which they belong. Therefore it is very important to review learning theories because it influences the learning transaction.

Behaviorist orientation

...Behaviorist theory of learning focuses generally on observable behavior rather than the internal thought process. Behaviorists say that learning is manifested by a change in behavior. They say that the environment in which one find himself herself is the main factor which determines what learns. Behaviorists also believe in the principles of contiguity and reinforcement. Contiguity refers to time-- how close in time to events must be for a bond or concrete learning to take place. Reinforcement refers to the increasing likelihood of an action repeated when rewarded or imitated (Merriam and Caffarella, 1991:124).

Elias and Merriam (1980:87) argue that the "roles of teacher and learner are quite defined in the behaviorist framework. The role of the teacher is to design an environment that elicits desired behavior toward meeting these goals and to extinguish behavior that is not desirable". The environment is arranged in such away that certain learner behaviors are emitted. Furthermore Elias and Merrtam (1980:89) state that "*behaviorism focuses upon the measurable, overt activity of an organism. Learning in behavioral terms is a change in a change in behavior*

Behavioral objectives, then specify the behavior to be exhibited by learner after completing a unit of instruction".

Cognitive orientation

"Perception, insight, meaning are key contributions to cognitivism learning theories. According to cognitivists, the human mind is not simply a passive exchange terminal system where the stimuli arrive and the appropriate response levels. Rather the thinking person interprets sensations and gives meaning to the events that impinge upon his consciousness" (Grippen and Peters quoted by Merriam and Caffarella, 1991, 129).

...What a person sees or hears is not just taken at face value, but it has to be evaluated or analysed and a certain meaning is given to it. This meaning then is important to the person's life at that time. Learning in this orientation involves the reorganisation of experiences in order to make sense of stimuli from the environment. Learning is a cognitive phenomenon. As opposed to the behaviorist orientation, learning activities lie with the individual. Learning is meaningful only when it can be related to concepts which already exist in a person's cognitive structure. This orientation focuses on the internal mental processes that are within the learner's control (Merriam and Caffarella, 1991, 129).

Humanistic orientation

"In contrast to the behaviorist theory, which concentrates on observable behavior determined by the environment in which one lives, and the cognitive theory that deals with mental processes, the humanistic orientation considers learning from the perspective of the human potential for growth" (Merriam and Caffarella, 1991; 132).

"The humanist assumes that there is a natural tendency for people to learn and that learning will flourish if nourishing encouraging environments are provided" (Cross, 1984;228). Rogers (1986;48) argues that the "role of the teacher in the humanist orientation is to increase the range of experience so that the student participants can use it any way they please to achieve their own desired learning changes".

...The humanistic orientation is student centered. In this orientation the teacher does not necessarily know best, especially when working with adult learners. Humanistic education places the responsibility for learning with the student - the student is free to learn what he or she want to learn in a manner desired by the learner. A teacher can guide or facilitate the process, but the emphasis is upon learning rather than teaching and student rather than the instructor (Elias and Merriam, 1980;123).

Furthermore they state that the "role of the teacher in a humanistic setting is that of facilitator ,helper, and partner in the learning process. In order to be a facilitator one must trust students to assume responsibility for their learning".

Social learning orientation

"Social learning theory posits that people learn from observing other people. By definition, such observations take place in a social setting - hence the label 'observational' or 'social' learning" (Merriam and Caffarella, 1991,135). *"Observational learning is influenced by the four processes of attention, retention, or memory, behavioral rehearsal, and motivation. Social learning theories contribute to adult learning by highlighting the importance of social context and explicating the process of modelling and mentoring"* (Hergenhahn, in Merriam and Caffarella, 1991:135).

This perspective differs from the other orientations in its focus on the social setting in which learning occurs. From this perspective learning occurs through the observation of people in one's immediate environment, and the behavior" (Merriam and Caffarella, 1991,139).

OTHER THEORIES BASED ON ADULT LIFE SITUATION AND CHANGES IN CONSCIOUSNESS

Jarvis (1987,11) argues that for children and adults the "facts do not suggest that there is an intrinsic difference in the external process that accompany the teaching and learning process. In short this is a social difference rather than a psychological one". Houle (quoted in Merriam, 1987) also took the position that child and adult learning are fundamentally the same.

Merriam and Caffarella (1991;256) states that *"Jarvis' theory of adult learning too begins with an adult's life situation or, more correctly, with an adult's experience: 'Even miseducative experiences may be regarded as learning experiences...all learning begins with experiences'. Some experiences, however, are repeated with such frequency that they are taken for granted and do not lead to learning"*.

"For Jarvis all experience occurs within a social situation, a kind of objective context within which one experiences life: Life may be conceptualised as an ongoing phenomenon located within a socio cultural milieu which is bounded by the temporality of birth and death" (Merriam and Caffarella, 1991;256).

One of the most significant aspects of adult learning, in Mezirow's (1985;8) view, is that "we are caught in our own history and are reliving it.... New experience is assimilated to- and transformed by one's past experience". Mezirow describes transformative learning as based on the reassessment of the perspectives or assumptions formed in childhood. What we are interested in here is the nature of the learner's "system of principles for the conduct of life" and the relevance to the educator of being aware of differing philosophies. What he actually describes are the types of influences on a person's system of understanding the world. These influences will provide a useful way for us to examine philosophical frameworks.

CHARACTERISTICS OF THE ADULT EDUCATOR

Adult education is significantly distinguished from other forms of educational provision by reference to the nature of its clients (Peterson, 1979;3). Therefore the

adult educator has to play a very important role in the adult education profession. So it is necessary to find out the characteristics and the functions that an adult educator has to perform.

The literature of adult education often does not mention the word teacher, but employs instead such terms as leader, mentor, and facilitator (Darkenwald and Merriam, 1982;17). Brookfield (1986;123) states that *'the educators who profess to be facilitators and not teachers are generally at pains to stress the democratic and student centred nature of their practice'*. Furthermore he explains that *"facilitators do not direct, rather, they assist adult to attain a state of self-actualisation or to become fully functioning persons"*.

Knowles (1970,22) identified the three levels of the adult educational roles. At the first level are the teachers, group leaders, and supervisors who work directly with the adult learners. They help the learners diagnose their needs, plan training, and motivate them. At the program level, there are committee chairman, training director, principal, and others who are responsible for planning and operating adult training activities. They may not take directly but principally organise a range of courses or activities. At the leadership levels the small group of adult educators who are responsible for such functions as developing new policies, co-ordinating other organisations, and generally promoting further development of the field of adult education.

Clark (1985;38) argues that "not only do the factors cited within characteristics of the learner apply but also do such considerations as one's philosophy, beliefs, and values, preferences for the particular instructional methods and expertise". Brookfield (1986;40) states that "instructional mastery and style are intertwined

components in the teaching transaction". Furthermore, he states that a "facilitators effectiveness in guiding the teaching learning transaction can be greatly influenced by his content mastery; these include, knowledge, psychomotor skills, and attitudes". Brundage and Mackeracher (1980;72) also state that "the teacher of adults must have knowledge, values, skills, and strategies relevant both to the subject area or content being learned and to the teaching functions required to help adult learn".

Brundage and Mackeracher (1980;70) argue that a) self concept, b) interpersonal relationship with the learners and c) knowledge and skills in both subject and adult teaching areas are the most important ideas to perform the trainer's role and the teaching learning transaction. Furthermore, they explain that an adult educator's self concept and esteem need to be positive in nature. The adult educator should be able to trust himself to cope with all types of situations.

Brundage and Mackeracher (1980;69) state that the *"first and most basic characteristic of teachers of adult learners is that they are adult themselves. Every characteristic described as being important for an adult learner is also applicable to being important for the adult teacher-- not excluding the characteristic of being a learner"*. *"In the teaching learning interaction, the teacher must be willing and able to learn about them (e.g. students). If he responds to them in stereotyped ways, his attitudes will be conveyed to them through his non verbal behavior"*.

TRAINING METHODS

There is a wide variety of training methods, but the teacher should understand the particular characteristics, purposes, advantages and disadvantage of each method in order to choose the most effective method. The teaching method of any training program is likely to be determined by the aims and objectives of the particular learning situation, and the nature of the clients. Knowles (1970:293) indicates two simple guidelines to identify suitable training techniques. The first guide is to match the technique to the objective, the second is the principle of participation. In formal teaching situation, the main objective is to accomplish specific learning within a restricted time period.

Teachers must therefore clarify precisely what learning they want the student to achieve. These instructional objectives then serve as a clear focus for the whole training program. Specific objectives in terms of knowledge, skills, and attitudes indicate what material must be taught. This consequently affects the choice of teaching methods. Therefore teaching methods are a most important factor in any teaching learning event.

The adult learner needs to acquire new knowledge: practical knowledge of process, how to do something, factual knowledge, data, and theoretical knowledge concepts. The teacher is there not to impart anything-skills, knowledge or information to the participants but to help the learners to acquire these for themselves. On the basis of research and experience Rogers (1986:137) suggest that the "more active the student learners are the more effective is the learning process; the more passive they are, the less deep will be the learning"

The use of a variety of techniques can provide a change of pace for teachers and learners. It relieves daily routine, and stimulates interest. Experienced teachers may employ several methods in a single presentation, thereby generating a co-operative spirit in the teaching-learning process. There are substantial teaching methods, but each of these methods requires particular skills of the facilitator and the learner in order to be successfully applied to the teaching-learning process

Rogers (1986:38) argues that the *"straight lecture is one of the most inefficient methods of teaching. It calls for very advanced learning skills on the part of the listener and the rate of forgetting the subject matter is high. A combination of lecture and printed material can create the greatest obstacle to an effective adult learning environment"*. In general, we learn best from actually doing a job, next best from what we see, then we read and hear. Moss (1988:13) states that the effectiveness of the lecturing method can be increased by combining it with other techniques. The spoken word should be reinforced with visual aids, demonstration and handouts. Whenever possible, repetition in a non-threatening environment is a valuable way to learn a new skill. Furthermore Moss states that a variety of teaching techniques is perhaps the best way to reinforce the learning process, but there is no one way that is best for everybody.

PRINCIPLES OF ADULT LEARNING

Principles serve as the basis for effective teaching, it is essential that teachers possess expert competence in the science technology and skills of the specialised areas they teach. However, knowledge and skill in subject matter, although

essential, is not sufficient if optimum learning outcomes are to be achieved. It is equally important that teachers know about, understand, and be able to use some basic principles of teaching-learning of adults. A number of educators have attempted to identify principles of good educational practice.

According to the literature it is clearly shown that the principles of adult education provide the foundation for all phases of the instructional process. Certain principles provide the rationale for the organisation and structure of subject matter, other principles are fundamentals to the motivation of students, to the appropriate use of reinforcement, learners' past experience and participation, and to the selection of training techniques.

These principles are features which research and experience have revealed to be desirable attributes of well designed and managed instructional situation. Bagnall (1978) presented a summary of such principles, based on the conclusions of a number of authors (Table 2.1)

Principles	Authorities																		
	Boyle (1958)	Brunner et al (1959)	Champlton (1975)	Dickinson (1973)	Dutton (1970)	Gibb (1958 & 1960)	Jensen (1964)	Knowles (1970 & 1974)	Lam & Wong (1974)	Lindeman (1961)	McClusky (1964)	Miller (1964)	Pine & Horne (1969)	Powell & Benne (1960)	Tye (1966)	UNESCO (1976)	Verner & Booth (1964)	Zahn (1967)	
1. Ensure high motivation to learning.	*					*	*	(*)	(*)	*	*					*	*		
2. Maintain adult autonomy.							*	*	*	*		*				(*)			
3. Allow for individual pace and level of learning.			*			(*)	(*)						*			*			
4. Make allowance for psychological and physiological ages.	(*)	(*)														*	*	(*)	*
5. Provide for practice with reinforcement of correct behaviour	*	*		*	*	*	*			*	*			*		*	*	*	
6. Utilise group influences on learning.	*	*				*	*	*	*	*	*	*	*	*	*	*	*	(*)	
7. Provide a secure learning environment.				*	*	*	*	*	*	*	*	*	*	*	*	*	(*)	(*)	
8. Ensure relevance of the material to the learner.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
9. Ensure meaningfulness of the material to the learner.			*	*	*				*	(*)	*	*				*	*	*	
10. Enable individuals to utilise previous learning.				*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
11. Provide for learner involvement in programme planning.	*	(*)	*	*	*	*	*	*								*	*		
12. Provide for learner involvement in programme management.	*	*	(*)	*	*	*	*	*		*	*	*	*	*	*	*	*	*	
13. Ensure active involvement in learning.	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	
14. Facilitate learner self-evaluation.	(*)		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	

Table 2.1

Summary of adult learning principles (Bagnall, 1978)

Newcomb and associates (1993:26) state that the "trainers who understand the factors under girding effective teaching and learning are able to plan, deliver, and evaluate instruction that results in the acquisition of high levels of competence by those who are taught". Darkenwald and Merriam (1982) suggest there are eight principles, and Brundage and Mackeracher (1980) present a list of 36 principles of learning derived from learning process which they believe can serve as guidelines for effective facilitation. Brookfield (1986:31) compiled the specification of principles of adult learning undertaken by Kidd (1973), Millar (1979), Knox (1981), Brundage and Mackeracher (1980), Smith (1982) and Darkenwald and Merriam (1982) as follows:

1. Adults learn when they are in good health, are well rested, and are not experiencing stress.
2. The past experience of adults affects their current learning.
3. Adults like their learning activities to be problem centered and to be meaningful to their life situation and they want the learning outcomes to have some immediacy of application.
4. Adults exhibits divers learning styles-strategies for coding information, cognitive procedures, mental sets, and learn in different ways.
5. Adults with a positive self concept and high self esteem are more responsive to learning and less threatened by the learning environment and the process of change.

Although the idea of applying general principles to adult education has been criticised as too simplistic (e.g. Jarvis, 1987), there is considerable support in the literature for such principles (e.g. Brundage and Mackeracher, 1980, Smith, 1982, Knox, 1986). Also much of the research from which these principles have been developed has been carried out in developed western countries (Merriam and Caffarella, 1991) However, even on the experience so far in Sri Lanka there is evidence that such principles are also likely to be relevant to adult education in developing countries. This will be explored in further in subsequent chapters.

SUMMARY

This chapter has defined an adult, adult learning, and provided an overview of the differences between learning in adulthood and in childhood. In this chapter a wide variety of learners' characteristics have also been reviewed specially pertaining to the teaching learning transaction. The role of the adult educator was also discussed in relation to the learning process. According to the literature, the adult educator should work with individuals to stimulate, facilitate, encourage, support and change people to change and grow. It is the purpose of this chapter, in part to increase that awareness and also to stimulate questioning about and reflection on the nature of the work in the In Service Training Institute in Sri Lanka. With these adult learning principles in mind, the next chapter will try to identify the problems which affect the implementation of the training model used in those Training Institutes in the Department of Agriculture.