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2.5

 THE NATURE AND PROCESS OF ADULT DEVELOPMENT

Paula Allman

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Introduction: The Plasticity Model of Adult Development

By the end of the 1970s most developmental psychologists were acknowledging a new body of descriptive and experimental evidence which indicated that cognitive (i.e. thinking) decline was *not* a necessary consequence of ageing. This evidence and the research methodology which produced it constituted an effective challenge to a much larger body of psychological evidence which had supported the socially persistent stereotype of inevitable and irreversible decline with advancing age. In the 1960s psychologists had formulated more complex and sophisticated research designs, in order to correct recognised biases in the designs which were normally used to produce descriptive evidence on development. What they found was that whether or not individuals' cognitive or thinking abilities decline, remain stable or continue to develop over the years of adulthood 'depends' on the interplay of many factors. Psychologists began to recognise that development, or the lack of it, during adulthood was inextricably linked to the degree and quality of individuals' interactions with their social and historical contexts. Since such interactions could fluctuate the pattern of development could as well. This model of development has been called the 'plasticity' model.

Though the evidence of the 1970s may complicate our thinking about adult development, it does make it quite clear that people have a 'potential' for continuing development across the entire life-span, and this idea has revolutionised our thinking about adults. To say that the 'potential' of adults is for lifelong cognitive development contradicts the prevailing view that adulthood is a stable period of life at least until what was believed to be 'the inevitable consequences of ageing' cause decline in cognitive functioning. This non-developmental concept of adulthood was the only one available to adult

educationalists until the mid-1970s. Directly and indirectly it has affected the practice of education for adults. If we expect adult learners to have fully mature and stable cognitive structures, then it is quite reasonable to define the developmental objectives of an educational experience within a somewhat limited framework. This is why adult educators have thought of development as either the further elaboration or accumulation of knowledge or the growth of self-knowledge and understanding. Both of these functions focus upon types of content or knowledge and assume that the processes and thought structures which deal with the content are unchanging. The revolution in our thinking about adults' potential for lifelong cognitive development requires that we re-examine our practice of adult education and discuss whether it is fulfilling its role in enabling this potential for continuing development to be realised.

When viewed together, our reconceptualisations regarding the nature of development during adulthood hold profound implications for adult educationalists. To me it seems indisputable that whenever in life there is potential for development the function of education is to enable it; and to achieve this function the educationalist must understand both the nature of what might be realised as well as the process by which development proceeds. However, it is worth noting that there is a fundamental difference between enabling the development of youth and the development of the adult. The teacher of children and adolescents will be enabling the learner to develop competencies, ideas and cognitive structures which the teacher has already developed. The enabling process where adults are involved demands a different perspective of development, because enabling in this context pertains equally to teacher and student. This difference alone would appear to require essentially different relationships between teachers and learners.

The evidence which has emerged from new, sequential research designs indicates that adults of all ages exhibit a 'plasticity' or fluctuation over time in their intellectual or thinking competencies. For example, on standard measures of intelligence some people between the ages of 70 and 84 showed gains and others showed losses (Schaie, 1975) and this was also true for other age groups. In addition, Huppert's comparatively recent British study (1982) indicates that if we look at individual performance, certain individuals in the oldest age group perform as well as, and a few outperform, the best scoring younger subjects. Nevertheless, even the evidence from these studies indicates that there is a tendency for the mean or average

score of the younger age group to be higher than that of the older age groups; but, rather than attribute this to age *per se*, this tendency is now attributed to a whole range of contextual factors, such as changes in the quality and amount of education which these age groups, on average, have experienced. However, regardless of whether we look at individual or group performance, there remains the problem that we are looking at performance on standard measures of intelligence and these were derived from theory based on the study of child and adolescent development (Labouvie-Vief, 1980).

Not all intelligence tests are based on the same theory of child and adolescent development but all are designed to measure intellectual functions that human beings have the potential to develop by the age of 16. For example, according to Piaget's theory, which is the most widely accepted theory of child and adolescent development, the development of thinking proceeds towards and culminates some time during adolescence in the stage of formal operations, which involves the ability to apply abstract formal logic. Because we assumed adulthood to be a non-developmental period, our model of adult thought was the same as our model of fully matured adolescent thought. We hadn't bothered to ask the very important question which has only recently become the focus of adult developmental psychology, namely, *is the nature of fully mature or effective adult thinking the same as the nature of fully mature and effective adolescent thought?* It is of great credit to Piaget (1971, 1972) that, even though he never studied adults, he was one of the first psychologists to ask this question. In some of his last writings, Piaget predicted that certain changes would take place in formal reasoning during adulthood because adult experiences in work and social relationships would necessitate adaptations in adults' thinking processes. This concept of thought becoming progressively adaptive through interaction with adult life experiences is central to a great deal of the theory and research which has emerged in the study of adult development.

Dialectical Operations: An Integrative Framework

In my opinion, the most important recent theory regarding the nature of adult thought is the theory of 'dialectical operations' (Riegel, 1973). Though Riegel proposed this theory more than a decade ago,

it was not until the 1980s that it began to have a concerted and widely acknowledged effect on psychologists' thinking about adult development. This theory is firmly grounded within the 'contextualist' framework or paradigm rather than the 'mechanistic' or 'organismic' paradigms in which psychological research and theory prior to the late 1970s had been couched. The 'contextualist' paradigm assumes that what people think and how they think emerges from people's transactions or interactions with their social and historical contexts. Since these contexts are dynamic, it is impossible to predict the most adaptive competencies which humans can develop or to predict an end stage in the developmental process. The mechanistic paradigm reflected the assumption that man was determined by internal and external factors, whilst the organismic paradigm placed an emphasis on people as the active agents in their own development which was seen to unfold according to some inherent predisposition of our species.

In explaining his theory of 'dialectical operations' Riegel reminds us that Piaget's theory was based on the model of formal logic, and that we might have to look to other systems of logic if we want to formulate a fully comprehensive model or theory of mature adult thought. One of the most important contributions of Piagetian theory was the realisation that the child's thought was qualitatively different from the mature adolescent's. The stages of cognitive development identified by Piaget demonstrated a progression from pre-logical or pre-operational thought through to formal operational thought, the processes of which conform to the model of formal logic. Child cognitive development therefore is not simply a process involving further accumulations of knowledge but a process entailing qualitative transformation in the structures of thought and modes of thinking.

The most essential principle of formal logic is 'identity' or the concept that an object may retain certain characteristics, such as quantity, mass or volume, even when it undergoes observable change. When individuals are using formal operational thought, they are seeking to resolve contradictions between what they see or perceive and what they think or know. The resolution of contradiction in formal thinking necessitates the development of hypotheses to test the variables involved in a given situation and deduce their cause-effect relationships. Riegel accepted that formal logic constituted a model for certain types of adult thinking or even stages in the adult's thinking with reference to certain types of problems, but

argued that the nature of adult thinking was potentially more complex. This is why he suggested that we consider other systems of logic to cull a more comprehensive model of adult thinking, and to explain the more complex and adaptive forms of thinking that adults have the potential to develop as they interact with adult life experiences, and the complex problems which arise from those experiences.

Riegel's theory draws on a system of dialectic logic (i.e. reasoning) wherein 'contradiction' rather than 'identity' is the most essential feature. The principle of contradiction implies that an object or some entity has a given quality and at the same time does not have that quality or has another quality, the presence of which contradicts the first. For example, a person's self-concept might define that person as being a tolerant person whilst recognising and even tolerating the fact that certain circumstances influence them to react in an intolerant manner. According to Riegel, the most effective adult thinking and thinking which causes advancement whether in scientific pursuits or personal and social relationships, is not that which provides immediate answers but that which first discovers the important questions and/or poses the important problems. Therefore, it is not primarily a matter of eliminating contradiction but of tolerating it and thus allowing for new questions and problems to emerge. This does not mean that mature or dialectic thought never reaches a state of equilibrium but when it does it is a resting point, a temporary resolution, rather than an immutable structure.

Riegel also pointed out that formal operational thinking involves a separation of thought from reality, i.e. thought becomes increasingly abstract and therefore alienated from the subject or content of thought. Riegel contends that effective adult thinking entails a reuniting of thought with reality. Only when the processes of thinking are applied and adjusted in terms of concrete reality can complex problems be explored effectively. Ulric Neisser (1982) has also reached much the same conclusion in his critique of psychological research into memory and learning:

In short, the results of a hundred years of the psychological study of memory are somewhat discouraging. We have established firm empirical generalisations, but most of them are so obvious that every ten year old knows them anyway. We have made discoveries, but they are only marginally about memory; in many cases we don't know what to do with them, and wear them out in endless experimental variations. We have an intellectually im-

pressive group of theories, but history offers little confidence that they will provide meaningful insight into natural behaviour ... because they say so little about the everyday uses of memory, they seem ripe for the same fate that overtook learning theory not so long ago. (pp. 11 and 12)

Neisser is arguing that theories about memory are meaningless because they pertain to 'esoteric laboratory tasks' rather than to the use of memory in terms of people's concrete reality. Riegel is simply extending this idea a bit further by saying that real thinking and effective thinking processes, including memory, must be reunited with concrete reality, and that to understand the nature of adult thought we must observe it in this process of reunion.

There are several reasons why I think Riegel's ideas are of extreme importance. They introduce the hypothesis that mature adult thought, or the type of thought which adults have the potential to develop, is qualitatively different from the thought of adolescents or very young adults. This hypothesis has led to a more serious study of the potential for cognitive development and the nature of thought during the adult years. Riegel's theory also provides a framework which, in my opinion, links or integrates several other findings and theories regarding adult development which may previously have appeared to be unrelated. This integration — of ideas from cognitive development research, ego development, moral development, the development of learners' concepts of learning and knowledge, and other areas — provides a foundation of theory and research from which we can begin to draw implications about the most appropriate approach for supporting and facilitating adult development through learning or educational experiences.

To view this research within the parameters of contextualism is slightly problematic; because some of it, like that which produced the 'plasticity model', is caught in transition between organicism and contextualism.¹ Even Riegel's theory could be easily misinterpreted as a stage theory, i.e. one which predicts a known sequence of stages with definable outcomes. Psychologists, whose work derives from the contextualist paradigm, would dispute the basic assumptions of stage theories because contextualism assumes that thought emerges from the human being's interaction with a constantly changing, social-historical context. To interpret Riegel's as a stage theory is incorrect, to my way of thinking, because of the very nature of dialectical thought. Whereas, when someone is thinking according to formal

logic, we can give them a problem and predict very accurately what answer they will give, we cannot predict the results or consequences of dialectical thought. By this I mean that we cannot know what questions will emerge or what problems will be discovered when another person engages in thinking dialectically about their reality. Nor can we set limits on the degree or quality to which one can come to 'know' something as this will be developing in interaction with the dynamics of the social-historical context. Furthermore, we cannot predict an end state or stage in the development of human thinking because new and progressively adaptive forms of thinking may result as a consequence of dialectical thought as well as from the interaction of thought with social and historical change. Therefore, though some of the research and theory we will be discussing does not fall entirely within the contextualist paradigm, it is my opinion that Riegel's theory of dialectic operations does.

Arlin (1975) hypothesised that formal operations were not the final stage of cognitive development. In confirmation of this hypothesis, she found that the ability to ask or discover important questions emerged subsequent to the stage of formal operations. Arlin's work is widely quoted in the literature on adult cognitive development, but has received neither considerable challenge nor support from repeated studies. This is equally true of Sinnott's (1975) study of the formal operational ability of adults. Sinnott designed a series of tasks which demanded formal operational thought with reference to the types of problem content adults confront in everyday living. Previously, researchers had assessed the extent of formal operational thinking in adults with the same types of problem content Piaget had used to assess adolescents. Whereas little evidence of adults' formal operational ability had been found in those studies, Sinnott's study showed a far higher percentage of adults to be capable of formal operational thought. Arlin's work testifies to the importance or developmental superiority of question asking and/or problem posing, and Sinnott's emphasises the importance of reuniting formal thought with problems which emerge from the reality of adult life. As such, neither of the studies is fully supportive of Riegel's theory but each touches upon and offers support for certain aspects of the theory of dialectic operations.

Though Riegel does not emphasise this point, it is my contention that one of the basic structures of dialectic thought is reflectivity. Neugarten (1977) in her research into the salient features of middle age reported that reflective thinking became increasingly prevalent

during the middle years of adulthood. And Piaget (1967) suggested that the reflective processes in formal operational thinking during adolescence only reach equilibrium or maturity when the adolescent stops using reflection to oppose experience and begins to use these processes to interpret and predict experience. In other words, Piaget is suggesting that the reunion of reflection with concrete reality produces a more mature type of reflection. I suspect that what Neugarten is referring to as an increase in reflectivity is, in fact, the use of a qualitatively altered form of reflectivity.

It may be that this type of reflective thought is a basic thought structure which emerges during the adult years and which allows for the development of the more advanced forms of thinking, such as dialectic thought. If so, it would be similar to the basic structures which develop in the child's thought, such as concept formation and conservation. Moshman (1979) has demonstrated that meta-theoretical thought — thinking about one's own theories — develops subsequent to formal operational problem solving. Whether this ability is necessary to, or follows from mature reflection, as I have defined it, and whether it is necessary to Arlin's stage of question asking or to dialectic operations, and therefore precedes the development of these forms of thinking, is not clear but would seem to be probable. Reflecting on how we think about the content of our environment and experiences may be a necessary prerequisite to asking questions, discovering problems and to contradiction becoming a basis for thought.

In the study of the continuing development of ego or identity during the adult years, I have argued elsewhere (Allman, 1982) that Erikson's theory of psychosocial ego development can be reinterpreted at least to some extent according to a dialectical model or within a contextualist perspective. Erikson (1959) proposes that the dynamic of ego development is the interaction of the individual's psychological processes with their social context, though he tends to ignore the dynamic nature of that context. Erikson suggests that the interaction with the social context introduces crucial issues with which the individual must deal if development is to proceed. Each issue is embodied in a dialectical tension between two polar or opposite ways of resolving the issue. For example, the establishing of identity is the most crucial issue of the adolescent years but will often re-emerge as a crucial issue in the course of adult life experiences, because interaction with experience enables the development of identity to be a lifelong process. Surrounding this issue is a creative

dialectical tension between identity at one pole and role confusion at the other. The healthiest resolve is not to establish such a firm identity that the person's thinking or reflection becomes closed when interacting with new experiences; therefore, the questions which arise from the dialectical tension between role confusion and identity help to create a sense of identity which is open to change and development. Erikson's theory is usually described as a stage theory but to do so ignores some of the basic complexities of his theory, which allows that what is gained can be lost, and that what is not gained in the first instance can be gained later due to the interaction of psychological processes with social experience.

Also in the field of ego development, Loevinger (1976) has proposed a stage theory which depicts increasing complexity in the person's way of thinking as well as in the ways in which the person relates to others. The last three stages, to which adults can potentially progress, involve tolerance for ambiguities and would appear to demand that the persons can think in terms of contradiction or with at least some degree of dialectical thought. Even though Loevinger's theory conforms to the assumptions of a stage theory, I have placed it along with Erikson's within this framework because both of these theories differ in a fundamental way from other theories about the development of ego, identity, personality and self-concept (i.e. theories of personal development). When careful attention is paid to what these theories say, and especially when we consider Erikson in terms of the qualifications which Marcia (1966) has added, we can infer that ego development cannot proceed without the type of cognitive development depicted in the theory of dialectic operations. According to these theories, ego development is not simply the natural unfolding for which human beings have an inherent predisposition, which is the notion conveyed by theories which lie solidly within the organismic paradigm (Rogers, 1961; Maslow, 1970), but is underpinned and made possible by increasingly complex ways of thinking or a willingness to engage in thinking about complex issues.

If we now turn to the study of moral development, we find that Kohlberg (1976) has had an influence on theory and research which is comparable to Piaget's influence on the study of cognitive development. Kohlberg's theory is a stage theory which can be depicted briefly as moving from pre-conventional to conventional and finally post-conventional forms of moral reasoning. The development of operational thinking is a prerequisite to, but not a guarantee of, higher stages of moral reasoning. Pre-conventional responses

to moral dilemmas are egocentric and/or absolutistic predeterminations of right and wrong. Conventional responses are aligned to the legal and moral codes of a given society; whereas post-conventional responses appeal to universal moral principles which may be in conflict with a particular society's legal or moral codes.

Various studies have revealed that the majority of adults resolve moral dilemmas or problems according to conventional moral reasoning. However, Gilligan and Murphy (1979) suggest that many of these adult responses which have been coded as conventional may actually entail advanced transformations of thought. In a longitudinal study, they asked adults to reflect upon post-conventional responses to moral problems which the same adults had given seven years earlier. In response to their earlier post-conventional thinking, these subjects were critical of the simplicity in their reasoning. They were able to see that they had not considered the consequences of their judgements because they had ignored the interdependence of their solutions with the social context. Gilligan and Murphy concluded that:

These transformations arise out of the recognition of the paradoxical interdependence of self and society, which overrides the false simplicity of formal reason and replaces it with a more encompassing form of judgement. (p. 97)

These researchers are saying that adults may have been incorrectly assessed as conventional because the majority of researchers did not observe their development over a period of time, and did not delve thoroughly enough into the complexity of the adult response. These advanced transformations in moral reasoning involve the principle of contradiction and conform more appropriately to the model of dialectic rather than formal operations.

Gibbs (1981) reports several interesting studies regarding the development of learner's concepts of learning and knowledge. The most comprehensive theory to emerge from this work was offered by Perry (1970). He found that in the early stages of college or university study, students were dominated by a blind acceptance of authority and academic expertise and therefore tended to seek absolute and unchallengeable truths. Later, however, they move away from this form of thinking towards understanding that knowledge and authoritative explanations are relative. In the final stages of development, while continuing to accept the relativity of knowledge,

many learners will form a commitment to particular explanations rather than others. If this progression were not studied longitudinally, and the learner's concepts of knowledge and learning comprehensively explored, a researcher could easily mistake the final stage as the first. However the difference is paramount. The final stage involves a recognition of and tolerance for contradiction, and therefore it appears to involve the development of dialectic operations.

This selection of theory and research offers a tentative yet much clearer and more comprehensive picture of the types of thinking which should be enabled when adults engage in educational or learning experiences. This tentative picture or description of the adult's developmental potential includes several factors. As adults we have the potential to develop the ability to think both formally and dialectically or to both solve and discover problems. In employing dialectic operations we have the ability to tolerate ambiguities and contradictions and perhaps even be excited by them. We also have the potential to form commitments to particular theoretical stances or explanations but only after engaging in considerable reflection and mental struggle with respect to the issues involved. The reunion of thought with reality may allow for continued qualitative refinements in both cognitive structures and identity or self-understanding. The ability to reflect upon and analyse the way we think about or theorise about experience should be a natural consequence of the development of mature reflection, which may well underpin many of the other developments in adult thought. As we continue to study the nature of adult thinking, and especially when we extend that study to cultures other than our own, we will no doubt be able to further elaborate this description of the adult's potential. However, we must also accept the tentative nature of the description, if we acknowledge the interdependence of adult thinking and the social historical context and thus the dynamic nature of both the relationship and the types of adult thinking which result from it.

To this tentative description of the potential nature of adult thought, we also need to add a concept of the process of development during adulthood. Stage theory concepts, which may be entirely appropriate when applied to childhood and adolescence when biological maturation is still taking place, led to the notion that the last competencies acquired in the stage sequence would be the first to be lost in the process of intellectual decline during adulthood (Coombs and Smith 1973). Therefore, stage theories are aligned to the maturational model of development. Labouvie-Vief (1980)

reviews several studies which indicate that, like the maturation model, the last in/last out concept of the developmental process may not be appropriate when applied to adults. Instead, it has been proposed that a first in/first out or 'trade-off' model offers a more appropriate description of the process of development in adulthood. Labouvie-Vief and others have tested this hypothesis with reference to the study of memory. They found that older adults were not as competent as younger ones when the task required memory of detail. In psychological experiments most tasks do require memory of detail. However, if the researcher also introduces tasks calling for more advanced forms of memory, such as the memory of propositions or principles, then they find that older adults perform as well and often better than younger adults. In examining further the lost competence in memory of detail, Labouvie-Vief also found that older adults tended to adjust the detail they did recall so that it conformed with their past experiences.

If these studies are repeated and the 'trade-off' model — that certain competencies must be lost if more adaptive ones are to be gained — is found to be a more accurate description of the process of development with reference to other cognitive competencies, then we will have to add a further dynamic element to our concept of adult development. And as a result, adult educationalists will have to recognise that the types of thinking competence they encourage in young adults may be quite different from the competencies of which the adult is capable in middle and later life. Therefore, the nature of learning during the adult years may alter several times as a consequence.

Towards a Theory of Andragogy

Earlier in this article I made the assertion that most of the current practice in the education of adults must be grounded in a non-developmental view of adulthood because this was the only view available to us until quite recently. I would hope that this discussion of the revolutions in our thinking about adult development underlines both the necessity and the urgency of evaluating our current practice. Over the past two years a group of adult education colleagues and I have attempted to formulate a comprehensive theory of andragogy based on a consideration of this theory and research on the adult's developmental potential.

We began by studying what Knowles (1978) had to say about andragogy and by considering Mezirow's (1981) charter for andragogy. We agreed with a great deal of what they had to say, but continued to feel that andragogy was a term in search of a more comprehensive theory. At this point we discovered that a particular concept linked much of the work which had led to our tentative description of adult developmental potential. This was the concept that, in all aspects of adult development, the movement appeared to be in the direction of gaining ever increasing amounts of control over our thinking and therefore our lives. For example, if adults can accept contradiction and not be forced by the need for stability to have ready answers to complex problems, they are in control. As adults' sense of identity or knowledge of themselves and others grows in depth and meaning, they become increasingly in control of how they think about themselves. Reflective minds and minds not crowded with detail but in search of concepts, ideas and principles mean that people are in control of their thinking and have greater control over their transactions within their social-historical contexts. This, therefore, became our organising concept of adult development, and we then focused our thinking on how educational experiences for adults could best enable the development of control.

We were reminded that our concept of control was similar to if not synonymous with Paulo Freire's (1972) concept of education moving man from being 'adapted', i.e. controlled by cultural myths and the thinking of others, to being 'integrated', i.e. in control. Therefore, we spent a great deal of time reflecting upon Freire's ideas and attempting to transfer them to the context of formal adult education. We made the assumption that if we could transfer the salient features of Freire's ideas to the formal context, then the approach devised should also apply within community and other forms of informal and/or non-formal education for adults. The following is a brief description of an andragogical theory or approach as we have defined it (Nottingham Andragogy Group, 1983).

Andragogy should be conceived as a philosophically and theoretically based approach to the education of adults which derives from the emerging theory of adult development and which rests upon an identifiable set of assumptions about the nature of adult beings, the nature of learning, education, knowledge and adult development. With reference to the nature of adult beings and adult development, our assumptions are the same as those which derive from the contextualist paradigm; namely, human beings are social beings and are

socially and historically interactive. Therefore, whilst contributing toward their own development and developments in society and history, they are influenced by what they and others have created and this is a lifelong process. Adult learning involves thinking in the increasingly complex ways that adults have the potential to develop. In fostering learning, knowledge can be viewed as either an open or a closed system. When viewed as open it is something to which learners can add or which they can alter through critical and creative thought. Even when perceived as a closed system it is viewed as something which the learner can use to solve problems or even to create new systems. As a consequence, education is not about transmission but rather it is about selection, synthesis and discovery through the process of dialogue. Dialogue is an essential process in Freire's educational method and involves, among other things, conscientisation through problem posing.

We have made the distinction that andragogy is an approach rather than a method. By this we mean that it embodies and expresses a philosophy of education for adults which rests on the assumptions and theory we've identified. In adult education there are two approaches which can be adopted, i.e. pedagogy or andragogy. Whether or not our assumptions differ fundamentally from those held by people who practise progressive pedagogy with children and adolescents must be decided by those whose expertise and experience derive from that base. However, we would argue that those who use a pedagogical approach with adults base their practice and their philosophy on a set of assumptions which differ fundamentally from those we have delineated.

We have viewed methods as part of the approach, be it andragogy or pedagogy and, as such, they mediate not only the intended content but also content or information about the assumptions underpinning the approach. Our andragogic approach would not exclude any category or type of method, but most methods would constitute fundamentally different learning experiences depending on whether they are used pedagogically or andragogically. Within an andragogic approach, a 'peer learning group', which includes the tutor, negotiates the curriculum, the objectives and the methods which will be used. They also negotiate decisions or questions regarding assessment and evaluation. Negotiation implies a sharing of power by all members of the group rather than an abrogation of power by the tutor; all members of the group contribute to decision making and the resourcing of learning. Method selection is based on decisions

regarding the appropriateness for reaching a particular learning goal. The rationale for placing method selection as well as other decisions within the learning group rather than solely with the tutor is that to do so mediates the assumption that creative and critical thinking are important for all stages of the educational experience. It is therefore just as important to think creatively and critically about what to learn, how to learn and how to evaluate learning, as it is to do so in the process of learning. Also it is more likely to take place in learning if encouraged throughout the educational experience, because the approach is implying that adults have the potential to be in control of their learning and that it is therefore important for them to take and use this control.

Though we have couched our description of andragogy within the context of group learning, we feel that the assumptions hold equally well for individual learners. Our own experience has shown that it is a much more complex process to enable a group to become self-directed and in control than it is to enable individuals. But perhaps because of the complexity, the experience of learning and development is all the more valuable. It is hopefully clear that the andragogic approach involves a realignment of relationships within the learning group and a realignment of the learning group's relationship to learning and knowledge. These realignments are based on the recognition that in an adult educational or learning experience everyone is potentially a developing adult, and therefore the teacher cannot be assumed to be developmentally (as we have defined the term) superior to anyone else.

Other adult educationalists may well reject our theory of andragogy and choose to engage in their own analysis of current practice. We would welcome this debate and any critique which arises from others' evaluations especially if these derive from a consideration of our *adult* potential for development.

Note

1. The researchers who produced the plasticity model assumed that people developed through transactions or interactions with their contexts (contextualism), but continued to think in terms of predictable and unchanging cognitive competencies (organicism).

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