Characteristics of Adult Learning

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The slogan of lifelong learning basically involves the simple message that learning can and should be a lifelong occupation. This poses the fundamental question of whether the processes of learning are the same irrespective of age. In the traditional psychology of learning, there are no age-conditioned differences. Learning was considered to be a common phenomenon in which researchers endeavored to discover the decisive and basic learning mechanisms, and research and tests were often performed to observe animals and humans in constructed laboratory situations.

Many scholars and researchers have claimed that adult's learning, as a psychological function, is basically similar to children's learning. This was, for instance, the underlying assumption behind the massive resistance to American Malcolm Knowles' launching of a separate discipline of andragogy, dealing with adult education and learning, and at the same time limiting pedagogy to the area of children's upbringing and schooling (e.g., Knowles, 1970; Hartree, 1984; Davonport, 1993). More recently, Alan Rogers, from Britain, in connection with his description of adults' learning, has deliberately maintained, "that there is nothing distinctive about the kind of learning undertaken by adults" (Rogers, 2003: 7). However, this position is only valid in relation to some very basic features of learning. As soon as the question is examined a little deeper or related to concrete learning courses or events, there are obviously substantial life-age differences, partly because some biological capacities of learning only mature gradually during childhood and youth, and partly because learning is also a social and an emotional process, and people's social and emotional situations change with their age (Illeris, 2004, 2007).

In the following section, some of the most important fundamental features of learning that are independent of life age are outlined; the special features of adult learning are discussed subsequently.

Some Fundamental Features of Learning

Human learning is a very complex matter that has been understood and conceptualized in many ways. However, for a structural analysis, three kinds of fundamental features can be pointed out: (1) the basic processes and dimensions of learning, (2) the different types of learning, and (3) the types of barriers to learning (Illeris, 2007).

Basic Processes and Dimensions of Learning

A fundamental aspect of learning is that it always includes two integrated but very different processes: the external interaction process between the learner and the social, cultural, and material environment; and the internal psychological process of elaboration and acquisition in which new impulses are connected with the results of prior learning.

The criteria of the interaction process are of a social and societal character, that is, they are determined by time and place. The individual interacts with an environment that includes other people, a specific culture, technology, etc., which are characterized by their time and society. In the late-modern globalized world, this is blended into a giant and rapidly changing hodgepodge that offers almost unlimited possibilities for learning.

No matter how dominant and imperative the interaction process has become, in learning there is also always a process of individual acquisition in which the impulses from the interaction are incorporated. As discussed by scholars such as Piaget (1952) and Ausuble (1968), the core of this process is that the new impressions are connected with the results of prior learning in a way that influences both. Thus, the outcome of the individual acquisition process is always dependent on what has already been acquired, and ultimately the criteria of this process are of a biological nature and determined by the extensive, but not infinite, possibilities of the human brain and central nervous system to cope with, structure, retain, and create meaning out of impressions as perceived by our senses (cf. e.g., Solms and Turnbull, 2002).

Learning, thinking, remembering, understanding, and similar functions are not just cognitive or content matters, although they have generally been conceived of as such by traditional learning psychology. Whether the frame of reference is common sense, Freudian psychology, modern management, or brand new results of brain research, there is much evidence that all such functions are also inseparably connected with emotions and motivation. The Austrian-American psychologist Hans Furth (1987), by combining the findings and theories of Piaget and Freud, has unravelled how cognition and emotions during the preschool years gradually separate out as distinctive but never isolated functions. The Portuguese-American neurologist Antonio Damasio (1994) has explained how cognition and emotion work in our brain and what disastrous consequences there are when the connections between

the two are cut by damage to the brain, even when neither of the functions in themselves has been affected. Thus, the acquisition process necessarily always has both a cognitive and an emotional side or, more broadly speaking, a content and an incentive side.

Consequently, all learning always includes three dimensions: the content dimension of knowledge, understandings, skills, abilities, attitudes, and the like; the incentive dimension of emotions, feelings, motivation, and volition; and the social dimension of interaction, communication, and cooperation – all of which are embedded in a societally situated context. The learning processes and dimensions are illustrated in **Figure 1**.

Different Types of Learning

Another fundamental aspect of learning has to do with the different character and scope of different types of learning processes. A very basic distinction was made by the well-known Swiss biologist and psychologist Jean Piaget (1896–1980) when he distinguished between assimilation and accommodation as two essentially different ways of learning (Piaget, 1952; Flavell, 1963). Later, other researchers found that each of these can be further differentiated into two, so that altogether four basic learning types emerge (Illeris, 2007).

As already mentioned, the acquisition process implies a linking between new impulses and the results of prior learning. These results cannot be thought of as merely an unstructured mass of knowledge, emotions, abilities, etc. One of Piaget's most fundamental assumptions was that to learn something means to mentally structure something, that is, to incorporate it in a mental scheme, and it is the difference in which this incorporation takes place that constitutes the learning types. From modern brain research we know that such schemes have the character of dispositions to reactivate specific electrochemical circuits between brain cells that represent the content and incentives in question (Damasio, 1994). When a scheme or pattern is established, it happens by the type of learning called cumulation, a kind of mechanical process, establishing an isolated formation characterized by a form of automation that means that it can only be recalled and applied in situations mentally similar to the learning context. This is, for instance, how learning by conditioning functions.

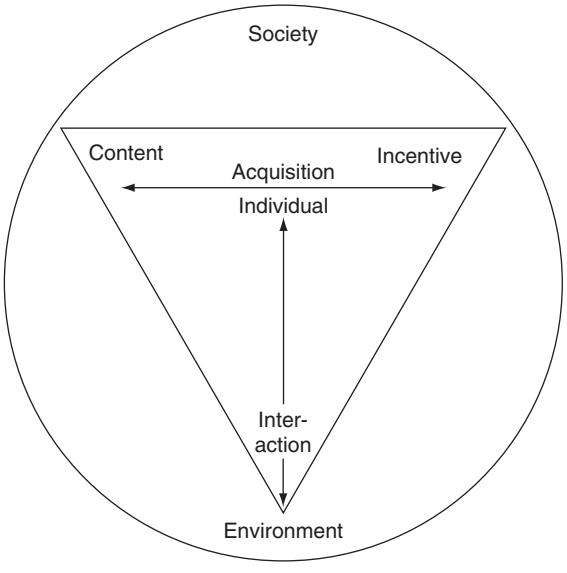

Figure 1 The processes and dimensions of learning. Adapted from Illeris, K. (2007) *How We Learn: An Introduction to Human Learning in Schools and Beyond*. London: Routledge).

The most common type of learning is, assimilation, or learning by addition, meaning that the new impulse is linked to a scheme or pattern already established in such a manner that it is relatively easy to recall and apply when one is mentally oriented toward the field in question.

Sometimes situations occur where we receive impulses that are difficult to immediately relate to any existing scheme or pattern. This can then take place by accommodation or transcendent learning, implying that one breaks down (parts of) an existing scheme or pattern and transforms it so that the new situation can be linked in. Thus, one both relinquishes and reconstructs something, a process that can be experienced as something demanding and even painful. The result can be recalled and applied in many different, relevant contexts.

Finally, there is also a far-reaching type of learning, which the American adult educator Jack Mezirow termed as transformation, and involves simultaneous restructuring in all three learning dimensions. This very demanding type of learning implies changes in the organization of the learner's self or identity and typically occurs as the result of a crisis-like situation caused by challenges experienced as urgent and unavoidable (e.g., Rogers, 1951; Engeström, 1987; Mezirow, 1991).

It is important that none of the learning types can be said to be better or more valuable than the others, as the more complex types of learning always presuppose that other and more basic learning has provided the preconditions that make them possible.

Barriers Toward Learning

Finally, as the third basic area of learning, it is important to deal with the different types of barriers that can prevent, reduce, or distort possible learning (Illeris, 2007).

In the content dimension, barriers will typically be about something that is not acquired, grasped, or taken in as intended. This may be generally termed mislearning, implying that the impulse or message does not come through, for instance, because of insufficient involvement or concentration, a lack of necessary prior learning, or due

to inadequate communication or teaching. The barriers to learning may also be rooted mainly in the incentive dimension. If so, it will typically be a case of some kind of mental defense. In our late-modern society, such defense mechanisms are no longer primarily the result of personal inhibitions as described by Freud a century ago, but are rather a general and necessary societally rooted defense against the overwhelming number and complexity of impulses and influences. Such defense either rejects or distorts the majority of impulses, preferably those that we dislike or are less interested in, but often those that we might profit from but do not immediately categorize as worth dealing with. Many also create learning defenses against the radically increased number of changes, the feeling of powerlessness experienced when authorities encroach on our life conditions, or the demands for change of identity, which the changing conditions impose on us.

Finally, nonlearning may be rooted mainly in the interaction dimension and have the nature of mental resistance. This can be inappropriate and annoying in many situations, but nevertheless constitutes symptoms of strong personal forces and engagement, which can lead to very important accommodative or transformative learning.

Adult Learning

In order to see what the characteristic of adult learning is, it may be useful to start by pointing out some basic features of children's learning.

Differences in Relation to Children's Way of Learning

In general, learning in childhood could be described as a continuous campaign to capture the world. The child is born into an unknown world and learning is about acquiring this world and learning to deal with it. In this connection, two learning-related features are prominent, especially for the small child: First, children's learning is comprehensive and uncensored. The child learns everything within her grasp, throws herself into everything, and is limited only by her biological development and the nature of her surroundings. Second, the child places utter confidence in the adults around her. She has only those adults and the ways in which they behave to refer to, without any possibility of evaluating or choosing what she is presented with. The child must, for example, learn the language these adults speak and practice the culture they practice.

Throughout childhood, the child's capturing of its surroundings is fundamentally uncensored and trusting as she endeavors, in an unlimited and indiscriminate way, to make use of the opportunities that present themselves. Of course, late-modern society has led to growing complexity and even confusion of this situation as older children receive a lot of impressions from their pals and especially from the mass media, which go far beyond the borders of their own environment. But still the open and confident approach must be recognized as the starting point.

In contrast to this stands learning during adulthood. Being an adult essentially means that an individual is able and willing to assume responsibility for his or her own life and actions. Formally, our society ascribes such adulthood to individuals when they attain the age of 18 years. In reality, it is a gradual process that takes place throughout the period of youth, which as we see it today, may last well into the 20s or be entirely incomplete if the formation of a relatively stable identity is chosen as the criterion for its completion at the mental level (which is the classical description of this transition provided by Erikson, 1968).

As concerns learning, being an adult also means, in principle, that the individual accepts responsibility for his or her own learning, that is, more or less consciously sorts information and decides what he or she wants and does not want to learn. The situation in today's complicated modern society is after all such that the volume of what may be learned far exceeds the ability of any single individual, and this is true not only concerning content in a narrow sense, but it also applies to the views and attitudes, perceptions, communications options, behavioral patterns, lifestyle, etc. that may be chosen. Thus, a sorting of input must be made.

As a general conclusion it is, however, important to maintain that in contrast to children's uncensored and confident learning, adult learning is basically selective and self-directed, or to put it in more concrete terms:

- adults learn what they want to learn and what is meaningful for them to learn;
- adults draw on the resources they already have in their learning;
- adults take as much responsibility for their learning as they want to take (if they are allowed to); and
- adults are not very inclined to learn something they are not interested in, or in which they cannot see the meaning or importance. At any rate, typically, they only learn it partially, in a distorted way or with a lack of motivation that makes what is learned extremely vulnerable to oblivion and difficult to apply in situations not subjectively related to the learning context (Illeris, 2007).

In the following section, the nature of adult learning is discussed in relation to the three dimensions and other basic features of learning described earlier.

Adult Learning in the Content Dimension

For many years, it was a general understanding among learning theorists that humans acquire their full cognitive

learning capacity at about the age of 11–13, when they, as described in Jean Piaget's theory of learning stages, reach the so-called formal operational level, which makes logical–deductive thinking possible as a supplement to the forms of thinking and learning acquired at earlier stages (see, e.g., Flavell, 1963).

However, during the 1980s, this understanding began to be questioned from several quarters. On the one hand, it was pointed out that not all adults are actually able to think formally and operationally in the logical sense inherent in Piaget's definition. Empirical research pointed out that in England, it was actually less than 30%, but at the same time it was confirmed that at the beginning of puberty, a decisive development takes place in the possibilities for learning and thinking in abstract terms, so that, all in all, distinguishing a new cognitive phase was justified (Shayer and Adey, 1981). On the other hand, it has been maintained that, at a later age, significant new cognitive possibilities that extend beyond the formally operative may develop (e.g., Commons *et al.*, 1984). British-American adult education researcher Stephen Brookfield summarized this criticism by pointing out four possibilities for learning that are only developed in the course of adulthood: the capacity for dialectical thinking, the capacity for applying practical logic, the capacity for realizing how one may know what one knows (metacognition), and the capacity for critical reflection (Brookfield, 2000).

Recent brain research seems to indirectly support Brookfield's claims. Whereas it is a well-established understanding that the brain matures psychologically and neurologically for formal logical thinking in early puberty, evidence has been found that the brain centers of the frontal lobe that conduct functions such as rational planning, prioritization, and making well-founded choices, do not mature until the late teenage years (Gogtay *et al.*, 2004). This finding seems to provide some clarification of the differences between the capacity of formal logical and practical logical thinking and learning as well as between ordinary cognition and metacognition in adolescence and early adulthood.

At any rate, the general conclusion of all this must be that during puberty and youth, a physiological and neurological maturing process takes place that makes possible new forms of abstract and stringent thinking and learning, so that an individual becomes able to operate context-independently with coherent concept systems and manage a balanced and goal-directed behavior. Teenagers' determination to find out how things are structured and to use such understanding in relation to their own situation could be seen as a cognitive developmental bridge signifying the difference between children's and adults' ways of learning.

It is thus at one and the same time the longing for independence and the longing for coherent understanding of how they themselves and their environment function and why things are the way they are, which in the content dimension separate adult learning from childhood learning. Up through the period of youth, individuals themselves increasingly assume responsibility for their own learning and nonlearning, make choices and rejections, and in this context understand what they are dealing with and their own roles and possibilities. However, all this has been enormously complicated by the duality of late modernity between, on the one hand, the apparently limitless degrees of freedom and reams of information, and on the other hand, far-reaching indirect pressure for control from parents, teachers, youth cultures, mass media, and formal conditions and possibilities. The transition from child to adult has thus, in the area of learning, become an extended, ambiguous, and complicated process, with blurred outlines and unclear conditions and goals.

Finally, it should be added that the possibility of transformative learning as well as the general defense systems in relation to learning seem to be developed along with the described cognitive development during the teenage years, and that the full development of the body and thereby the possibilities for bodily skills is also a process that is not fulfilled until about the age of 20 years.

Adult Learning in the Incentive Dimension

Learning in the incentive dimension is fundamentally aimed at helping the learner to control and direct emotions, feelings, motivation, and volition and thereby maintain an appropriate mental balance in relation to the complexity of life. In late-modern society, this process is concentrated on the development and maintenance of a self-understanding or identity that can secure the experience of being oneself, that is, of being the same person across the diversity of situations and challenges we meet and deal with. It is mainly in this dimension that the selective regulation and the defense mechanisms of adult learning are directed, which, in everyday life, is a mainly unconscious process and only taken up consciously in case of more important decisions. The identity, which, as mentioned, is developed during the teenage years, functions as the superior director of all this. On the more concrete level, adults typically have a range of life projects, subprojects, interests, and preferences to which the direction and regulation are related.

Most adults have a family project that concerns creating and being part of a family; a work project that concerns a personally and financially satisfying job; perhaps a leisure-time project concerning a special interest or a hobby; and sometimes a fulfillment or conviction project that may be religious or political in nature. All these projects result in many even more specific activities and attitudes that in this connection, serve as the measure for all the conscious as well as unconscious decisions about what to learn, with which kind of motivation and

investment to learn, and what not to learn or not to invest so much in that the learning process becomes demanding (which usually implies a weak and superficial kind of learning).

When dealing with adult learning, it is very important to realize that adults have and practice these conscious and unconscious ways of being selective in relation to their own learning. This is why and how adults, as stated before, "are not very inclined to learn something they are not interested in, or in which they cannot see the meaning or importance." In contemporary adult education and lifelong learning, authorities and teachers very often do not sufficiently understand and respect these fundamental conditions of adult learning and many human and financial resources are wasted on programs and courses with limited or no possibilities of success (cf. Illeris, 2004).

Adult Learning in the Interaction Dimension

The general aim of learning in the interaction dimension is integration. Humans want and need to be integrated in their social environment, to communicate and collaborate with others, and this is a fundamental part of existence. But for adults, this side of life is highly selective: we have strong social preferences, and there are also communities which we do not want to be a part of. As to learning, this ambiguous attitude implies that the basic nature of our learning in the interaction dimension varies in relation to different learning spaces. In present society, five main types of spaces of adult learning can be pointed out.

Everyday life is the general and basic learning space in which a lot of learning takes place, as we are moving around and not participating in any specifically defined activities. This kind of learning is therefore mainly informal, multifarious, personal, and related to the cultures and subcultures in which the person is integrated, and it constitutes the general socialization and many patterns, norms, attitudes, general understandings, etc.

Workplaces have formed another very important learning space for adults ever since work was separated from everyday life. Here, of course, several professional qualifications are trained, but a lot of general learning takes place more or less incidentally as an inseparable part of work activities and communication (Marsick and Watkins, 1990). However, this learning is fundamentally different from general learning in everyday life, because it is marked by basic workplace conditions such as effectiveness, profit-orientation, and, not least, job stability. On the other hand, workplace learning may also include more formalized learning, which is usually accepted as relevant and meaningful, at least if the learner has a positive identification with the job. It is worth noting that even such goal-directed workplace learning is often restricted by the immediate needs of production or service and therefore tends to lack theoretical understanding and overview (Illeris *et al.*, 2004).

Special interests or convictions are the basis of another type of learning spaces including, for example, communities, associations, hobbies, and grassroots movements. Learning here may be understood as a goal-directed kind of everyday learning in which incidental and informal features are replaced by a clear motivation and resolution, which generally make this type of learning space very effective.

Schools and other educational institutions form the type of learning space which society has established to secure a lot of learning that is today considered to be necessary for all of us to maintain the material and structural level we have reached. Originally, this type of learning space was mainly set up for children and youth, but it is significant for late modernity that such institutions are now also established for adults and the slogan of lifelong learning covers a massive upgrading of such learning. However, it is important to realize that school learning is by nature formal, rational, and externally directed. Although it is officially aimed at goals outside the educational system, it is usually experienced as directed by internal measures such as the school subjects and exams. Although adult schooling is not compulsory, many adults are brought into situations where they more or less have to undertake such formal learning. Low-skilled workers often oppose or are very ambivalent about going back to school as they have for so many years experienced that they are no good at school learning (Illeris, 2003, 2006).

Finally, it must be mentioned that computers and the Internet have opened a new learning space of rapidly growing importance, not least for adults. Computer learning has its own characteristics, advantages, and disadvantages. Net-based learning is very flexible, because it can be practiced independently of time and to some extent also of place. It also seems to have an advantage in that it forces the learner to express oneself in writing and thereby to make points, understandings, and opinions more clear than generally needed in face-to-face conversation. The disadvantage is the lack of direct social contact, but this can to some extent be eliminated by frequent classes or meetings, during a Net-based course, of some duration. Yet, so far we know very little about the transfer of Net-based learning onto the different spaces of reality.

As most adults today are involved in all or most of the main described types of learning spaces, the transitions and transfer of learning between them become increasingly essential and complex. The transition and transfer between school and education on the one side and workplaces and everyday learning on the other side forms a challenge to contemporary adult learning. Net-based learning may relate to either of these sides, whereas

interest-based learning has a kind of independent position from which transfer can often be made to any other learning space.

Conclusion

Learning in late-modern society is a very complex and at the same time very important issue, and the slogan of lifelong learning strongly indicates that this also includes adult learning. However, adult learning is very different from children's learning and much of the traditional learning theory and teaching practice does not apply very well to adults. Whereas childhood naturally is time for learning and development, adulthood traditionally has been the age for applying the acquired competencies. Today, this situation has changed, and learning in adulthood has become a necessary demand. This causes many challenges and expenses, but also new possibilities of a rich and expanding adult life.

It must be remembered and respected that in free and democratic societies, adults have the right to direct their own learning. Therefore, the typical patterns and processes of childhood learning cannot just be overtaken, and the idea of lifelong learning can only be practiced successfully if sustainable ways to meet the needs of the adult learners can be developed and practiced.

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