Towards a contemporary and comprehensive theory of learning

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The modern concept of competence comprises not only relevant knowledge and skills, but also a range of personal qualities and the ability to perform adequately and flexibly in well-known and unknown situations. To be up-to-date, the concept of learning must be understood in the same broad sense, and therefore traditional learning theories must be revised. The theory presented is based on two fundamental assumptions. Firstly, that all learning includes two essentially different types of process, namely an external interaction process between the learner and his or her social, cultural and material environment, and an internal psychological process of acquisition and elaboration in which new impulses are connected with the results of prior learning. Secondly, that all learning includes three dimensions, namely, the cognitive dimension of knowledge and skills, the emotional dimension of feelings and motivation, and the social dimension of communication and co-operation—all of which are embedded in a societally situated context. In addition, the approach specifies four levels of learning and deals with what happens when intended learning does not occur. Inside this framework existing learning theories deal with different aspects. Thus the new theory has been constructed as a sort of umbrella, offering an overview and a structure of the landscape of learning which can be applied in both analysing and planning learning processes, both inside and outside of the educational system. The development of the theory is described in detail in my book, *The Three Dimensions of Learning*, which has been a bestseller in the Scandinavian countries since 1999, and which has now been published in English (Illeris 2002).

The new interest in the concept of learning

It is striking that the concept of learning in the last years of the 1990s experienced a revival of sorts, both in public debate and in professional psychology, education and management circles. Part of the background for the new interest in learning is no doubt the increasing orientation towards education and lifelong learning as important factors in the global competition between nations and companies. This has led to growing expenses for educational measures, and therefore also to increased attention to the outcome. Politicians, administrators and managers seem at length to have realized that while what they grant money for is teaching, what they actually want to buy is learning, and that there is no simple and automatic

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connection between the two. The questions to be addressed are thus: What is learning? How does it come about? How can it be promoted? Why does teaching not always result in learning?

At the same time there has been rapid development in ideas about the sort of learning that is necessary and desirable. Learning can no longer be conceived of as merely the acquisition of a syllabus or curriculum. If one examines job advertisements or interviews personnel managers, it becomes obvious that general skills and personal qualities are considered at least as important as professional qualifications. In contemporary everyday life, such skills and qualities are also essential both to manage the complex functions of modern life and to maintain the common and democratic functions of society.

Thus what should be learned in education as well as in working and societal life is a complex totality of traditional and up-to-date knowledge, orientation and overview, combined with professional and everyday life skills and a broad range of personal qualities such as flexibility, openness, independence, responsibility, creativity, etc. In management, and to a certain extent also in education, the concept of competence or competencies has been used increasingly to capture this complex situation—and for learning theory and educational practice it is an evident challenge to develop a concept of learning that is able to match this concept and include the acquisition of the whole range of different competencies at stake.

The combination of the variety of learning theories into a comprehensive framework

For the purpose described, the starting point of the development of such a theory was a very broad and open definition of learning covering all processes that lead to relatively lasting changes of capacity, whether they be of a motor, cognitive, psychodynamic (i.e. emotional, motivational or attitudinal) or social character, and which are not due to genetic-biological maturation. The significance of this definition is mainly that it avoids any separation between learning, personal development, socialization, qualification and the like by regarding all such processes as types of learning when viewed from different angles or positions.

In relation to this definition, many existing theories are of relevance whether or not they present themselves as learning theories, and the procedure in the work of establishing a comprehensive and coherent understanding of the field has been, so to speak, to scrutinise a great variety of relevant and important theories to see how each of them can contribute to an overall understanding. In this way I have tried to gradually build up a framework or model which covers the totality and places the various contributions in relation to each other.

Naturally, a process of this kind cannot be carried through in any neutral or objective manner. It is evident that when constructing the model I have had to involve my personal and professional views as to what is basic, important and significant, and to employ continuously my own interpretations and judgements and make my own additions. In this connection I believe that I have had the advantage of having a broad orientation in Nordic, Continental European, Russian, British and American approaches. Nevertheless, in no way do I believe or claim that the process or the model developed is anything but a personal construct and that other researchers could not build up other equally or perhaps more appropriate

and useful understandings. I am also quite aware that developers or devotees of the many theories involved may feel their contributions or opinions undermined by being placed in a construction which is based on a fundamental understanding and a scientific rationality different from their own.

However, learning in the broad sense as described above and as it will be regarded in the following account, is a very complex process involving both biologically founded psychological and societally founded social elements which follow different sets of logic and work together in a complex interaction. Therefore, I regard it as a necessity to bring these different approaches together and find a way of dealing with the totality in spite of, and simultaneously in acknowledgement of, these basic differences.

The two basic processes

The first important step in the construction is to realize that all learning implies the integration of two very different processes, namely an external interaction process between the learner and his or her social, cultural or material environment, and an internal psychological process of acquisition and elaboration.

Many learning theories deal only with one of these processes, which of course does not mean that they are wrong or worthless, as both processes can be studied separately. However, it does mean that they do not cover the whole field of learning. This may, for instance, be said of traditional behaviourist and cognitive learning theories focusing only on the internal psychological process. It can equally be said of certain modern social learning theories which—sometimes in explicit opposition to this—draw attention to the external interaction process alone [here I am referring to types of approach such as social constructionism (Gergen, 1991, 1994) and the concept of situated learning (Lave and Wenger, 1991)].

However, it seems evident to me that both processes must be actively involved if any learning is to take place.

The three dimensions of learning

In my model construction of the field of learning, I start by depicting the external interaction process as a vertical double arrow between the environment, which is the general basis and therefore placed at the bottom, and the individual, who is the specific learner and therefore placed at the top (figure 1).

Next I add the psychological acquisition process as another double arrow. It is an internal process of the learner and must therefore be placed at the top pole of the interaction process. Further, it is a process of integrated interplay between two equal psychological functions involved in any learning, namely the function of cognition, dealing with the learning content, and the emotional or psychodynamic function, providing the necessary mental energy of the process. Thus, the double arrow of the acquisition process is placed horizontally at the top of the interaction process and between the poles of cognition and psychodynamics.

As can be seen, the two double arrows can now span out a triangular field between three angles. These three angles depict three spheres or dimensions, and it is the core claim of the theory that all learning will always involve these three dimensions (figure 2).
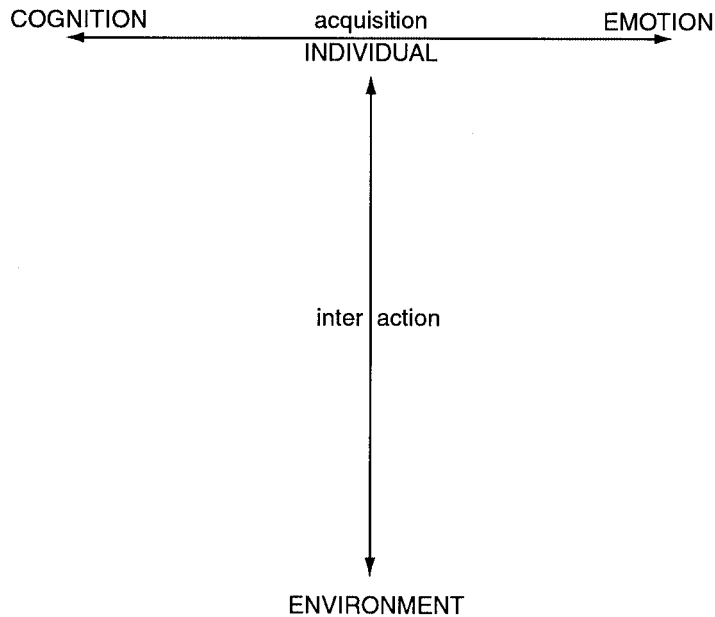
COGNITION   acquisition   EMOTION

INDIVIDUAL

inter | action

ENVIRONMENT

Figure 1. The fundamental processes of learning.

The cognitive dimension is the dimension of the learning content, which may be described as knowledge or skills and which builds up the understanding and the ability of the learner. The endeavour of the learner is to construct *meaning* and *ability* to deal with the challenges of practical life and thereby develop an overall personal *functionality.*

The emotional or psychodynamic dimension is the dimension encompassing mental energy, feelings and motivations. Its ultimate function is to secure the *mental balance* of the learner and thereby it simultaneously develops a personal *sensibility.*

These two dimensions are always initiated by impulses from the interaction processes and integrated in the internal process of acquisition and elaboration. Therefore all cognitive learning is, so to speak, 'obsessed' by the emotions at stake—e.g. whether the learning is driven by desire, interest, necessity or compulsion. Correspondingly, emotional learning is always influenced by the cognition or understanding, e.g. new information can change the emotional condition. (Many psychologists have been aware of this close connection, e.g. Vygotsky 1986, Furth 1987.) It has also recently been thoroughly investigated in neurology (Damasio 1994).

The social dimension is the dimension of external interaction such as participation, communication and co-operation. It serves the personal *integration* in communities and society and thereby also builds up the *sociality* of the learner. However, this building up necessarily takes place through the two other dimensions.

Thus the triangle depicts what I see as the tension field of learning in general and of any specific learning event or learning process as stretched out between the development of functionality, sensibility and sociality (or, to express it in popular

terms as in the original Danish version of the model: between the realms of Piaget, Freud and Marx).

As learning, furthermore, always takes place in the context of a specific society which sets the basic conditions for the learning possibilities, finally I place the triangle inside a circle indicating this basic situation (figure 2).

An example from everyday school life

In order to illustrate how the model may be understood and used, I shall take an everyday example from ordinary school life (which does not mean that the model only deals with learning in school).

During a chemistry lesson in the classroom, a teacher is explaining a chemical process. The pupils are supposed to be listening and perhaps asking questions to be sure that they have understood the explanation correctly. The pupils are thus involved in an interaction process. But at the same time they are supposed to take
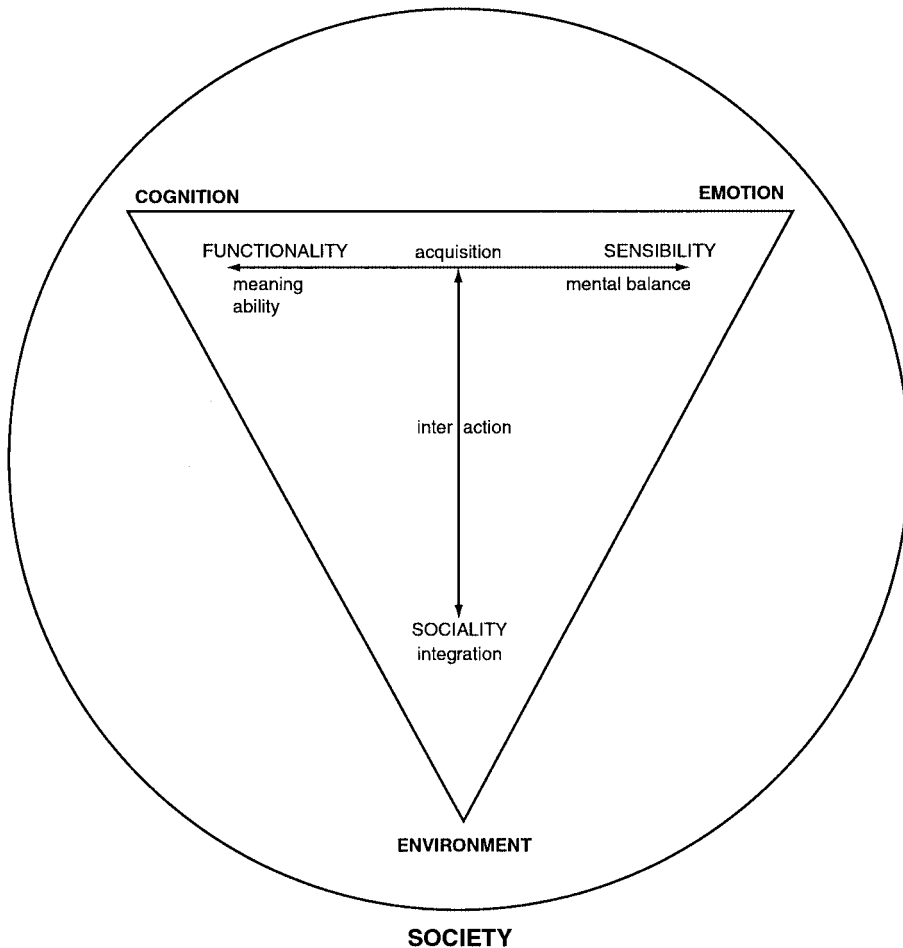

Figure 2.   The processes and dimensions of learning.

in or to learn what the teacher is teaching, i.e. psychologically to relate what is taught to what they should already have learned. The result should be that they are able to remember what they have been taught, and under certain conditions to reproduce it, apply it and involve it in further learning.

But sometimes, or for some pupils, the learning process does not take place as intended, and mistakes or derailing may occur in many different ways. Perhaps the interaction does not function because the teacher's explanation is not good enough or even incoherent, or there may be disturbances in the situation. If so, the explanation will only be picked up partially or incorrectly, and the learning result will be insufficient. But the pupils' acquisition process may also be inadequate, for instance because of a lack of concentration, and this will also lead to a deterioration in the learning result. Or there may be errors or insufficiencies in the prior learning of some pupils making them unable to understand the teacher's explanation and thereby also to learn what is being taught. Much of this indicates that acquisition is not only a cognitive matter. There is also another mental function involved concerning the pupils' attitudes to the intended learning: their interests and mobilization of mental energy, i.e. an emotional or psychodynamic function.

In a school situation focus is usually on the learning content; in the case chosen it is on the pupils' understanding of the nature of the chemical process concerned. However, the emotional function is still also crucial, i.e. how the situation is experienced, what sort of feelings and motivations are involved, and thus the nature and the strength of the mental energy involved. The value and durability of the learning result is closely related to the emotional dimension of the learning process.

Further, both the cognitive and the emotional functions and their interplay are crucially dependent on the interaction process between the learner and the social, cultural and material environment. If the interaction in the chemistry lesson is not adequate and acceptable to the pupils, the learning will suffer or something quite different may be learned, for instance a negative impression of the teacher, of some other pupils, of the subject or of the school situation in general.

The four levels of learning

What has been outlined in the triangle model and the example above is a concept of learning which is basically constructivist in nature, i.e. it is assumed that the learner him- or herself actively builds up or construes his or her learning as mental structures. These structures exist in the central nervous system as dispositions that can be described as *schemes* or *mental patterns.*

With respect to the cognitive dimension, one typically speaks of schemes or, more popularly, of memory. In the emotional and the social-societal dimensions, one would employ terms such as patterns or, more popularly, inclinations. Under all circumstances, it is decisive that the results of learning are structured before they can be retained. This structuring can be established in various ways, and on this basis it is possible to distinguish between four different levels of learning which are activated in different contexts, imply different types of learning results and require more or less energy. [This is an elaboration of the concept of learning originally developed by Jean Piaget (e.g. Piaget 1952, Flavell 1963).]

When a scheme or pattern is established, it is a case of *cumulative* or mechanical learning. This form of learning is characterized by being an isolated formation, something new that is not a part of anything else. Therefore, cumulative learning is most frequent during the first years of life, but later occurs only in special situations where one must learn something with no context of meaning or personal importance, for example a telephone or pin code number or a long string of words. The learning result is characterized by a type of automation that means that it can only be recalled and applied in situations mentally similar to the learning context. (The concept of cumulative learning was developed by the Danish psychologist and Piaget specialist, Thomas Nissen; Nissen, 1970.)

By far the most common form of learning is termed *assimilative* or learning by addition, meaning that the new element is linked as an addition to a scheme or pattern that is already established. One typical example could be learning in school subjects that are precisely built up by means of constant additions to what has already been learned, but assimilative learning also takes place in all contexts where one gradually develops one's capacities of a cognitive, emotional or social-societal nature. The results of learning are characterized by being linked to the scheme or pattern in question in such a manner that it is relatively easy to recall and apply them when one is mentally oriented towards the field in question, for example a school subject, while they may be hard to access in other contexts. This is why problems are frequently experienced in applying knowledge from a school subject in other subjects or in contexts outside school.

However, in some cases, situations occur where something takes place that is difficult to relate immediately to any existing scheme or pattern; this is experienced as something one cannot really understand or relate to. But if it seems important or interesting, if it is something one is determined to acquire, this can take place by means of *accommodative* or transcendent learning. This type of learning implies that one breaks down (parts of) an existing scheme and transforms it so that the new situation can be linked in. Thus one both relinquishes and reconstructs something and this can be experienced as something painful, requiring mental energy. One must cross existing limitations and understand or accept something that is significantly new or different. The result of the learning is characterized by the fact that it can be recalled and applied in many different, relevant contexts. It is typically experienced as having got hold of something which one really has internalized.

Finally, over the last decades it has been pointed out that in special situations there is also a far-reaching type of learning that has been variously described as *transformative* learning (Mezirow 1991) or expansive learning (Engeström 1987). This learning implies what could be termed personality changes and is characterized by simultaneous restructuring in the cognitive, the emotional and the social-societal dimensions, a break of orientation that typically occurs as the result of a crisis-like situation caused by challenges experienced as urgent and unavoidable, making it necessary to change oneself in order to get any further. Transformative learning is thus both profound and extensive and can often be experienced physically, typically as a feeling of relief or relaxation.

As has been demonstrated the four levels or types of learning are widely different in scope and nature, and they also occur—or are activated by learners—in very different situations and connections. Whereas cumulative learning is most important in early childhood and transformative learning is a very demanding

process that changes the very personality or identity and occurs only in very special situations of profound significance for the learner, assimilation and accommodation are, as described by Piaget, the two types of learning that characterize general, sound and normal everyday learning.

However, ordinary discussions of learning, and also the design of many educational and school activities, are concentrated on and often only aimed at assimilative learning, as this is the sort of learning that the ordinary understanding of the concept of learning is about. But, as stated at the beginning of this paper, today this understanding is obviously insufficient.

Another problem is that much intended learning does not take place. In schools, in education, at workplaces and in many other situations, very often people do not learn what they could learn or what they are supposed to learn. Therefore I find it important also to discuss briefly what happens in such cases.

Non-learning, defence, everyday consciousness and resistance to learning

Of course, it cannot be avoided that we all sometimes learn something that is wrong (cf. Mager 1961) and something that is inadequate for us in some way or other. In the first instance, this concerns matters such as mislearning and distortion of learning, which can be due to misunderstandings, miscommunication and the like. This may be annoying and in some cases unlucky, but simple mislearning is not a matter of great interest to learning theory.

However, today much non-learning and mislearning are not so simple, but have a background in some general conditions that modern society creates, and in some respects the investigation and understanding of such processes are definitely as important as more traditional learning theory to understand what is happening and to cope with it in practice.

The central point is that in our complex late modern society what Freud called *defence mechanisms*—which are active in specific personal connections (cf. Anna Freud 1942)—must necessarily be generalized and take more systematized forms because nobody can manage to remain open to the gigantic volumes of influences we are all constantly faced with.

This is why today people develop a kind of automatic sorting mechanism *vis-à-vis* the many influences, or what the German social psychologist Thomas Leithäuser has analysed and described as an *everyday consciousness* (Leithäuser 1976, cf. Illeris 2002). This functions in the way that one develops some general pre-understandings within certain thematic areas and when one meets with influences within such an area, these pre-understandings are activated so that if elements in the influences do not correspond to the pre-understandings, they are either rejected or distorted to make them agree. In both cases, this results in no new learning but, on the contrary, often the cementing of the already-existing understanding.

Thus, through everyday consciousness we control our own learning and non-learning in a manner that seldom involves any direct positioning while simultaneously involving a massive defence of the already acquired understandings and, in the final analysis, our very identity. (There are, of course, also areas and situations where our positioning takes place in a more target-oriented manner, consciously and flexibly.)

Therefore, <u>in practice the issue of learning very often becomes a question of what can penetrate the individual, semi-automatic defence mechanisms and under what conditions.</u> These defence mechanisms are the most common reason for the gulf between the impulses being communicated, for example in an everyday situation, a work situation or a teaching situation, and what is actually learned.

<u>Another psychological mechanism which may block or distort relevant learning is mental *resistance*.</u> This is not, in itself, so very time-specific, as all human beings in any society will experience situations where what they try to accomplish cannot be carried through, and if they cannot understand or accept the barriers they will naturally react with some sort of resistance.

<u>In practice it is sometimes quite difficult to distinguish between non-learning caused by defence and non-learning caused by resistance.</u> However, psychologically there is a great and important difference. Whereas the defence mechanisms exist prior to the learning situation and function re-actively, resistance is caused by the learning situation itself as an active response. Thus, resistance contains a very strong learning potential, especially for accommodative and even transformative learning. Often when one does not just accept something, the possibility of learning something significantly new emerges. And most great steps forward in the development of mankind and society have taken place when someone did not accept a given truth or way of doing or understanding things.

In everyday life, resistance is also a most important source of transcendent learning although it may be both inconvenient and annoying, not least for teachers. In any event, <u>today it should be a central qualification of teachers to be able to cope with and even inspire mental resistance, as precisely such personal competencies which are so much in demand—for example, independence, responsibility and creativity—are likely to be developed in this way.</u>

General learning theory and adult learning

How can such theoretical insights as discussed above be of any use in the troublesome daily practice of schooling and education and in planning and administrative activities? Of course, educational problems—and especially problems of such scope as the modern concept of competence deals with—cannot be solved by learning theory. Political and economic measures are necessarily of superior importance as they lay down the framework and thereby the fundamental learning conditions.

But adequate theories can help us to understand what happens to learning when conditions change. The changes of late modernity are fundamentally changing the conditions of learning, and if politicians, administrators and educators are to cope adequately with this, as educational researchers we must be able to develop adequate theories matching the problems experienced at all levels. Adult education is very much in focus—as highlighted by such popular new concepts as those of modern competencies and lifelong learning. I shall therefore here take adult education as an example to illustrate the possible application and value of the theoretical approach presented.

What is fundamental to adult learning—seen in relation to childhood or youth learning—is that being an adult essentially means that one is capable of and wishes to take responsibility for oneself and one's actions. In our society one formally

becomes such an adult at the age of 18, but in reality this takes place gradually in the course of the increasingly longer period of youth. From the point of view of learning, in principle being an adult also means that one takes responsibility for oneself, i.e. that consciously or less consciously one selects and decides what one wants to learn and not to learn (Illeris 2003a).

Traditional learning theory, with a focus on the cognitive dimension and perhaps also the assimilative type of learning, does not include such issues and is therefore of little help for understanding and coping with the most significant developments and problems of adult education or lifelong learning today. Only when it includes the emotional, social and societal dimensions of learning, only when it acknowledges that such learning levels as accommodation and transformation are also at stake, and only when it thematizes such functions as learning defence, everyday consciousness and mental resistance, can learning theory become an adequate tool in relation to adult educational and learning practice today.

This paper started by pointing out that learning today is not only about the development of knowledge and skills, and this applies to a high degree to adult education. The popular catchword of lifelong learning has not only a quantitative content—more learning for more adults—but also a qualitative content—adults must learn to change and develop rapidly in order to keep up with the demands of our late modern society.

In practice this is mainly supported by regulations and financial measures to press or force adults into education of different kinds. But such measures create conflicts, defence and resistance. Many people do not want to 'go back to school again' (which is the way they usually experience and express it themselves) if they have not chosen it for their own purposes (Illeris 2003b). If the optimistic promises of adult education and lifelong learning are to be fulfilled, measures other than administrative and financial incentives must be utilized—measures that understand and take into account the psychological situation of the learners. A contemporary and comprehensive learning theory providing an overview of the situation as seen from the adults' perspective and used in solidarity with the adults in question can serve as a guide in a movement of this kind.

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