

ORIGINAL ARTICLE

An overview of the history of learning theory

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Abstract

This article is an account of the history of learning theory as the author has come to know and interpret it by dealing with this subject for almost half a century during which he has also himself gradually developed the broad understanding of human learning which is presented in his well-known books on “How We Learn” and a lot of other books and writings.

1 | INTRODUCTION

Learning is a basic biological capacity which is far more developed in humans than in any other living being. Hence, humans are created and also doomed to be learners—we cannot avoid accumulating an enormous amount of learning throughout our life. Furthermore, in contemporary societies, we are also forced to learn. In nearly all countries, compulsory education lasts for several years and in addition we must all learn a great deal of things to deal with our daily life (Illeris, 2007/2017, p. 1).

How various kinds of learning take place in the human brain and body is the basic question of learning theory, as this has been developed mainly in the discipline of learning psychology, but with supplementary input from other psychological disciplines and the adjacent disciplines of sociology, pedagogy and biology, including modern brain research. The following is an account of the history of learning theory which is strongly influenced by my personal experience since I have dealt with this topic for almost half a century. In a previous article in this *Journal* (Illeris, 2015) I described how, during these years, I developed step-by-step a theory of learning. Here, I shall set out the main elements of the history of learning theory as I have gradually come to know and see it and, in later years, also been part of it. I come from a small country and have therefore been able to look at contributions from all the larger and more important environments in the field without being directly part of any of these approaches. However, it must be mentioned that I only relate to European, American and Australian contributions, as my experience with Asian and African thinking in this area is limited and what I have come across from these parts of the world has been about cultural influences and not the structure and internal course of learning processes (Jarvis, 2009; Jarvis & Watts, 2012; Poell, Rocco, & Roth, 2015). So it must be emphasised that the following focuses on learning theory as the understanding of how learning takes place and functions as interior individual processes and that the external conditions are only mentioned when they directly influence or are related to the character of these processes.

2 | THE FOUR EARLY SCHOOLS AND TWO SUPPLEMENTARY APPROACHES

Up until about 1950, learning theory was developed relatively independently, mainly in four approaches related to specific languages and geographical areas which I shall sum up very briefly, as none are applied today in their original way, but, to some extent, form the fundamental basis for the later more complex pattern of understandings.

2.1 | German Gestalt psychology

The first university department of psychology was founded in 1875 in Leipzig by Wilhelm Wundt as an experimental laboratory and learning soon became a central topic of early German psychology. Hermann Ebbinghaus' experiments on the learning and memory of meaningless syllables are remarkable because they tried to separate pure learning from the disturbing factor of meaning, whereas meaning today is generally regarded as one of the most significant features of human learning. Later, the various early German approaches gradually developed into Gestalt psychology, emphasising that human psychological functions generally tend to deal with coherent entities (Gestalt) and understand phenomena by their structures and connections (Ash, 1995). In the 1920s and 30s, this led to a focus on problem-solving as the core of learning, reaching beyond the simpler acquisition of knowledge and skills (Duncker, 1935/1945).

2.2 | American behaviourism

The psychological school of behaviourism was founded in 1913 by the American John B. Watson (1925) and dominated the academic understanding of learning for about 60 years, especially in Anglophone countries. The fundamental idea was that only what could be directly observed and measured was accepted as scientific material, whereby such concepts as consciousness, meaning and emotions were excluded. This led to a focus on the simplest learning processes and a mechanical understanding, often based on experiments with animals.

2.3 | Russian cultural-historical theory

From the mid-1920s, the cultural-historical or activity-theoretical approach to psychology was developed in the Soviet Union, more especially, by Lev Vygotsky, Alexander Luria and Aleksei Leontjev. Basically, the human capacity of learning was understood as shaped by the human phylogenetical development and the use of both practical tools and higher mental functions such as consciousness, language and understanding (Leontjev, 1959/1981). Vygotsky's concept of 'the zone of proximal development' became famous as the area for qualitatively new learning towards which the teacher should lead the learning child (Vygotsky, 1934/1986). Learning was seen as closely related to school and teaching, that is, something that can be directed and supported, unlike something which comes from somewhere within the learner.

2.4 | Piaget's constructivism

Also in the 1920s, the Swiss biologist and epistemologist Jean Piaget developed his comprehensive theoretical work. Most famous is his stage theory on the development through childhood of human intelligence understood as the ability to think logically (Piaget, 1926/1959)—a theory which exercised great influence, but also met with considerable critique for being too rigorous in relation to social and cultural differences (Cohen, 2013). Concerning learning, it is important to note that the stages are not learned, but appear at a certain age, which implies that teaching and education, in principle, cannot accelerate development. However, Piaget's most important contribution to the understanding of learning in a narrower sense is his theory of how learners construct their own learning by maintaining an equilibrium between assimilation, whereby the individual adds new elements to existing mental schemes and accommodation, whereby existing schemes are changed to include new input which is not immediately in accordance with existing schemes (Piaget, 1936/1952). Hence, Piaget was the first to operate with fundamentally different types of learning and distinguish between learning by addition and learning by change or reconstruction.

2.5 | Freud and Dewey

To complete the presentation of learning theories in the first half of the 20th century, two very important figures should be mentioned who did not directly deal with the topic of learning, but who nevertheless had considerable influence on understanding this area. Thus, Sigmund Freud's concept and practice of psychoanalysis were important in this

area because they drew attention to the mental influence of emotions and were thereby in contrast with the dominating understanding of learning as a purely or mainly cognitive matter. Also, Freud's understanding of defence mechanisms is important in relation to learning. Similarly John Dewey's work on schooling and pedagogy did not specifically imply a learning theory, but his child-centred approach and ideas of 'learning by doing' were very influential, taking up such essential angles as experience and motivation and distinguishing between the logical and psychological organisation of learning processes (Dewey, 1902, 1938).

3 | CONTINUATIONS, NEW IDEAS AND EXCHANGE IN THE POST-WAR YEARS

After the Second World War, other matters required more attention, especially in Europe, Germany and Russia. Hence, initiatives in the area of learning theory were mainly left to the Americans.

3.1 | Skinner's extreme behaviourism

In America, the dominance of behaviourism culminated in the work of B.F. Skinner who saw human behaviour as determined by the interaction between the individual constitution and the environment, with no room for individual freedom and learning totally dependent on the input. In his two most important books, *The Technology of Teaching* and *Beyond Freedom and Dignity* (Skinner 1968, 1971), he summed up this understanding, reducing learning to a technical matter. Human beings are controlled by external influences and learning is about the exertion of the most appropriate input and control. The learner's emotions, motivation and initiative were totally ignored and teaching was seen entirely as a technological matter. Thus, behaviourism excluded any concern with qualities such as personal development, meaning, understanding, identity, hope, care, love, sociality, etc. Skinner's behaviourism was, as I see it, not only beyond freedom and dignity, but also beyond any understandings of human qualities.

3.2 | Humanistic psychology and Rogers

However, during the same period, a quite different psychological approach was launched in America as a third way in opposition to both behaviourism and psychoanalysis. This was humanistic psychology. Two of its leading representatives, Carl Rogers and Abraham Maslow, contributed to the understanding of learning in ways which were very different from the dominating behaviourist thinking. Rogers was both a psychologist and a psychotherapist. In 1951, he introduced client-centred therapy and launched the terms student-centred teaching and significant learning, defined as learning involving 'a change in the organization of the self' (Rogers, 1951, p. 390). He regarded this as the most important kind of learning, which he explained further in *Freedom to Learn* (Rogers, 1969). This was in direct contrast to behaviourism and did not have a great impact in America at the time, but witnessed a revival among European students following the revolts in 1968. Maslow's work was about motivation and thus only indirectly influenced the understanding of learning. Most famous is his hierarchy of needs or motives, illustrated by the motive pyramid, with basic physiological needs such as hunger, thirst and sex at the bottom, followed by safety needs, social needs, needs of self-esteem, cognitive needs (insight etc.), aesthetic needs and self-actualisation at the top (Maslow, 1954). This stressed the importance of motivation, although the hierarchy is rather doubtful and it is easy to find examples of people letting their lives, practice and preferences be directed by higher needs, although their basic needs were not covered.

3.3 | The Germans' impact in America

Refugees from Nazi Germany were an important source of inspiration for American learning theory in the post-War period. Kurt Lewin introduced a field theory inspired by the German Gestalt psychology which became a very important contribution to the understanding and practice of organisational learning and group psychology (Marrow, 1969). The developmental psychologist and psychoanalyst Erik Erikson's work on identity development was also an important

source of the understanding of learning in youth (Erikson, 1950, 1968). Finally, Adorno, Frenkel-Brunswik, Levinson, and Sanford (1950) from the Frankfurt School which combined a central understanding of Marx and Freud explained full well how authoritarian personality traits were conveyed by the Nazis. Thus, the German researchers in America contributed to a broader and more humanistic understanding of learning and psychology in general.

3.4 | The first steps away from behaviourism

However, what gradually promoted a real change in American psychology was the beginning of what was called cognitive science in the 1960s. It was strongly stimulated by Soviet Russia's launching of the first satellite in 1957 which created a kind of shock wave in the United States and an urge for radical changes in education. An expert group was appointed to prepare basic reforms, with the Harvard professor of cognitive psychology, Jerome Bruner, as chairman. This resulted in the idea of the 'scientific curriculum', stressing the importance of the understanding of basic structures and more student activity (Bruner, 1960). It was certainly a radical step beyond the doctrines of behaviourism.

At that time, some of Piaget's most important books had already been translated into English (Piaget, 1936/1952, 1947/1951), two comprehensive accounts of his work had been published (Flavell, 1963; Furth, 1969) and the American psychologist David Ausubel had produced *Educational Psychology: A Cognitive View* (Ausubel, 1968) which stressed that the most important condition of learning was what the learner had already learned because learning was about connecting new impulses with existing mental structures. Furthermore, the Dane Thomas Nissen (1970) noted that, when the first element of a learning scheme was established, a special learning type was required which he termed 'cumulation'. This is theoretically important because a bridge between simple learning as studied by behaviourism and other kinds of learning was established. (However, Nissens's ideas only appeared in Danish and were not available before I incorporated them in my later works).

But other new angles also appeared in the 1960s, mainly in America. For example, Daniel Berlyne pointed to curiosity and conflict as motivations to learn (Berlyne, 1960), Alfred Bandura introduced social learning with an extended version of behaviourism (Bandura, 1962) and Robert Gagné (Gagné, 1965) created an extraordinary connection between behaviourism and Gestalt psychology by arranging the various behavioural categories of learning in a hierarchy and placing problem-solving at the top—although he only considered problems with a distinct solution and not personal and social problems. Hence, it was no longer impossible to question behaviourism as the only acceptable way of dealing with human learning.

4 | THE GREAT BREAKTHROUGH AND VARIETY OF UNDERSTANDINGS FROM ABOUT 1970

However, in the early 1970s, the background for dealing with and understanding learning changed dramatically and a new agenda of learning as a necessity for all gradually became the frame of reference for both learning theory and practice. This may be seen as a consequence of the development in Western societies of labour market conditions requiring a higher educational level of all parts of the labour force.

4.1 | Learning to be

Retrospectively, it is obvious that the reason for this rapid and almost all-embracing change was due to and part of global technical and economic developments and worldwide changes in life conditions. More concretely, in relation to learning, a publication seemed crucial: the UNESCO report *Learning to be—The world of education today and tomorrow*, edited by the former French prime minister and minister of education, Edgar Faure as chairman of an international commission (Faure et al., 1972). This report was thorough, radical, consistent, exact and humanistically- and socially-oriented. It emphasised that learning was necessary for everyone during all their life and in all parts of the world. It was seen here as a personal and social enrichment, a basis for and part of democratic societies. The expression 'the

learning society' was coined. Learning theory was not directly involved, but the publication was historical for the agenda of learning and provided a platform to relate existing learning theory to new conditions and thereby develop a new learning theory, not least outside traditional schooling and education.

4.2 | Lifelong learning and adult education

Although the UNESCO report did not use the term 'lifelong learning', it was in this area that the new agenda most immediately influenced learning theory and practice, probably because there was already an ongoing discussion initiated by the American adult educator Malcolm Knowles (1970) who claimed that adult learning was different from children's learning and therefore should be practised in different ways. So he proposed that, in parallel to pedagogy for children, a new discipline of andragogy should be established to deal with adults' learning and education. The most central difference was that adults were able to profit by directing their own learning. However, this was strongly opposed by many well-established pedagogical theorists and the new term was never really adopted. But the discussion became the beginning of a development whereby lifelong learning and adult education in the following decades became core areas for new approaches to learning, not only in adulthood, but also in general.

4.3 | Learning for liberation and emancipation

The most extensive and innovative of the many new learning approaches that emerged in the 1970s were probably those that aimed at some kind of general or personal liberation or emancipation of certain groups of adult learners.

The first (which is rather unknown outside the German-speaking countries and Scandinavia) was the *Sociological Imagination and Exemplary Learning* approach, launched in the German trade-union movement in 1968 and published in 1971 by the sociologist Oskar Negt (1971) who belonged to the Hannover branch of the re-established Frankfurt School. The term sociological imagination was taken from the American sociologist Charles Wright Mills and refers to the ability to understand personal matters and experiences in the light of the social structures which create them. Exemplary learning involves understanding general conditions by analysing representative examples and power conditions. Hence, workers at floor level can learn about what determines their work conditions and what they can do to influence them.

This was in essence very close to the messages and practice developed at that time by the Brazilian Paulo Freire who worked with illiterate rural workers and taught them to read and write by working with 'generative themes' which were very similar to Negt's exemplary conditions. But in contrast to Negt's rather limited range, Freire's book *The Pedagogy of the Oppressed* became known in most of the world, including in the less developed countries and introduced a concrete agenda and method of combined learning and liberation (Freire, 1970).

The third great pioneer in emancipative learning was the American adult educator Jack Mezirow who launched the term 'transformative learning'. The background was a study of women who entered adult education in the United States and thus came to understand their oppressed situation and the ideas of women's liberation (Mezirow, 1978, 1991, 2006). Transformative learning was understood as any learning involving changes in the meaning perspectives, frames of reference or habits of mind of the learner and thus also a term for profound learning, promoting subjectively fundamental transformations. Later, Mezirow was criticised for not having sufficiently considered the emotional and social learning dimensions (Brookfield, 2000; Cranton, 1994)—a critique which he accepted (Mezirow, 2006)—and other definitions of transformative learning were proposed, for example, changes of elements of the self (Tennant, 2012) or the identity (Illeris, 2014). It should also be noted that four women, partly inspired by Mezirow, published *Women's Ways of Knowing* in 1986, claiming that women tended to learn in ways which were different from men's and from the kind of learning to which most research and literature refer (Belenky, Clinchy, Goldberger, & Tarule, 1986).

The approaches of liberation and emancipation have contributed considerably to the general development of learning theory by including social circumstances as an important element of learning conditions and all the mental dimensions in the learning process and outcome.

4.4 | Russian influences in America and Germany

Also in the 1970s, the Russian cultural-historical approach was adopted in Western Germany and the United States. In Germany, the work of Leontjev inspired Critical Psychology, headed by Klaus Holzkamp at the Free University in Berlin. Concerning learning, the most important contribution was, as I see it, a thorough study by Ute Holzkamp-Osterkamp (1976) of emotions and motivation as incentives for action and learning in which learning content and incentives were perceived as functioning in close interaction, unlike the detached and independent motives of American motivational psychology. The last of Klaus Holzkamp's many publications was a book on learning in which self-initiated learning was praised and learning imposed by others regarded as enforced (Holzkamp, 1995)—but this book never achieved the intended impact.

In America, Vygotsky's concept of the zone of proximal development was taken up by progressive educationalists such as Michael Cole, Barbara Rogoff and James Wertsch. This led to the 'Zoped' educational approach and practice in which learning activities were seen in relation to the pupils' and students' proximal zone of development (Cole & Scribner, 1978; Rogoff & Wertsch, 1984). Some researchers such as Jerome Bruner, Jean Lave and Yrjö Engeström were interested in the Zoped movement. Hence, the impact of the Russian cultural-historical approach was mainly a greater attention to pupils' and students' background, life world and expected interests as the bases for the selection of learning content and activities.

4.5 | Learning in working life

During the 1970s, the topic of learning in working life was also taken up. The main pioneers were the Americans Chris Argyris and Donald Schön who published the first version of their book '*Organizational Learning*' (Argyris & Schön, 1978) in 1978. For many years, it was the basic book in this area, adhering to the standpoint that only people can learn, not organisations. Later came a wide range of other contributions, spanning from the Australian Stephen Billett's attempt to set up a curriculum for workplace learning (Billett, 2001) to the comprehensive *Foundations of Human Resource Development* (Swanson & Holton, 2001). However, the interests of the organisations seem to be more important to the authors than the interests in human learning. So I shall not go into more detail here, but simply refer to my book in which I dealt with this topic (Illeris, 2014).

4.6 | Experiential learning

An important innovation as from the mid-1980s was experiential learning. It has two sources. The first was the book entitled *Experiential Learning* by the American David Kolb (1984) which presented a comprehensive model and theory of learning to which I shall return later, as it can be seen as the first attempt to create a comprehensive learning theory and thus gained a special status. The other was the International Consortium for Experiential Learning (ICEL network), originally initiated by the British educational adviser, Ed Rosen, which organised a number of conferences, the first in London in 1987. Probably the unspoken reference to John Dewey's work and mission, but also many informal connections, attracted a group of progressive adult educators, including the British-Australian David Boud (Boud, Keogh, & Walker, 1985) and Robin Usher (Usher, Bryant, & Johnston, 1997), the British Susan Weil (Weil & McGill, 1989) and the Belgian Danny Wildemeersch (Wildemeersch & Jansen, 1992). Several conferences were held, culminating with the Cape Town Conference in 1996. The consortium then gradually faded out and its future seems rather uncertain.

The idea of experiential learning played an important role as a learner-oriented alternative to more traditional understandings for some two decades.

4.7 | Social and situated learning

Since the late 1970s, several initiatives and proposals have also dealt with social learning in different ways. It has already been mentioned that, as early as 1962, Alfred Bandura made a first attempt to develop a social learning theory on a behaviourist basis. Later, he gradually moved away from traditional behaviourism and launched a theory of

vicarious learning which implied that reinforcement was not always a direct process, but may also happen indirectly through social imitation (Bandura, 1977). Also, the various approaches of emancipative learning, Zoped learning, workplace learning and experiential learning include many elements of social learning. In 1987, Peter Jarvis placed the social dimension at the centre of adult learning (Jarvis, 1987). However, it was not until 1991 that a specific focus on this dimension was established in general learning theory by two notable publications.

In his book *The Saturated Self*, the American psychologist Kenneth Gergen (1991) launched the social constructionism approach, claiming that, psychologically, individuals were nothing on their own, but only by virtue of their social relations. This does not deny that learning processes occur internally in the individual. But their nature and content are always determined by relations in the social field and learning can only be understood in the light of the social context. However, Gergen did not specifically deal with learning and the crucial breakthrough of the notion of social learning was a book, *Situated Learning* by the American anthropologist Jean Lave and the Swiss-American IT researcher Etienne Wenger (Lave & Wenger, 1991). They claimed that learning always took place in a specific situation which also influenced the learning process as its outcome. Later, Lave and many others developed this approach into a more general idea of practice learning (Lave, 1993/2009), whereas Wenger launched a 'social theory of learning' which was an interaction between meaning-making (learning as experience), practice (learning as doing), community (learning as belonging) and identity (learning as becoming) (Wenger, 1998).

4.8 | Intuitive learning, school learning and expert learning

Another important understanding of learning was presented in 1991 by the American psychologist Howard Gardner, primarily known for his theory of multiple intelligences. In his book *The unschooled mind*, Gardner (1991) distinguishes between intuitive learning, which is the natural and dominating way of learning in the preschool years, school learning, which is the kind of learning which schools force on older children and young people and the combined intuitive-expert kind of learning, which should be the desired result. The important innovation here is the attention to intuitive learning which is based on immediate perception and which human beings have practised for thousands of years before constructed and scientific recognition was developed. This kind of learning is still extremely valuable in daily and social life. The role of expert learning should not be to overrule intuitive learning. Both should be practised in a sensitive and logical combination.

4.9 | Scaffolding, narratives and biographical learning

Finally, I shall mention two very different but parallel contributions from the 1990s. First, Jerome Bruner with his remarkable book *The Culture of Education* (Bruner, 1996) and some minor publications, *Acts of Meaning* and *Making Stories* (Bruner, 1990, 2002), completed his lifelong transition from behaviourism, structuralism and constructivism to a kind of culturalism. This was, however, not as conflicting as it may sound because he always maintained an empathic understanding of the learners to which he added and combined new inspirations in a very enriching way. For example, the idea of scaffolding, that is, of learning by building sustainable structures and then gradually completing them with relevant content and understandings, saw learners expressing themselves by narratives as the core of individual learning and development. This brought Bruner close to the biographical learning approach which was developed in the 1990s, mainly in Germany with the sociologist Peter Alheit as its central figure (Alheit, 1995, 2009/2018). Here, the subjective understanding and expression of one's life story are seen as the core of all important learning.

5 | FOUR ATTEMPTS TO DEVELOP COHERENT AND COMPREHENSIVE LEARNING MODELS AND THEORIES

As demonstrated in the above, many kinds of contributions to learning theory were developed as from about 1970. Most were related to special approaches or areas. But as from the mid-1980s, contributions have proposed general

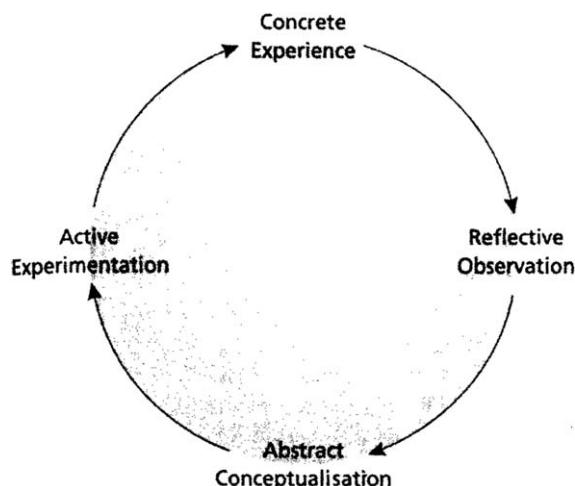


FIGURE 1 Kolb's learning cycle (after Kolb, 1984, p. 33)

theoretical models or approaches that aim at covering the whole field of learning in one coherent construction. In the following, I shall take up four.

5.1 | Kolb's theory of experiential learning

The first was the theory and model of experiential learning proposed by David Kolb in 1984. As it stated that all learning was basically experiential, it aimed at covering human learning in general. Kolb took as his point of departure the theories of Piaget, Dewey and Lewin. By transforming their essence into three somewhat crude models, he claimed that they all understood learning as a process with four stages or adaptive learning modes which could be inscribed in a learning cycle from concrete experience through reflective observation and abstract conceptualisation to active experimentation and then back to a new concrete experience. He also claimed that there were two dimensions in all learning which he called 'prehension' (grasping) and transformation, each stretching between two dialectically-opposed adaptive orientations which, together, are identical to the four stages of the learning cycle. Hence, a specific learning model emerged:

Figure 1 includes four basic kinds of knowledge—assimilative, convergent, accommodative and divergent –, two taken from Piaget and the other two from the intelligence and creativity researcher J.P. Guilford. Kolb then uses these four kinds of knowledge to describe different learning styles, kinds of individual and professional orientations, etc. Hence, he ends up with a very comprehensive, coherent and systematic understanding of human learning and knowing which had a great appeal but was based on a number of constructional assumptions that are not always clear and convincing. It must be noted that he only deals with the cognitive learning dimension. The succession of learning stages is in conflict with studies that show that learners start off with what they already know and regard as important and then attempt to progress by using what can help them to obtain a clearer and more advanced understanding (Schön, 1983).

5.2 | Engeström's activity theoretical reconceptualisation

Another holistic understanding of learning theory was launched by the Finnish psychologist Yrjö Engeström in his 1987 dissertation in continuation of the cultural-historical or activity-theoretical approach (Engeström, 1987, 2009/2018). He combined the Russian theory with a very theoretical learning typology developed by Gregory Bateson and thus operated with three types of learning, two of which are similar to Piaget's assimilation and accommodation, whereas the third, 'expansive learning', is close to Mezirow's transformative learning. With this background, Engeström adopted a reformulation of Vygotsky's understanding of 'the zone of proximal development' which was originally

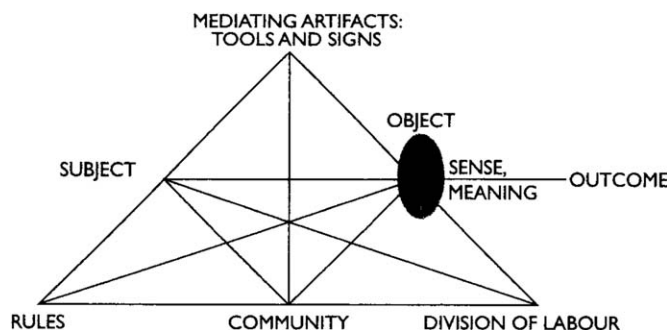


FIGURE 2 The structure of a human activity system (after Engeström, 1987, p. 78)

proposed by the Zoped theorists Peg Griffin and Michael Cole (1984) as a zone for 'a dialogue between the child and his future', whereby the child's self-development was focused and the role of grown-ups reduced. This understanding was then related to learning in general and more especially to adults' work-related learning. Engeström thus expanded Vygotsky's understanding of mediating artifacts or tools into a model of the structure of a human activity system (Figure 2).

On this basis, work-related learning was then analysed as the interaction between two or more such activity systems in Engeström's 'Boundary Crossing Laboratory' for working groups.

Engeström's approach bridges the cognitive and social learning dimensions, but the emotional dimension is only indirectly broached. It also adds a new kind of learning to Piaget's understanding of assimilation and accommodation and deals with the overcoming of learning barriers, although no concept for this element of boundary crossing was formulated.

5.3 | Kegan's constructive-developmental approach


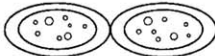
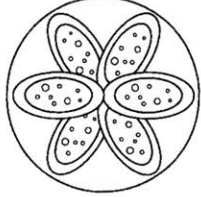
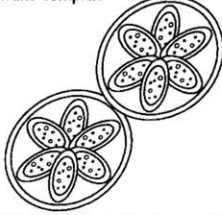
Another comprehensive theory of human development and learning was presented by Robert Kegan, professor of developmental psychology at Harvard University, first as a draft in 1982, then as a fully-developed theory in the book *In Over Our Heads* (Kegan, 1994) and finally as a response to Mezirow's understanding of transformative learning in an article entitled 'What "Form" Transforms?' (Kegan, 2000). Kegan called his approach constructive-developmental because it describes a general human development which is brought about through learning. His model is close to Piaget's approach because it describes a succession of five stages, but with the difference that, whilst Piaget's stages terminate in early youth, Kegan deals with a lifelong process, and while all children come through all of Piaget's stages, many people will only cover the first three of Kegan's stages and be stuck at the level of the socialised mind, some will go on to the fourth stage of the self-authoring mind and only a minority will reach the fifth and final stage of the self-transforming mind, as shown in the following Figure 3.

The transition between the stages takes place by transformative learning (thus Kegan employs this concept in a broader and more general way than Mezirow) whereby what was the subject of cognition now becomes the object—that is, that by which one was previously controlled now becomes something one controls.

It is important to note that Kegan includes all three dimensions of learning (using the terms the logical-cognitive, the social-cognitive and the intrapersonal-affective domain), as well as assimilative, accommodative and transformative learning.

5.4 | Jarvis' approach to lifelong learning

Since the late 1980s, the British sociologist Peter Jarvis has been a central figure in the areas of adult and lifelong learning. His theoretical understanding has spanned from an early empirical study of how adults reported their learning processes (Figure 4) to the position of adult education in society. His comprehensive publications have included his

	SUBJECT	OBJECT	UNDERLYING STRUCTURE
	PERCEPTIONS Fantasy SOCIAL PERCEPTIONS/ IMPULSES	Movement Sensation	Single point/immediate/atomistic
	CONCRETE Actuality Data, cause-and-effect POINT OF VIEW Role-concept Simple reciprocity (tit-for-tat) ENDURING DISPOSITIONS Needs, preferences Self-concept	Perceptions Social perception Impulses	Durable category 
The socialized mind	TRADITIONALISM ABSTRACTIONS Ideality Inference, generalization Hypothesis, proposition Ideals, values MUTUALITY/INTERPERSONALISM Role consciousness Mutual reciprocity INNER STATES Subjectivity, self-consciousness	Concrete Point of view Enduring dispositions Needs, preferences	Cross-categorical Trans-categorical 
The self-authoring mind	MODERNISM ABSTRACT SYSTEMS Ideology Formulation, authorization Relations between abstractions INSTITUTION Relationship-regulating forms Multiple-role consciousness SELF-AUTHORSHIP Self-regulation, self-formation Identity, autonomy, individuation	Abstractions Mutuality Interpersonalism Inner states Subjectivity Self-consciousness	System/complex 
The self-transforming mind	POST-MODERNISM DIALECTICAL Trans-ideological/post-ideological Testing formulation, paradox Contradiction, oppositeness INTER-INSTITUTIONAL Relationship between forms Interpenetration of self and other SELF-TRANSFORMATION Interpenetration of selves Inter-individuation	Abstract system ideology Institution relationship- regulating forms Self-authorship Self-regulation Self formation	Trans-system Trans-complex 

LINES OF DEVELOPMENT

K COGNITIVE

E INTERPERSONAL

Y INTRAPERSONAL

FIGURE 3 Kegan's five-step scheme (adapted from Kegan, 1994, pp. 314–315)

first important book on the social conditions of adult learning (Jarvis, 1987), a trilogy summing up his broad approach to lifelong learning and the learning society (Jarvis, 2006, 2007, 2008) and the editing of two international handbooks (Jarvis, 2009; Jarvis & Watts, 2012).

The pivotal point of Jarvis' understanding has always been the connection between societal conditions and the learners' personal development, especially in adulthood. For many years, he supported lifelong learning and took part in several international activities in this field, but later became more sceptical and saw restricting elements in modern educational policy. His strong side has always been his insights into learning and education as social and societal

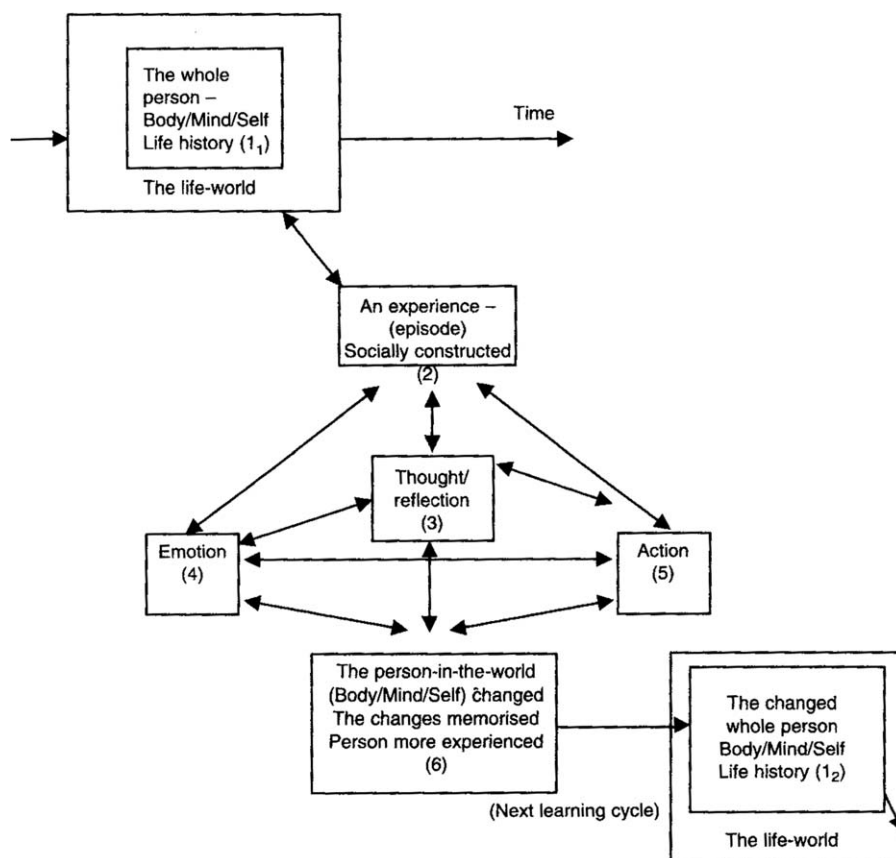


FIGURE 4 The transformation of the person through learning (after Jarvis, 2006, p. 23)

activities and the person as a free participant in this, whereas his interest in the individual acquisition process and motivation has been more peripheral.

6 | CONCLUSION

Learning theory is a broad topic with blurred outlines and many approaches that overlap in different areas and different ways. I shall now sum up the present situation by using the categories of my own understanding (Illeris, 2007/2017, 2009/2018, 2014/2016) which comprises learning structures, learning types and learning barriers, as well as considerations on learning in relation to age, gender and the competitive State.

It is important to realise that all learning comprises two simultaneous processes so that the learner does not experience them separately: an interaction process between learners and the social and/or material environment which provides them with some impressions and an acquisition process whereby these impressions are assessed, elaborated and taken in. Furthermore, the acquisition process always includes two elements, the content which is what is learned, be it knowledge, skills, understanding, behaviour, values, or feelings and the incentive which is the mobilisation of the necessary mental energy. As a result, all learning always comprises three dimensions: the content dimension, which is usually, but not always, cognitive; the incentive dimension, which includes engagement, interest and motivation and is mainly emotional; and the interaction dimension, which is social (also when it is a text, a picture, a film or the like) and may have many layers, ranging from the immediate situation, the local, institutional, environmental, national and other conditions to the global context in general (Figure 5).

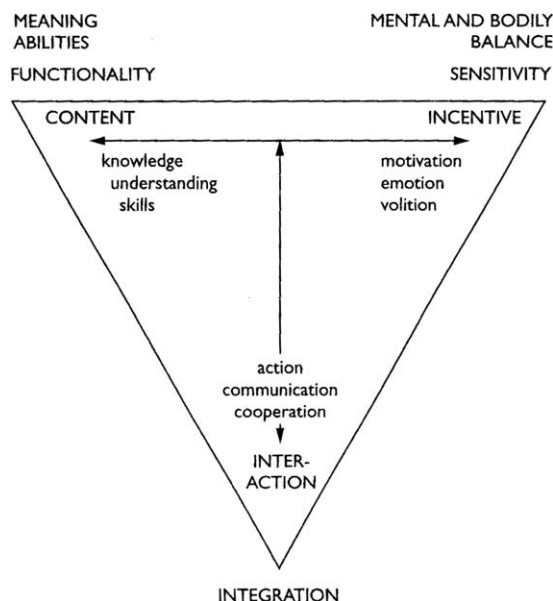


FIGURE 5 The three dimensions of learning and competence development (after Illeris, 2009/2018, p. 10)

From the analysis in this article, it appears that, up to about 1970, learning theory predominantly dealt with the acquisition process. Only in some of the more holistic theories, such as Gestalt psychology, the cultural-historical approach and Dewey's more pedagogical work did the interaction process have a significant position. Bandura, Negt, Freire and Argyris and Schön were among the first to give the social dimension more specific attention, but after about 1990 there has been a remarkably increased and separate interest in this dimension, for example, by Jarvis, Lave, Wenger and Alheit. Today, one cannot leave out the interaction process in learning theoretical considerations.

As for the acquisition process, most theoretical approaches have focused on the content dimension. A great deal of learning theory has been about how learning content is acquired. With behaviourism, this was restricted to what could be registered by visible changed behaviour. Also, Piaget and later important theorists such as Mezirow and Kolb mainly focused on the content dimension. The incentive dimension was, of course, central in Freud's work and also in Dewey, but these were not really regarded as learning theorists. Later, Rogers, Berlyne, Holzkamp-Osterkamp and the experiential learning approach were the pioneers of this dimension.

However, as I see it, the most fundamental general feature to understand learning, knowing, thinking and remembering is that these mental functions span content and incentives, reason and emotion in a practical and socially-situated context in accordance with what contemporary brain research has shown (Damasio, 1994). Ever since Descartes' depicting of reason as the most distinguished human hallmark ('cogito, ergo sum', 1644), it has been the central error of Western understanding to think of reason and learning content as separated from and in some ways more human than the rest of the mental totality. I think that Gestalt psychology, as well as Dewey, Rogers, the cultural-historical and Zoped-theorists, Negt, Freire, Engeström, Kegan and Jarvis have all had some sense of this. But this has far-reaching consequences as it implies that only as an analytical abstraction can the learning content and incentive, the what, the how and the why of learning be dealt with separately. For example, this entails that most educational policy and didactical considerations are amputated and insufficient—including present neo-liberal educational arrangements, to which I shall return later. As an up-to-date illustration I shall point to the interviews with 12 dedicated North European youth and learning researchers in a recent both practice- and theoretically-oriented book, *Learning and Motivation in Youth* in which I was involved (Katznelson, Sørensen, & Illeris, 2018). Another new and important book in this connection is K. Ann Renninger's and Suzanne E. Hidi's *The Power of Interest for Motivation and Engagement* (Renninger & Hidi, 2016).

As for the issue of learning types many learning theorists do not explicitly consider this question, but directly or indirectly a distinction is usually accepted between additive/assimilative learning and changing/accommodative

learning. Beyond this quite a few also deal with a more advanced kind of significant, transformative, expanding or biographical learning involving personal change or development. And, finally, I also include cumulative learning as a specific simple learning type, mainly practised in early childhood.

When going through the various theories of learning it is also striking that they do not deal with what is involved when intended learning does not take place—although today this seems to be almost as important as what happens in cases of intended or accidental learning. In my own studies of learning in practice I have time and time again witnessed different kinds of non-learning due to what I have termed mislearning, learning defence and learning resistance, respectively (Illeris, 1999/2002, 2007/2017, 2009/2018). The only other theorist who has taken up the issue of learning barriers is Jarvis, who in his first book on social learning uses the concept of non-learning, which may be due to 'presumption' (the learner presumes that he already has an understanding of the area), 'non-consideration' (because of insufficient interest), or conscious 'rejection.' In a later handbook article Jarvis partly changed this, but still only discusses different levels of consciousness and does not relate to the central concept of defence (Jarvis, 1987, 2012).

The question of learning and age has been taken up by learning theory in two ways. Piaget and others have dealt with different learning stages related to mental maturation in childhood and youth, and Knowles and many other adult educators have claimed that learning in adulthood is different from children's learning. Furthermore, Kegan, Gardner, Alheit and others have linked different ways of learning to lifelong mental development without pointing to age dependent stages.

The issue of gender differences in relation to learning has been taken up by Mezirow, who was strongly inspired by women's liberation as the incentive of transformative learning, and Belenky et al. studied women's ways of knowing. But apart from this, the issue of gender has hardly influenced considerations on learning until modern brain research drew attention to gender differences in the brain. At first, differences between the cerebral hemispheres were highlighted, but this line of approach was complicated by the fact that damaged brain centres can be restored in the opposite hemisphere. Later, especially Goldberg (2001) and Baron-Cohen (2003) pointed to general tendencies of women's brains functioning more empathically and men's brains more systematically—both strongly emphasising that this tendency is not valid for single individuals. In the present connection it can hardly be missed that the great majority of learning theoretical contributions are made by male researchers—while today most teachers, especially in pre-school and primary school are women.

Finally, it is no longer possible to deal with learning theory without noticing that education has a very central position in the policy of nations and internationally because a high educational standard is regarded as a key factor of competitiveness. However, it is not education, but learning which is decisive in this connection, and more education does not automatically result in more and better learning. And in today's so-called competition states the dominant approach of 'new public management' has not realised this difference. So authorities tend to stick to economy and financial considerations, learning theory is hardly involved in the planning and designing of educational reforms and administration and human motivation seems to be regarded as something which can be manipulated by financial and administrative incentives. This may be part of the reason why the many initiatives and arrangements apparently have not resulted in better learning, but rather in greater problems and higher drop-out rates. Pressure and regulations do not promote good learning (Illeris, 2015/2016).

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