I'm not robot

reCAPTCHA

Continue

I'm not robot

reCAPTCHA

Continue

Cognitive learning theory for adults

Cognitive learning theory for adults pdf. What cognitive learning theory. What is cognitive learning theory examples.

The cognitive theory of learning was advanced by Koffka, Kohler, Lewin, Piaget, Ausubel, Bruner and Gagne. It considers the process of learning as an internal intellectual process that includes the aspects of intuition, information processing, storage and conception of a certain perception of what is learned. His place of learning is internal cognitive structuring unlike external stimuli in behavioral theory. It focuses mainly on the internal structure that allows the learning process to happen. This is very important in adult education since the model used must be adapted to the interior structures of adults. It must be understood that, adults carry a lot of problems in their minds and the learning model used must measure their intellectual structure. Cognitivist theory sees the purpose of education as to develop the ability and ability to learn better by creating the environment necessary for the interiorization of what is learned. This is the basis of every learning process, since what you learn must be understood and internalized before you are practiced. The role of the educator is seen as purely to structure the learning process and content so that they can be easily understood by the learning group. This is a very essential concept in adult learning, since the model used must be relevant in order to attract their attention. The learning model used must take into account the needs of the learning group and consider how the content will help them. This is because adult learning process, this theory insists on cognitive development of learners. Learning content should not be too difficult for students to understand. Adults easily learn to themselves and the learning model used should facilitate their self-direct learning. Cognitivist theory emphasizes taking into account the learning content according to the cognitive ability of students. The cognitive theory sees learning as a process involving the structuring of the intellectual and cognitive processes of an individual. He sees learning as what generates new knowledge in an individual. Summary All's learning theories have each aspect in itself that can permanently help adults in their learning process. These theories take into account the learning environment, the content of inclination and the impact of learning on the individual and society. Therefore they should belearn theories to consider when implementing any model of adult learning. By Shirley J. Caruso, M.A., Human Resource Development Follow @EA4oLtEd // Image by geralt / 21 039 PixabayIn this article, I want to share the summary of the literature review I conducted to support learning. There are many theories that explain how adults learn and each has its own merits. You deserve it. Guide explains and explore the most commonly used and how they can be used to improve students and faculty learning. The guide has a model that combines many of the theories in a flowchart that can be followed by anyone designing learning. The scheme can be used at the curriculum planning level, or at the individual learning level. At every stage of the model, the guide identifies the responsibility of both the instructor and the educator. The role of the institution is to ensure that time and resources are available to allow effective learning. The guide is designed for new education, in the hope that it can reveal the difficulties in the understanding and application of common learning theories, also creating debate opportunities on the best way they should be used. Most we read, more we realize that there are many different ways to explain how adults learn (Merriam et al. 2007). None of the individual theories fully explains what is happening when an aspiring health professional is committed to learning. In this guide, it will be clear that the authors have a widely constructive vision. The constructivists, like Vygotsky (1997), consider that learning is the process of building new knowledge on the foundations of what you already know. We will explain a constructivist scheme, we feel we have a test base and forms a theoretical base to help the development of the curriculum, learning and teaching strategies, student assessment and program evaluation. Malcolm Knowles (1988) considered that adults learn in different ways of children. He introduced the term â € œAndragogiaâ € to differentiate the learning of adults from pedagogy; This differentiation now seems to be artificial. Many of the principles of andragogy can be applied in the same way as children learning. It is probably more appropriate to think in terms of a learning continuum, which extends throughout life, with different emphasis, problems and strategies in different times. In this guide, we will indicate what we feel are the main types of learning theories, we will briefly show the way in which theories developed from each other, and then we will show how, when different theories can be applied to maximize Learning. When we consider medical education in particular it is important to remember that in some programs the students have already completed a degree, and in others the students come directly from high school or secondary school. Medical education also includes post-graduate studies and permanent professional development. Each of our students will have their own constraints, experiences and individual preferences. The duty task is to provide an environment and resources Which one student can flourish. Our task is complicated by the observation that learning theories in part of the psychological theories of learning and partly from pragmatic observation. It is also important to remember that â € œLearningâ € includes the IL of three domains: knowledge, skills and attitudes; any theory should ideally take into account learning in each of these three domains. In general terms, adult learning theories can be grouped into, or related to, different categories. There is a lot of overlap between theories and categories of theories, and here we give a simplified overview: Instrumental learning theories: These focus on individual experience and include behavioral and cognitive learning theories. Behavioral theories are the basis of many training programs and curricula based on competence (Thorndike 1911; Skinner 1954). A stimulus in the environment leads to a change of behavior. Applying these theories usually results in learning that promotes the standardization of the result. This leads to the main problem with behavioral theories - that is, who determines the results and how are measured? Cognitive learning theories focus on learning in mental and psychological processes and, not behavior. They are interested in the perception and treatment of information (Piaget 1952; Bruner 1966; Ausubel 1968; Gagne et al. 1992). Experiential learning has influenced adult education by making educators responsible for creation, facilitating access and organizing experiences to facilitate learning; both Bruner's discovery (1966) and Piaget's cognitive development theory (1952). Experiential learning has been criticised to focus anything upon the development of individual knowledge and on limiting the social context (Hart 1992). Its application in medical education is relevant because it focuses on the development of skills and skills of practice in a specific context (improvement of practice: Yardley et al. 2012). Humanistic Theory: These theories promote individual development and are more engaging. The goal is to produce individuals who have the potential for self-realization, and who are self-directed and motivated internally. Knowles (1988) supported this theory by divulging the concept of "andragogy". It explains the motivation to learning, its main limitation is the exclusion of context and the social mechanism of building meaning and knowledge. We now know that context and social factors are crucial in professional education (Durning & Artino 2011). Self-direct learning suggests that adults can plan, conduct and evaluate their own learning. It has often been described as the goal of adult education that emphasizes individual autonomy and freedom in learning. Although it is axiomatic for adult learning, there are doubts about the extent to which self-learning, rather than direct self-learning is really(Norman 1999;Hoban et al. 2005). A limitation of the concept is the lack of consideration of the social context of learning. He also implicitly underestimated the value of other learning forms such as collaborative learning. Theory of transformative learning: transformative:The Theory of learning explores the way critical reflection can be used to challenge instructor beliefs and assumptions (Mezirow 1978, 1990, 1995) The process of transformation of perspectives includes a disorienting dilemma that is the catalyst/trigger to review their opinions/prospects – "know you don't know"The context, which includes personal, professional and social factors Critical reflection. Mezirow (1990) identifies different forms of reflection in the transformation of meanings, structures, context, process and premise. The pre-emptive reflection involves the critical review of long-term assumptions (Brookfield 2000).Social Learning Theory: The two fundamental elements for social theories of learning are the context and community (Choi & Hannafin 1995; Durning & Artino 2011). These concepts have been developed by Etienne Wenger (Lave & Wenger 1991; Wenger 1998), which emphasizes the importance of "communities of practice" in guiding and encouraging learning. Land and colleagues consider them interactive within the practice community (Land et al. 2008). The way an apprentice experience is shaped by their context and the community is developed by the theory of placement and is discussed by Durning & Artino (2011). The theories on cognition are based on three main assumptions: Learning and thinking are social activitiesResearch and learning are structured by the tools available in specific situations (thought is influenced by the approach in which learning takes place (Wilson 1993). Motivational models: Any theoretical model that attempts to explain and relate adult learning to an educational theory must have two critical elements – motivation and reflection. One of these theories is the theory of self-determination (Ryan & Deci 2000; ten Cate et al. 2011; Kusurkar & ten Cate 2013). The theory recognizes the importance of intrinsic motivation and believes that three fundamental needs should be met to support it: Autonomy, Competence and a feeling of belonging – or "Relativity". One of the questions about learning is that a low expectation of success will result in a poor motivation to learn, while the perceived value of success is overwhelming. This is partly explained by Maslow's theory of needs (Maslow 1954; Peters 1966), but probably does not capture the balance between the different competing drives of hopes and expectation of learning in contrast with the time and effort necessary to engage with the process. The theory of expectation (Weiner 1992) incorporates the "value" of success and success expectation. The Chain of Response model covers adult participation in learning opportunities (Cross 1981). In this model, three internal motivation factors are interconnected:the instructor's attitude to education and the importance of objectives and expectations. The main external barriers to motivation are life events and transitions, opportunities and barriers to learning or achieving Models: Reflection change models consider that reflection leads to action and then to change. Reflective learning (Sch™n 1983, 1987) has an important importance for medical education, and more widely in society (Archer 2012). The role of the deliberate practice (Duvivier et al. 2011,) using reflection and feedback as tools to develop knowledge and skills is starting to provide very valuable information for educators who help students develop autonomous learning. Also this brief consideration of the types of theory applicable to adult learning will lead to realizing that each has their strengths, and are each incomplete without others. Before dealing with a model that tries to put together the theories, we must consider how we arrived at where we are. At the end of the seventeenth century, the pervant vision was that all knowledge derives from the experience. Although he personally did not like the term, John Locke (Locke 1690) considered that the mind was a tabula rasa or A empty slate at birth and that all acquired knowledge has been derived from the experience of the senses. These ideas have been reworked and developed until the beginning of the 20th century when Edward Thorndike derived its laws (Thordike 1911,) mainly the law of effect â € "that declared that learning has occurred if he had a Positive effect on the individual, and the Law of Exercise â € "which meant that repetition has strengthened learning. This was further developed by the behaviorists, such as Skinner (1954) who have shown that some learning forms could be demonstrated by a simple paradigm response to stimuli, so that a reward can be used to guarantee an appropriate response to a stimulus . Skinner showed that there were three elements that strengthened learning, ie the frequency (the number of times a stimulus was presented), contiguity (the time delay between the response and reward) and contingency (continuous binding between stimulus and reward). Chomsky (1975) believes that the type of experiments favored by behaviorists do not explain the acquisition of superior skills, such as language learning. Chomsky claimed that our brains are scheduled to acquire higher order skills, which we develop and modify from experience. While some looked at the potential neural mechanisms that emphasize the acquisition of learning, others were considering the factors that can make it more effective. Piaget, a cognitive constructivist, considered the different types of knowledge that could be acquired at different stages of a young man's life (Piaget, 1952). This flow of thought continues to the work of people like William Perry who described the way in which university students change from dualism (the ideas are either true or false; the teacher always has reason) to multiplicity (the truth depends on context; the context is not necessarily the referee). Social constructivists, such as Vygotsky (1978) focus on how the learning community supports learning. A key ideaConstructivism is that of the Proximal Development Zone, so a learner can acquire new knowledge only if he can connect it with existing knowledge. Conversations between students/teachers articulating what is already known can extend the area of proximal development by putting new ideas in the context of current understanding. This line of thought was carried forward in social learning theories by Bandura (1977), and notably by Wenger in the concept of a learning community or "community of practice" (Wenger 1998). Towards the end of the 20th century, a body of research suggested that adults learn differently from children and that "andragogy" was a better term for this process than "pedagogy". The key difference between adults and children is said that adults are differently motivated to learn. Although the arguments don't seem so clear anymore, the line described by Knowles (Knowles et al. 2005) was that adult students differ from children's students in six ways: The need to know (Why do I need to know?) Student self-concept (I am responsible for myself and my learning). For my decisions) The role of student experiences (So experiment Readiness to learn (I need to learn because my circumstances are changing) Learning orientation (Learning will help me cope with the situation I am in) Motivation (I learn because I want to) These observations, in association with the experiential learning model (I learn because I want to) In Kolb's scheme, the instructor has a concrete experience, on which to reflect. Through their reflection they are able to formulate abstract concepts, and make appropriate generalizations. They then consolidate their understanding by testing the implications of their knowledge in new situations. This then gives them a real experience, and the cycle goes on. Students with different learning preferences will have strengths in different quadrants of the cycle (Kolb). In Kolb's terminology, "Attists" feel and do, "Reflectors" feel and look, "Theoretical" look and think, and "Pragmatists" think and do. From the educator's point of view, it is important to design learning activities that allow to follow the cycle, involving each of the quadrants. Although often cited, and easily understandable, the inventory of the learning style developed by the Kob cycle has little reliability and validity (Coffield et al. 2004). Of particular importance for us is the realization that while we are something new, attend a conference, or talk to a patient, compare what we're seeing. What we already know and reflect on the difference (reflection in action, (Schön 1983)). This allows us to formulate abstract concepts that make sense of new data. In turn, this will lead us to propose tests of our knowledge, through direct experimentation or through debate and discussion. This is a family process to all know the scientific/clinical method; However, at least one key element is missing and this is the reflection on action. It is essential that the student thinks of the processes they used, and the extent to which they were rigorous or appropriate in the use of the material; This is fundamental to learning. The next problem is how the new knowledge becomes integrated into the existing knowledge base. Supporters of the transformative learning approach believe that meaningful learning occurs when connections are made between new and existing information (Regan-Smith et al. 1994). Norman & Schmidt (1992) suggest that there are three main elements in this process: processing, refinement and finally restructuring. The processing is linked in new knowledge with what we already know. It is important, however, that the links are accurate rather than general (Stein et al. 1984). Sophistication is the act of sifting and selecting through information to maintain such elements that make sense. Finally, restructuring is the development of new knowledge maps (schemata) that probably claim to become an expert or demonstrate skills (Norman et al. 2006). The process of acquiring new knowledge, relating to what is already known and developing a new understanding is complicated and difficult but educators can help students by providing early organizers (Ausubel 1968). There are two types of advanced organizers: models and metaphors, which we will consider later, and scaffolding ..Scaffolding refers to the structural things that teachers can use to guide students through educational and learning materials. They are necessary because the volume and complexity of knowledge to be acquired often leaves the student standing on the threshold (in a state of liminality), rather than entering the world of learning. It is easy to underestimate the problem of liminality. It is well described by Ray Land (Land et al. 2008; Meyer et al. 2010), but refers to the sense of discomfort we feel when we do not understand the rules, or context of a new situation. We need someone to lead us to the threshold, presenting us with new ideas and probably explains some of the language (Bernstein 2000). As we begin to build our knowledge and understanding, we need to have an idea of where things fit, how they fit together, and an idea of how individual pieces are part of a whole. â € "Coffielding" provides such a perspective. Stainsprogramme level organizers, which depend both on the content and context in which it is learned. Program organizers include program, program,experiential learning and programmed reading lists. More commonly, scaffolding currently includes providing students with a list of expected learning outcomes. It is important to remember that it also includes the induction students receive when they enter the program or enter a new clinical setting. Learning outcomes can be further refined using Bloom's taxonomy (Bloom et al. 1956), which has been reviewed by several authors, including Anderson (Anderson & Kratwohl 2001). In Figure 2, Bloom's taxonomy is shown in the pyramid itself, and Anderson's development in the same place. Anderson's modifications include the belief that "create" is a superior attribute to "evaluate", but they are also important to emphasize that the student does things with knowledge. Learning objectives, should be associated with verbs, rather than lists of things to learn. The difficulty with the model is evidenced by the differences between Bloom's and Anderson's models. In fact, the elements of the pyramid are arranged in a loop. Evaluation leads to the development of a new idea which is then applied, analyzed, evaluated and so on. Bloom's original work has led to several variations. In medical education, the Miller pyramid (Miller, 1990; Figure 3), which can be used as a guide for planning and assessment within a curriculum. The important is that, because in the training of Bloom's for the health professions it is essential to remember that the result of the training is intended as a graduate who can take their place in the workforce (Action). Knowledge is the foundation of the pyramid, but not the pyramid itself. In a structured learning environment, new knowledge is sufficient unto existing knowledge to allow its relevance to be perceived. A more difficult condition occurs in real life, when the relevance of the information is often anything but obvious. Variations of this situation are described in Johari Window (Figure 4), named after its creators Joseph Luft and Harry Ingram in the 1950s (Luft & Ingham 1955). Two things are immediately apparent from this construction, namely that discussion between individuals will increase the amount of practical knowledge, and that some things require a mystery until you speak to someone else with a different field of knowledge or understanding. As a result, the more diverse the members of a learning group are, the more likely the individuals within the group are to learn from one another. There will always be "unknown unknowns", but teachers can help students move around these areas by carefully choosing assignments, resources and, of course, patients. Newble, Entwistle and their colleagues, in a series of studies (Newble & Clarke 1986; Newble & Entwistle They showed the existence of different forms of learning, learning, styles, and that students have different learning preferences. There is a real and active debate over whether learning styles are fixed or flexible and to what extent they are determined by context (Coffield et al. 2004). It seems clear that some students prefer to work for a deep understanding of what they are learning; Others prefer to acquire facts, a term known as "surface learning". A reflection of a moment will show that everyone can be an appropriate strategy. Sometimes a deep understanding is necessary, and sometimes it is enough to know "the facts" on the surface. It is important to know the normal values of gas in the blood or the levels of electrolytes and this superficial study triggers appropriate clinical action. However, solving a patient with acidosis requires a deeper understanding of how the various physiological systems interact. The ability to be strategic about the type of learning we wish to maintain is important. But it can be influenced by the evaluation system. Thus, if an evaluation system tries to recall facts, then the successful student will employ superficial learning. If the system rewards deep thinking, understanding and reasoning, then the successful student will employ to this. There is a divergence of views on whether or not "strategic" is a third type of learning (Newble & Entwistle 1986; Biggs et al. 2001). Recognizing the different styles is important, as (most) the lessons will be more attractive for superficial students and the extended project work will interest deeper students more. Some materials must be known and quickly remembered (gas values in the blood, electrolyte levels), while others need a deep understanding to allow appropriate interventions (to address acid base disorders or circulatory shock). In a series of studies on American students in the undergraduate years, Perry (1999) noted that students change their approach to learning as they progress in university years. Typically, students develop from a 'duality'-based approach, with the clear vision that the teacher will tell them the difference between right and wrong, towards 'multiplety', in which they recognize the importance of the context and that they, their colleagues and the environment are valuable sources of knowledge and experience. Together with this change of orientation, a greater confidence is accompanied a facing uncertainty. This work was based on a relatively competent, well-thought and homogeneous population of graduates, and was subsequently extended by Perry's colleagues to a wider range of society. They (Belenky et al., 1997) discovered a group of 'silent' learners who did not recognize their right to question or build knowledge. Belenky and colleaguesalso extended the scale beyond receiving and understanding knowledge, and to constructivism of knowledge (Belenky et al. 1997). Some recent Maudsley works (2005) show that medical students develop in the way they learn, but that progression is notfrom duality to multiplicity. There are no two explanations for this paradox, one is that students tend towards more strategic learning styles to cope with the needs of the evaluation system; alternative explanation is more complex and refers to the business becoming a new member of the profession. The learning process of new things is not only the acquisition of knowledge (surface learning), it includes being able to make some use of it, and hopes to make use of it. But being able to do these things means an understanding of where things fit. A novice stands at the threshold, not enough to know what to expect, and sometimes not knowing even what it is supposed to look at. It is a state of liminality, and the instructor needs to have some threshold concepts so that they can move further (Land et al. 2008; Meyer et al. 2010). Often the difficulty is in vocabulary or the way language is used (Bernstein 2000), but it can also be problematic concepts (Meyer & Land 2006), or simply join the "team" and take on a new identity (Wenger 1998). The role of the teacher is to help the instructor on the threshold, and, as discussed above, help them until they start making sense. If we follow Wenger's arguments (Wenger 1998) then we will see that the whole community has a role in guiding the novice on the threshold, and helping them take their place in the practice community, that is, in this case, the health profession. It will be clear by now that there are several themes on, and approaches to, learning. In the following section we introduce a model that encapsulates them and can be used to structure, plan and provide successful learning experiences. We propose that there are five stages of learning experience, which the instructor must face. The instructor and the teacher will have special responsibilities at every stage. We first describe the model, describe the responsibilities and then discuss each stem in more detail. All learning begins with the existing knowledge of the instructor, which will be more or less sophisticated in any given domain (Figure 5). The dissonance phase exists when the existing knowledge of the learner is questioned and has been incomplete. The challenge can be internal, when a learner is thinking about things through, or can be external, provided by a teacher or patient. There are several things that influence if the instructor engages with the dissonance phase. These include the nature of the task, the resources available, the motivation of the learner, and the development phase of the instructor and their preferred learning style. It concludes with the instructor that reflects and determines their personal learning results. During the completion phase, the instructor seeks and possible explanations or solutions to a problem (processing), and through completion of tasks, research, reflection and discussions perfect new information in a number of concepts that are, for the apprentice, new. The stage of the organization is where the instructor develops or restructures its ideas to take into account the more information acquired. There are at least two elements to this: the reflection in action, where the instructor tries and re-tests the hypothesis to give meaning to the information and organization of the information in scheme that (for the student, at least) makes sense. The feedback phase is probably the most crucial, as it is where the instructor articulates their newly acquired knowledge and proof against what their peers and teachers believe. The feedback will strengthen their scheme, or force the instructor to reconsider it in the light of new information. During the consolidation phase the instructor reflects on the process they have undergone, looking back at the learning cycle and identifying what they have learned from it, both in terms of increasing their knowledge base, but also in terms of the learning process itself (reflection on action). During each of these stages, we propose that there are specific roles for teachers and students. The model we have given here shows that there are a number of ways in which the application of the model can help in the design of learning activities, both in individual discussions, small group work, seminars or large conferences. The same principles apply to curricula planning, short-term course, module or program level. Whether it's working with a single student, or planning an important program, the educator must recognize that the instructor needs to move through a cycle, in order to understand and truly learn. We must also be explicit that the educator and instructor have specific responsibilities at every stage of the learning process. The key to success as an educator is likely to provide organizers in advance. We need to know what we want the instructor to learn, and how it fits into the bigger system. This means that we must have clearly defined results, at the appropriate levels of one of the changes in Bloom's taxonomy (Figure 2). We may need a student to acquire new knowledge, apply their knowledge or create a new hypothesis, for example. Once we know our expected result we can start thinking about the best way to help the instructor acquire, and demonstrate that they have acquired, learning results. When we plan an educational intervention, we usually start with an idea of the task in which we want students to be involved the careful at a conference, take a story from a patient, write a essay, or other). There are, however, five considerations that define the most appropriate task, and should come first. The entire learning processWith what you already know an apprentice. In every intervention, we must make sure that the instructor has the possibility of articulating what they already know about something. There are many possible techniques, for example â € â € œGruppiâ € in lessons lessons 2003), the first phases of the PBL process in which students discuss what they already know (Taylor & MiFlin 2008), or discuss something in a department before carrying out an exam or getting a story from the patient. This phase helps the instructor to anchor the new knowledge to what already includes and places it in the first phase of the learning cycle. If the target of educational intervention is simply to present new knowledge, then superficial learning is the most appropriate learning style. It is not the most appropriate learning style, however, if it requires the learner of understanding, or subsequently processing the knowledge (Newble & Entwistle 1986; Biggs et al. 2001). The subsequent processing and phases of Bloom taxonomy require an increasing understanding. The are complication factors, given that many students are strategic in choosing learning styles before accessing university courses, so they may seem to prefer superficial learning. Even at the degree level, if students know that they will be tested about their knowledge of facts, rather than on their understanding, they will naturally choose a superficial learning style. If the educator aims at a deeper level of understanding, then it will be necessary to make sure that there are several lessons does not derail it. It is possible, but challenging, use the lessons to provide something more than a superficial knowledge. The deep learning goes through the discussion, research and weighting of the tests. The programs that use the PBL (Taylor & Miflin 2008), the Based Learning team (TBL: Michaelsen et al. 2004) and the case-based Learning (Ferguson & Kreiter 2007) are designed in this sense, but the most traditional programs can introduce elements of the most discursive styles or request students to carry out particular tasks, such as research, group work or preparation of documents. If superficial learning attracts many students, the perry duality stage attracts both the student and the educator (Perry 1999). The lessons can strengthen a state of duality in which the student accepts what the teacher says. But students must feel at ease with uncertainty, to deal with a partial image and recognize when they need to know more. It is not enough for a doctor to know the right answers in a perfect situation. We rightly expect that he will understand why they are the right answers and how they are determined by the circumstances. An experienced doctor will have the experience necessary to recognize it, and this should emerge in traditional teaching alongside the patient. Students can also develop their understanding of systems through a PBL or Case-based Learning learning, where the facilitator encourages students to reflect on which they attribute to "facts" and how they see them. Help the student to move from duality to early multiplicity, early, The work of Sobral (2004) has shown that the motivation of the students can be strongly influenced by the school environment and their attitude towards learning. This is also fundamental for the theory of self-determination (Ten Cate et al. 2011; Kusurkar & Ten Cate 2013). If this is the case, then an early, stimulating and relevant clinical context for the desired learning results, it will be advantageous. Although the adult learners are self-motivated, they will also have a number of conflicting concerns. Balancing two or more imperative is a normal situation both for the learner and for the other members of the team. It is responsibility of the educator to ensure that the task involves the learner for a sufficient period to capture its enthusiasm. Equally important is not to waste the energy and enthusiasm of the student with poorly designed tasks or with trivial or too complex problems. In this context, there is much more to consider, in particular the size of the € ™ AUTIREITO LEARNING (GARRISON 1997), which include the motivation and self-regulation (ZIMMERMAN 2002). There are some tasks which the motivation and above all, the ability to determine what should be learned (Loyens et al. 2008). Again, this is favored by the learning based on problems, but it is easily destroyed by publishing or providing students with detailed learning results. Naturally, we must consider physical resources such as space, books, magazines and access to electronic resources. The most precious resource, for all of us, is time. Whenever an educational activity is planned, sufficient time must be dedicated to preparation and programming, including the programming of the assessment and assessment modalities of the activity. It is clear that it will be necessary to provide a sufficient period of time for the educator or educators involved in the realization, but also in the evaluation and evaluation processes. It is also important that students have sufficient time to engage in learning activity and to complete any supplementary work necessary, such as reading, and of course reflecting on the material and the way they have learned. The task assigned to the learner must Take all the previous considerations into account and must have learning results aligned with the curriculum as a whole and specific. Sufficient to be reasonably achievable within the assigned time period. No one could learn the anatomy and physiology of the nervous system in a couple of days, but could be able to master the anatomy and physiology that are at the base of the cross extensor reflection. crossed.Information if each task is to be evaluated, but it is widely stated that "Assessment guides learning" (Miller 1990), so attention must be paid to evaluation opportunities, and the covered material should be included in the evaluation project (Hamdy 2006). The dissonance provided by the task was sufficient to introduce new possibilities, facts and concepts to the student. They must now start making sense to them. The first phase in this process is to consider as many as possible explanations for the task.This is equivalent to the brainstorming phase in problem-based learning and has two main advantages. The first is that it helps ensure that concepts are made between new information and previous knowledge, ensuring that everything is learned in the context of what is already known. The second is that it strengthens our natural tendency to be appropriately inventive and think widely. This skill will be fundamental for the future professional health, where obvious explanation for the symptoms of a patient might be wrong. Lack of breath, for example, may have a respiratory or cardiovascular origin. Laboration without refinement will lead to confusion, so once a number of possible explanations for a scenario has been determined, it is necessary to perfect them in the most plausible solutions . This will be after some research, reflection and discussion or in the clinical environment after reading the patient's notes observing or seeing the results of the appropriate tests. At this stage we are reflecting the scientific and clinical method, which is a valuable exercise in itself and in itself. The outcome of this phase is the generation of a working hypothesis. Most of what happens in the processing and refining phase is within the student, but the success of the venture will result from the nature of the task that has been established and the provision of appropriate resources. The task must be such as to require some thought and commitment to complete it, and resources must be appropriate for the task and understanding of the student. This phase is the fundamental part of problem-based learning, but it can also derive from clinical teaching and bedside table when the educator is aware of the student. This is a complex task and involves the student who reflects in action, challenging it to reflect critically. The educator has two roles in supporting the student. The first role is to provide them scaffolding, a skeleton to support their ideasGive them consistency and structure. This could be the picture of the program, with a series of themes, or Be a series of conferences or conferences or may also be a program. The danger with scaffolding is that if it is too detailed removes any freedom or responsibility from the student. It becomes therefore very difficult to determine if true understanding has been achieved (almost than a simple call). It also means that the student will not know, until late, if they really understand the subject. The second role for the educator is to encourage critical reflection. At its best the educator will model it in tutorials or the supervision clinic in the teaching of the bedside table, but it is perfectly possible to shape your own way of thinking aloud in a lesson or seminar. Since so much of our knowledge changes, critical thinking is probably the most important skill we can give to our students. It is essential to provide students with opportunities to test their reflective skills. There are many possible ways, but they include discussion with each other, informally or in small groups, with the educator, or with critical friends. Although the idea of critical friends (Baskerville & Goldblatt 2009) is usually associated with teachers/researchers, there is no reason why it would not work among students, even if they would need training and support first. There are two elements to the feedback . The first is to articulate what was learned. All educators know that the real test of understanding something is explaining it to other students. So the newly acquired material must be explained or used somehow. The role of the instructor, together with other students, is the second element of feedback, which is to emphasize the strengths and weaknesses of any subject and to ask further questions. This student and educator are satisfied that the result has been satisfied. In any session of small group facilitated or bedside table teaching, this is part of the facilitator's role : it is perfectly possible and acceptable to challenge constructively without distributing the correct response or humiliation of the student. In a group that works well (if a formal, structured group or less formal study group) other members of the Group present questions and will seek clarification. This is a combination of feedback and discussion and can lead to knowledge building (Belenky et al. 1997). It is also relatively simple to provide feedback in a lecture theatre - either through team-based learning activities, or through instant feedback devices such as â € â € â € â € â € â € Although feedback is best administered in frequent, small doses, there are clearly times when it is crucial. The most obvious example is when the student is evaluated. This is when students youAccount of the measure in which they acquired and can demonstrate new knowledge. Any effective evaluation system will provide students with an indication of where they are going wrong, and which areas should focus on clarifications of Understanding. There are two additional elements of the often ignored feedback phase. The first is that any effective evaluation system will provide students with an indication of where they are going wrong, and which areas should focus on clarifications of Understanding. There are two additional elements of the often ignored feedback phase. The first is the duty of the instructor to search and reflect on feedback that get their performance. In this way we can develop and refine our skills to improve what we do. The second refers to the epistemology. Also educator and student must reflect on the way they learned and the relative highs and the minimum of experience. This to ensure that we can work more intelligently (rather than harder) next time. The student faces two challenges at this stage. The first is to reflect what was learned in the light of what was known before. Does it all kind of sense, or is there a logical perspective that must be designed? How does the new knowledge helps to explain the biggest image and increase our understanding? If the exercise was the subject of evaluation, it is here that the student should ideally think about their evaluation results and their areas of strength and relative weakness, so as to overcome the levels of trust in what they think they know. The student will already have articulated (in the previous phase) how they worked the learning. In this phase of consolidation they must consider the measure in which they have taken personal responsibility for their learning. How far are they along the continuum to co-build knowledge? To what extent were personally responsible for any process breakdown? What should they do otherwise next time? The role of the educator at this stage is to provide summary feedback on the exam, highlighting areas of strength and relative weakness, or could be through an evaluation or portfolio process. The key is to move from a type of feedback to the right / wrong to one in which the possibilities of future development are explicit. The role of the Listor, after all, is to guide the student towards a deeper understanding. Assign an institutional level that connects the adult learning theory with the practice is challenging. Some theories or aspects of a theory will be more relevant and useful than others in a particular context. In the way exactly in the same way in which doctors should take practices based on the best available tests, educators should use the best tests available to guide their educational decisions. The institutions of medical education should rationalize and be explicit on their mission, their vision, program and development of programs, learning strategies, learning strategies, student assessment and program assessment led by the theories of the Adult education and from the special socio-cultural contexts. Health education programs will have a mission or vision statements describing graduates who have knowledge, skills and attitudes that enable them to respond to the health needs of the population with a high degree of moral and social responsibility. Based on the result you can expect a variety of strategies, each based on one or more different educational theories. Understanding how people learn is important, and both students and educators must remember that learning is a process through which they weight their knowledge against a critical examination of alternative possibilities (Ahlquist 1992). This understanding is essential for problem-based learning and most clinical practice. Although knowledge is the simplest domain, and most of the public, more than half of the medical education domains are related to attitude, such as lifelong learning, empathy, utilitarianism, connection with patients and colleagues, ethics and professionalism. The theories of transformative and experiential learning are an important theoretical framework for learning affective and change results. The institution should be ready to undertake changes in the educational and value principles in medical education will probably require the change of perceptions of educators and students about adopting a vision of themselves as students and educators. The role of the instructor is not only to receive knowledge, but also to seek, challenge, build knowledge and change your perception, opinions and beliefs. Applications of these strategies require significant changes in institutional culture, active development of faculty and increased autonomy and self-direction of students. To develop these skills all students (including faculty members) must be trained to ask questions, critically assess new information, identify their learning needs and gaps in their knowledge and, above all, reflect and express their views on their learning process and results. The clinical environment is challenging for the explorer and educator. Clinical educators, students and patients interact together in the context of a hospital, clinics and communities in general not only in a classroom. Time is at a reward, and the stake for the patient is often high. Because of this it is important to make the best use of learning theories when helping people learn. Self-direct and experiential learning are key strategies, but feedback is essential to help learn how to make the most of their contact time. Clinical reasoning, hypothesis generation and testing are essential skills for good clinical practice. The adult learning model we have illustrated (Figure 5) shows that perception, insight, the process of meaning and mental networking are interconnected and essential for good reasoning. Clinical teachers should explain how they come with a diagnosis or make a management decision by exploring with the instructor the mental processes in the minds of the teacher and the instructor with which "the implicit becomes explicit". AutoDirect learning and the development of student objectives should always be encouraged and sustained, but they should be discussed, monitored and recorded. Portfolios, logbooks and reflective magazines are particularly important tools for this. The key to successful implementation is for them to be more "neck box" exercises and we should land and use them as a basis for discussion makes them more effective. Ethics and professional behaviour can be, and often are, taught, but their understanding is demonstrated and consolidated within the clinical setting. Asking students to observe, record and discuss incidents that have ethical and professional implications is central to this development (Maudsley & Taylor 2009). The theory of perspective transformative (Mezirow 1978) is more appropriate for acquiring these skills. It supports the reflection and examination of the assumptions and beliefs of the teacher and teachers, having to lead to individual and social change. An off-shoot of adult learning theories is located cognition (Wilson 1993) developed by Wenger (1998) in the theories of communities of practice. Its application to the clinical setting is relevant. Learning and thinking are structured social activities influenced by the approach and tools available in a specific situation (Lave & Wenger 1991). Didactic and learning insights on the bedside are different from the operating room, emergency department or in the community (Durning & Artino 2011; Yardley et al. 2012). Each context has its own educational power and value. Observing a trainer's performance and behaviour as a role model, reflection and action and feedback on performance are important educational principles to consider in teaching and learning in clinical settings. Assessment systems and tools need to be designed and selected to measure skills and expected outcomes. What to measure, how, when, by who are important key questions and their answers are not always easy. The assessment should be linked to the expected learning outcomes, and the instructor should be given any feedback that will help them develop or consolidate their knowledge, skills or attitudes. Time constraints indicate that some elements of feedback will have to be self-assessment and peer review by the instructor, but this should not be seen as a problem. Encouraging discussion, debate and reflection will increase learning opportunities. It is important to allow time, and provide a structure, for these activities if they are to be properly integrated into the learning/assessment system. As mentioned above, good thinking through portfolio/log book with reflective elements will allow the instructor's progress to be documented for himself, and, above all, for the educator/counsellor. Applying theories of learning Consistently and attention, the educator can be sure of helping students to join the health profession, and lay the foundations for a career for development along life. Adult learning theories are related to different educational, educational theories, philosophical and psychological theories. It is proposed a simple model that takes into account different aspects of the theories of adult learning and their implications for the role of the learner and the teacher. Although the model is presented as a cycle, the student and teacher can enter the cycle at any time. Adult theories should influence all aspects of education in health, from education and considering them should improve clinical learning and even clinical outcomes. Declaration of interest: The authors do not report conflicts of interest. The authors are solely responsible for the content and drafting of the article. Practical points Entering a health profession requires not only the acquisition of knowledge and skills, but also a process of growth within the professional community. Although people learn in different ways, we all face a process of elaboration of possible explanations and classification of explanations in probability and less likely. Understanding the way people learn can plan the most effective ways to help them learn. The model presented here provides a scheme and checklist that we can use to increase our effectiveness in the organization of study programmes, in the provision of education and in the evaluation of results. Teacher's RolesDissonance Phase Identifying knowledge, skills and previous attitudes (basic) Recognize what is unknown Recognize the needs of personal development and learning Participate in planning personal learning goals and relevant experiences Provide the context in which the student can learn. Increasing extrinsic motivation through appropriate activities "Helping the student to recognize or promote internal motivation factors "Exploring the prior knowledge and experience of the student" Helping the student to identify his learning needs and the relevance of each step of improvement" Think about many possible explanations or solutions to the case or problem. 'W identify the most likely resources to refine the possibilities of ' actively participating in activity and experience'.Perfecting information in a hypothesis 'Ensure that relevant learning experiences are available 'at the appropriate level for the appropriate Phase Organization'(Test) and reprove the hypothesis Organizing information in 'history' that makes sense to the student. To provide early organizers for the 'structures' of the learners with the instructor in which they can continue.• Encourage reflection in action Return stage• Articulate the knowledge, skills or attitudes developed • Provide feedback to peers and staff • Accept, and if appropriate act on feedback received from others• Reflection on learning experience (in action and action) • Provides feedback to learner, formally or informally. • Accept and, if appropriate, act on the basis of the feedback received from the instructor's consolidation phase • Reflection on the learning process • Evaluate personal responsibility for learning • Development of knowledge, skills and attitudes• Provide opportunities for the instructor to try and/or apply their new knowledge • Encourage reflection on the action. Ahlquist R. Inequality events: Overcoming resistance in a multicultural foundation course. Research

and multicultural education, C Grant. Falmer Press, London 1992: 89–105. [Google Scholar]Anderson LW, Kratwohl DR. A taxonomy for learning, teaching and evaluation: A review of Bloom's taxonomy of educational goals. Longman, New York 2001 [Google Scholar]Archer MS. The imperative reflexive in late modernity. Cambridge University Press, Cambridge 2012 [Crossref], [Google Scholar]Atherton JS, 2011. Learn and teach; the taxonomy of Bloom [Online]. [Access 19 March 2011]. Available from [Google Scholar]Ausubel D. Educational psychology: A cognitive vision. Holt, Rinehart & Winston, New York 1977 [Google Scholar]Baskerville D, Goldblatt H. Learn to be a critical friend: from professional indifference through the challenge to unquestioned conversations. Camb J Educ 2009: 39: 205–221 [Taylor & Francis Online], [Google Scholar]Bandura A. Social learning theory. General Learning Press, New York 1977 [Google Scholar]Baskerville D, Goldblatt H. Learn to be a critical friend: from professional indifference through the challenge to unquestioned conversations. Camb J Educ 2009: 39: 205–221 [Taylor & Francis Online], [Google Scholar]Belenky MF, Clinchy BM, Goldberger NR, Tarule JM. The streets of women to know: Self-development, voice and mind. Basic books, New York 1997 [Google Scholar]Bernstein B. Pedagogy, symbolic control and identity: Theory, research, criticism. Rowman & Littlefield, Oxford 2000 [Google Scholar]Biggs J, Kember D, Leung DYP. The new two factor study process questionnaire: R-SPQ-2F. Br J Educ Psychol 2001: 71: 133–149 [Crossref], [PubMed], [Web of Science ®], [Google Scholar]Bloom BS, Engelhart MD, Furst EJ, Hill WH, Kratwohl DR. Taxonomy of educational objectives: The classification of educational objectives. Manual I, cognitive domain. Longmans Green, New York 1956 [Google Scholar]Brookfield SD. Transformative learning as a critique of ideology. Learn how to transform: Critical perspectives on an ongoing theory. Kindle and, Mezirow, J Associates. Jossey-Bass Inc. San Francisco, CA 2000: 125–148 [Google Scholar] Bruner J. Towards an education theory. Belkap Press, Cambridge, MA 1966 [Google], Hannafin M. Knowledge and context in design. Educ Technol Res Dev 1995: 43: 53â €"69 [Crossref], [Web of Science ®], [Google Scholar] Chomsky N. Reflections on the language. Pantheon Books, New York 1975 [Google Scholar]Choi JI, Hannafin M. Learning environments: Increase participation and facilitate learning. Josset-Bass, San Francisco, CA 1981 [Google Scholar] Durning S, Artino AR. Theory of the situation: a perspective on how the participants and the environment can interact: Amee Guide no. 52. Med Teach 2011; 33: 188-199 [Taylor & Francis Online], [Web of Science ®], [Google Scholar]Duvivier RJ, Van Dalen J, Muijtjens AM, Moust VRMP, Van der Vleuten CPM, Schuppier Ajja. The role of the practice deliberated in the acquisition of clinical skills. BMC MED EDUC 2011; 11: 101 [Crossref], [PubMed], [Web of Science ® Â], You [Google Scholar] Gagne RM, Briggs LJ, Wagner WW. Educational design principles. Harcourt Brace, Orlando, FL 1992 [Google Scholar] Hart M. Working and education: Keeping the critical alive. Adult Educ Q 1992: 42: 125–138 [Crossref], [Web of Science ®], [Google Scholar] Hoban JD, Lawson SR, Mazmanian PE, Best AM, Seibel HR. The prompting scale of self-portrait learning: a study of factors analysis. MED EDUC 2005: 39: 370â €"379 [Google Scholar]Ingram D. ABC of learning and teaching in medicine: teach small groups. Br med J 2003; 326: 492â €"494 [Google Scholar] Knowles M. The adult explorer: the definitive classic in adult education and human resources development. Elsevier, Burlington, MA, 2005 [Google Scholar] Kolb D. Experimental Learning. Prentice-Hall, Englewood Cliffs, NJ 1984 [Google Scholar] Kusurkar RA, Ten Cate OTJ. AM Last Page: Education does not fill a bucket, but light up a fire: self-determination theory and motivation in medical students. Acad Med 2013; 88: 904 [Google Scholar] Land R, Meyer JHF, Smith J. Threshold concepts within the discipline. Sense Publishers, Rotterdam and Taipei 2008 [CrossRef] [Google Scholar] Lave, Wenger E. Learning: Cambridge University Press, New York 1991 [Crossref] [Google Scholar] Locke J. An essay on human. Thomas Basset, London 1690 [Crossref], [Google Scholar]Loyens Smmm, Magda J, Rikers RikersAutoDirectlo learning in learning based on problems and its relationship with self-regulated learning. EDUC Psychol REV 2008; 20: 411 â € 427â €à €, [Web of Science ®], [Google Scholar] Luft J, Ingham H. The Johari window, a graphic model of interpersonal awareness. UCLA, Western formation laboratory acts in group development. LOS ANGELES, CA 1955Â, [Google Scholar] Maslow A. Motivation and personality. Harper and Row, New York 1954 [Google Scholar] Maudsley G. The expectations and experience of medicine students as students in a curriculum based on problems: a research approach Â «Mixed methods.â € Doctor in medicine. University University, Liverpool, United Kingdom 2005. [Google Scholar] Maudsley G, Taylor DCM. Learn professionalism in a curriculum based on problems. Professional Medical Profession, RL Creuss, Sr Creuss, Y Steinert. Cambridge University Press, New York 2009; 211Â »224Ã» [Google Scholar] Meyer JHF, Land R. Threshold concepts and problem knowledge: a linkages to the ways of thinking and practice in the disciplines. Improving teaching and learning, C Rust. Oxford Centre for Staff and Learning Development 2006: 412â €"418, [Google Scholar] Meyer JHF, Land R, Baillie C. Threshold concepts and transformative learning. Sense Publishers, Rotterdam and Taipei 2010â, [Crossref], [Google Scholar] Mezirow Jè. Prospective transformation: Adult education (IS) 1978; 28: 100 â €"110â [Crossref], [Google Scholar] Mezirow Je. Promote critical reflection in adulthood: a guide to transformative and emancipatory learning. Jossey-Bass, San Francisco, CA 1990â, [Google Scholar] Mezirow Je. Transformative learning: theory to practice. In defense of the world of life, M.R. Welton. SUNY PRESS, NEW YORK 1995; 36 Â «70Â» [Google Scholar] Michaelsen LK, Knight AB, Fink LD. Group based learning: a transformative use of small groups in university teaching. Stylus Publishing, Sterling, VA 2002, [Google Scholar] Miller GE. The evaluation of the capacity / competence / clinical performance. Acad Med 1990; 63: S63 Â «S67Â» [Google Scholar] Newble DI, Clarke RM. Approaches to student learning in a traditional medical school. Med Educ 1986; 20: 267â €"273â" [CrossRef], [PubMed], [Web of Science ® Â], You [Google Scholar] Newble DI, NJ Entwistle. Styles and strategies of student learning: implications for medical education Med Educ 1986: 20: 162 Ã Â«175Ã Â»[CrossRef], [PubMed], [Web of Science ® Â], You [Google Scholar] Norman G, Eva KM, Brooks, Hamstra S. Experience in medicine and surgery. The Cambridge Handbook of expertise and expert performance, KA Ericsson, N Charness, PJ Feltovich, RR Hoffman. Cambridge University Press, Cambridge, 2006; 339 Ã "353Ã" [CrossRef], You [Google Scholar] Norman GR. Adult learner: A mythical species. Acad Med 1999; 74: 886 Ã Â "889 [Crossref], [PubMed], [Web of Science ®], [Google Scholar] Norman GR, Schmidt HG. The psychological basis of learning troubleshooting: a review of the evidence. Acad Med 1992; 67: 557â € "565 [Crossref], [PubMed], [Web of Science ®], [Google Scholar] Perry WG, Jr. Forms of ethical and intellectual development in the college years. Jossey-Bass, San Francisco, CA 1999 [Google Scholar] Peters R. The concept of motivation. Routledge, London 1966 [Google Scholar] Piaget J. The origins of intelligence in children. International University Press, New York 1952 [Crossref], [Google Scholar] Regan-Smith MG, Obenshain S, Woodwarth C, Richards B, Zeits H, Small PJ. Rote Learning in medicine. J am Med Assoc 1994; 272: 1380Ã "1381 [Google Scholar] Ryan RM, DECI EL. Theory of self-determination and facilitation of intrinsic motivation, social development and well-being. Am Psychol 2000; 55: 68â € "78 [CrossRef], [WEB OF SCIENCE ®], [Google Scholar] SchÃ¶n DA. The reflective doctor: how professionals think in action. Temple Smith, London 1983 [Google Scholar] SchÃ¶n D. Educate the reflective doctor: towards a new design for teaching and learning in the professions. Jossey-Bass, San Francisco, CA 1987 [Google Scholar] Skinner BF. Science of learning and the art of teaching. Harvard Educ Rev 1954; 24: 86â €"97 [Web of Science ®], [Google Scholar] Sobral DT. What kind of motivation drives medical students learning searches? MED EDUC 2004; 38: 9504 Â "9517 [Crossref], [PubMed], [Web of Science ®], [Google Scholar] Stein BS, Littlefield J, Bransford JD, Persampieri M. Elaboration and knowledge acquisition. Mem Cogn 1984; 12: 522â € "529 [Crossref], [PubMed], [Web of Science ®], [Google Scholar] Taylor DCM, Miflin B. Troubleshooting: Where are we? Med Teach 2008; 30: 742Ã "763 [Taylor & Francis Online], [PubMed], [Web of Science ®], [Google Scholar] Ten Cate Otj, Kusurkar Ra, Williams GC. As self-determination theory can help our understanding of teaching and learning processes in medical education: Amee guide no. 59. Med Teach 2011; 33: 961â € "973 [Taylor & Francis Online], [Web of Science ®], [Google Scholar] Thorndike EL. Animal Intelligence. MacMillan, New York 1911 [Google Scholar] Vygotsky L. mind in society: the development of higher psychological processes. Harvard University Press, Cambridge, Ma 1978 [Google Scholar] Vygotsky L. and society: the development of higher psychological processes. Harvard University Press, Cambridge, Ma 1978 [Google Scholar] Weiner B. Human motivation: metaphors, theories and research. Sage, Newbury Park, CA 1992 [Google Scholar] Wenger E. Community of practice: learning, meaning and identity. Cambridge University Press, New York, NY 1998 [Crossref], [Google Scholar] Wilson AP. The promise An An An Anon Adult Learning Theory, SB Merriam. Jossey-Bass, San Francisco, CA 1993 [Google Scholar]Yardley S, Teunissen PW, Dornan T. Experiential learning: AMEE Guide no. 63. Med Teach 2012; 34: 102â115 [Taylor & Francis Online], [Web of Science ®], [Google Scholar]Zimmerman BJ. Becoming a self-regulated performance: An overview. Pract Theory 2002; 41: 64â70 [Taylor & Francis Online], [Web of Science ®], [Google Scholar]