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Associated theories of learning and cognitive theories of learning

The second subset of cognitive learning theory, cognitive behavioral Theory, examines how our thoughts affect our behavior and our feelings. According to behavioral cognitive theory, thoughts, feelings and actions of a person affect how they learn. In other words, their patterns of thought and mentality influence how they collect and store information. For example, a study suggests that someone's motivation to learn helps determine how often their mind wanders during a lesson. Participants who were more motivated to learn less vague experience than those who said they were less motivated. In turn, people whose minds wandered more than others kept the lesson information less effectively. In Harvard Business Review, leadership coach Erika Andersen illustrates the four traits he discovered in successful students — aspiration, self-awareness, curiosity and vulnerability. According to Andersen, people in the workplace can feed these qualities with exercises. For example, considering how new information could help them, or reframing errors like learning experiences. Different ideas and priorities, then, influence how teachers think about learning, including curriculum, the difference between teaching and learning, sequencing, availability and transfer. Ideas form a “screen” through which to understand and evaluate any psychology has to offer education. As it turns out, many theories, concepts and ideas from educational psychology do it through the “screen” of education, which means that they are consistent with the professional priorities of teachers and useful in solving important problems of teaching in class. In the case of learning problems in class, for example, educational psychologists have developed a series ofand concepts that are relevant to classrooms, as they describe at least some of what usually happens there and offer a guide to help learning. It is useful to group theories according to secondfocus on changes in behavior or thinking. The distinction is rough and inaccurate, but a good place to begin. To begin with, therefore, consider two perspectives on learning, called behaviorism (learning as changes in excessive behavior) and constructivism, (learning as changes in thought). The second category can be further divided into psychological constructivism (changes in thought resulting from individual experiences), and social constructivism, (changes in thought due to assistance from others). The rest of this chapter describes the key ideas of each of these points of view. As I hope you will see, everyone describes some aspects of learning not only in general, but as happens in classrooms in particular. Thus every perspective suggests things that you could do in your classroom to make learning students more productive. Behaviorism: Changes in what students do Behavior is a learning perspective that focuses on changes in the observable behaviors of individuals - changes in what people say or do. At one point we all use this perspective, whether we call it “behaviorism” or something else. The first time I drove a car, for example, I was worried especially if I could actually drive, not with if I could describe or explain how to drive. For another example: When I reached the point of life where I started cooking meals for myself, I was more focused on the fact that I could actually produce edible food in a kitchen than with if I could explain my recipes and cooking procedures to others. And another example – one often relevant to new teachers: when I started my first year of teaching, I was more focused on doing teaching work – daily survival – than on pausing/reflect on what I was doing. Note that in all these examples, focusing attention on behavior instead of “thinkers” may have been desirable at that time, but not necessarily desirable indefinitely or all the time. Also as a beginner, beginner, are times when it is more important to be able to describe how to drive or cook than actually do these things. And there are certainly many times when thinking and thinking about teaching can improve teaching itself. (As a teacher-friend once told me: “Don’t just do something; Stay there!”) But neither is it concentrating on behavior that is not necessarily less desirable than focusing on the “internal” changes of students, such as gains in their knowledge or their personal attitudes. If you're teaching, you'll have to attend all forms of learning in students, both inside and outside. In classrooms, behaviorism is more useful to identify the relationships between specific actions by a student and the precursors and the immediate consequences of actions. It is less useful to understand changes in student thinking; for this purpose we need more cognitive (or thought-oriented) or social theories, such as those described later in this chapter. This fact is not a criticism of behaviorism as a perspective, but only a clarification of its particular strength or utility, which is to highlight the observable relationships between actions, precursors and consequences. Behaviourists use particular terms (or “lingo”, some might say) for these relationships. A variety of behaviorism that has proved particularly useful for educators is the operating conditioning, described in the next section. Functional climate: new behaviour due to new consequences Operating conditioning focuses on how the consequences of behavior affect behavior over time. It begins with the idea that certain consequences tend to make certain behaviors happen more frequently. If I compliment a student for a good comment made during the discussion, there is more than one possibility that I will hear further commentsstudent in the future (and I hope they too will be good!) If a student tells a joke to classmates and laughs at it, then the student is likelymore jokes in the future and so on. The original research on this learning model was not done with people, but with animals. One of the pioneers of the industry was a Harvard professor, B. F. Skinner, who published numerous books and articles on the details of the process and who stressed many parallels between operatic conditioning in animals and conditioning operating in humans (1938, 1948, 1988). Skinner observed the behavior of rather domiciled laboratory rats (not the unpleasant type that sometimes lives in landfill.) He or his assistants would put them in a cage that contained little except a lever and a small tray large enough to contain a small amount of food. (Figure 1 shows the basic set-up, which is sometimes nicknamed a “Skinner box.”) At first the rat would sniff and “putter around” the cage at random, but sooner or later it would happen on the lever and eventually it happens to press. Hurry! The lever released a small pellet of food, which the rat would promptly eat. Gradually the rat would spend more time near the lever and press the lever more frequently, getting food more frequently. In the end, it would spend most of its time at the lever and eating its filling of food. The rat had “discovered” that the consequence of pressing the level was to receive food. Skinner defined changes in rat behavior as an example of operating conditioning, and gave special names to different parts of the process. He called the pellets food reinforcement and lever-pressing the operator (because “operated” on the rat environment). See below. Figure 1: Functional conditioning with a Skinner laboratory rat and other behavioral psychologists experimented with the use of various reinforcements and operators. They also experimented with various reinforcement models (or reinforcement times), as well as with various ideas or signalsabout when the reinforcement was available. It turns out all thesehe operation, the reinforcement, the program, and the deer – affected how easily and accurately the operating conditioning occurred. For example, reinforcement was more effective if it came immediately after crucial operatic behavior, rather than being delayed, and reinforcements that occurred intermittently (only part of time) caused learning to take longer, but also caused it to last longer. Functional conditioning and student learning: Since the original research on the operistic conditioning used animals, it is important to ask if the operistic conditioning also describes learning in humans, and especially in students in classrooms. At this point, the answer seems to be clearly “yes” There are countless examples of classroom consequences affecting student behavior in ways that resemble operistic conditioning, although the process certainly does not take into account all forms of student learning (Alberto & Troutman, 2005). Consider the following examples. In most of them, the operatic behavior tends to become more frequent on repeated occasions: A seventh grade boy makes a silly face (the worker) to the girl who sits next to him. Classmates sitting around them giggle in response (strength). A child in kindergarten raises his hand in response to the teacher’s question on a story (the worker). The teacher calls her and she makes her comment (reinforcing). Another child kindergarten blurtis his comment without being called on (the worker). The teacher complains, ignores his behavior, but before the teacher calls a different student, classmates are listening carefully (strength) to the student even if he did not raise his hand as he should. A 12th grade student, a track team member, runs a mile during practiceHe notes the time he takes it as well as his speed increase since they join the team (strength). A child who is usually very restless sits for five minutes doing an assignment(operating.) The teaching assistant compliments him for working hard (strengthening.) A sixth elementary brings home a book from the class library to read the night (the worker.) When the book returns the next morning, his teacher puts a golden star by name on a chart published in the room (strength.) These examples are sufficient to make several points on the operating conditioning. First, the process is widespread in classrooms — probably more widespread than teachers realize. This makes sense, given the nature of public education: To a large extent, teaching is to make some consequences (such as praise or signs) depend on the commitment of students in certain activities (such as reading some materials or assignment). Second, learning through operistic conditioning is not confined to any particular degree, subject area, or teaching style, but by nature happens in every imaginable class. Thirdly, teachers are not the only people who control reinforcements. Sometimes they are controlled by the activity itself (as in the example of the track team), or by classmates (as in the example “giggling”). This leads to the fourth point: that more examples of conditioning often occur at the same time. A case of study in Appendix A of this book (The decline and fall of Jane Gladstone) suggests how it happened to someone who completes the teaching of students. Because the operating conditioning happens so widely, its effects on the motivation are somewhat complex. Functional conditioning can encourage intrinsic motivation, to the extent that reinforcement for an activity is the activity itself. When a student reads a book for the pleasure of reading, for example, it is strengthened by reading itself, and we can say that his reading is “intrinsally motivated”. More often, however, theoperistic stimulates both intrinsic and extrinsic motivation at the same time. The combination of both is evident in the examples of the preceding paragraph. In everyit is reasonable to assume that the student felt intrinsically motivated to some extent partial, even when the reward came from outside the student as well, this because part of what strengthened their behavior was the behavior itself, whether it was to make faces, to perform a mile, or to contribute to a discussion. At the same time, however, it should be noted that each student was probably also extrinsically motivated, which means that another part of the reinforcement came from consequences or experiences not inherently part of the activity or behavior itself. the boy who made a face was reinforced not only by the pleasure of making a face, for example, but also by the giggles of classmates. the track student was strengthened not only by the pleasure of running, but also by the knowledge of his times and improved speeds. Also the child usually restless sitting still for five minutes can be reinforced partly by this short experience of unusually focused activity, although it was also reinforced by the compliment of the helper. Note that the extrinsic part of reinforcement can sometimes be observed or noticed more easily than the intrinsic part, which by definition can sometimes be lived only within the individual and not even exposed outside. The latter fact can contribute to an impression that sometimes occurs, that operistic conditioning is really only “bribery in camouflage,” that only external reinforcements operate on the behavior of students. It is true that external reinforcement may sometimes alter the nature or force of internal reinforcement (or intrinsic), but this is not the same as saying that it destroys or replaces intrinsic reinforcers. But making this problem? Key concepts on operistic conditioning: functional conditioning is made more complicated, but also more realistic, by different additional ideas, be confused because ideas have names that sound pretty ordinary, but which have special meanings, non-behaviorist terms, the cue allows the student to learn when it is acceptable to speak, and when it is not, constructivism: changes in how students think that behavioral learning patterns can be useful in understanding and influence of what students do, but teachers usually also want to know what students are thinking, and how to enrich what students are thinking, for this purpose of teaching, some of the best aids come from constructivism, which is a learning perspective focused on how students actively create (or build) knowledge of experiences. Building learning patterns differ on how a learner builds knowledge in a waycompared to how much he or she takes snacks from people who can be more than an expert and who help the instructor’s efforts (Fosnot, 2005; Rockmore, 2005). For convenience these are called psychological psychologicaland social constructivism (or sometimes sociocultural theory). As explained in the next section, both focus on the thought of individuals rather than on their behavior, but have distinct implications for teaching. Psychological constructivism: the independent investigator The main idea of psychological constructivism is that a person learns by mentally organizing and reorganizing new information or experiences. The organization takes place in part with regard to new experiences with prior knowledge which is already significant and well understood. Declared in this general form, individual constructivism is sometimes associated with a well-known educational philosopher from the early 20th century, John Dewey (1938-1998). Although Dewey himself did not use the term constructivism in most of his writings, his point of view was a type of constructivism, and discussed in detail his implications for educators. He argued, for example, that if students actually learn primarily by building their own knowledge, then teachers should adjust the curriculum to adapt students’ knowledge and interests as much as possible. He also argued that a curriculum could only be justified if it concerned as fully as possible the activities and responsibilities that students will probably have after, after leaving the school. To many educators these days, his ideas may seem simply like a common sense, but they were really innovative and progressive in the early 20th century. Another recent example of psychological constructivism is the cognitive theory of Jean Piaget (Piaget, 2001; Gruber & Vonèche, 1995). Piaget described learning as a game of interaction between two mental activities he called assimilation and housing. Assimilation is the interpretation of new information in terms of existing concepts, information or ideas. Apreschool which already includes the concept of bird, for example, could initially label any flying object with thisturtleflies or mosquitoes. The assimilation is therefore somewhat like the idea of generalization in operatic conditioning, or the idea of transfer described at the beginning of this chapter. In Piaget’s view, however, what is transferred to a new setting is not simply a behavior (operating with Skinner in operistic conditioning), but a mental representation for an object or experience. 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