Situated learning

"The theory of situated cognition… claims that every human thought is adapted to the environment, that is, situated, because what people perceive, how they conceive of their activity, and what they physically do develop together" (Clancey, 1997).

Situated cognition is argued that it provides a broad, useful framework focusing on everyday cognition, authentic tasks, and the value of in-context apprenticeship training. But, how does this learning theory differ from behavioral or cognitive perspective of learning?

Behaviorist theories and cognitive theories look at knowledge external to world, either in behaviors or internal processes or structures. On the contrary, situated learning looks at the learning phenomenon in a broader and holistic perspective incorporating behaviors (actions) and cognition by recognizing the interaction between people and environment and the role of situation. Wilson and Myers (2000) commented that situated learning "is positioned to bring the individual and the social together in a coherent theoretical perspective."

Situated Learning	Behavioral and Cognitive Learning Theories
1. Learning process is a process of enculturation, emphasizing the socio-cultural setting and the activities of the people within the setting. In other words, "learning is not an accumulation of information, but a transformation of the individual who is moving toward full membership in the professional community." (Hmelo and Evensen, 2000). 2. The situated cognition focuses on the participation in communities of practice. 3. Knowledge is located in the actions of persons and	1. Learning process both in behavioral and cognitive psychology is individual one. 2. Behavioral theories focus on formation of the association between the stimuli and response via the manipulation of reinforcement; cognitive theories focus on the information process and knowledge representation within the learner, i.e. cognitive processes take place within the heads of individuals) (Norman, 1993: the brain is the computational engine of thought, and thereby

groups. Human knowledge and interaction cannot be divorced from the world.	concentrating one's efforts upon understanding brain mechanisms and mental representations). 3. Knowledge is revealed in behavioral changes implied by the behavioral theories; and knowledge is organizational structure resides within the learner.

Lave's Situated Learning and Everyday cognition (1988)

In Cognition in Practice (1988), Lave discussed the transfer problem in school learning, and argued that learning in natural setting, contrast with most of classroom learning, occurs is a function of the activity, context and culture in which it is situated. Lave studied cognition in everyday situation and gave descriptions of the following findings:

- Cognition is socially defined, interpreted, and supported.
- Social context constrain and aid cognition: research should examine cognition in everyday to determine the generality of cognitive skills and articulate the role of culture in the development of these skills.
- People devise satisfactory opportunistic solutions. People do not employ formal approaches to solving problems in everyday thinking. Participation in interaction results in adaptivity of successful reasoning and learning.

Brown, Collins and Duguid's (1989) Situated Cognition and the Culture of Learning

According to Brown, Collins and Duguid (1989), the different instructional goals of 'knowing what' and 'know how' result in different structures and practices of our education system. They criticized the decontextualized learning resulted from separation between learning and doing. They suggested that "activity and situations are integral to cognition and learning" and that cognitive apprenticeship can provide "the authentic practice through activity and social interaction in a way similar to that evident--and evidently successful--in craft apprenticeship."

Importance of authentic learning

1. Situated Cognition:

- Knowledge, as a product of a meaning-making process, cannot be separated from the context of its use.
- Learning is a continuous, lifelong process from acting in situations.
- Tools and their use "reflect the particular accumulated insights of communities".
- Learning is an enculturation process: "Given the chance to observe and practice in situ the behavior of members of a culture, people pick up relevant jargon, imitate behavior, and gradually start to act in accordance with its norms."

2. Cognitive apprenticeship: Four procedures that are characteristic of cognitive apprenticeship:

- By beginning with a task embedded in a familiar activity it shows the students the legitimacy of their implicit knowledge and its availability as scaffolding in apparently unfamiliar tasks.
- By pointing to different decompositions it stresses that heuristics are not absolute but assessed with respect to a particular task---and that even algorithms can he assessed in this way.
- By allowing students to generate their own solution paths, it helps make them conscious creative members of the culture of problem-solving mathematicians.
- Also, it helps students, in enculturating through this activity, acquire some of the culture's tools--a shared vocabulary and the means to discuss, reflect upon, evaluate and validate community procedures in a collaborative process.

Gibson's Affordance:

Affordance is ecological concept about perception. The implications of this idea include:

1. Gibson's "affordance" is a term to characterize the impact of the environment on an organism's behavior, or how it lives in its environment. Affordance emerges with the action of an organism, i.e. an organism's direct perception of these affordances controls its behavior.
2. The idea of affordances suggests an interactive and reciprocal relation between an organism and its environment. Thus, it is important to analyze behavior or organisms in relation to their environment.
3. When the complexity of people as organisms is considered, perception of affordances must go beyond a physical state of affairs to a conceptual state of affairs.
4. Any theory of learning must start with the culture in which the learner resides. This is a critical pedagogical approach. If knowledge is co-produced by the learner and the situation in the context of a culture or society, then the position of the learner within the culture can become an important variable. Also the teachers need to value the importance of respecting the knowledge communities from which learners come and help them to become comfortable in multiple worlds

In summary, what are the key concepts of situated learning?

1. Knowledge is not an object and memory is not a location. Instead, knowledge is located in the actions of persons and groups. Knowledge evolves as individuals participate in and negotiate their way through new situations.
2. Knowing, learning and cognition are social constructions, expressed in actions of people interacting within communities.
3. Construction of meaning is tied to specific contexts and purposes.
4. Mediation of artifacts: Cultural models are not just held by individual participants but reside also in the practices in which the group engages, the tools they use, and the contextual setting.
5. "As situations shape individual cognition, individual thinking and action shape the situation. This reciprocal influence constitutes an alternative conception of systemic causality to the more commonly assumed linear object causality." (Wilson and Myers, 2000).
6. Cognitive Apprenticeship: To engage students to participate in a community of practice can provide the following advantages:

    - Legitimacy on the apprentice and available of community resources.
    - Strong goals and motivation.
    - Development of understanding of the enterprise through engagement in practice.
    - Communication among peers and near-peers.

7. Legitimate peripheral participation (Lave, 1988, Lave & Wenger, 1991): a process how a learner engages in the activity of a sociocultural practice and becomes increasingly competent in this practice. Participation provides students to define ways of belonging to a community of practice.

    - Legitimate" refers to social organization of and control over resources" of the practice. To get full access to the resources takes time and experience in the community of practice.
    - Peripheral is used to "distinguish between new comers and old timers" (Driscoll, 2000). The concept "encompasses multiple, varied, more-or-less engaged and inclusive ways of being located in the fields of participation defined by a community".

What phenomena does it attempt to explain?

Brown, Collins and Dugid (1989) supported their propositions about situated learning and cognitive apprenticeship by addressing the following:

1. There is a mismatch between the learning situation in school and the real world situations.

2. There is a failure of knowledge to transfer.
3. Training by abstraction is of little use.
4. Learning is inherently a social phenomena.

Situated learning emphasizes the idea that what is learned is specific to the situation in which it is learned. Wilson and Myers (2000) described that situation cognition "emphasizes the web of social and activity systems within which authentic practice take place."

What are the implications of this view of learning to instruction?

Before we answer this question, let us review some basic theoretical assumptions entailed in situated learning:

1. Learning-in-practice (Lave, 1990): learning is conceived as increasing participation in communities of practice; Learning is a co-constitutive process in which all participants change and are transformed through their actions and relations.
2. Knowledge accrues through the lived practices of the people in the society: knowledge remains inert and unused if taught in contexts that separate knowing from doing; one learns a subject matter by doing what expert in that subject matter do.
3. Learning involves social participation; hence, cognition takes place within the world and not in minds construed as somehow separate from or outside the world a learning should take place in complex, social situations with varying emphasis on complex and social.
4. Cognition is a matter of sign activity, or semiosis, i.e. the continuously dynamic and productive activity of signs.

Those assumptions give rise to some instructional principle and impacts to instruction:

1. Provide authentic tasks in the learning environment: authentic tasks are those ordinary practices in the culture. The authenticity involve two levels: the objectives and data in the setting, and the degree to which the tasks that students are asked to perform are authentic.
2. Simulate apprenticeship that comprises authentic task: school children could acquire the knowledge and skills of historians, mathematicians, or scientists by becoming apprentices in those disciplines.
3. Anchored instruction: CTGV (Cognition and Technology Group at Venderbilt): as a means of implementing the conditions of situated learning: providing a situated context for solving complex and realistic problems.
4. Learning communities: change of learning culture in the classroom: change from knowledge dispenser into a learning community, in which teacher and learners work collaboratively to achieve important goals emphasizing distributed expertise (students come to the learning task with different interests and experiences and

are provided the opportunity within the community to learn different things. For example, CSILE (Computer-Supported Intentional Learning Environment) provides a means for students to engage in knowledge-building within a learning community, i.e. students focus on a problem of interest and begin to build a communal database of information about the problem: discourse, reflection and peer review.

5. Assessment In-Situ: assessment requires to indicate person's performance in the various kinds of situation types: focusing on learning as processes as well as the product.

Wilson and Myers (2000) described the impact of this type of social interactional view on designers as follows:

- We as instructional designers must go into the community of the practitioners, using ethnographic methods of observation and reflection, and become participant observers. We develop a focus on how the community learn.
- Instructional designers must use methods of participatory design in which the worker participates in redesign practices with the designer.

Young (1993) described four broad tasks for the design of situated learning:

1. Selecting the situation: the general principle is to select the generator set of situations, which entail complex, realistic problem spaces that afford students to be able to detect the invariant concepts in the domain.
2. Providing scaffolding: students need to be active generators of both problems and solutions so that they can "crisscross the landscape of knowledge". The principle is "initially limit a novice's access to all the features of the context and then removing those constraints."
3. Determining and supporting the role of the teacher: in situated learning, students learn from different knowledge sources distributed in the environment, e.g. the tools, the peers, themselves, the textbooks, and the teacher. The responsibility of the teacher is to constant assess the interaction of students and the environment and to guide students to pay attention to important attributes of the environment.
4. Assessing situated learning: Young pointed out several views of the assessment in situated learning:

    - The assessment methods should focus on "the process of learning, perception, and problem solving."
    - Assessment must become an integrated, ongoing, and seamless part of the learning environment. Assessment must provide important feedback to both teacher and students.

References

Brown, J. S., Collins, A., & Dugid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18, 32-42.

Clancy, W. C. (1997). *Situated cognition: On human knowledge and computer representations.* Cambridge: Cambridge University Press.

Drisoll, M. P. (2000). *Psychology of learning for instruction*. 2nd. Needham Heights, MA: Allyn and Bacon.

Lave, J. (1988). *Cognition in practice. Mind, mathematics and culture in everyday life*.

Lave, J.& Wenger, E. (1991). Situated learning: Legitimate peripheral participation. Cambridge: Cambridge University Press.

Young, F. Y. (1993). Instructional Design for Situated Learning. *Educational Technology Research and Development,* 41 (1), 43-57.

Taken from:

Pennsylvania State University. (3 de mayo de 2021). *Situated learning.* http://www.personal.psu.edu/students/w/x/wxh139/Situated.htm