**2.2 Constructivism**

Constructivism is an ancient concept which might have roots in the works of the 18th century philosopher Giambatista Vico, who claimed that human beings can only clearly understand what they have constructed, themselves. He also explained that one only knows something if he himself can explain it. Another famous philosopher, Immanuel Kant, further developed this idea by claiming that human beings are not passive containers of information. Yet, more prominent supporters of constructivism include John Dewey, Jean Piaget, Jerome Bruner, von Glaserfeld and Vygotsky have contributed deeply and wholly into the development of the concept and have left their own specific finger prints in this learning theory.

According to Candy (1991) constructivism proposes that knowledge cannot be taught but only learnt (that is, constructed), it is something “built up by learners” (Glasersfeld and Smack 1974 cited in Thanasaulos, 2000).In the same line of thought, language learning does not involve internalizing sets of learning, structures and forms; each individual learner brings his own knowledge to bear on the target language or task at hand. As Bruner (1966) states “…students would better learn and retain concepts they discover on their own instead of passively through rote learning and lectures.” (p.33). Bruner rooted his pedagogy in Piagetian and Vygotskian principles and extended the work of Vygotsky by employing the concept of Scaffolding.

Thus, during the previous chapter we have seen that models of learning based on behaviourism might give us insights on how to influence what learners do, but educators do usually want to know what students are thinking and how they can bring improvements on their thinking. One way of achieving this objective is doing it through the learning theory ‘Constructivism’, which is a view on learning that focuses on how learners actively construct knowledge out of experiences. Models of learning under this theory question the quantity of knowledge that learner constructs independently in comparison to the quantity of cues he takes from the more competent individuals who are in the approximate zone of his own development (Fosnot,2013). These two trends of thoughts are behind the coining of psychological constructivism and social constructivism which are going to be detailed in the what comes below.

**2.2.1 Psychological Constructivism**

Psychological constructivism is generally referred to by individuals mentally organizing or reorganizing newly confronted information or lived experiences. The organization takes place while relating new experiences to prior knowledge that already has a meaning and is understood by the individual learner. Put as it is, individual constructivism is most often related to the American philosopher and psychologist John Dewey (1916) who believes that education stands on action. Knowledge, he believes, emerges from situations where learners extract it from experiences that have meaning for and are important to them. This situation is bound to a social context, such as in school classrooms where learners build knowledge together while creating small communities.

Yet, in spite of the fact that the concept *‘constructivism’* was not specifically used in his writings, Dewey made very explicit its implication for educators. He explained, for instance, that if learners learn through knowledge construction, then it is a must for teachers to elaborate curricula that fit students’ prior knowledge and needs as much as possible. He commented that the curriculum should have a direct relationship with life beyond the school ,i.e. students should construct knowledge that is important for them to be used later on when they leave school. This view to school knowledge may practically seem like good common sense to educators nowadays, but they were very innovative and progressive at the beginning of the twentieth century.

In fact, we owe many important ideas to John Dewey that we have adapted into teaching today . First, we owe to him the view of the child as an active learner. Before Dewey, it was believed that children should sit quietly in their seats and passively learn in a rote manner. In contrast, Dewey believed that children learn best by doing. Second, we owe to Dewey the idea that education should focus on the whole child and emphasize the child’s adaptation to the environment. Dewey believed that children should not be narrowly educated in academic topics but should learn how to think and adapt to a world outside school. He especially thought that children should learn how to be reflective problem solvers. Third, we owe to Dewey the belief that all children deserve to have a competent education. This democratic ideal was not in place at the beginning of Dewey’s career in the latter part of the nineteenth century, when education was reserved for a small portion of children, many of whom were issued from wealthy families. Dewey was one of the influential psychologist-educators who pushed for a competent education for all children- girls and boys, as well as children from different socioeconomic and ethnic groups.

John Piaget, the Swiss Psychologist, came out with a more challenging view to psychological constructivism through his theory of cognitive development that we will see in the chapter concerned with ‘Development’. In his theory, Piaget tried to demonstrate that learning is an interplay between two mental activities that he labelled assimilation and accommodation. (Piaget, 2001).Assimilation is the interpretation of new information in terms of pre-existing concepts, information or ideas. A child who already understands the concept of ‘bird’ might initially identify any flying thing, such as butterflies or mosquitoes, with the term ‘bird’. Assimilation is in a way identical to the concept of generalization in operant conditioning. In the theory of Piaget, however, a mental representation for an object or an experience is being transferred rather than just a behaviour (Skinner's “operant” in operant conditioning). Assimilation works in parallel with accommodation, which is the modification of pre-existing concepts in terms of new experiences or new information .The little child who generalizes any flying object to be a bird, will later on revise the concept to consider only some types of flying objects such as swallows or a canaries and not others, like drones or butterflies. Up to Piaget, these two concepts (assimilation and accommodation) work hand in hand to develop the child’s thinking and to generate what Piaget named cognitive equilibrium, which is a kind of balance between relying on the prerequisite and openness to the unknown or what Piaget called new information. This ever-growing repertoire of mental representations for objects and experiences is further explained by Piaget and he considers that every mental representation as a schema. He explained that a schema is a mixture of vocabulary, actions, and experience related to the concept. A child’s schema for bird, for example, embodies not only the appropriate verbal knowledge (defining the word “bird”), but also the child’s experiences with birds, pictures of birds, and conversations about birds. As assimilation and accommodation about birds and other flying objects operate together over time, the child adds and remembers relevant new experiences and actions. From these collective revisions and additions the child gradually constructs general new schemata about birds, butterflies, and other flying objects. In general terms, Piaget might then consider that “the child has learned more about birds”.

The basic principle of constructivism is that an individual brings explanations to events, objects and perspectives from his/her own mental structures, beliefs and experiences. People construct their understanding and knowledge of the world through experiencing things and reflecting upon those experiences. For instance, when we face a new situation, we have to compare it with our former ideas and experiences and thus we may change our beliefs or reject the new information as irrelevant. Thus, following this flow of thought, knowledge is constructed and not reproduced. The constructed knowledge is personal and individualistic, and this is an adaptive process thanks to which we understand the world through our experiences. (Cole, 1992).

**2.2.2 Social Constructivism**

One of the most prominent contributors who has helped to shaped our understanding to constructivism is Lev Vygotsky (1896-1934).In spite of the fact that his ideas were not known while he was alive, they became so later on when his books ‘**Thought and Language**’ and ‘**Mind in Society**’ were translated into English. His thoughts were the basis upon which social constructivism was developed and which puts forward the importance of social interaction and culture to help the learner construct knowledge and learn. Up to Vygotsky, individuals construct knowledge while interacting each other. Thus, he considers learning as a human product that is socially and culturally constructed.

The following conversation between the two school pupils (P1 and P2) going back home from school exemplify very well how pupils construct knowledge while exchanging their respective understanding of what a ‘rainbow’ is and thanks to their negotiation of meaning they constructed their understanding to the rainbow phenomenon .Her is the conversation:

***P1: Look! There is a beautiful rainbow in the horizon.***

***P2: Yes I see. But why is there a rainbow?***

***P1: Because it just rained.***

***P2: But I only see a rainbow when it is sunny.***

***P1: You are right there must be sun.***

***P2+P1: So, we need sun and rain for a rainbow!***

**2.2.2.1 Vygotskyan Theory**

Underlying Vygotsky’s peer learning theory is the belief that human beings are social by nature, and thus, human cognition develops first through social interaction. That is, a child is born into a certain society and learns about its world, including social conventions and cultural knowledge, through participation in experiences constituted within that world. This belief has led Vygotsky to formulate the general law of cultural development, which states that any function in the child's cultural development appears in two zones. "First, it appears in social zone between people as an inter-psychological category, and then on the psychological zone within the child as an intra-psychological category."(Vygotsky, 1981)

The inter-psychological dimension or the social zone indicates that learning first takes place between a child or a novice and a more capable peer (or peers). This dependent nature of learning is transformed to something more independent (i.e., intra-psychological) at a later phase. For instance, young children might be largely dependent on other individuals, most probably parents, in the early stages of development. As they grow, however, they gradually become less dependent on others, because they become more capable of achieving things by themselves.

Development occurs as a novice or a child and an adult or a more capable peer engage in dialogic interactions in which the more capable participants guide the learners in accomplishing specific tasks. Through their regular interactions over time, learners internalize the skills and abilities needed to be able to function independently. This shift from inter-psychological to intra-psychological zones is referred to as "regulation" (ibid). The use of language in this process is key to learning and development. In examining foreign language from a socio-cultural perspective, we are looking at language as both a product and process of social interaction.

Vygotsky considers the development of human being as a socio-genetic process through which children master cultural tools and signs while interacting with members in their surroundings. These others are often more competent and help children to understand and use in the suitable manner, the tools and signs that are important in the cultural group they live in.

This process of interaction between the child and a more competent other is said to affect development if the interaction occurs within the child's ZPD.

Vygotsky (1978) defines the ‘ZPD’ as: “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers”. What children can do with the assistance and help of others is more beneficial to their mental development than while working alone.

Vygotsky developed two levels of development based on his beliefs that learning is a collaborative process influenced by culture. The level of **Actual Development** which is the level that the learner has already reached. It is the level where the learner can take his learning at hand without the help of any other, i.e., the level where he is able to work independently. However, the level of **Potential Development** is the level of development that learners are not capable of doing at the moment but have the potential to do so in the future. Between the actual and the potential levels, Vygotsky explains, there is what he calls the **Zone of Proximal Development** (**ZPD**).The three levels may be clarified as shown below:

**(a)** what learners can do alone (Actual)

**(b)** what learners can do with help (ZPD)

**(c)** what learners cannot do yet (Potential)

|  |
| --- |
| **Potential Development**  **Beyond the reach of**  **Learners at present** |

**Figure 2.2:** Zone of proximal development (Adapted from Open University Malaysia

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The ZPD embodies a concept of readiness to learn that emphasizes upper levels of competence. These upper boundaries are constantly changing in the learner's increasing independent competence. That is to say, what a learner can perform today with assistance will be able to perform tomorrow independently. Thus, getting him ready for entry into a more demanding collaboration.

The ZPD defines those functions that have not yet matured but are in the process of maturation; functions that will be ready tomorrow but are actually in an embryonic state. These functions could be considered the ‘buds’ or ‘flowers’ of development rather than the ‘fruits’ of development (Roediger& Marsh, 2005). Vygotsky explained how a teacher or a more advanced peer might provide the explanation to enable a child to reach a higher level of achievement with support.

**2.2.2.2 The Scaffolding Concept**

Conversely to Piaget’s view to constructivism which is rather individually oriented, Jerome Bruner (1960), the American psychologist, explicitly stressed on the importance of interactions between a learner and a more competent other. He indeed came out with the argument that students could learn more than what they were traditionally able to do as far as they are given the right guidance and resources. He labelled such support **instructional scaffolding.** Literally a scaffold is a temporary framework used in constructing a building that permits a much stronger structure to be built within it.

The concept of scaffolding relates to Vygotsky's ZPD theory. In the literature scaffolding has been defined as follows:"…in social interaction a knowledgeable participant can create, by means of speech, supportive conditions in which the novice can participate in, and can extend skills and to higher levels of competence." (Donato,1994:40)

The concept of scaffolding has been introduced to foreign language learning contexts as well. For a long time, the focus was on teacher learner interaction. However, recently attention has turned to processes of scaffolding in learner-learner interactions. This is what Little (1991) explains while mentioning the importance of scaffolding in language learning "…learner autonomy theory requires language teachers to create an interactive dynamic that allows their learners access to full range discourse roles in the target language. This is because the development of communicative proficiency depends directly on sustained involvement in genuinely communicative behaviour, beyond the minimal contribution to which frontal teaching methods traditionally confine learners"(p.29).