

Mohammed Arroub
illuminates the benefits
of engaging students
in collaborative learning
processes



Development Zone

“Learning is not something an individual does alone, but is a collaborative endeavor necessarily involving other individuals” (Aljaafreh & Lantolf 1994, 480). The quotation cited above is the locus of the sociocultural theory pioneered by the Russian psychologist Lev Vygotsky (1896-1934) who emphasizes that learning and cognitive development occur through interaction in a social environment, i.e. with other people.

He maintains that human intelligence originates in our society and culture, hence human cognition and learning, from Vygotskian perspective, is a social and cultural rather than individual phenomenon, “Social interaction actually produces new, elaborate, advanced psychological processes that are unavailable to the organism working in isolation” (Vygotsky 1989 cited in Donato 2000, 46). Moreover, Vygotsky’s theory suggests that social interactions are mediated by abstract symbols or tools, “We also use symbolic tools, or signs, to mediate and regulate our relationship with others and with ourselves and thus change the nature of these relationships....included among symbolic tools are numbers and arithmetic systems, music, art, and above all language” (Lantolf 2000, 1).

Vygotsky (1978) asserts that language as a tool is not created in isolation but rather is a product of the sociocultural evolution of an actively involved individual.

Zone of Proximal Development

Central to the psychology of Vygotsky is the concept known as the zone of proximal development (ZPD) which Vygotsky (1978) defines as “the distance between the actual development as determined individual problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86), or as Lantolf (2000) puts it “ZPD is the difference between what a person can achieve when acting alone and what the same person can accomplish when acting with support from someone else and/or cultural artifacts” (p.17). Vygotsky refers to the distance between the abilities displayed independently and with social support as the ZPD. This idea emphasizes that humans develop higher cognitive levels when the gaps in their thinking and problem solving are supported by adults, or more capable others. Thus, “ZPD necessarily involves interaction between an expert and a novice in which the expert eventually transmits an ability to the novice through social interaction” (ibid,17). Further to this point, Williams and Burden (1997) who define ZPD in their terms as “the layer of skill or knowledge which is just beyond that with which the learner is currently capable of coping” (p. 40), point out that “working together with another person, either an adult or a more competent peer at a level that is just above a learner’s present capabilities



is the best way for the learner to move into the next layer” (ibid). Therefore, we can gather that the scope of skill that can be developed with adult guidance or more capable peers outstrips that which can be gained individually.

The problems initially solved under guidance and in cooperation with more knowledgeable others will be tackled independently once the problem-solving activity is internalized, hence the claim that ZPD leads to autonomy. The example of the parent instructing the child how to solve a puzzle supports this view on ZPD (Wertsch 1979, cited in Lantolf 2000). To elaborate, the more able participant or the expert (the parent in our previous example) offers assistance to the less able participant or the novice (the child), presents approaches to solving the problem, and encourages the child to use their nascent skills by assuming responsibility for some parts of the task. As the novice develops the abilities required, they should receive less assistance and solve more of the problem without help. The social environment should support development in such a way that what can be done collaboratively now can be accomplished independently. The social interactional support given on the basis of puzzle-solving approach can establish ZPD, which means the cognitive level has been developed since a gap in a child’s or learner’s thinking and problem solving behavior is being supported by an adult or a more skilled person. Vygotsky’s sociocultural standpoint that scaffolding and modeling are important ways to facilitate the individual’s cognitive growth and knowledge acquisition.

Moreover, ZPD necessitates providing help only when needed or when the task is beyond the novice’s capability, “The construct of zone

of proximal development (ZPD) specifies that development cannot occur if too much assistance is provided or if a task is too easy” (Ohta 2000, 52). Aljaafreh and Lantolf (1994) argue that help should be graduated: giving enough help to encourage the learner to perform a certain task successfully, but no more than necessary. They also argue that assistance should be contingent — offering assistance when sought after by the learner and taking it away when the learner demonstrates ability to carry out the task alone or autonomously. If help or scaffolding is offered on this basis, the learner’s performance can increase on a particular task. The process of graduation and contingency can be shown in the study on the interaction of error correction or corrective feedback between a student and a tutor (ibid). This process manifests itself as one of the ongoing assessments of the apprentice’s needs and abilities, and the tailoring of assistance to those conditions (ibid). To this end, the corrective procedure undergoes several stages in which the tutor tries to provide help only when deemed necessary, indirectly inviting the student to share with them the mistake-identifying responsibility. In so doing, capacity to self-correct can be developed, and dependency on other-regulation by the tutor can be reduced. Knowing when to give help and when to withhold it through the interaction of the tutor and the student creates ZPD, and makes the student assume responsibility and be less dependent. In short, this joint work between the student and the teacher is what Vygotsky views as collaborative learning and considers it “essential for assisting each student in advancing through his or her own zone of proximal development” (Vygotsky 1962, cited in Warschauer 1997, 471).

Regulation

Regulation is another major concept in Vygotsky’s theory.

Other-regulation by definition is carrying out tasks and activities under the guidance of other more skilled individuals. In other words, under other-regulation the learner relies on another individual in order to perform. When, however, a learner reaches a stage where they can operate solo having their ZPD constructed, they have accomplished self-regulation through which they can control and monitor their cognition, “At first the activity of individuals is organized and regulated by others, but eventually, in normal development, we come to organize and regulate our own mental and physical activity through the appropriation of the regulatory means employed by others. At this point psychological functioning comes under the voluntary control of the person” (Lantolf 2000, 14). In other words, when the learner achieves self-regulation, they are the initiator of the cognitive and learning process.

Referring anew to the “corrective feedback” mentioned in the previous section where the teacher tries to make the student self-correct or initiate repairs on their own composition, the learner in the last stage exhibits signs of movement away from reliance on the tutor, or the other-regulation, and towards reliance on the self, or self-regulation. The learner in the last developmental stage moves through the ZPD towards self-regulation receiving no repair initiated by the teacher, and consequently assuming full responsibility for correcting the errors, “The learner’s performance, including corrective behaviour is completely self-generated and automatized and mistakes emanate from legitimate slips of the tongue, or the pen, rather than from incomplete learning” (Aljaafreh & Lantolf 1994, 470-471).

It is this transition from other-regulation to self-regulation performance which has led to the learner’s cognitive development, making