

‘Scaffolding’

The metaphor that has been most widely used to capture the forms of guidance that support learners in their progress through the ZPD is that of ‘scaffolding’. Introduced by Wood et al. (1976), it captures a form of ‘vicarious consciousness’ provided by an adult or more capable peer for the benefit of the child, referring to the ways in which the more knowledgeable partner controls:

those elements of the task that are initially beyond the learner’s capacity, thus permitting him to concentrate upon and complete only those elements that are within his range of competence.

(Wood et al., 1976, p. 90)

It also captures the sense in which, through encouragement, focusing, demonstrations, reminders and suggestions, a learner can be supported in mastering a task or achieving understanding. To take the building analogy further, if we imagine building an arch with bricks it is easy to see the vital role played by the wooden framework used to assemble the arch. However, the role of this scaffolding is strictly temporary; when complete the arch will hold itself up, though without scaffolding it could not have been built. The adult’s intellect provides a temporary support for the child’s own until a new level of understanding has been achieved. Effective scaffolding reduces the scope for failure in the task while encouraging efforts to advance. Bruner writes that:

[Scaffolding] refers to the steps taken to reduce the degrees of freedom in carrying out some task so that the child can concentrate on the difficult skill she is in the process of acquiring.

(Bruner, 1978, p. 19)

Scaffolding helps a learner accomplish a task they would not have been able to do on their own. But it is a special, sensitive kind of help that is intended to bring the learner closer to a state of competence that will enable them to complete the task on their own. This image is useful for highlighting the sense in which, for Vygotsky, individual self-supported competence is only possible if successful performance has been established through assisted learning.

Psychologists have attempted to study scaffolding in order to define what constitutes ‘effective instruction’. For example, Wood and Middleton (1975) conducted a series of investigations of how 4-year-old children can be taught to assemble a 3D puzzle involving wooden blocks and pegs. They observed mothers’ attempts to teach their own children how to complete the puzzle. The mothers who succeeded best were those who shifted their levels of intervention flexibly according to how well the child was doing. This ‘contingency strategy’ can be seen as a way for the mother to gauge and monitor the child’s ZPD as learning proceeds, and to provide scaffolding at just the right point.

As Daniels notes, the term scaffolding could:

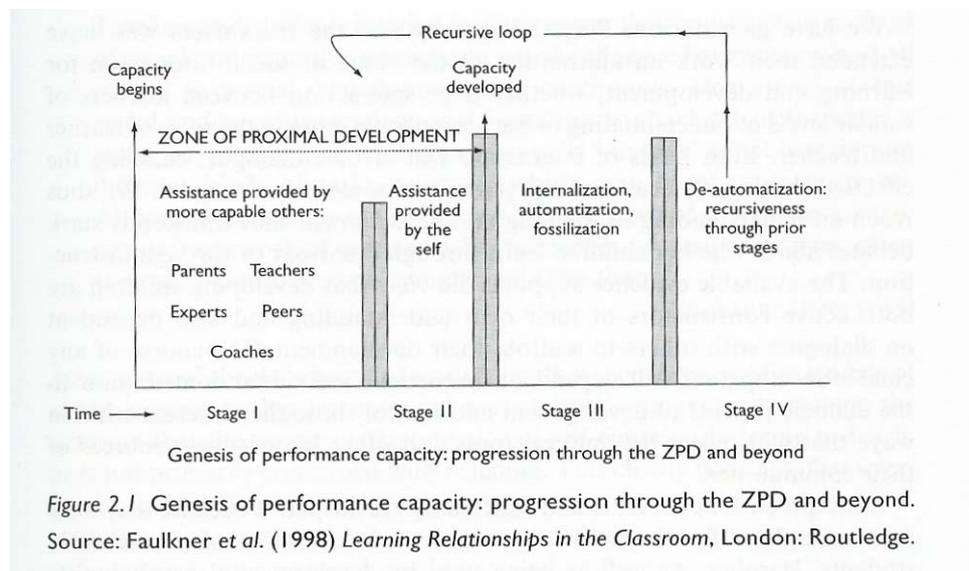
be taken to infer a ‘one-way’ process wherein the scaffolder constructs the scaffold alone and presents it for use to the novice. [However,]... Newman et al. (1989) argued that the ZPD is created through negotiation between the more advanced partner and the learner, rather than through the notion of a scaffold as some kind of pre-fabricated climbing frame.

(Daniels, 2001, p. 59)

This emphasis on negotiation is also evident in the work of Tharp and Gallimore (1988) who extended Vygotsky’s notion of the ZPD, drawing upon Wood et al.’s conception of ‘scaffolding’ to present what they call a theory of teaching as assisted performance. They characterize the ZPD not as a single growing point for an individual but as a multitude of ‘growing edges’ that relate to all areas of developing, culturally constituted competence:

There is no single zone for each individual. For any domain of skill, a ZPD can be created. There are cultural zones as well as individual zones because there are cultural variations in the competencies that a child must acquire through interaction in a particular society.... Boys in Micronesia where sailing a canoe is a fundamental skill, will have a ZPD for the skills of navigation, created in interaction with sailing masters. A girl in the Navajo weaving community will experience a zone not quite like any encountered by the daughters of Philadelphia. Whatever the activity in the ZPD we find assistance is provided by the teacher, the adult, the expert, the more capable peer.

(Tharp and Gallimore, 1998, p. 96)



The development of understanding is seen as a process of guided reinvention, whereby social guidance makes it possible for the learner to achieve a constructive intellectual ‘re-invention’ of some piece of culturally elaborated knowledge. Progression through the ZPD is described in terms of four stages, which are illustrated in Figure 2.1.

In the first stage, performance is directly assisted by more capable others through scaffolding of one kind or another. In the second, the learner effectively takes over the role of the scaffolder in relation to his or her own learning. This often means talking oneself through a task, remembering requests, reminders and injunctions previously given, and so on. The third stage is marked by the falling away of such self-guidance, as performance becomes automatic. The fourth stage just recognizes the fact that we can get thrown back to earlier stages of the acquisition process by such stressors as tiredness, or by changes in the precise conditions of the task. These stages seem to apply to the process of learning at whatever age it occurs.

What becomes evident from this brief account of Piagetian and Vygotskian perspectives is that they have many features in common. For both, learning is a matter of active construction, the ingredients for which are to be found in the physical and social world. Vygotsky's stress on the mediated character of action extends Piaget's account in ways which add to its reach in important respects, while not quarrelling with its basic tenets. In some respects the work of each might be seen as complementary to that of the other (as argued explicitly by Shayer, 2003) and certainly, between them, these two approaches to understanding development and learning have shaped almost all of the research to be described and discussed in this book.