

Scaffolding: Defining the Metaphor

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ABSTRACT

Scaffolding embodies much of the activity that goes on in classroom teaching and teacher-learner interaction. As the metaphor of scaffolding has become popularized, it has often been adopted as a general term that is used to describe all types of support and guidance offered in the classroom. Due to its popularization, scaffolding has become difficult to define, and perhaps even unbounded from its theoretical underpinnings (Palincsar, 1988). This paper revisits the concept of scaffolding by (1) introducing its origin and connection to sociocultural theory, (2) reviewing some of the empirical and pedagogical endeavors that expanded the definition over the last forty years, and (3) considering its current application to the language classroom. It concludes with suggestions regarding some directions for future research on the role of scaffolding in the field of second language teaching and learning.

INTRODUCTION

A scaffold is a temporary structure to support and protect the construction of a building, dismantled at its completion. *Scaffolding* as a metaphor in teaching and learning describes a system of temporary guidance offered to the learner by the teacher, jointly co-constructed, and then removed when the learner no longer needs it. In the years since the metaphor was first proposed in the field of child psychology, it has become popularized, and currently seems to be omnipotent in conversations about general education (e.g. Dennen, 2004; Wells, 1999), language learning and development (Applebee & Langer, 1983; Donato, 1994, 2000; Langer & Applebee, 1986; Rogoff, 1990; Stone, 1998; Tharp & Gallimore, 1988), and teacher education (Mercer, 1995; Oxford, 1997; Tudge, 1990; van Lier, 1996, 2004, 2007, 2008; Walqui, 2006; Walqui & van Lier, 2010, among others). Palincsar (1998) proposed the following explanation for the attractiveness of this metaphor:

... educators readily appropriate this metaphor [...] perhaps in part because it captures multiple dimensions reflective of teaching/learning processes, providing an instructional context that is at once supportive, flexible enough to accommodate individual differences among learners, and designed to cede increasing responsibility to the learner. (p. 373)

Because scaffolding embodies much of the activities of classroom teaching, it has been adopted by many, perhaps at times offhandedly, as a general term that is used to describe all types of

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support and guidance offered in the classroom (Brown et al., 1993; Palincsar, 1998; Stone, 1998). The popularization of the term has perhaps led to some confusion as to what scaffolding involves. To further complicate matters, its definition has undergone significant modifications over the past forty years--added to, in some cases, and streamlined in others. During this process of evolution, it was suggested that scaffolding as a metaphor had become unmoored from theory (Palincsar, 1998).

This paper will revisit and examine the concept of scaffolding, with particular attention to its connection to sociocultural theory of learning and development (Vygotsky, 1978, 1896). I will attempt to provide an overview of how the definition of the term has evolved over the last forty years, beginning with a look at the origins of the metaphor, followed by a consideration of the connections between scaffolding and sociocultural theory. I will then describe how the definition of scaffolding has been broadened and refined within the field of teaching and learning. As part of this description, I will examine how scaffolding, in its various modified forms, has formed an integral part of some of the approaches to language teaching and learning which have been developed and promoted since the mid-80s. Finally, I will speculate on the directions which future research on scaffolding could take in the field of second language teaching and learning.

THEORETICAL BACKGROUND: ORIGIN OF THE METAPHOR

In order to tie the practice of scaffolding to sociocultural theory, it is necessary to locate the wellsprings of the metaphor and consider how it was first employed in learning and development research. In this section, I will present the original definition of scaffolding, followed by a comparison of its definition with the *zone of proximal development (ZPD)*, the theoretical concept on which scaffolding is based and within which it operates. I will review some of the key elements of sociocultural theory pertinent to the scaffolding concept.

Scaffolding, as it relates to learning and learner development, was first coined and defined in Wood, Bruner and Ross's (1976) study of adult-child interaction during problem-solving tutoring sessions. In their study, three-, four-, and five-year olds were paired with an adult to form dyads, each given a problem-solving task. The adult guided the child through the use of appropriately calibrated support during the interactions, leading the child toward successful completion of the assigned task. This practice had six features: (1) *recruitment*, or piquing the child's interest in the task; (2) *reduction in the degrees of freedom*, to avoid overwhelming the child by using incremental steps in the problem-solving process; (3) *direction maintenance*, through keeping the child in pursuit of the goal; (4) *critical feature marking*, for drawing the child's attention to what is significant; (5) *frustration control*, to ensure that the child will experience minimal angst while completing the task; and (6) *modeling*, or demonstrating the solution to a step in the task, which the child imitates back in an appropriate form.

Although scaffolding was not originally tied to the Vygotsky's (1978) theory of learning and his notion of the ZPD, subsequent research explicitly linked the two, identifying scaffolding as the interactional work done within it (Aljaafreh & Lantolf, 1994; Cazden, 1979; Ohta, 1995; Palincsar & Brown, 1984). The Vygotskyian notion of the ZPD and the Wood et al. idea of scaffolding seem to "fit" together, although they were formulated separately, forty years apart. The two metaphors were defined as follows:

[The Zone of Proximal Development] is the distance between the actual development level [of a child] 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. (Vygotsky, 1978, p.86)

Wood, Bruner, & Ross (1976) wrote:

The intervention of a tutor may involve ... a kind of “scaffolding” process that enables child or novice to solve a problem, carry out a task or achieve a goal which would be beyond his unassisted efforts. (p. 90)

These definitions seem to place the work of scaffolding squarely within the ZPD which, according to sociocultural theory, is an area of potential development for the learner, and which is activated and co-created during social interaction (Vygotsky, 1978; Wertsch, 1985). Before further exploring the connection between the two concepts, however, it is useful to review particular concepts of sociocultural theory that I argue to be directly related to scaffolding.

The Zone of Proximal Development (ZPD)

Vygotsky’s development of the ZPD concept was influenced by his focus on the development of higher mental functions, his emphasis on the importance of an individual’s potential for development based on which mental functions were maturing, and his arguments concerning the part that formal instruction played in the process of psychological development. Chaiklin (2003) pointed out that the ZPD was not a central concept in Vygotskian theory of child development, but rather was meant to point to “an important place and moment in the process of child development” (p. 43). It has become, however, one of his most well-known, albeit least understood, concepts; indeed, Palincsar (1998) called it “one of the most used and the least understood constructs to appear in contemporary educational literature” (p. 170). Vygotsky did not propose a specific procedure for determining how to locate an individual’s ZPD, nor did he specify how to perform dialogic interaction within it. Consequently, those were issues left for his successors to wrestle with. He did, however, briefly mention examples of the work that could be conducted within the ZPD, such as giving demonstrations, asking leading questions, and giving part of a task’s solution (Chaiklin, 2003). It is significant that these examples reflect the work often engaged in during scaffolding, as it was later described (Bruner, 1978; Cazden, 1979; Ratner & Bruner, 1978; Wood et al., 1976).

Vygotsky’s ideas concerning instruction and pedagogy as they related to the ZPD were, however, explicitly expressed. Instruction was meant to provide tools for thinking and ways of acting in the world. It was not meant to result in an accumulation of facts or a rote memorization of preset solutions to specific problems or tasks (Aljaafreh & Lantolf, 1994). Indeed, pedagogical interventions were meant to lead to the development of higher mental functions. Each developmental stage, which was correlated to a mental age, had a leading or predominant activity considered a source for development at that stage (e.g., fantasy play was considered a leading activity for preschoolers). When the children engage in a leading activity, they engage in actions likely to “contribute to the structural reorganization of mental functions leading to a transformation that would usher in the next stage in development” (Chaiklin, 2003). The assessment of a child’s maturing mental functions would require pedagogical intervention in

order to determine the extent of their maturation. Vygotsky's interest lay in promoting pedagogical interventions that would take advantage of and focus on these leading activities, and would be characterized by dynamic, interactive procedures within a learner's ZPD. Hedegaard (1990) described the ZPD as "an analytic tool necessary to plan instruction and to explain its results" (p. 350).

The size of the ZPD could also vary. For example, two children may have started out at the same developmental level, but one might progress much more quickly than the other. This was presumed to be evidence that the child who progressed more quickly was better able to take advantage of collaboration, and that this child had a larger ZPD and a greater number of maturing functions (Vygotsky, 1978). In addition, the size of a child's ZPD was not fixed, but could change, depending on the type of problem solving task (Chaiklin, 2003). Scholars noted that it was also important to consider the appropriateness of the collaborative work being performed during dialogic interaction within the ZPD. The work conducted there should not simply involve a more experienced person giving general assistance to one who was less experienced. Instead, the assistance had to be aimed at those maturing functions which would lead to a transition to the next stage (Dunn & Lantolf, 1998). If the assistance given was above or below the child's ZPD, development would not occur. If aimed too low, the child might gain practice or reinforce previously assumed developmental functions or ways of thinking, but there would be no further development or transition to a higher level. If targeted at a level higher than the child's ZPD, it would not be accessible to the child.

The connection between scaffolding and sociocultural theory becomes clearer as *mediation*, *appropriation*, and the *ZPD* are defined and examined. The work to be done within the ZPD is described as that which allows learners to accomplish what they are unable to accomplish unassisted, which is what scaffolding proposes to do. More specifically, the guiding work occurring during the collaborative interactional work of scaffolding matches the type of work to be carried out within the boundaries of the learner's ZPD. In addition, the concept of appropriation is reflected in removing the scaffolding as learners successfully move through a task. Finally, the idea that learners are selective about what they perceive during the collaborative process, is echoed years later in van Lier's (2000, 2007, 2008) interpretation of scaffolding, which includes a consideration of *affordances* and *learner agency*, terms that will be discussed.

Mediation & Appropriation

Mediation, the process whereby an individual connects to and learns from the surrounding social and cultural environment, lies at the core of sociocultural theory. This connection develops as the child interacts with other individuals and environmental surroundings. Mediation forms the basis of how a community manages to communicate, and how a member of the community comes to understand the meaning and value of experiences and material goods. According to sociocultural theory, all human mental activity can fall into one of two categories: *lower forms*, which are biologically programmed, immediate responses to external stimuli, and *higher forms*, which involve complex mental activity such as voluntary attention, intentional memory, logical thought, and problem-solving. According to Vygotskian thought, higher forms of human mental activity are mediated (Lantolf, 2000b). Thus, the brain organizes the mental functions of the higher forms through the integration of symbolic, culture-specific artifacts, such as number systems, alphabets, signs, and social conventions.

These artifacts, language being the most powerful among them, change relationships amongst self, others, and the environment (Lantolf, 2000a, p.1) and contribute to further development. Mediation takes place within an individual's ZPD, which in turn provides a window into future development (Vygotsky, 1978). An understanding of mediation clarifies Vygotsky's view of human consciousness, which was his principal area of interest. The manner in which humans engage with each other and collaborate during mediation reflect characteristics the scaffolding process; that is, mediation is an interactive, collaborative social practice in which problem-solving (among many other activities) is accomplished, much like the collaborative interaction described in scaffolding (Woods et al., 1976). The goal of mediation is *appropriation*, another key element in sociocultural theory. It is considered to be both process and product, and it describes what happens to learners during the interactive collaboration of mediation.

As interpreted by Aljaafreh and Lantolf (1994), *appropriation* is a process of transition from intermental to intramental functioning, "a dynamic process of reconstruction and qualitative change in which the novice and the expert collaborate in constructing a mutual activity frame" (p. 467). Here, the importance Vygotsky placed on the transmission of social culture from individual to individual, and from generation to generation, must be acknowledged. Culture was defined in sociocultural theory as "the accumulation of humankind's historical legacy outside the boundaries of the organism, [which] is interiorized as mental activity, thus becoming internal to the organism" (Blanck, 1990, p. 47). This definition of culture corresponded to Vygotsky's *genetic law of cultural development*, which states that every stage in a child's cultural development made two appearances, first between people on the social level (inter-psychologically), and then inside the child on an internal level (intra-psychologically) (Vygotsky, 1978). Simply stated, appropriation manifests in the following way: what is first *said to* the child is later *spoken by* the child (Tharp & Gallimore, 1988). This did not mean, however, that what a child appropriated was an exact copy of what had appeared on the social level in another's mental activity; the child transformed what was appropriated according to his developing personality and in the context of his specific, unique social activity. Therefore, he was an active participant in the process. In the same way, scaffolding, as defined in its original incarnation (see Woods et al., 1976), is based on the collaborative interaction (*i.e.* mediation) between expert and novice as active participants, the goal of which is the novice taking in (or appropriating) the content of a particular social interaction.

As stated above, the concepts of mediation and appropriation are interrelated, as mediation leads to appropriation. Understanding these two concepts will aid in understanding Vygotsky's ZPD, the place where scaffolding occurs. In an effort to further define scaffolding, and to continue to examine its place within the ZPD, the following section will focus on the evolution of the definition of scaffolding.

EMPIRICAL ENDEAVORS: EXPANDING THE DEFINITION

As scaffolding began to gain acceptance as the term used to describe the work done within the ZPD during teacher-learner classroom interactions, it was adopted by researchers for use in their various specific fields of language study. For example, research in second language acquisition examined the use of scaffolding in feedback negotiation and error correction (Aljaafreh & Lantolf, 1994; Klingner & Vaughn, 2000; Ohta, 2000). Literacy research focused on devising more effective instructional approaches, which included scaffolding (Applebee & Langer, 1983;

Lee & Muncie, 2006; Palincsar & Brown, 1984). Scholarly work on collaborative practices focused on the amount and quality of verbal participation during scaffolding (Donato, 2000; Nakahama & van Lier, 2001; Palincsar, 1986, 1998; Pavlenko & Lantolf, 2000; Tharp & Gallimore, 1988; van Lier, 1994, 2007; Young & Miller, 2004), while second language teacher education research analyzed the ways in which scaffolding fit into approaches to teaching (Gibbons, 2002, 2003; Rogoff, 1994; van Lier, 2004, 2007, 2008; Walqui, 2006, Walqui & van Lier, 2010). The definition of scaffolding evolved as a result of the combination of the findings of empirical studies and theoretical writings, and the development of new approaches to teaching that incorporated scaffolding, at times in new ways and with new considerations.

Expanding the Definition and Scope of Scaffolding

The process of building upon Wood et al., while maintaining scaffolding's grounding in sociocultural theory, has continued up to the present day (Anton & DiCamilla, 1998; Brown et al., 1993; de Guerrero & Villamil, 2000; Donato, 1994, 2000; Gibbons, 2003; Ko et al., 2003; Langer & Applebee, 1986; Ohta, 2000; Palincsar, 1986, 1998; Stone, 1998; van Lier, 2007, 2008; Walqui, 2006). The six features in the original definition of scaffolding (see above, Wood et al., 1976), fit neatly with learning and development theory regarding the mediational work conducted within the ZPD. The withdrawal of support during and following the process of appropriation, however, was added soon after (Bruner, 1978, Cazden, 1979, Palincsar & Brown, 1984). One of the first modifications to the Wood et al. (1976) definition was by one of its authors. Bruner (1978) added two features to scaffolding: (1) *extension*, whereby the expert extended the situations and function of utterances, thus introducing more contexts which were appropriate for particular utterances; and (2) *ratcheting*, in which the expert kept to familiar lexicon, syntax, and contexts, providing a steady foothold for the child as he prepared for the next step forward. The use of extension and ratcheting helped the parent/teacher provide incremental steps when guiding the child.

Shortly after the addition of extension and ratcheting, Wertsch (1984) presented an analysis of the ZPD that impacted the interpretation of the interactional work done within it. Wertsch proposed that a *situated definition* was crucial to determining an individual's ZPD; in other words, the child and the adult needed to be aware of and understand the context of their interpsychological positioning, and engage in goal-directed action. Also, Wertsch added the concept of *intersubjectivity*, a state occurring when interlocutors realize they shared the same situated definition. Although certain aspects of these additions to the ZPD definition were later questioned and contested (e.g. Wells, 1998), they highlighted the importance of context in determining appropriate scaffolding and the shared goal of the interaction

Collective scaffolding broadened the scaffolding metaphor by adding the element of collaboration between peers. This type of scaffolding was a rich area of study beginning in the mid-1990s, for it seemed to answer a question raised regarding the appropriate interactants during work conducted within the ZPD. Studies which focused on collective scaffolding searched for verification concerning whether peers could successfully engage in scaffolding when paired with those of lesser or equal proficiency. Setting the stage for investigating this type of scaffolding, and using the original six features proposed by Wood et al. (1976), Donato (1994) conducted a study that analyzed what he termed *mutual* or *collective scaffolding*. He argued that (1) the dyad central to scaffolding (child-adult, tutor-tutee, or novice-expert) should be expanded to include learner-learner or peer scaffolding in a dyad or larger group, and that (2) scaffolding was not necessarily unidirectional, from expert to novice, but was bidirectional and present in

collaborative peer interaction. At times, Donato used *mutual* and *collective* interchangeably, while at other times, he distinguished between the two: *mutual scaffolding*, when learners spoke as one voice (e.g., finishing each other's sentences); and *collective scaffolding*, when different individual contributions were made during the collaborative process. In his study, the verbal interaction of three students of French at an American university was audiotaped and transcribed in an effort to uncover if and how learners mutually constructed a scaffold. Donato's findings provided evidence that the three learners scaffolded each other's efforts, and suggested that the three students were novices individually, but experts collectively; therefore, what one individual could not do alone, he was able to do in a group. He also observed that the learners often spoke as one voice (mutual scaffolding) which was evidence of intersubjectivity, the sharing of common knowledge or a common goal (Wertsch 1984). Ohta (1995) also found that students involved in paired work performed at a higher level collectively than individually. In addition, she argued that there were several variables affecting the success of collective or peer scaffolding, including the expertise of the participants, the nature of the task, the goals of the participants, and developmental level.

Numerous studies detailed the elements of collective scaffolding (Anton & DiCamilla, 1998; Brown et al., 1993; de Guerrero & Villamil, 1994, 2000; Donato, 1994; Nyikos & Hashimoto, 1997; Ohta, 1995; Tudge, 1990, 1992, Walqui, 2006). In their analysis of peer scaffolding in an elementary school classroom, Brown et al. (1993) focused on differences in each learner's ZPD, analyzing the role that an individual's area of expertise played in a small group's ability to successfully scaffold learning. The researchers found that each member of the collective made contributions based on his background knowledge and strengths. Studies conducted by de Guerrero and Villamil (1994, 2000) investigated evidence of symmetry/asymmetry of power distribution amongst peers, and interchangeability of the novice-expert roles during revisions of written work. Building on earlier work by Ohta (1995) on the factors affecting the success of peer scaffolding, Anton and DeCamilla (1998) emphasized the importance of intersubjectivity, which they defined as the shared perspective of a task. They outlined the ways in which peers checked with each other to keep themselves synchronized and on task. In short, collective scaffolding represented an important leap forward concerning the interpretation of the scaffolding metaphor as it was embodied in the classroom.

Some years later, Dennen (2004) added *affect* as another important aspect to collective scaffolding. His study focused on the ways in which *supportive scaffolding* impacted learners' cognitive and affective development. More precisely, Dennen studied how affect contributed to a learners motivation and confidence in addition to the development of abilities and knowledge. Other studies continued to explore affective aspects of collective scaffolding (Walqui, 2006; van Lier, 2007, 2008). Unsurprisingly, this research further clarified understanding of teacher-student interactions and classroom dynamics, and further shaped and enriched the scaffolding concept. In addition to the studies' contributions to defining the term, they added significantly to determining some of the variables that should be considered in future research on scaffolding in general, and collective scaffolding in particular.

While empirical work expanded and fleshed out the scaffolding metaphor, there were a number of nascent pedagogical models incorporating elements of scaffolding into the design. Because the practice of scaffolding was built into the pedagogy, the interpretation of the metaphor was necessarily diversified, further broadening its definition; as some subsequently argued, this popularization of scaffolding in instructional models resulted in, simultaneously, a wide embrace of the metaphor and a 'watering down' of the original concept.

Utilizing Scaffolding in Pedagogical Approaches

Alongside the empirical studies analyzing the interactional makeup of scaffolding, there were a number of new approaches to teaching and learning that included scaffolding as a teaching point, which in turn contributed to expanding its definition. It is important to point out that scaffolding, at times, assumes different names, which perhaps serves as evidence of a loosening of the metaphorical term.

Reciprocal Teaching. An early contribution to the definition of scaffolding was found in Palinscar and Brown's (1984) development and study of *reciprocal teaching* with seventh-grade students struggling with reading comprehension. *Reciprocal teaching* involved a dialogue between teacher and learner wherein the teacher modeled skills while reading a text, such as asking questions and rephrasing; the learner gradually took on greater responsibility for controlling the collaboration, eventually assuming the role of teacher. In this seminal study, each learner was paired with a teacher, and the teacher, while reading with the student, scaffolded the use of the strategies the learner could use to improve his or her comprehension of texts. The scaffolding techniques used by the teacher were rephrasing and elaborating on statements made by the learners, and asking questions. Although no entirely new characteristics were added to scaffolding, the study presented transcriptions of teacher-learner interaction, providing evidence that teacher scaffolding led to increased learner participation and eventual mastery of these strategies. Also, the study showed, in real time, how scaffolding was gradually taken away when it was no longer needed.

Instructional scaffolding. At approximately the same time as the publication of Palinscar and Brown's (1984) work on reciprocal teaching, *instructional scaffolding* for teaching reading and writing (Applebee & Langer, 1983, Langer & Applebee, 1986) proposed tailoring scaffolding to fit the needs of a whole class, a major leap in the use of scaffolding. Grounding their work in sociocultural theory, Langer and Applebee focused on integrating individual development and the social environment of the classroom. Building on the six characteristics of scaffolding proposed in Wood et al. (1976), they suggested that in addition to guiding learners in grasping novel concepts or skills, teachers should encourage learners to complete those elements of a task which were within their range of competence. Langer and Applebee suggested that working within the range of a learners' competence helped locate the lower end of a learner's ZPD. Langer and Applebee's search for an effective reading and writing instructional model that incorporated scaffolding in this way led to their model of *instructional scaffolding* (also called *instructional dialogue*). It included the following five characteristics: (1) *ownership*, or giving the learner a voice and a sense of purposefulness in relation to the task; (2) *appropriateness* through building tasks based on the learners' current knowledge, while at the same time providing guidance aimed at stretching that knowledge; (3) *structure*, by presenting tasks in a context of supportive dialogue that provided a natural sequence of thought and language (see Halliday, 1975), as well as by suggesting effective routines for learners to internalize; (4) *collaboration* via building on and recasting student efforts through telling, modeling, questioning, rephrasing, extending, praising, and correcting; and (5) *internalization*, or gradually moving control of the interaction from teacher to student, after which the scaffolding self-destructed. Of these characteristics, ownership, originally called intentionality (Applebee & Langer, 1983) emphasized the contribution of the learner to the dialogic interaction that took place during scaffolding. Langer and Applebee also provided a list of techniques for promoting collaboration,

and they explicitly included the self-destruction of the scaffolding in their version of internalization (what Vygotsky termed *appropriation*).

Assisted performance. This type of scaffolding formed an integral part of Tharp and Gallimore's (1988) theory of education, and their proposal to reconstitute schools as *educating societies*. An important detail was to suggest that the ZPD was not only important to child development, but also to the learning and developmental processes of older children and adults. Basing their work in Vygotskian sociocultural theory and, in particular, the construct of the ZPD, they focused on realizing work within the ZPD. Tharp and Gallimore also highlighted the difficulty of learning to do this type of work effectively, and called for its inclusion in teacher training programs. This was the first acknowledgement that scaffolding required specialized training. Tharp and Gallimore's *assisted performance* included six characteristics and was suggested for use with individual learners, small groups, and whole classes. Although their data focused on elementary school contexts, the six means of assisting performance were also considered appropriate for older learners: modeling, contingency management, feeding back, instructing, questioning, and cognitive structuring. Of these, giving praise and encouragement, briefly mentioned in Langer and Applebee (1986), as techniques of *contingency management*, and *feeding back* in the form of both planned and spontaneous assessment, were additions to the definition of scaffolding. These features and techniques had perhaps been implied in previous definitions, but had not been explicitly stated. Importantly, peer assistance was also recognized as constituting assisted performance. Later, this idea was further developed as *collective scaffolding* in numerous studies (Anton & DiCamilla, 1998; Brown et al., 1993; deGuerrero & Villamil, 2000; Donato, 1994; Palincsar & Brown, 1984; among others).

Guided Participation. Rogoff's work on children's cognitive development (Rogoff, 1990, 1995; Rogoff & Gardner, 1984; Rogoff et al., 1984) represented a major contribution to shaping the definition of scaffolding. Guided participation was meant to include not only verbal interaction between humans, but also non-verbal interaction through the use of gaze, hesitation, and postural changes. Guidance involved learner interaction with materials and fellow participants in the classroom, but also the specific social and cultural values offered to the learner outside the classroom. This greatly expanded upon what was originally presented as scaffolding by Wood et al., and adhered to the sociocultural and sociohistorical aspects of Vygotskian theory of learning and development. Although broadening the scope of scaffolding in this way was perhaps implied in previous descriptions and definitions of the metaphor, it was stated explicitly, perhaps for the first time, in Rogoff's work. The collaborative work performed during guided participation led to what Rogoff termed *participatory appropriation*, with its heavy emphasis on the role both participation and creativity played in interaction. She also highlighted the work of the adult as requiring constant adjustments to the structuring and pacing of instruction. In fact, the adult and child jointly co-constructed activity, and both played an active role in structuring and pacing instruction. Expert and novice worked collaboratively, Rogoff stated, and in another direct reference to Vygotskian thought, she claimed were both changed through their collaborative interaction.

Perhaps due to the numerous additions to both the substance and scope of scaffolding in teaching/learning approaches, the definition and interpretation of scaffolding generated confusion for educators. Although scaffolding had become a buzzword by the late 1990s, its exact definition and real-time implementation had become fuzzy, having lost the simplicity of its original six features. In the following section, I will document an attempt to refine and streamline the metaphor in the late 1990s.

Refining the Metaphor: A Critical Analysis

After the addition of various features to the definition of scaffolding as well as the proposal of several considerations that needed attention when conducting scaffolding (e.g., affect, nonverbal conduct), Stone (1998) and Palincsar (1998) took time to step back and critically review scaffolding as metaphor and practice. Stone initiated the dialogue, expressing three main criticisms: (1) cultural differences between and amongst teachers and learners had not been taken into account; (2) the contexts in scaffolding studies were exclusively that of middle-class socioeconomic status; (3) there was still too much importance given to the unidirectionality of scaffolding from expert to novice. He did, however, support continued use of the metaphor, and went on to propose a new, streamlined version of the original, with three characteristics: intersubjectivity, graduated assistance, and transfer of responsibility. Palincsar (1998) responded by suggesting that three additional characteristics be included to refresh the metaphor. These included: (1) repositioning the metaphor within its theoretical framework; (2) considering the ways in which tasks and contexts themselves scaffolded learning, later echoed in van Lier's *meso-scaffolding*; and (3) issuing a call to researchers to conduct studies on the relationship between scaffolding and learning. She made an interesting final point related to peer scaffolding, mentioning Brown's (1993) study of distributed expertise in the classroom, and how children pick up what they can-- often what they need-- to further learning. This idea was also found in van Lier's (2000, 2007, 2008) use of *affordances* within his *ecological* approach to learning and development, wherein learning involves relationships among learners and their environment, as well as between cognitive and social processes.

Despite the concerted effort to tighten the definition of scaffolding, it is not certain that the goal was accomplished. In subsequent studies, scaffolding was often named but not defined, and a great number of features, not all of them symbiotic, remained linked to scaffolding. It does seem, however, that the modifications and emphases led to a broader vision of what was involved in the work of scaffolding. I will now turn to scaffolding as it has most recently been defined in the current literature of second language teaching and learning, for interpretation in this context seems to be the most inclusive, and takes many previously proposed features under consideration.

SCAFFOLDING: THE CURRENT STATE OF THE ART

Although in recent years scaffolding has not attracted the same level of interest and attention as it did in the 1980s and 1990s, its definition was further shaped and clarified for second language education in the important work of Walqui (2006) and van Lier (1994, 1996, 2000, 2007, 2008).

Scaffolding is currently presented as a three-level system (van Lier 1996, 2007; Walqui, 2006), with all levels operating simultaneously, in turn interacting and affecting each other. The first level is the whole structure of the scaffold itself, the *macro-scaffolding*, which corresponds to the progression of the curriculum of a course of study; this type of scaffolding relates to the order in which the knowledge needed to learn a second language is presented (e.g., simple greetings, followed by describing everyday routines and events, followed by descriptions of past events). The second level, *meso-scaffolding*, corresponds to the structuring of activities in the lesson plan for one class; tasks and activities are gradually made more complex, and thus, more challenging (e.g., vocabulary work, followed by a listening activity including the vocabulary just

practiced, then an informal discussion of the topic of the listening activity followed by a collaborative writing activity based on the topic, and finally, a group presentation on the topic). The third level, *micro-scaffolding*, refers to the moment-by-moment collaborative work of building the scaffold, reflected in the alternating turns at talk that constitute interaction in the classroom (van Lier, 1996); this level refers to the teacher's leading/guiding/prompting-type utterances and the learners' responses which advance the interaction (e.g. the moment-by-moment verbal co-construction between teacher and learners of the instructions for an activity). In addition to the macro-, meso-, and micro-scaffolding levels, there are four sources of scaffolding for the learner: (1) the expert; (2) other learners at the same level; (3) learners at a lower level wherein assisting them entails organizing one's own thoughts; and (4) working alone, which involves relying on inner resources and experimentation, such as when one organizes and develops a way to persuade a classmate during a role play activity (van Lier, 2004).

Contingency, the moment-by-moment work that unfolds between teachers and learners, has become a central focus of scaffolding (van Lier, 1994). As a consequence, scaffolding can perhaps best be understood as a balancing act between the planned, on one hand, and the unpredictable or improvised, on the other, and requires a high degree of teacher attentiveness to the learners' "emergent understandings and growing autonomy" (van Lier, 2000, p.62). Taking advantage of the unplanned and the unpredictable means that exploration, experimentation, and depth of learning are of primary importance. Upon considering the effect this would have on curriculum planning, Walqui (2006) stated, "learning may cover less, but uncover more" (p. 178). Scaffolding's most recent incarnation, *pedagogical scaffolding* (Walqui, 2006), was built on previous work by van Lier (1994, 1996, 2000), and grounded in sociocultural learning and development theory. van Lier (2000) proposed that scaffolding, especially meso- and micro-scaffolding, involved making resources available to the learner based on his or her emergent needs. This gave importance to the learner's *agency*, his own voice and initiative in his learning. These ideas formed the basis of *pedagogical scaffolding* which was related specifically to schooling, and consisted of the following features: (1) continuity: tasks are repeated with variations and connected to each other; (2) contextual support: exploration is encouraged in a supportive context; (3) intersubjectivity; (4) contingency: tasks are adjusted depending on learners' actions; (5) handover/takeover; and (6) flow: learners are focused on task and *in tune*, or synchronized, with each other. Once these features had been identified, various types/techniques of instructional scaffolding were suggested: modeling, bridging familiar information to new information, contextualizing (using metaphors and analogies to bring complex ideas closer to learners' world experiences), schema-building, re-presenting text (transforming linguistic structures from one genre to another), and developing learner meta-cognition. In addition to these features and sources, van Lier's (2007, 2008) emphasis on the importance of learner identity as embodied in voice, and which implied agency, had important implications for pedagogical scaffolding. It meant greater learner initiative in the learning process, which emphasized the unpredictable, unplanned aspect of scaffolding, particularly micro-scaffolding. Teachers and learners alike were required to be alert and train their attention on the moment-by-moment interaction occurring in the classroom.

Noting the features and the suggested techniques of pedagogical scaffolding, the Wood et al. (1976) definition has clearly been updated and modernized. Additionally, it has expanded to reflect proposals and advances in teaching/learning theory and teacher education, and to include learners of all ages in academic settings, the current arena for the study of scaffolding.

CONCLUSIONS

The definition of scaffolding has undergone several modifications since it first appeared in child psychology research. Linking scaffolding to Vygotskian sociocultural theory gave it shape and a theoretical framework, and as Vygotsky's metaphor of the ZPD evolved, so did the metaphor of scaffolding. Although the term was not part of Vygotskian sociocultural theory from the outset, research in the areas of child psychology, teaching and learning, and teacher education, came to both define and place scaffolding within this theory of learning and development, specifically, within the ZPD. After the first studies which examined and defined scaffolding in child first language learning, the definition gradually expanded its scope to include child and young adult literacy, and child and adult second language learning contexts. As it moved away from descriptions of mother-child interaction to teacher-learner interaction, and finally, learner-learner interaction in the classroom, it also came to reflect, and even lead, the development of teaching and learning models and approaches, and to influence teacher education.

There were several pivotal moments in the evolution of the definition of scaffolding: the use of transcribed audio and video-recordings to observe and analyze scaffolding as it unfolded in moment-by-moment talk in interaction; the use of scaffolding as a building block in new approaches to teaching which then influenced teacher training; the study of collective scaffolding and subsequent enrichment of the metaphor; and the interest in scaffolding and its relationship to learner participation and agency in learner-centered classrooms. Although the definition of scaffolding continues to be a bit unwieldy, some core features have been present throughout most of its evolution, such as intersubjectivity, collaboration, interaction, temporariness, and contingency.

Scaffolding research has opened up several areas for possible future research. The most recent work on scaffolding, with its emphasis on learner agency and dealing with the unplanned and unpredictable nature of contingency, will perhaps lead to further analyses of meso- and micro-scaffolding. Also, the focus on affective factors which influence the success of collective scaffolding (e.g. Dennen, 2004) opens a line of study which could add significantly to our understanding of how to teach and perform scaffolding. Two additional areas of research which seem especially interesting to me, due to their link to effective language teaching and teacher education, are: analyses of how contingency is handled in real time in the classroom, perhaps through an analysis of meso- and micro-scaffolding data; and how to use scaffolding to deal with and harness invigorated learner agency in order to increase learner participation.

Although scaffolding has found a comfortable resting place in teaching and learning jargon, and despite its lingering off-handed use, it is, in fact, firmly grounded in Vygotskian sociocultural theory. In the field of teacher education, when presenting scaffolding, especially micro-scaffolding, it should not be assumed that teachers are able to intuitively translate and transfer its metaphorical meaning into practical application in the classroom. Instead, when presenting scaffolding, time would be well spent discussing its theoretical framework, its features and techniques, and analyzing examples of how it manifests in moment-by-moment interaction, through the use of transcribed classroom data. Perhaps in this way, novice and experienced teachers alike would be better able to take advantage of scaffolding as a teaching practice.

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