

# Guided Participation in Sociocultural Learning: Intervention and Apprenticeship

The central tenet of this article is to urge a shift in thinking about intervention approaches to include sociocultural activities. The sociocultural approach is described as a process that is embedded in social and cultural activity, and is an approach to rethinking and redefining best practices for intervention. As one application to intervention, this framework examines the transfer of responsibility in cultural activities in three major areas: apprenticeship and intervention, intervention and qualitative documentation of intervention in cultural activities, and the efficacy of apprenticeship in clinical intervention approaches. The data in this chapter support the integration of sociocultural learning and apprenticeship in the current paradigm of intervention practices. Descriptions of intervention practices as development in context, relating intervention practices to everyday routine activities, and describing intervention practices as apprenticeships are discussed. *Key words: apprenticeship, intervention, problem-solving, sociocultural theory, Vygotsky, zone of proximal development*

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USING A SOCIOCULTURAL theory as a clinical intervention framework is one that has been recently explored in the field of communicative disorders (e.g., van Kleeck & Richardson, 1997; Schneider & Watkins, 1996). Using cultural theories to guide intervention approaches incorporates approaches such as mediated learning, goal adjustment, and skill transfer that are central to effective clinical intervention. For example, Schneider and Watkins focused primarily on story-telling interventions using clinical assistance levels of high, mid, and low to determine decision making in the interactions. The purpose of these levels was to assist the clinician in providing effective mediation to the client, and to guide clinician decision making. While a few recent studies have begun to examine Vygotskian applications in intervention (e.g., Schneider & Watkins, 1996), further discussion and application issues in intervention are warranted in order to understand and describe effective intervention approaches.

The context of intervention can be characterized as a complex enterprise that views the inextricable connection between context, culture, and learning (e.g., Vygotsky 1978, 1987; Wertch 1984; Wertsch, Tulviste & Hagstrom, 1993; Cole, 1996; Forman & McPhail, 1993; and Rogoff, 1990). This view makes it difficult to imagine any intervention activity that does not have a sociocultural link. In an effort to explore this link between culture and cultural phenomenon, it is ironic that there is not a cohesive account of how culture appears in and influences the context of intervention. One perspective that shows promise is Vygotsky's (1978) sociocultural view of learning. This sociohistorical perspective describes learning as a dynamic apprenticeship: children learn in guided participation with experts who use scaffolding techniques to provide and withdraw support linked to the learner's changing competence (e.g., Rogoff, 1990). This notion can be extended to explore dynamic approaches to intervention where the clinician mediates clinical interactions.

While the importance of dynamic assessment has been clearly delineated in the literature (e.g., Bain & Olswang, 1995; Olswang, Bain & Johnson, 1992; Olswang & Bain, 1991), there has been little empirical discussion of a way to operationalize the dynamic process of intervention. This process is central to Vygotsky's theory: that children's participation in cultural activities allows children to internalize the process carried out initially in the apprenticeship between the adult and the child. This article will explore Vygotsky's notion of the zone of proximal development (ZPD) as a way to examine transfer of responsibility from the adult to the child, with the goal being that

the child would be assisted in developing skills by internalizing the process carried out *between* the clinician and the child in an apprenticeship.

### **APPRENTICESHIP AS INTERVENTION: A SOCIOCULTURAL FRAMEWORK**

The structure of the therapeutic relationship is a perfect example of sociocultural learning. Each therapeutic session is shaped by the clinician's ability to define the client's zone of proximal development (actual vs. potential level of performance) and to mediate change. The clinician's job is to mediate the clinical interactions. That is, the clinician identifies where the client is currently functioning (actual level) and attempts to facilitate performance (potential level) by applying various types of prompts and cues (mediation). Success of this method depends upon selecting the proper goals, recruiting, and motivating the client—using appropriately scaffolded prompts and cues for learning.

In Vygotsky's view of learning, culture and development are inseparable—culture shapes development and development shapes culture. That is, cognitive processes develop through participation in problem-solving with more experienced members of the culture—and where culture and cognition are inextricably tied to each other and create each other (e.g., Rogoff, 1990;

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Rogoff, Gauvain, & Ellis, 1984; Cole, 1990; Wertch, 1985). From a Vygotskian perspective, children's development occurs in situations where the child's problem solving is guided in joint participation with an adult or a more experienced partner who structures and models the appropriate solution to a problem. Vygotsky's view is a paradigmatic shift in clinical thinking: that individuals in intervention internalize *with* others, the ways of thinking that develop in social interactions. That is, habits of the mind, and therefore learning, is co-constructed with more capable others. Vygotsky's notions of the zone of proximal development, and further work by Rogoff (1990) elaborated in her notion of guided participation and apprenticeship have domains that are easily operationalized, and are accessible for use in many clinical interactions and interventions. The purpose of this article is to describe the efficacy of the sociocultural approach to clinical intervention and to provide a clinical intervention framework embedded in apprenticeship in cultural activities. Implications of this view of learning in intervention are that intervention must be sensitive to the cultural influences of the client, the cultural milieu of the client, as well as the cultural context of the client's everyday experiences. Three major domains from sociocultural learning and apprenticeship can be bridged to rethinking, shifting, and realigning the current paradigm of intervention practices:

1. describe intervention practices as development in context,
2. relate intervention practices to everyday routine activities, and
3. describe intervention practices as apprenticeships.

### Intervention practice as development in context

For Vygotsky (1978, 1987) children's development takes place with social support in familiar cultural contexts—in homes, school, and community, as well as in social interactions with adults and peers in order to develop and internalize skills. In this framework, context is used to describe the ways in which tasks are understood and strategies are used to provide participants with repeated opportunities to learn. It is through this recurrence and repetition that learning is transferred and transformed. One metaphor for examining the transfer of learning is Vygotsky's zone of proximal development. In the zone of proximal development the primary focus is on the potential development of the novice when engaged in an interaction with a more capable other—the focus is not on skill acquisition but skill transformation. Figure 1 demonstrates the triangulation of theoretical frameworks by incorporating a sociocultural framework within a clinical intervention framework. That is clinical interventions should be guided by the etic that interventions are dy-

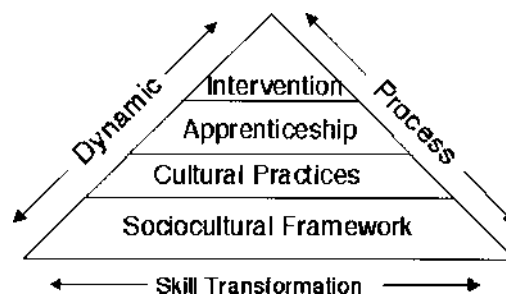


Figure 1. Triangulation of theoretical frameworks for intervention.

namic, involve process oriented activities and skills, and focus on skill transformation rather than skill acquisition. In this framework, clinical interventions are based on learning in the context of cultural practices and in an apprenticeship: learning evolves in participation and it is in the participation that the transfer of learning from the expert to the novice occurs.

Consider the following example of an apprenticeship in a classroom context. Two children (one an expert (age 7)) and two novices (age 5 and age 6) are paired to work on a “candy math” lesson. The teacher used the cultural activity of Halloween as a context to teach base ten and addition while asking groups (in one part of the lesson) of children to count candy they had in their individual bags, and then to count collectively how much candy they had in their group. Children were then asked to use classroom manipulatives to represent the candy and decide on the total number of candy pieces in the group.

Teacher: “Here is your problem to solve in your apprenticeship groups. You have just been trick or treating, and each person in your group got 7 candy bars, and then looked in their bags again, and found 3 pieces of bubble gum. How many candy bars do you have as a group? How many piece of gum do you have as a group? And finally, how many goodies do you have all together in your group? Your expert will guide you in solving this problem.”

### **Expert-Novice Apprenticeship: Episode 13:13–14:41**

(1) Olivia: “Okay, now we are going to count. No, Chiara. These are not twenty.” (Points to unifex cubes and the representation of tens.)

(2) Olivia: Moves the unifex cubes into columns of ten on table so both Miles and Chiara can see.

(3) Olivia: (Takes unifex cubes representing ones from Miles.) “Now we already know how many of these we have right?” (Points to unifex cubes and looks to Chiara and Miles for acknowledgment.)

(4) Chiara and Miles: Nod their heads yes, as they watch Olivia line up the unifex cubes to count.

(5) Olivia: “Ready? Count with me, Chiara.”

(6) Olivia and Chiara: Olivia holds a pencil and touches each cube as Chiara watches and they count in unison “1–2–3–4–5–6–7–8–9.”

(7) Miles: Watches as they count each unifex cube.

(8) Olivia: “Okay, now you (looking at Miles) are going to count with Chiara (takes three more unifex cubes from Miles and adds to the columns of cubes). And I’m going to leave these here while I answer this question, okay?” (Looks at board and begins to answer the question in sentence form on a piece of paper while Miles and Chiara count.)

(9) Olivia: Begins to count out loud with them and then stops. “Wait. I’m going to count them all first” (counts silently to 30).

(10) Chiara: “We have thirty one or thirty two.”

(11) Olivia: “No, count with me. 1, 2, 3 . . . 27, 28, 29, 30. 30. The answer is 30.”

(12) Miles: Watches as Chiara and Olivia count, and as Olivia writes the answer on her sheet of paper in a sentence.

This transcript excerpt highlights the rich nature of the apprenticeship and the participation of the group members—both verbal and nonverbal participation. In this particular interaction, Olivia, the “expert” guides the novices by marking critical features of the activity in the following way: moves the unifex cubes into columns (strategy to make it easier to count); demonstrates a strategy to count out loud as she touches each cube to represent a number; repeats the strategy

when the “novices” come up with the wrong answer. In this apprenticeship interaction, and countless others that were observed, the route to the participation is in the apprenticeships. That is, through children’s guided participation in cultural activities with more skilled partners, the culture is reproduced or transformed. Children re-create culture as they learn to participate in practice, and as they participate they get better and better at doing things that resemble those of more experienced members of their culture.

### **Intervention practices in everyday cultural activities**

Central to the theory of apprenticeship is the idea that children’s participation in cultural activities with the guidance of more skilled partners (e.g., teachers, clinicians, peer experts) is necessary in order to internalize the tools for thinking. These tools for thinking are embedded in learning opportunities and allow practice of these skills in everyday sociocultural contexts. One such context is problem-solving as it is embedded in the cultural context of mathematical activities in classrooms. Processes of student learning in apprenticeship activities need to be described in ways that shape our understanding of the relationship between cultural activities and children’s cognitive activity; provide an account of the organization of these activities as they are jointly produced by the teacher (expert) and novices (children) in the classroom, and describe how these cultural tools are integrated in the curriculum.

One cultural tool that children learn about in an elementary math curriculum is measurement. The following activity in a multi-age classroom (Kindergarten through second grade) is used to highlight the ap-

prenticeship and participation of children in activities that relate to their everyday experiences and routines. Students were asked to examine the practices of their everyday lives in measurement, and were then asked to work in groups to describe and define measurement in the context of an activity created by the teacher where students have large tubs of milk and are to figure out cups, pints, half-gallons, and gallons. For example, when describing liquid measurement, the teacher described the history of measuring liquid, and the tools that were used to measure a half-gallon of milk or a gallon of milk. The teacher asked students to describe the routines of buying liquid—in this example, milk—and to think about how they would know that the half-gallon of milk in their grocery cart was a measured half-gallon. The following sample excerpt describes an interaction between an expert (teacher) and a novice (student) and a window into the moments of learning in the apprenticeship that are taking place:

### **Episode 27: 18–22:D6**

- (1) T: If the pattern is true how many cups will it take to fill half a gallon? Cause that’s the next biggest container.
- (2) J: Eight cups.
- (3) T: So you double six and you get eight?
- (4) J: Seven.
- (5) T: Do you double six to get seven? What happened when you doubled three?
- (6) J: Three—you get six.
- (7) T: What happens if you double six?
- (8) J: You get 12.
- (9) T: So you think . . .
- (10) J: 12.
- (11) T: A half gallon is 12?
- (12) J: Nods head yes.
- (13) T: (Looks to the group of students.) Jules speculated on something. Jules, share your thinking. Jules has something to say.

(14) J: I think you double it. Because like the last two times it was three and the time after that it was six and then it's like three plus three is six.

(15) T: So, based on your pattern, how many cups do you think it will take to fill the next largest container?

(16) J:12.

This interaction demonstrates the guided participation of the expert in this apprenticeship. The transfer of responsibility for the problem-solving was established through “co-narrations” with the novice through verbal and nonverbal discourse. As Wertch (1979) states: “These responsibilities were formerly divided between the adult and child, but now they have been taken over completely by the child.” (pg.18). In this interaction, you can “see” the construction of solutions embedded in the participation of the expert and novice. The novice begins to “internalize” the cultural tools and rules of mathematical thinking. The expert sets up the idea of a pattern for the novice saying “Do you double six and you get eight?”; “What happened when you doubled three?”; “What happens if you double six?” By the end of this interaction, the apprentice begins to internalize the pattern “I think you double it” as a result of shared thinking in the repeated practice of the activity.

### An expert-novice dyad

Another interaction depicted below describes the familiar cultural activity of grocery shopping and an expert-novice dyad of a mother and her nine-year-old daughter. The transfer of learning appears as the expert structures a situation that provides the novice with access to observe and participate in a culturally valued skill—figuring out cost of items per pound.

Mother: Should we get some bananas?

Ruthie: Okay.

Mother: Why don't you go see how much the bananas are?

Ruthie: Walks toward bananas and begins to look around for a price and looks over at her mother shrugging her shoulders.

Mother: (watching daughter from the shopping cart, and moves closer) Can you see how much they are?

Mother: (points to a sign at the top of the stand) See the sign at the top? What does it say?

Ruthie: (looks at the sign at the top). Twenty cents.

Mother: It is twenty cents *a pound* (emphasizes a pound).

Mother: I haven't seen an ad like that in a long time. So you think we need two?

Ruthie: Yeah, so it is 40 cents.

Mother: It's 40 cents a pound. It's more than 40 cents. You pay 20 cents for each pound. We have 4 1/2 pounds (points to scale). For each pound you pay 20 cents, so if you have 4 pounds you say four twenties.

(12) Ruthie. Oh. (walks over to the shopping cart as she helps push the cart, and begins to count out loud). Oh, I get it now: 20, 40, 60, 80. Eighty cents.

Mother: They are about 80 cents.

Ruthie: It's not very much.

Mother: No it's not. It's usually 33 or 36 cents a pound, so it's quite a bit less.

This interaction between a mother and child, could also be characterized as an intervention in everyday practices—learning to use cultural tools (using a scale to define pounds and mathematics to determine price) in a culturally relevant activity (grocery shopping). The mother in this activity recruited her daughter into the activity of looking for the price per pound, weighing the fruit, defining the actual cost of the fruit, and comparing the cost to past prices in order to define a value for the food. All of these cultural values and beliefs are embedded in the context, and explicated in the discourse of the apprenticeship. The transformation of skills is established in the collaborative interactions, and depicts ap-

prenticeship as an intervention negotiated in the social interaction.

### **Intervention practices as apprenticeships**

The notion of apprenticeship is not an unfamiliar metaphor. Apprenticeships have been described universally (e.g. Greenfield & Lave, 1982; Rogoff, 1986; Chaiklin & Lave, 1993) where the process of learning is divided into steps and provides guidance in the context of joint participation in the activity. Consider the steps involved in apprenticeships of tailors. The novice tailor begins in a reverse order by first learning to sew simple garments (sewing buttons, hemming) and next learns to cut the garments:

Reversing production steps has the effect of focusing the apprentices' attention first on the broad outlines of garment construction as they handle garments while attaching buttons and hemming cuffs. Next, sewing turns their attention to the logic (order, orientation) by which different pieces are sewn together, which in turn explains why they are cut out as they are. Each step offers the understated opportunity to consider how the previous step contributes to the present one. (Lave, 1988, p.4).

The structure of the tasks provided the opportunity for the apprentice or novice to observe the next step carried out by the expert, while participating in the steps that are less complex. This account emphasizes the active role of the apprentice in learning in practice, while also participating in the activity. While this account describes adult apprenticeship, it is consistent with Rogoff's (1990) account of children's apprenticeship in thinking, "children's active learning in the context of sociocultural activity, with the guidance of more skilled partners." (p. 91). This emphasis can also be

considered in intervention activities. That is, in intervention tasks, the structure of the tasks should be designed to engage the participation of a novice apprentice (client) in an activity while the expert master (clinician) carries out the more complex aspects of the task. The following transcript excerpt is a clinician with an eight-year-old child in a session where classroom math tasks have been used to facilitate and bridge verbal problem-solving skills. This excerpt delineates the way in which the expert guides this child (as an apprentice) in an activity that he clearly could not carry out without the participation of an expert other:

### **Clinician-Student Apprenticeship: Episode 17:41–21:19**

(1) Clinician: We have to figure out what to do. Let's say we want to have a party, and we want to have cookies and milk for everyone. How would you figure that out?

(2) Jacob: I don't know.

(3) Clinician: How about if you decide how many people you want to have at the party?

(4) Jacob: I want to invite six people to my party, and I want them to have two cookies each.

(5) Clinician: And besides the cookies, what else do you need to be thinking about?

(7) Jacob: Oh, yeah. Milk. I guess they can all have one glass of milk.

(8) Clinician: Uh huh.

(9) Jacob: So, now what do I do?

(10) Clinician: Well, how will you decide on the milk?

(11) Jacob: Huh?

(12) Clinician: Milk is sold in a quart or a half-gallon, or gallon, right? So what will you need to think about if you want six people to have one glass of milk?

(13) Jacob: I have no idea. Let me think. Um, um, how many cups are in a gallon?

(14) Clinician: Ten cups. See? (Points to chart.) Look at the chart to help you remember.

(15) Jacob: Okay, I need a gallon of milk and then I guess I'll have some left over.

- (16) Clinician: And, what about the cookies?  
 (17) Jacob: Well, I want everyone to have two cookies, and six plus six is twelve. So, is one package enough?  
 (18) Clinician: What do you think? Do cookies come in different kinds of packages? If you look over at the chart we made, it looks like the large package has 15 cookies.  
 (19) Jacob: Yeah, so I guess I'll just get the biggest package, and I think I will have some left over, right?  
 (20) Clinician: Well, one strategy would be to write it all down and so you can see what you have. Do you want to try that?  
 (21) Jacob: Nods head (yes) and begins to write.

A sample of this student's work from the session described in the problem-solving transcript is depicted in Figure 2. The child was able to begin to organize the problem on paper with the guidance of the expert in order to participate in the task.

In this interaction, the clinician provides many other-regulated strategies, and takes most of the responsibility for the problem-solving task (e.g., recruits him into the initial task responsibilities). "How about if you decide how many people you want?"; helps him think about portions for the party such as "So what will you need to think about if you want six people to have one glass of milk?"; helps the novice use tools in the environment as guides, "Look at the chart to help you remember," or "One strategy would be to write it all down so you can see what you have." While the expert was providing and marking critical features of the task, the novice was responding to the strategies provided, and used each interaction as a step to completing the task. A sample of this student's work from the session described in the problem-solving transcript is depicted in Figure 2. The child was able to begin to organize the problem on paper with

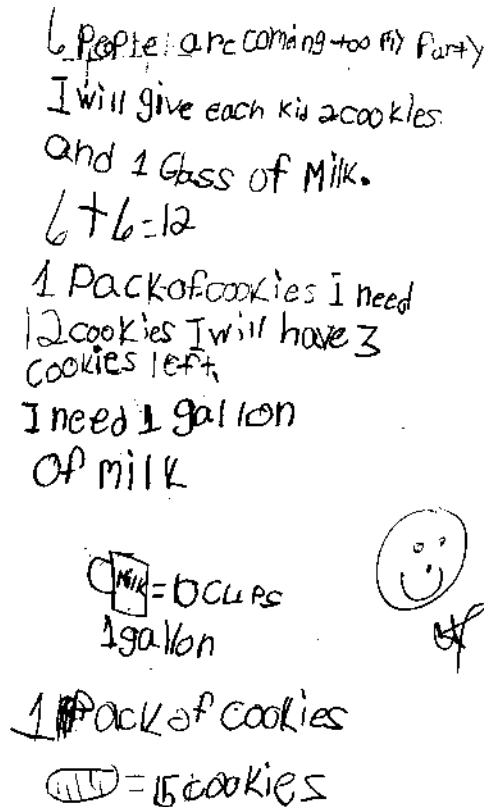


Figure 2. Student problem-solving: Other regulation.

the guidance of the expert in order to participate and regulate the task demands. A later sample of this student's work on similar verbal problem-solving tasks is depicted in Figure 3. Several weeks later, after repetition of the task goals, more of the responsibility of the task could be transferred to the child, and his ability to problem-solve both verbally and mathematically transformed. While previous session interactions depicted a path where the student was provided assistance by the expert, in this written example there is a qualitative shift: the child took on more responsibility for the



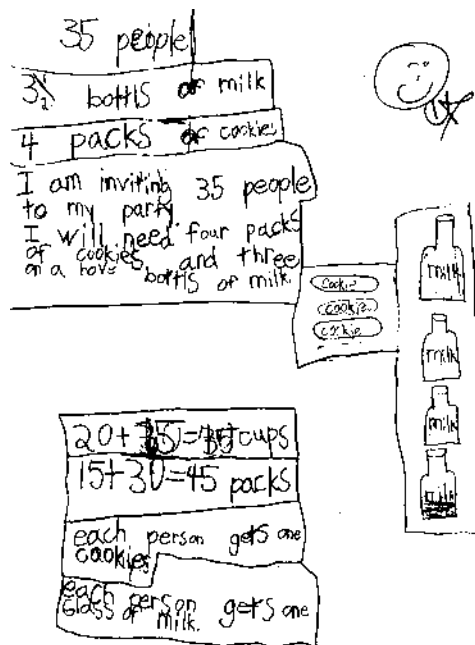


Figure 3. Student problem-solving: Self-regulation.

written task, and provided self-assistance and self-talk to accomplish the tasks of the activity while under the guidance of the expert clinician.

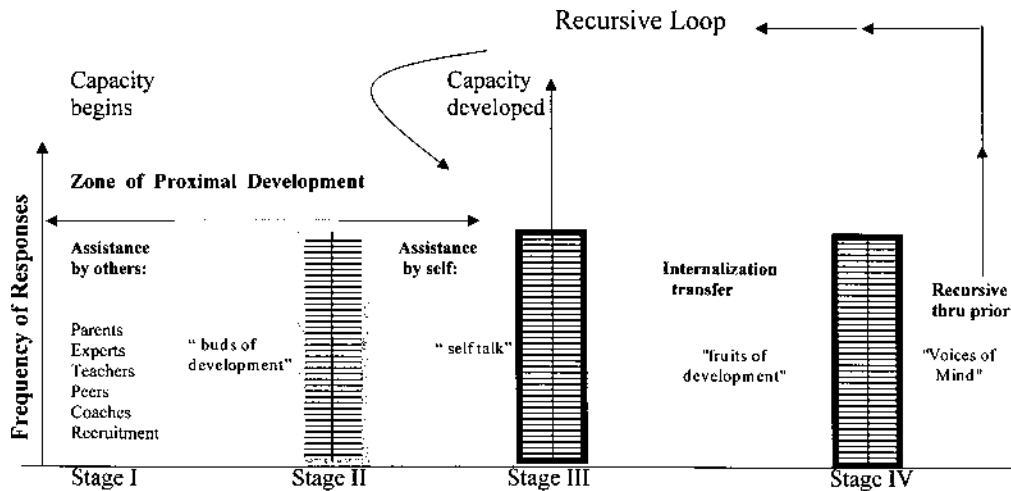
### MOMENTS OF INTERVENTION IN CULTURAL ACTIVITIES: A QUALITATIVE PATH ANALYSIS

One significant purpose in using a socio-cultural framework for intervention is to document the process of transfer and transformation of skills. That is, measuring shifts in the level of assistance provided from the expert to the novice. The slippery slope of measuring intervention has often led clinicians to think about measuring product outcomes (such as tabulating frequencies of occurrence) rather than also measuring *process* as an outcome. One way to measure

process is to examine qualitative shifts in dynamic intervention interactions using Vygotsky's (1978) zone of proximal development (ZPD). Vygotsky defined 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." That is, with the assistance of an expert in the interaction, a novice might be able to solve a problem that without the collaboration and working individually may not have solved at all, or with less complexity. The focus becomes on the novice's potential development in the interactions.

In order to operationalize the ZPD, Tharp & Gallimore (1988) used the work of others who defined the importance of structuring situations of assistance (Rogoff, 1986) and structuring teaching situations into sub-goals (Saxe, Gearhart, and Guberman, 1984) to create a graphic representation of the stages of the ZPD (see Figure 4). This representation allows an expert to visually represent the goals of the task, and at the same time "see" where the novice is having difficulty or success in the task activity. More importantly, it allows the expert to adjust the task difficulty or complexity based on the participation of the novice.

Four stages are described in the ZPD in the representation described by Tharp and Gallimore (1988) in Figure 4. Stage I includes assistance by others or what is referred to by Vygotsky as "buds of development." In this stage, an "expert" can be parents, teachers, peers, coaches, clinicians—anyone with expertise in the activity and recruits the novice into the activity. For example, in a joint puzzle-solving activity



**Figure 4.** Stages of the zone of proximal development. Source: Adapted with permission from R. Tharp & R. Gallimore. *Rousing Minds to Life: Teaching, Learning, and Schooling in Social Context*. p. 37. © 1998. Cambridge University Press.

the child can use discourse exchanges to ask for strategic direction such as “Where does this piece go?” or for the expert to provide direction in an exchange such as “First, find all the pieces with a straight edge.”

In Stage II the novice carries out a task without assistance from others; however the task performance is not fully internalized. In this stage, novices begin to use “self-talk” to guide their activity in the task. For example, in this stage, the novice might say out loud “I need to find the pieces with the straight edge” as a strategy to get started on a puzzle activity. In this stage, it is the “passing of control or assistance from the adult to the child, from the expert to the apprentice. What was guided by the other is now beginning to be guided and directed by the self” (Tharp & Gallimore, p. 37). In Stage III, performance becomes automatic and internalized. Vygotsky calls the internalization of activity “fruits of development”; that is, goals are transferred and transformed. In this stage the novice would be able to com-

plete the puzzle with internalized trial and error strategies without assistance from the expert. Stage IV is considered to be the recursive stage of development. That is, novices are now experts and completely self-regulated. Experts in this stage might use the “voices of mind”; that is, the voice of the expert or tutor when providing assistance to others, and when restoring or refining competence in the maintenance of a skill. For example, an expert might try to complete a puzzle with more complexity, but can recursively use prior strategies in prior stages to make a recursive loop in internalization of the skill.

Understanding the pedagogical rule of ZPD is critical: that is, assistance that is beyond the novice’s understanding is not effective and can disrupt the learning process, and assistance that is not necessary can also disrupt and interfere with the learning process. Responsive assistance is “assistance [that] is offered at points in the ZPD at which performance requires assistance.

Careful assessment of the child's abilities, relative to the ZPD . . . is a constant requirement for the teacher" (Tharp & Gallimore, pp. 41–42).

The stages of the ZPD as conceptualized by Tharp and Gallimore (1988) provide rich territory for clinicians to begin thinking about the four stages of other-regulation to self-regulation as a launching point to providing descriptive data for developing, adjusting, and revising goals in intervention. The shaded areas added to the ZPD path are areas that are critical for clinical intervention. That is, clinicians should think carefully about the kinds of activities, tasks, and goals that shift the novice's abilities to move to the next stage of development. The gray area is the fertile ground for rethinking goals and strategies. The capacity of learners in movement between stages is fluid and recursive. When tasks are not responsive to the child's ability level, practices do not become internalized and do not become recursive. This model represents a paradigm shift both theoretically and conceptually, and urges experts (e.g., clinicians) to engage in self-reflection in the joint participation of clinical interaction.

The following are several general strategies which serve as launching points for intervention embedded in sociocultural learning:

- *Use the metaphors of scaffolding, the ZPD, apprenticeship, and guided participation to operationalize the stages of other to self-regulation, the transfer of learning, as well as the qualitative shifts in clinical interactions.*
- *Adjust levels of scaffolding and verbal mediation based on task responses: devise levels of assistance, vary forms*

of mediation (e.g., direct requests, prompts), and describe the role of apprenticeship in clinical interactions.

- *Target the transfer of task responsibility by seizing the meaning in the data.* That is, use evidence of skill change in the ZPD to shift the goals of the task. Document shifts in other to self-regulation, internalization of a skill, and justification for task adjustment.
- *Document change and variability in skill transformation in both qualitative and quantitative domains.*
- *Describe data about strategies that are and are not utilized to gain access to responsive assistance strategies, innovations that occur following successes and failures, and motivations for strategy construction.*

Making the transformation from examining everyday cultural activity in apprenticeships to clinical apprenticeships is necessary in order to understand the embedded nature of culture, development, everyday activity, and intervention practices. The following example is an intervention path analysis using the stages of the ZPD with an apprentice. The path of transformation was designed to increase the novice's use of requesting (this novice was using requesting behavior at the onset of the goal; however it was used inconsistently). For this activity, requesting in each phase was documented over a three session period using frequencies (as one documentation of change) as well as qualitative analyses of both the client and clinician discourse. As an example of using this framework to guide intervention shifts, Figure 5 depicts the phases of skill transformation for this child.

Overall, there were 15 opportunities presented for the novice to request in activities

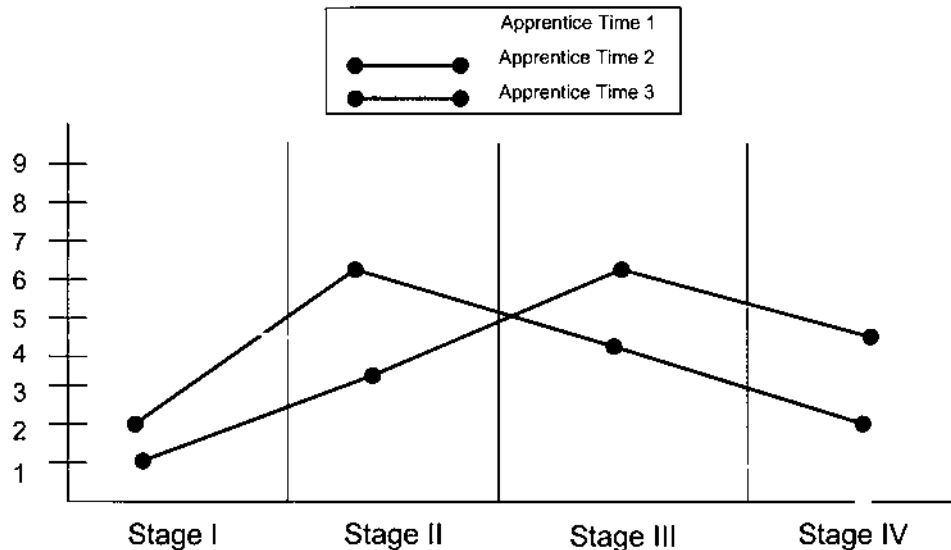


Figure 5. Paths of skill transformation.

developed. The following example highlights the incremental changes from one stage to the next that is documented by the expert, and provides both quantitative (e.g., frequency of responses) and qualitative (e.g., descriptions of responses) data as evidence of the process of change in the skill of the novice. The practice highlighted in this approach is that the process *is* the product: *the* expert (or clinician) focuses on the process of change (i.e., the transformation of abilities) rather than on the product of change (i.e., a designated skill ability).

In Figure 5, several events are reported for each stage of development. In Stage I, most of this activity was directed by the expert (e.g., “If you want juice, you need to ask.”; “I know you want to draw, and I have lots of markers—you could say ‘I want markers’”) all designed to be joint participatory and reciprocal interactions that define apprenticeship. Once the novice was re-

cruited into the activity at least a third of the time, the assistance was modified to the next stage. The expert should decide what evidence (e.g., frequency of responses, quality of responses) is sufficient to provide and introduce opportunities in the next stage of the novice’s zone of proximal development.

In Stage II, the novice was given opportunities to use self-talk described in Stage I by the expert. In this second stage the novice began to use utterances such as “I want juice”; “I need the red marker”; “Please get me more paper.” Once these skills were documented in the opportunities provided in Stage II, activities designed for transfer of skill in Stage III were designed. In this stage, the novice began to request consistently in contexts provided. That is, the novice initiated utterances without other-directed expert prompts. For example, when the novice sat down at the table for an activity, he stated “I feel like drawing a picture

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*Using apprenticeship to understand . . . cultural practices in this kind of intervention practice is a . . . sensible way to understand the process of skill transformation.*

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today”; “Your markers don’t work—you need new ones.” These utterances types document the shift not only in the frequency of responses, but in the *quality* of the responses. The novice demonstrated his internalized understanding of the context of the activity structure that was not dependent on structure imposed by the expert.

In Stage IV the novice used requesting skills in many contexts, both familiar and unfamiliar. For example, his family reported that he requested particular activities, food, drinks, and objects in a variety of contexts, and with a variety of family members, peers, and adults. These exemplars were documented by the family using structured diary entries designed by the expert to highlight exemplars of the novice’s skill transformation in the context of apprenticeship. Using apprenticeship to understand the construction and transformation of cultural practices in this kind of intervention practice is a rich, dynamic, sensible way to understand the process of skill transformation.

#### **THE EFFICACY OF THE SOCIOCULTURAL APPROACH: THE FUTURE OF APPRENTICESHIP AS A CLINICAL INTERVENTION FRAMEWORK**

The sociocultural approach has been explored in this article as a way to rethink

clinical intervention. Intervention can be described in context, in a social milieu, and in participation with others. In this kind of reciprocal participation, the individual represents a changing relationship in performance from other-regulated to self-regulated activity. This transfer of knowledge, skills, and cultural tools is a process that examines skill transformation rather than skill acquisition. This transformation of skill and ability occurs in the context of guided participation with more capable others and an apprenticeship is co-constructed. Rethinking clinical interaction as an apprenticeship creates opportunities for the interactions to be dynamic, process oriented, and developed incrementally. Documenting incremental steps of regulation is the hallmark of intervention practice: generalization and skill transfer. A paradigm shift is to think about intervention as a dynamic, recursive process where internalization of skills is the cultural goal.

The documentation of the process of internalization is possible using an operational framework of the ZPD and described by Tharp & Gallimore (1988). While this is a first, albeit a general attempt to examine stages in the ZPD, it is a pivotal point for thinking about clinical intervention in a participatory framework. Strategies and goals in this framework are co-constructed, negotiated and instantiated in social interaction. Using everyday cultural activities in intervention practices makes the interventions relevant, meaningful, and enhances the transformation of the skills created in the apprenticeship. Several examples of apprenticeships were highlighted: peer expert-novice interactions, teacher expert-student (novice) interactions, clinician expert-novice (client) interactions, and mother expert-

novice (child) interactions. These apprenticeships might all be characterized as interventions occurring in relevant developmental and cultural contexts. By focusing on the process of intervention, we can develop cogent culturally embedded strategies, relate activities and skills in meaningful contexts, and describe contingent social interactions.

By focusing on how novices recreate culture in participation and on the multiple forms of participation, we escape rigid intervention formats that defy skill transformation in meaningful cultural practices. In essence, this sociocultural approach urges a rethinking of ways to describe and define best practices for intervention.

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