Lev Vygotsky's Sociocultural Theory of Cognitive Development

Piaget viewed developing children as busy and self-motivated individuals who—on their own—explore, form, and test ideas with their experiences.

Lev Vygotsky, a Russian psychologist, provided an alternative view, a **sociocultural theory of development,** which emphasizes the role of social interaction, language, and culture on the child's developing mind (Vygotsky, 1978, 1986). These relationships are outlined in Figure 2.4 and discussed in the sections that follow.
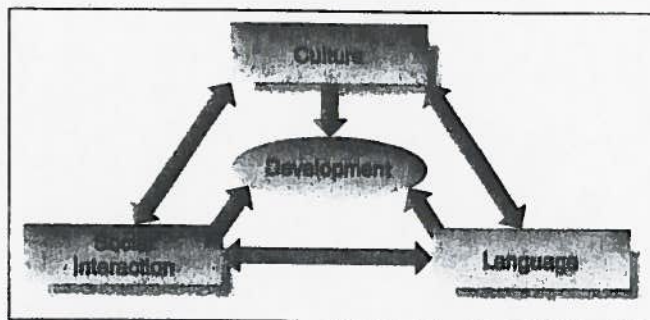

Figure 2.4 Learning and development in a cultural context

Learning and Development in a Cultural Context

To begin our study of Vygotsky's theory, let's look at two short case studies. As you read them, focus on the social interaction and use of language in each, and consider how culture influences the process.

> Suzanne is reading *The Little Engine That Could* to her 5-year-old daughter, Perri, who sits on her lap. "I think I can, I think I can," she reads enthusiastically from the story.

Sociocultural theory of development. A theory of cognitive development that emphasizes the influence of social interactions and language, embedded within a cultural context, on cognitive development.

"Why do you think the little engine kept saying, 'I think I can, I think I can'?" Suzanne asks as they talk about the events in the story.

"We need to try . . . and try . . . and try," Perri finally says hesitantly and with some prompting.

Sometime later, Perri is in school, working on a project with two of her classmates.

"I don't get this," her friend Dana complains. "It's too hard."

"No, we can do this if we keep trying," Perri counters. "We need to work a little harder."

Limok and his father look out and see a fresh blanket of snow on the ground.

"Ahh, beautiful," his father observes. "Iblik, the best kind of snow for hunting, especially when it's sunny."

"What is iblik?" Limok wonders.

"It is the soft, new snow; . . . no crystals," his father responds, picking up a handful and demonstrating how it slides easily through his fingers. "The seals like it. They come out and sun themselves. Then, we only need the spear. Our hunting will be good today."

Sometime later, as Limok and his friend Osool hike across the ice, Limok sees a fresh blanket of snow covering the landscape.

"Let's go back and get our spears," Limok says eagerly. "The seals will be out and easy to find today."

> **Vygotsky believed that development is a direct result of social interaction.**
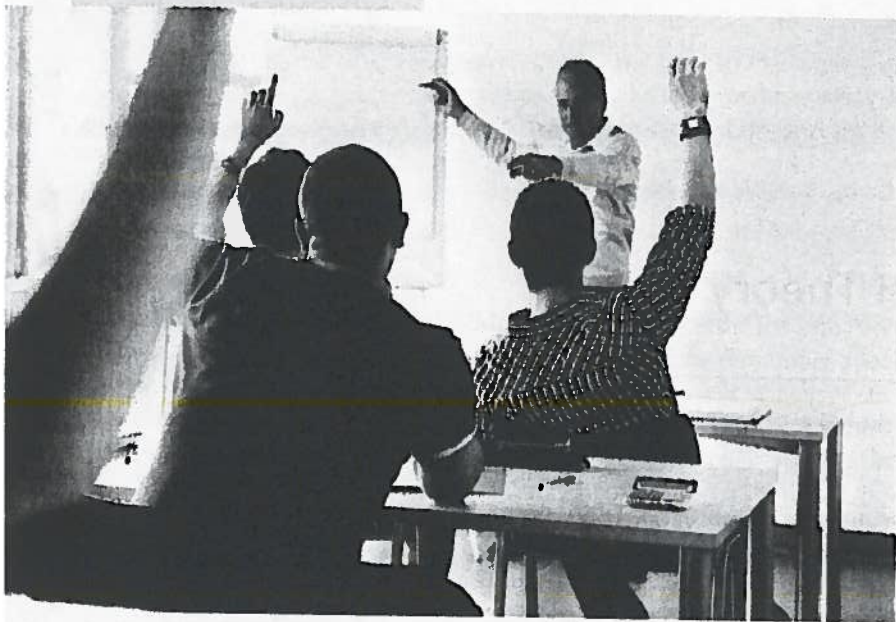
Social Interaction and Development

Vygotsky (1978, 1986) believed that social interaction directly promotes development. To see how, let's look again at Perri's and Limok's experiences. First, for example, as she and her mother talked, Perri learned about perseverance, and Limok learned about hunting as he interacted with his father. Vygotsky would say that their thinking developed as a direct result of this interaction.

Second, the interactions were between the children and a *more knowledgeable other*, and as a result, the children developed understanding that they wouldn't have been able to acquire on their own. This understanding exists in the form of **cognitive tools,** the concepts and symbols (numbers and language) together with the real tools that allow people to think, solve problems, and function in a culture. For example, the Yu'pik people, who live in the Bering Sea just west of Alaska, have 99 different ways to describe ice. There are concepts describing wavy ice, shore fast ice, small cakes of ice, and thin ice overlapped like shingles (Block, 2007). These concepts help them function in their culture, just as concepts, such as freedom of speech and managing money, together with real tools, such as computers and the Internet, help us function in ours.

Vygotsky suggested that children need not reinvent the knowledge of a culture on their own; rather, this knowledge has accumulated over thousands of years and should be appropriated (internalized) through social interaction (Leont'ev, 1981). **Internalization** is the process through which learners incorporate external, society-based ideas into internal cognitive structures.

> Every function in the child's cultural development appears twice: first, on the social level, and later on the individual level; first between people . . . and then inside the child. . . . This applies

> **Cognitive tools.** The concepts and symbols (numbers and language) together with the real tools that allow people to think, solve problems, and function in a culture.

> **Internalization.** The process through which learners incorporate external, society-based activities into internal cognitive processes.

equally to voluntary attention, to logical memory, and to the formation of concepts. All the higher functions originate as actual relationships between individuals. (Vygotsky, 1978, p. 57)

Perri and Limok both internalized cultural knowledge; Perri learned about perseverance, which is valued in our culture, and Limok learned about the conditions for good hunting. Later, they applied their understanding in a new context. Perri, for example, encouraged Dana, who wanted to quit, to keep trying, and Limok recognized the conditions for good hunting as he and Osool were hiking across the ice. Incorporating understanding into a new context marks an advance in development.

Finally, Perri and Limok were active participants in the interactions. The concept of *activity* is essential in sociocultural theory (Roth & Lee, 2007), and Vygotsky believed that children learn through active involvement with more knowledgeable people.

Language and Development

Social interaction requires the use of language, and socio-cultural theory suggests that language plays three important roles in development. First, it gives learners access to knowl-edge others already possess. Second, as you saw in the previ-ous section, it's a *cognitive tool* that people use to help make sense of their experiences. For example, when Limok learned *iblik*, he didn't just learn the word and how to pronounce

Ed Psych and You

Have you ever said to yourself, "I know what I'm trying to say, I just don't know how to say it?" Most of us have. Why do you suppose this is so common?

it; he also learned that it is soft, fresh, crystal-free snow and something that increases the likelihood of a successful hunt. This is related to the questions we ask in the adjacent "Ed Psych and You." The ability to put our understanding into words marks an advance in both our understanding and development, and it has important implications for us as teachers. We should encourage our students to use language to describe their understand-ing, and we should guide them in this process. This aids both their thinking and their lan-guage skills. Third, language is a means for regulating and reflecting on our own thinking (Winsler & Naglieri, 2003). Let's look at this process in more detail.

Private Speech and Self-Regulation

We all talk to ourselves; we grumble when we're frustrated, and we talk ourselves through uncertain situations. "Oh, no, a flat tire. Now what? I haven't changed a tire in years. I'd bet-ter look up how to do it in the owner's guide."

Children also talk to themselves. During free play, for example, you will often hear them muttering to no one in particular, and if you listen closely, you'll notice that they talk as they attempt to complete various tasks. Vygotsky believed this free-floating speech is the precur-sor of internal, **private speech**, self-talk that guides thinking and action. Private speech provides children with a tool they can use to examine their thinking, help with problem solving and other higher order functions, and control emotions and actions, all of which mark the beginnings of self-regulation.

Private speech. Self-talk that guides thinking and action.

Private speech provides an *executive function*, the process of monitoring our thoughts and steering them in productive channels, which become increasingly important as we learn complex ideas and solve sophisticated problems. For example, it forms the foundation for cognitive skills such as remembering ("If I repeat the number, I'll be able to remember it") and problem solving ("Let's see, what kind of answer is the problem asking for?") (Winsler & Naglieri, 2003).

As development advances, private speech becomes silent and internalized but remains important for cognitive functioning. Children who use private speech achieve more than their peers, enjoy learning more, and learn complex tasks more effectively than those who don't (Emerson & Miyake, 2003). The absence of private speech, which

helps monitor learning during reading, math, and complex thinking in other areas, may also be a factor in the problems encountered by students with learning disabilities (Friend, 2011).

Culture and Development

In Vygotsky's sociocultural theory, culture provides the context in which development occurs (Glassman, 2001). The role of culture was illustrated most concretely in the example with Limok and his father. As they interacted, they used the term *iblik*, a concept unique to their culture that provided a cognitive tool they used for both thinking and communication. The same is true for all learners. Perri's development, for instance, was influenced by Suzanne's work ethic, a factor prominent in our culture.

Zone of Proximal Development

Zone of proximal development. A range of tasks that an individual cannot yet do alone but can accomplish when assisted by the guidance of others.

As you saw earlier, children benefit from the experience of interacting with a more knowledgeable other. However, not all forms of interaction are equally effective. A learner benefits most from interaction when working in his **zone of proximal development**, a range of tasks that an individual cannot yet do alone but can accomplish when assisted by others (Glassman & Wang, 2004). Vygotsky (1978) described it 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. (p. 86)

Learners have a zone of proximal development for each task they're expected to master, and they must be in the zone to benefit from assistance.

Scaffolding: Interactive Instructional Support

More knowledgeable others, most commonly parents and teachers, play essential roles in helping learners progress through the zone of proximal development for each task they are attempting. For example, as small children learn to walk, their parents often walk behind them, holding onto their hands as they take their tentative steps. As children gain confidence, parents hold only one hand, and later, let the children walk on their own. This help illustrates the concept of **scaffolding,** which is assistance that helps children complete tasks they cannot complete independently (Puntambekar & Hübscher, 2005).

Scaffolding. Assistance that helps children complete tasks they cannot complete independently.

Just as toddlers' development with respect to walking is advanced by their parents' support, learners' development is enhanced by their teachers' support (Rogoff, 2003; Lutz, Guthrie, & Davis, 2006). Without this support, development is impaired. It is important to note, however, that effective scaffolding provides only enough support to allow learners to progress on their own. Doing tasks for learners actually can delay development. Modeling and questioning are two of the most important forms of scaffolding. Our "Ed Psych and Teaching: Applying Vygotsky's Theory" feature provides a concrete illustration of this process.

Piaget's and Vygotsky's Views of Cognitive Development

Similarities and differences exist in Piaget's and Vygotsky's perspectives on cognitive development. For example, both views are grounded in the widely accepted idea that learners, instead of passively receiving knowledge from others, actively construct it for themselves. They differ, however, in how the process occurs. Piaget believed that learners construct knowledge essentially on their own, whereas Vygotsky believed that learners first socially construct knowledge and then individually internalize it.

They also differ in their views of the role of language and social interaction in development. For Piaget they are mechanisms for disrupting equilibrium, and people then—individually—reconstruct their understanding, reestablish equilibrium, and development advances. Vygotsky, in contrast, believed that language and social interaction directly advance development (Rogoff, 2003).

The two theories also differ on the role that culture plays in cognitive development (Rogoff, 2003; Siegler & Alibali, 2005). In many respects Piaget ignored culture, viewing development as a universal process that occurs outside of any particular culture. Vygotsky believed that culture provides the cognitive tools that children use to function within their cultures, and all development occurs in a cultural context.

Perhaps most important, both views suggest that we should limit our use of lecturing and explaining and instead use instructional strategies that actively involve students in learning activities. We examine ways to do this in Chapter 6.

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check your understanding

3.1 You're a math teacher. What does the discussion in the section entitled "Language and Development" suggest your instruction should include as students study math?

3.2 In mainstream American culture, the concept of ice is relatively simple. In contrast, the Yu'plk people have 99 different concepts for ice. Use Vygotsky's theory to explain why this difference exists. How does this difference relate to learner development?

3.3 You are unsuccessfully trying to learn a new word processing program. A friend comes over. You do fine when she helps, but after she leaves, you again run into problems. Explain the difference between your zone of proximal development and your friend's zone. How does this difference relate to development?

To receive feedback for these questions, go to Appendix A.

Classroom connections

Promoting Cognitive Development in Classrooms with Vygotsky's Work

1. Cognitive development occurs within the context of meaningful, culturally embedded tasks. Use authentic tasks as organizing themes for your instruction.

   ■ **Elementary:** A second-grade teacher teaches bar graphing by having students graph the different transportation modes that students in the class use to get to school.

   ■ **Middle School:** A science teacher structures a unit on weather by having her students observe the temperature, barometric pressure, and relative humidity; record and graph the data; and compare the actual weather to that forecasted in the newspaper.

   ▣ **High School:** Before a national election, an American government teacher has his students poll their parents and students around the school. Students then have a class election, compare their findings with national results, and discuss differences.

2. Scaffolding is instructional support that assists learners as they progress through their zones of proximal development. Provide enough scaffolding to ensure student success as they progress through each zone.

   ■ **Elementary:** When her students are first learning to print, a kindergarten teacher initially gives them dotted outlines of letters and paper with half lines for gauging letter size. As students become more skilled, she removes these aids.

   ■ **Middle School:** A science teacher helps her students learn to prepare lab reports by doing an experiment with the whole class and writing the report as a class activity. Students use it as a model for writing their own reports.