

Self-Regulated Learning from a Sociocultural Perspective*

Özdüzenleyici Öğrenmeye Sosyokültürel Bir Bakış Açısı

İ. Elif YETKİN ÖZDEMİR**

Hacettepe Üniversitesi

Abstract

Self-regulated learning (SRL) involves students' active and goal-directed control over their behavior, motivation, and cognition in their academic learning. Among the theories of learning, sociocultural perspective provides a unique understanding of SRL by its emphasis on the role of social environment and the mediational means in the development of SRL. The main purpose of this article is to examine SRL from a sociocultural perspective. The first section includes an overview of sociocultural perspective. Next, SRL is described with a discussion of the concept of shared and mediated agency, the social origins of SRL, and the role of mediational means in the development of SRL. The final section is devoted to the conclusion with suggestions for implications.

Keywords: Self-regulated learning, sociocultural theory, Vygotsky, educational implications

Öz

Özdüzenleyici öğrenme, öğrencilerin akademik öğrenme faaliyetleri sırasında davranışlarını, motivasyonlarını ve bilişlerini etkin ve hedefe yönelik biçimde kontrol etmelerini içerir. Öğrenme teorileri arasında sosyokültürel yaklaşım, özdüzenleyici öğrenmenin gelişiminde sosyal çevrenin ve yardımcı araçların rolüne yaptığı vurgu ile bu kavramın anlaşılmasında farklı bir bakış açısı sağlar. Bu makalenin temel amacı, sosyokültürel açıdan öz-düzenleyici öğrenmeyi incelemektir. Bu amaçla, ilk bölümde sosyokültürel bakış açısı hakkında genel bilgi verilmiştir. Sonra, bu bakış açısına göre özdüzenleyici öğrenme tanımlanmıştır. Bu bölümde bireylerin karar verme ve bu kararları uygulama yetisinin paylaşımlı ve aracılı gerçekleşmesi, özdüzenleyici öğrenmenin sosyal kökleri ve gelişiminde yardımcı araçların rolü tartışılmıştır.

Sonuç bölümünde ise uygulamaya yönelik öneriler yer almaktadır.

Anahtar Sözcükler: Özdüzenleyici öğrenme, sosyokültürel teori, Vygotsky, eğitim uygulamaları

Introduction

We have all experienced the feeling of frustration when learning is hard for us. Some of us are able to cope with it whereas others are not. The ability to take charge in one's own thoughts, motivation and emotions in the face of difficulties and uncertainties throughout learning process has been studied under the concept of "self-regulated learning" (SRL). SRL refers to learning that occurs when individuals are "metacognitively, motivationally, and behaviorally active participants in their own learning process" (Zimmerman, 1994, p. 3).

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** Dr. İ.Elif YETKİN ÖZDEMİR, Hacettepe Üniversitesi, Eğitim Fakültesi, İlköğretim Bölümü, Matematik Eğitimi Anabilim Dalı, ozdemiry@hacettepe.edu.tr

Self-regulated learners generate thoughts, feelings, and behaviors to attain their learning goals (Schunk, 2001; Zimmerman, 2001). They regulate their cognition by planning, organizing, monitoring and evaluating their learning processes. In terms of motivation, they view themselves as self-efficacious and competent. They also regulate their behaviors by selecting, structuring, and creating environments to learn effectively. In short, SRL involves students' active and goal-directed control over their behavior, motivation, and cognition for academic learning (Pintrich, 1995).

Research in SRL has gained a great deal of attention over the past 20 years to address the question of how students become masters in their own academic learning. Researchers have developed several models in order to explain what motivates students to self-regulate, through what processes they become self-aware, how social and physical environment affect their self-regulation, what cognitive, affective and motivational processes play role in their self-regulation, and how the ability of self-regulated learning develops (Zimmerman, 2001). Although these models share some commonalities, they differ in terms of the learning theories in which self-regulation is defined.

Purpose of the Study

Although SRL is inherently a social process, it is generally viewed as an individual construct. Among the theories of learning, Vygotsky's sociocultural perspective provides a unique understanding of SRL with its emphasis on the role of social environment and the mediational means in the development of SRL. Therefore, in this paper, I aimed to examine self-regulated learning from a sociocultural perspective.

The exploration of SRL from sociocultural theory necessarily involves a deep understanding of the theory and higher order thinking skills within which self-regulation is included. For this reason, in the first section, I will focus on three interdependent features of Vygotsky's sociocultural theory: (a) the genetic analysis, (b) the social origins of higher mental functioning, and (c) the mediation by tools and signs. Next, I will describe self-regulation within the sociocultural perspective. This section will include the discussion of the concept of agency from sociocultural perspective, the social origins of self-regulated learning, and the role of mediational means in the development of self-regulation. Finally, I conclude with the suggestions for promoting student SRL.

Sociocultural Theory

Sociocultural theory aims to understand human mental functioning in terms of the contextually situated processes (Wertsch, 1990). This perspective asserts that individuals and the social environment of which they are a part constitute mutual elements of a single, interacting system (Cole, 1985). Central to this effort is to explain the relationships between human mental functioning and the cultural, historical and institutional situations in which this functioning occurs (Wertsch, del Rio & Alvarez, 1995).

The theory has its roots in Vygotsky's work stemming from his Marxist orientation in the Soviet Union of 1920s. Three tenets of Marxism are worth discussing briefly to understand Vygotsky's ideas. The first principle that influenced Vygotsky was Engel's conception of human labor and tool use, particularly language, as a means of changing the world, and in doing so changing human kind. Vygotsky extended this idea to include the use of signs such as writing and numbers (McCaslin & Hickey, 2001). He was also influenced by Marx's idea of consciousness as a property of human mind that organizes and controls one's behavior. Within this perspective, Vygotsky concluded that the origins of conscious behavior that enables one to anticipate, plan, and direct actions to particular goals should be found in individual's social relations with the environment (Luria, 1979 as cited in McCaslin & Hickey, 2001). The third principle that influenced Vygotsky's ideas is the method of dialectic materialism which proposes that all phenomena must be studied as processes in motion and change (Cole & Scribner, 1978). Vygotsky applied this line

of reasoning to explain the transformation of elementary mental functions into higher ones.

Vygotsky's theory is based on three general themes: (a) understanding the human mind requires analyzing the origins and genetic transformations it has undergone (i.e. genetic or developmental analysis), (b) higher mental functioning has its origin in social activity, and (c) higher mental functioning is mediated by tools and signs (Wertsch, 1990). Next, I will briefly explain these themes.

Genetic Analysis

Vygotsky argued that human mental functioning can only be understood by considering the changes it undergoes. In his words: "...we need to concentrate not on the *product* of development but on the very *process* by which higher forms are established" (Vygotsky, 1978, p.64). Otherwise we might have a risk of trying to explain a phenomenon on the basis of "fossilized forms of behavior" which "have lost their original appearance; and their outer appearance tells us nothing whatsoever about their internal nature" (Vygotsky, 1978, p.63-64).

Vygotsky also claimed that the explanation of psychological phenomena must rely on changes occurring simultaneously on four different types of development, or genetic domains: (a) *phylogeny*, which focuses on the general characteristics of human beings such as the capacity of cultural mediation and communication, (b) *the sociocultural history*, which focuses on the historical development of human behavior such as the development of language and tool use, (c) *ontogeny*, which focuses on the interaction of natural and cultural or social line of individual development such as the impact of schooling on the development of cognitive processes, and (d) *microgenesis*, which focuses on the development of particular psychological processes that occur during a single experimental session or in a specific formal educational activity setting.

Vygotsky also made specific assertions about the nature of development. He defined development in terms of qualitative shifts rather than steady quantitative increments of some psychological unit, such as stimulus response-bonds (Wertsch, 1985). He argued that biological factors cannot be viewed as the sole force of change but multiple factors are involved in development. Particularly, social factors and the introduction of new forms of mediational means are associated with these qualitative transitions.

The very nature of these qualitative shifts can be best understood through the examination of elementary and higher mental functions and the role of mediation. To Vygotsky, natural development produces functions in elementary forms, such as memory, attention, and perception. On the other hand, cultural development alters elementary forms onto higher mental processes, such as voluntary attention, logical memory or concept formation, within which self-regulation is included.

Four major characteristics that distinguish elementary and higher mental functions are: (1) the transfer of control from environment to the individual, (2) the emergence of conscious awareness of mental functions, (3) the social origins of higher mental functions, and (4) the use of tools and signs as mediators. The first characteristic that distinguishes elementary from higher mental processes is that the latter is self-regulated rather than constrained with the control of the environment. For Vygotsky (1978), elementary functions are determined by the stimulation attained from environment whereas higher mental functions are based on self-generated stimuli. In higher forms of human behavior, the person actively modifies the stimulus situation by establishing an intermediate link between the stimulus and response. This intermediate or auxiliary link creates a new relation between stimulus and response, which transfers the psychological operation to higher and qualitatively new forms.

The second criterion that distinguishes higher from elementary mental functions is that the former one is based on conscious realization and voluntariness (Wertsch, 1985). Vygotsky argued that any higher mental function is the object of conscious awareness rather than automatic or unconscious. With regard to the third distinguishing criterion, Vygotsky asserted that higher

mental functioning is not only attributed to individuals, but also dyads, and other groups. The three criteria presuppose the existence of psychological means in the formation of higher mental functioning, which is the fourth criterion that distinguishes between higher and elementary mental functions.

The Social Origins of Higher Mental Functions

The second basic theme of Vygotsky's theoretical framework which has already been briefly explained is that higher mental functioning has its origin in social life. Vygotsky claimed that in order to understand the individual, one must need to understand the social environment in which the individual exists (Wertsch, 1985, 1991). Within this theme, he was mainly concerned with interpsychological functioning as reflected in his "general genetic law of cultural development."

Any function in the child's cultural development appears twice, or on two planes. First, it appears on the social plane, and then on the psychological plane. First it appears between people as an interpsychological category, and then within the child as an intrapsychological category. This is equally true with regard to voluntary attention, logical memory, the formation of concepts, and the development of volition. We may consider this position as a law in the full sense of the word, but it goes without saying that internalization transforms the process itself and changes its structure and functions. Social relations or relations among people genetically underlie all higher functions and their relationships. (Vygotsky, 1981, p.163)

This law entails two basic claims beyond the idea that higher mental functions derive from social participation. First, it asserts that definition of higher mental functions such as thinking, voluntary attention and logical memory is not limited to the individuals but can be attributed to groups and dyads, as well. In other words, the notion of mental functioning can be applied to any forms of social activity as well as individual activity (Wertsch, 1985, 1991).

Vygotsky's second claim is that individual's higher mental functioning is not a direct and simple copy of external, social processes. His argument is based on the assumption that the structures of external and internal activity are neither identical nor unrelated. The first position makes the notion of internalization trivial, whereas the second position makes it unresolvable (Zinchenko, 1985). Vygotsky argued that there is an inherent relationship between external and internal activity and he considered the issue of how external processes are transformed to form internal processes.

Leont'ev (1978, p.60) clarified Vygotsky's comments on the notion of internalization by stating that "...the process of interiorization is not external action transferred into a preexisting internal "plane of consciousness", it is the process in which this internal plane is formed." The emergence of such consciousness out of social processes depends on semiotic mechanisms especially speech, that mediate between the individual and social world, which will be explored in the next section.

Mediational Means

Vygotsky claimed that human activity on both the interpsychological and intrapsychological plane can only be understood by taking into consideration of tools and signs that mediate the activity (Wertsch, 1990). An underlying assumption of this claim is that humans can only assess the world through mediational tools and signs (Wertsch, et al., 1995). These means are the products of sociocultural evolution and individuals have access to them by their participation of social activity (Wertsch, 1985).

Unlike other approaches that focus on the structure of sign systems and ignore the mediating role they play, Vygotsky was particularly interested in the mediational role of these tools and signs in human activity (Wertsch, 1991). These forms of mediation do not simply facilitate the activity but fundamentally shape and define it. "By being included in the process of behavior, the psychological tool alters the entire flow and structure of a new instrumental act just as a technical tool alters the process of a natural adaptation by determining the form of labor operations" (Vygotsky, 1981, p. 137).

The role of mediational means in human activity becomes meaningless if we ignore the role of the agent. Mediation can be best understood as a process involving the cultural tools and the unique use of these tools (Wertsch, 1998, Wertsch, et al., 1995) because it is neither the tool nor the individual, in isolation, but the “individual(s)-operating-with-mediational-means” who carry out the action. (Wertsch, Tulviste, & Hagstrom, 1993, p. 349).

In accord with Vygotsky’s general genetic law of cultural development, the key to understand the role of means in mediated action on the intramental plane requires the analysis of their intermental origins (Wertsch, 1991). This point is reflected in his claim that “ a sign is always originally a means used for social purposes, a means of influencing others, and only later becomes a means of influencing oneself” (Vygotsky, 1981, p.157). This claim has important implications because it enables us to expect that individuals’ mental processes can be indirectly shaped by the forces that originate their intermental precursor. Given the brief overview of sociocultural theory, I can now describe self-regulation within this framework.

A Sociocultural Perspective of Self-Regulation

The concept of self-regulation plays an important role in Vygotsky’s sociocultural theory. Two closely related characteristics distinguishing elementary from higher mental functions imply that transformation of elementary processes into higher ones necessitates the existence of one’s conscious awareness and control over his/her own mental processes. In this sense, the capacity for self-regulation can be seen as a major outcome of development that accounts for the transformations of children’s cognitive and social skills (Diaz, Neal, & Amaya-Williams, 1990).

Throughout development, child’s elementary processes such as the capacity for perception or memory are transformed in the context of socialization, particularly through the use of language, to constitute unique forms of human processes such as selective attention and voluntary memory (Diaz, et al., 1990). For instance, children originally attend to anything perceptually salient in the environment regardless of their desires. This basic form of perception is determined by the properties of environmental stimuli and is not the object of conscious awareness. In development, this form of perception is transformed into higher forms of processes such as selective attention or sustained attention and enables children to organize their perception according to a specific goal or task. The basic premise of Vygotsky’s theory is that these transformations occur within the child’s social participations and through their use of culturally determined tools and signs (Diaz, et al., 1990).

Vygotsky’s conception of higher mental functions as consciously self-directed thought processes would inherently involve self-regulatory processes that enable individuals actively participate in a cultural activity at metacognitive, motivational and behavioral levels. Acknowledging self-regulation as the exercise of several higher mental functions, such as voluntary attention, planning and forming a sign system within the context of interaction provides us a leading point in our exploration of self-regulated learning from sociocultural perspective.

Sociocultural perspective allows us making two major claims in understanding self-regulation. First, Vygotsky’s genetic analysis suggests that self-regulation can only be understood by considering the transformations it has undergone and the factors influencing its development. In other words, the exploration of self-regulation must rely on the analysis of progressive changes in individuals that allow them exert control over their thoughts, feelings and actions. Second, Vygotsky’s claims about the social origins of higher mental functions and the role of mediated means in the development of these functions imply that understanding self-regulation necessitates understanding the role of the socialization processes and mediational means in the development of self-regulation.

Based on these two claims, sociocultural perspective brings about a unique approach to the concept of agency, which is an implicit assumption under many theories of self-regulation. In the following sections, I will first describe sociocultural approach to the concept of agency. Then I will

discuss the role of social interaction and mediational means, particularly the role of speech, in the development of self-regulation.

A Sociocultural Approach to Agency

Many psychological theories of self-regulation rest on a basic assumption about the nature of agency that actively carries out the actions and regulates human activity (Wertsch, et al., 1993). Without taking active and purposeful agent into account, we cannot understand the mechanisms of self-regulated actions. Even though most studies in psychology focus on the social factors, within which human agency operate, they generally conceived the individual as an independent cognitive agent, and assume that social factors are attached onto this preexisting account of the individual. In other words, agency is mostly viewed as a property of the individual (Wertsch, 1981; Wertsch, et al., 1993).

Sociocultural approach suggests that the analysis of agency extends beyond the individual based on two assumptions: (a) agency is often shared by dyads and small groups and (b) agency involves mediational means (Wertsch, et al., 1993).

Agency as a shared property. Vygotsky's general genetic law of cultural development implies that agency exist at the intermental level, that is among people on the social plane; as well as at the intramental level, that is within the child on the psychological plane (Vygotsky, 1981; Wertsch, et al., 1993). Instead of an isolated individual, it is often a group or dyad that carries out the mental functions. The following example supports this argument:

A 6-year-old child has lost a toy and asks her father for help. The father asks where she last saw the toy; the child says "I can't remember." He asks a series of questions- did you have it in your room? Outside? Next door? To each question, the child answers "no." When he says "in the car?", she says "I think so" and goes to retrieve the toy. (Tharp & Gallimore, 1988, p.14)

In this case, we cannot say that either the child or her father did remembering. It is the dyad as a system that carried out the function of remembering. In such situations, "the socially distributed cognition is greater than or at least qualitatively different from the sum of the individuals' cognitive processes that constitute it" (Wertsch, et al., 1993, p.339). Therefore agency is attributed to the group or dyads rather than to the individual.

Mediated agency. Vygotsky also claimed that any human function is mediated by tools and signs, which are the products of that sociocultural milieu. This conception implies that the appropriate designation of the agent is not the individual in isolation but the combination of individual or a group of individuals together with mediational means (Wertsch, 1998; Wertsch, et al., 1993). For instance, in order to multiply 343 by 822, one can probably use the following way:

$$\begin{array}{r}
 343 \\
 \times 822 \\
 \hline
 686 \\
 686 \\
 + 2744 \\
 \hline
 281946
 \end{array}$$

Figure.1 Multiplication of two numbers

From the perspective of mediated agency, the multiplication of two numbers displayed in Figure 1 was not solved by the individual solely but it was carried out by interacting with some cultural tools, e.g., the spatial organization, or syntax of numbers (Wertsch, 1998). For most of us, finding the solution of this task would be very difficult, if not impossible, without placing the numbers in the vertical array. In this case, the spatial organization of numbers is also contributing to the solution process, hence we can attribute agency to individual functioning together with

this mediational means. In this view, individual(s) continues to take the major responsibility for carrying out an action, but their actions are shaped by the mediational means employed.

Social Origins of Self-Regulated Learning

The development of self-regulation can be viewed as a social process in several related ways (Diaz, et al., 1990). Self-regulatory processes such as self-monitoring and voluntary attention appear first in the interpsychological level before they become a part of the child's cognitive/behavioral capacity. Through social interaction, children actively begin to use cultural mediators in order to influence others and control his or her environment, then to regulate their thoughts and behaviors. Among these cultural mediators, the word with socially shared meaning plays an important role in children's attempts to control their environment and their thoughts and actions. In the following sections, I will explain the role of social interaction and mediational means, particularly use of speech, in the development of self-regulation.

The role of social interaction in the development of self-regulation. From a sociocultural perspective, the development of self-regulation requires an awareness of socially approved behaviors through social interaction, particularly adult-child interaction, where adults provide the "other regulation" necessary for the child to perform the task (Wertsch, 1979). Within this social interaction the child can take over the communicative and regulative responsibility from the adult and develop the capacity for self-regulation. In the context of a social activity, the transition from regulation by others to self-regulation highlights the degree of "intersubjectivity" or "consensual interpretation" that exists between the participants of the activity (Henderson & Cunningham, 1994).

Wertsch (1979) describes four levels of interaction corresponding to the degree of intersubjectivity or the responsibility held by each participant in an activity. At the first stage, there is little or lack of intersubjectivity- the child's understanding of the task situation is so limited that he/she may not interpret the activity in an appropriate way. At this stage, the issue is how the child begins to develop an understanding of the task situation that allows him/her to participate the communicative activity. With the aid of adult's use of speech and gestures that are tied to child's definition of situation, a shared meaning can be constructed. At the second stage, the child begins participating communication successfully and seems to make connections between the adult's utterance and the task in some coherent way. However, his/her understanding of the task situation is still limited and the responsibility for regulating behavior and carrying out plans still lies with the adult.

At the third stage, the child's definition of situation coincides with the adults to the degree that allows him/her participate fully the communication. The child can make connections between speech and activity and appropriates the "regulative communication" that has previously occurred in social dialogue. In this way, the adult no longer has to explicitly specify the actions to be followed because the child can carry out these actions independently and take most responsibility for the task. However, the task is still being carried out at the interpsychological plane and the child still needs adult assistance. Through reciprocal interactions, the child begins to take over the rules and responsibilities of both participants in the activity. At this final stage, egocentric speech with its self-regulative function allows the children to carry out both sides of the communicative interaction and participate in the activity on the intrapsychological plane.

Wertsch (1979) argued that the type of adult assistance plays an important role in the transition from other regulation to self-regulation. His analysis of puzzle-making task situations that mothers and their children work on together illustrated that adults need to use specific type of communication, which is tied to the children's definition of situation in order to provide a shared meaning of the activity. For instance, in order to depict the window piece of the puzzle, using deictics such as "this thing" and "that thing" along with nonverbal pointing was more successful than using referential expressions such as "the window" in regulating the child's task performance.

From Vygotsky's perspective, children gain the capacity of self-regulation by participating the activity at a comfortable but slightly challenging level, or "the zone of proximal development." By actually performing the task under adult guidance, the child comes to understand the task situation and gain responsibility to carry out it independently. Therefore, effective guidance requires the adult to lead the child through the process, with both involved in the activity. Children's progress within the zone of proximal development is largely depends on the mediational means engaged in the activity, which will be discussed in the next section.

The role of mediational means in the development of self-regulation. Vygotsky suggests that children acquire self-regulatory capacities through the use of signs. Within social interaction, active use of signs (e.g., speech) allows children become independent from the stimulus field and increase control over their thought and behavior (Diaz, et al., 1990). Vygotsky clarifies the role of sign in the development of self-regulation distinguishing signs and tools in terms of the ways they impact human behavior. In his words:

A most essential difference between sign and tool, and the basis for the real divergence of the two lines, is the different ways that they orient human behavior. The tool's function is to serve as the conductor of human influence on the object of activity; it is externally oriented; it must lead to changes in objects. It is a means by which human external activity is aimed at mastering, and triumphing over, nature. The sign, on the other hand, changes nothing in the object of a psychological operation. It is a means of internal activity aimed at mastering oneself; the sign is internally oriented. (Vygotsky, 1978, p.55)

The key role signs play in the development of self-regulatory capabilities can be observed in Vygotsky's analyses of higher mental functions in terms of control and regulation throughout four major stages. At the first stage, regulation simply refers to children's simple and direct responses to the environment. It is a primitive stage because children's behavior is determined by the environmental resources based on the laws of stimulus-response. There is no use of auxiliary signs that mediates between the environmental stimulus and the children's response. At this stage adults regulate children's behavior only by controlling the concrete and immediate stimuli. During the second stage, children are able to use external signs as a mediator to their responses. Their ability to use of auxiliary signs makes them free from the stimulus. However, only the concrete and actual connections between stimuli and signs can affect the child's behavior.

During the third stage, children begin to regulate their behaviors by creating and manipulating external signs in order to achieve a desired goal. Unlike earlier stages in which children operate superficially with signs, in this stage they become aware of the role and functions of signs in the activity. However, their regulation is still dependent on the structure of external stimuli. The fourth stage in the development of self-regulation is the internalization of external relations among stimuli, sign and behavior. At this stage the use of external signs become part of the children's internal organization so the external auxiliary sign turns out to be no longer necessary.

The internalization of external operations postulates an important aspect in the development of self-regulation, namely that, a new form of functioning is achieved through the use of mediating signs and become a part of the child's internal organization (Diaz, et al., 1990). The new relation between the children and their environment that emerges through the use of external mediators becomes an intrapsychological property of the children.

As a sign with socially shared meaning, speech plays an important role in the development of self-regulation. In Vygotsky's (1962) view "thought is not merely expressed in words, it comes into existence through them" (p.125). This dynamic relationship between thought and speech implies that speech is a means not only to communicate but also to guide, plan and monitor one's activity. Although social environment constitutes the source for the development of both functions of speech, the structure of each type of speech differs.

Communicative speech involves turning thought into words whereas inner speech involves turning words into thought (Vygotsky, 1986). In a general sense, inner speech refers to thinking and

represents a link between thought and semantic language system of social world (Rohrkemper, 1989; McCalsin & Hickey, 2001). Vygotsky was particularly interested in the regulatory function of inner and private or egocentric speech. He argued that private speech, as “the form of the transition from overt verbalized thought to inner speech” (Zivin, 1979, p.23), reflects a new functional capacity for speech and gradually becomes internalized as inner speech.

The development of self-regulatory function of speech is from social or interpersonal to intrapersonal. Initially, children may not react to words by their meanings. As the child’s language facility develops, words spoken by others gradually acquire meaning independent of their stimulus or syntactical properties and children gradually internalize word meanings. Children’s use of private speech starts with overt verbalization (thinking aloud) for the purpose of regulating thought and behavior and increases until ages 6 to 7, and it becomes primarily covert (internal) as inner speech by the ages of 8 to 10 (Vygotsky, 1986). However, overt verbalization can occur at any age when individuals encounter difficulties.

Children’s use of speech as a tool of thought has three major consequences that affect self-regulatory development (Diaz, et al., 1990). First, the use of inner speech enables children’s cognitive operations to be more flexible and independent from the concrete external stimulus field. In this way, children can structure their thoughts and behaviors in terms of their goals and intentions. Second, inner speech allows children to act reflectively according to a plan rather than responding impulsively. It does so by creating a bridge between the stimuli and the child’s responses.

Finally, speech allows children not only control their environment but also regulate their own behavior in order to understand situations and get through difficulties. “The specifically human capacity for language enables children to provide for auxiliary tools in the solution of difficult tasks, to overcome impulsive action, to plan a solution to a problem prior to its execution, and to master their own behavior” (Vygotsky, 1978, p.28). Speech, therefore, “is an expression of the process of becoming aware” (Rohrkemper, 1989, p.147; McCalsin & Hickey, 2001).

Conclusion and Implications

Sociocultural approaches assume that self-regulated learning is inherently a social process. It originates and develops as learners participate in multiple social, cultural, and institutional environments. Within these contexts, learners internalize goals, values, knowledge, and strategies that promote their self-regulation in academic learning through social interactions and use of cultural or mediational means (e.g., speech, symbol systems, and representations). The theory particularly emphasizes interactions with more experienced ones (e.g., adult, teacher) where that person provides the “other regulation” necessary for the learner to perform the task (Wertsch, 1979).

Considering that self-regulation originates and exists through dynamic social interactions by using cultural means, we can make three major claims related to the characteristics of an instruction that promotes self-regulated learning. First, in order to understand and enhance students’ self-regulated learning in the classroom, one must consider the emergent, interactive relationship between home and school environments. Depending on the degree of similarity between home and school culture, students may experience cultural meanings and behavioral cues in the school that are different from what they acquired in the home environment (Henderson, 1986). These differences in valuing and interpretations may cause students find the classroom experiences ambiguous. For this reason, when a student does not exhibit self-regulated behaviors we need to look at contexts within which the student functions.

Second, mediational means, particularly speech, plays an important role to plan, organize, monitor, and reflect in classroom activities. Particularly, in the transition from other-regulated to self-regulated learning, verbalization of goals, plans, and rationales play an important role.

Third, effective instruction that promotes self-regulated learning involves classroom interactions that enable shared meaning and gradual transfer of responsibility from the teacher or the group to the individual student. Through the use of speech that is tied to students' understanding of the problem situations, the teacher could help students to redefine their understandings of the situations. In this way, students gain a shared understanding of classroom goals, expectations and problem situations, which enables them to participate in classroom activities. While the ultimate goal is "self"-regulation, sociocultural researchers use the terms such as "adaptive learning" or "co-regulation" in order to stress the role of ongoing interactions between individuals and the context in the development of SRL (e.g., McCaslin & Good, 1996; McCaslin & Hickey, 2001; Rohrkemper, 1989). For example, the model of co-regulation emphasizes the shared responsibility among teachers and students in establishing and maintaining relationships that promote self-regulation. In this model, students' responsibility is to organize multiple social worlds, goals, and expectations, whereas teachers are responsible for providing scaffolded support and opportunities that mediate student regulation. In this sense, as a social process, self-regulated learning is built on negotiation or shared understandings of goals, tasks, and activities and develops through the scaffold support to help students build competence through increased understandings, opportunities for self-regulatory practices, and exercising autonomy (Meyer & Turner, 2002).

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