
Vygotsky's Vision

Reshaping the Practice of Special Education for the 21st Century

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ABSTRACT

Lev S. Vygotsky formulated a unique theoretical framework for perhaps the most comprehensive, inclusive, and humane practice of special education in the 20th century. The following topics germane to contemporary special education are discussed: the application of Vygotsky's Cultural-Historical Activity Theory to the domain of special education; Vygotsky's views on the nature of handicapping conditions in children; the principles of psycho-educational evaluation of the disabled; the issue of compensation, rehabilitation, and education of children with sensory and cognitive impairments; and the concept of inclusion as a prospect for development in special education. This article includes some discussion on international experiences by scientists/practitioners working within Vygotsky's paradigm of special education. It is suggested that Vygotsky's socially, culturally, and developmentally oriented scientific legacy has the potential to unify, restructure, and promote special and remedial education as a science, profession, and social institution.

inspired Vygotskians has formed in the United States. Vygotsky has emerged as one of the major psychologists in the 20th century (Wertsch, 1985, 1998), the icon of the "cognitive revolution" (Haywood & Tzuriel, 1992), postmodern educational progressivism (Newman & Holzman, 1993), and cultural pluralism (Rogoff, 1990). He is rightfully considered to be the founder of *cultural psychology*, a psychological theory in which the human being is the subject of cultural, rather than natural, processes (Ratner, 1991).

What is it in Vygotsky's works that invites scientists from different fields to scrutinize his writings as if he were our contemporary? Indeed, many factors created the stage for the selection of Vygotsky's work as a promising alternative to existing psychoeducational theories and practices. According to some observers (e.g., Bruner, 1987), what has brought Vygotsky into the limelight is a powerful pendulum swing from biologically based understanding of human behavior to the sociocultural explanation of human activity. The timeliness of Vygotsky's works is borne out by the fact that he discovered the connecting links between sociocultural processes taking place in society and mental processes taking place in the individual. Vygotsky, as no other psychologist in this century, succeeded in developing an approach that connects social and mental processes and describes the essential mechanisms of the socialization and development of the human being. In education, Vygotsky's theory is viewed as a counterbalance to behaviorism, and more importantly, as an alternative to the influential concepts of Piaget. For years, the predominant theoretical framework for childcare and education in the United States had been Piaget's theory. In this theory, a maturational process determines cognitive competence and a child's ability to learn: Learning follows maturation.

THE LAST TWO DECADES OF THE 20TH CENTURY IN the United States have been marked by an upsurge of interest in Lev S. Vygotsky's ideas. Several volumes of new translations of Vygotsky's writings have appeared recently, the most prominent among them being *The Collected Works of L. S. Vygotsky* (Vygotsky, 1987–1998) and *The Vygotsky Reader* (Valsiner & Vanderveer, 1994). Since the late 1980s, dozens of books, articles, and book chapters have been published by professionals in different fields interpreting, elaborating, and expanding Vygotsky's scientific legacy. Numerous web sites and electronic discussion forums on the Internet have emerged to discuss ideas written by a fountain pen. Within the past 2 decades, an "invisible college" of enthusiastic and

tion. Contrary to this, Vygotsky considered learning as a shared-joint process in a responsive social context. In the Vygotskian framework, children are capable of far more competent performance when they have proper assistance (scaffolded learning) from adults. The optimism of Vygotsky's general message, substantiated by a number of concrete methodologies (such as dynamic assessment, mediated learning, and cognitive education, among many others) developed within Vygotsky's theory, found an enthusiastic audience in U.S. education in the 1990s. Vygotsky has become a powerful identification figure in education (Gredler, 1992; Kozulin, 1998; Moll, 1990), developmental psychology (Vanderveer & Valsiner, 1991; Wertsch & Tulviste, 1992), school psychology (Gindis, 1995, 1996), educational psychology (Das, 1995; Karpov & Bransford, 1995), and early childhood education (Berk & Winsler, 1995; Bodrova & Leong, 1996).

Unfortunately, the powerful influence of Vygotsky's ideas has not been as obvious and fruitful in the domain of special education. There is a sad irony in this fact because special education not only played a distinct role in Vygotsky's professional activity and personal life (Vygodskaya & Lifanova, 1996), but also constitutes an important part of his scientific heritage (Kozulin, 1990; Vanderveer & Valsiner, 1991; Yaroshevsky, 1993). Special education was the main empirical domain from which Vygotsky obtained data to support his general theoretical conceptions. Being conscious of the artificiality of the data brought about in psychological experiments, Vygotsky considered special education a huge natural laboratory where general psychological laws were discovered on the basis of various anomalies. Indeed, many of the major concepts of his cultural-historical theory were conceived, formulated, and elaborated upon within the special education theoretical framework and terminology (Kozulin, 1990; Wertsch, 1985; Yaroshevsky, 1993). All this became apparent in the United States only recently, with the publication of *The Collected Works of L. S. Vygotsky*, Volume II, *The Fundamentals of Defectology* (Vygotsky, 1993). Finally, his major writings in the area of special education become available to English language readers. Nevertheless, we are still far from utilizing the scope of intellectual treasures of Vygotsky's writing in this domain. The translated book reflects the content of Volume V of the original (in fact, incomplete) Russian publication (Vygotsky, 1983). Since that time, several important, previously unpublished papers relevant to special education written by Vygotsky (in one case in collaboration with Luria, and in another with Warshava) appeared in the Russian language. In 1995 in Moscow, the most complete collection of Vygotsky's writings on special education and related matters was published under the title *Problemy Defektologii* (*Problems of Defectology*; Vygotsky, 1995). This article introduces Vygotsky's ideas in special education based on all sources available.

Defectology is the term reflecting the domain of Vygotsky's research and practice relevant to contemporary special education. Special educators, however, may need some clarification regarding this term, which has no real parallel in

the English language and sounds rather degrading. As once noted by a U.S. scholar (McCagg, 1989), "this term would not survive 3 minutes in a discussion of the handicapped in the Western world today because it carries too much negative connotation toward the disabled" (p. 40). In fact, the word *defectologia* (or *defectology* in the English transliteration) literally means "study of defect." In Russia for more than a century, this term has referred to the study of children with disabilities and methods of their evaluation, education, and upbringing. To be technically precise, in Russia this term covers the following disabilities (Petrovsky & Yaroshevsky, 1998): children who are hard of hearing or deaf (*surdo-pedagogika*), children who are visually impaired or blind (*tiflo-pedagogika*), children with mental retardation (*oligophreno-pedagogika*), and children who are speech-language impaired ("*logopedia*"). As one can see, defectology includes neither psychopathology nor learning disability or emotional disturbance, as known in the United States. It offers services to roughly the same population as special education in the United States, minus two large groups of students with disabilities: children with emotional disabilities and children with learning disabilities (who account for more than half of the special education population in the United States, according to Schulte, Osborn, & Erchul, 1998). According to the principles of defectology, children with organically intact brain and sensory systems traditionally belonged to general education despite the wide range of educational problems they presented (Gindis, 1986, 1988). Moreover, *learning disability*, as it is understood in the contemporary United States, was unknown in the Russia of Vygotsky's time (Gindis, 1992). That is why an attempt to explain defectology as a combination of learning disability and abnormal psychology, as it was done by the publisher of the second volume of *The Collected Works of L. S. Vygotsky* (Vygotsky, 1993) is somewhat misleading (Gindis, 1994). Despite an obvious lack of congruence between the fields of Vygotsky's defectology and contemporary U.S. special education, Vygotsky's theoretical and methodological finding is the most powerful single source of professional inspiration for current and coming generations of special education professionals. But this is not an easily digested source.

It may be difficult for special education professionals to devour Vygotsky's texts; this difficulty may be caused by many factors, including the differences in psychological and general humanistic traditions in U.S. and Russian science (Vanderveer & Valsiner, 1991), the innovative nature of Vygotsky's writing, nonacademic and sometimes unsystematic and contradictory ways of expressing ideas, passionate argumentation with authors who are completely forgotten today, and last but not least unfamiliar terminology (in many cases, terminology that sounds harsh today). No doubt, Vygotsky belongs to the cohort of the so-called romantic scientist (as it was defined by his most prominent student Alexander Luria [1979]), and his romanticism obviously determined the style of his discourse. His is not an academic text in the traditional sense, but rather an inspirational human-

istic appeal (in the very broad, almost biblical, sense) to reconstruct the sociocultural reality. Stating this, let us go on to discover the essence of Vygotsky's ideas. There are two ways of applying Vygotsky's theories to contemporary special education: his general theory, known in the West as Cultural-Historical Activity Theory, and his special theory (less known in the United States), which is called the Theory of Disontogenesis (literally, "distorted development").

UNDERSTANDING THE SOCIOCULTURAL ASPECT OF DISABILITY

Understanding the nature of a disability and the means of compensating for it is the core of any system of rehabilitation and special education. The uniqueness of Vygotsky's approach lies in his understanding of the disability not as a biological impairment having psychological consequences, but as a sociocultural developmental phenomenon. Based on a comprehensive review of many anthropological and historical studies (including reports authored by individuals with impaired organs), Vygotsky argued that a disability is perceived as an abnormality only when and if it is brought into the social context. The human brain, eye, ear, and limb are not just physical organs: Impairment of any of these "leads to a restructuring of social relationships and to a displacement of all the systems of behavior" (Vygotsky, 1983, p. 63). Moreover, a defect varies psychologically in different cultural and social environments: "The blindness of an American farmer's daughter, of a Ukrainian landowner's son, of a German duchess, of a Russian peasant, of a Swedish proletarian—these are all psychologically entirely different facts" (p. 70). Another argument is that, from the survival point of view, blindness, in the world of nature, is a more severe impairment than deafness. In the social world, however, deafness is a more severe disability because it prevents mastering of speech, blocks verbal communication, and bars entry to the world of culture. Therefore, being deaf "disrupts a person's social connections in a more substantial way than blindness" (p. 77). Vygotsky pointed out that from the social perspective, the primary problem of a disability is not the sensory or neurological impairment itself, but its social implications:

Any physical handicap . . . not only alters the child's relationship with the world, but above all affects his interaction with people. Any organic defect is revealed as a social abnormality in behavior. It goes without question that blindness and deafness per se are biological factors. However, the teacher must deal not so much with these biological factors by themselves, but rather with their social consequences. When we have before us a blind boy as the object of education, then it is necessary to deal not so much with blindness by itself, as with those conflicts which arise for a blind child upon entering life. (p. 102)

Within the context of his paradigm of the social nature of the disability, Vygotsky introduced the core concepts of the primary disability, the secondary disability, and their interactions. A *primary disability* is an organic impairment due to biological factors. A *secondary disability* refers to distortions of higher psychological functions due to social factors. An *organic impairment* prevents a child from mastering some or most social skills and acquiring knowledge at a proper rate and in an acceptable form. The child's social milieu, however, modifies his or her course of development and leads to distortions and delays. From this point of view, many symptoms such as behavioral infantilism or primitivism of emotional reactions in individuals with mental retardation are considered to be secondary handicapping condition, acquired in the process of social interaction. Vygotsky pointed out that from the psychoeducational perspectives the primary problem of a disability is not the organic impairment itself, but its social implications: An organic defect is recognized by society as a social abnormality in behavior. Expectations and attitudes of social milieu and conditions created by the society influence the access of a child with disability to sociocultural knowledge, experiences, and opportunity to acquire psychological tools. Changing negative societal attitudes toward individuals with disabilities should be one of the goals of special educators (Vygotsky, 1995). The search for positive capacities and qualitative characteristics in the upbringing (nurturing) of children with disabilities is the trademark of Vygotsky's approach. He called for the identification of a disability in a child from the point of strength, not weakness; he labeled this *positive differentiation*. With his slashing sarcasm, he nicknamed the traditional approach to the individuals with disability an "arithmetical concept of handicap" because of its view of a child with disability as the sum of his or her negative characteristics. He suggested, for example, the identification of levels of overall independence and needs for support rather than levels of feeble-mindedness in children with mental retardation (see Vygotsky, 1995, p. 114). Sixty years later, this approach was employed by the American Association on Mental Retardation (1992).

UNDERSTANDING DISABILITY AS A DEVELOPMENTAL PROCESS

Vygotsky tirelessly pointed to the dynamic nature of disability. He argued that constant changes in the structure and content of a disability take place during development and under the influence of education or remediation. Vygotsky formulated the following basic assertions of child development, fully applicable to the child with a disability. Human development is a sociogenetic process carried out in social activities. Education leads development, which is the result of social learning through the internalization of culture and social relationships. Development is not a straight path of quantitative gains and accumulations, but a series of qualitative, dialectic transformations, a complex process of integra-

tion and disintegration. The essence and uniqueness of human development resides in its mediation by material instruments and social signs (language): Culture is acquired through internalization of social signs, starting with language.

Within the context of development, Vygotsky stated, there are two classes of psychological functions: lower (natural) and higher (cultural). The first class comprises elementary perception, memory, attention, dynamic characteristics of the nervous system—in short, everything that creates a biological predisposition of the child's development. The second class includes abstract reasoning, logical memory, language, voluntary attention, planning, decision making, and so on. These are specifically human functions that appear gradually in a course of transformation of the lower functions made through the so-called mediated activity and psychological tools. The formation of individual consciousness takes place through relations with others: It is a socially meaningful activity that shapes the individual's makeup. Vygotsky (1978) indicated that each psychological function in the child "appears twice: first, on the social level, and later, on the individual level; first, between people (interpsychological), and then inside a child (intrapsychological)" (p. 57). As one can see, the concepts of natural and cultural psychological functions discussed earlier are related to his notion of primary and secondary disability. Vygotsky wrote that progressive divergence in social and natural development leads to social deprivation as a society's response to a child's organic impairment. This, in turn, adversely affects the whole developmental process and leads to the emergence of delays and deficiencies, the secondary handicapping conditions.

QUALITATIVE VS. QUANTITATIVE DIFFERENCES

Traditionally, a child with a disability has been considered to be either underdeveloped/developmentally delayed (in the case of mental retardation) or a regular child lacking a sensory organ (in the case of physical and/or sensory impairments). In other words, the difference between a child with a disability and his or her nondisabled peer is only quantitative. According to Vygotsky, the development of an individual with a disability is not slowed down or missing variations of normal development. For example, he objected to the terms *developmental disability* and *developmental delays* in relation to mental retardation. He called attention to the qualitative uniqueness of the development of a child with a disability, mediated by such powerful factors as the social implication of disability. He wrote (1983), "A child whose development is impeded by a disability is not simply a child less developed than his or her peers; rather, he has developed differently" (p. 96). The development of a child with a disability has major qualitative differences in the "means and ways" of his or her internalization of culture. The core of the development of a child with a disability is the divergence between his or her "natural" and "social" paths of development. Vygotsky pointed to two major differences in the development of a child

with a disability in comparison with his typically developing peers: the formation of compensatory strategies (mechanisms) and the emergence of social complications of the disability. Without an understanding of these qualitative differences, no effective remediation is possible. Vygotsky suggested that in the future science will be able to create the disability-specific profile of this discrepancy as the most important characteristic in the psychological development of a child with a particular disability. He listed the dynamic and forms of socialization, the adoption of psychological tools, and the formation and use of compensatory strategies as the milestones of this profile (Vygotsky, 1993). Compensatory strategies are by no means mechanical substitutions of impaired functions: They are the product of the child's personality, his or her experiences, and education. Compensatory strategies are aimed at mastering psychological tools and using them to acquire cultural forms of behavior. When the direct way of developing psychological functions is blocked (e.g., in the case of blindness), the compensatory strategies offer an indirect path to the same goal, cultural development. Creating the disability-specific compensatory strategies was Vygotsky's vision of the future in remedial education. In Russia, based on Vygotsky's theoretical foundation, an effective system of raising and educating deaf individuals was created (Knox & Kozulin, 1989; Lebedinsky, 1985; Zaitseva, Pursglove, & Gregory, 1999).

Vygotsky's understanding of disability as a sociocultural, developmental and qualitatively specific phenomenon has brought about two distinctive methodologies that may have a long lasting impact on the field of special education: zone of proximal development and dynamic assessment.

ZONE OF PROXIMAL DEVELOPMENT AND DYNAMIC ASSESSMENT

Thousands of teachers and parents, well before Vygotsky, observed that with the proper assistance from an adult or a more advanced peer, a child is capable of much more learning than on his or her own. Vygotsky elevated this simple observation to a theoretical generalization known as the *zone of proximal development* (ZPD). He stated that the process of scaffolding brings about abilities that have been emerging and developing (that is, have not yet matured), and thus reveals the hidden potential of a child, which is crucial for both diagnosis and prognosis. The ZPD is one of Vygotsky's ideas that has a direct bearing on practice, both in psychological testing and in school instruction (Moll, 1990) and is, perhaps, the best known and most experimentally scrutinized concept in Vygotsky's entire legacy (For an elaborate review, see Rogoff & Wertsch, 1984; Valsiner & Vanderveer, 1993).

The ZPD in its application to special education, however, still remains terra incognita. In terms of individual differences, the depth of the ZPD varies, reflecting a child's cognitive and metacognitive learning potential. From this perspective, it offers a qualitative distinction between children with mental

retardation and educationally neglected, temporally delayed, or bilingual students from impoverished families. Those children might appear similarly backward in their functioning according to the results of standardized psychological testing because those tests report the current samples of behavior (Sattler, 1992), but they indeed differ dramatically in their ability to benefit from an adult's help, as Vygotsky and his followers in Russia showed (Lebedinsky, 1985; Lubovsky, 1990; Rubinshtein, 1979). On the other hand, questions arise about the validity and effectiveness of this notion applied to the children with disabilities, whose unaided performance could be extremely limited (Cole, 1987). The real advantages of this concept and its practical application within the U.S. system of special education still remain to be seen, based on further verification of its merits and limitations (see Gindis, 1992).

Vygotsky is rightfully considered to be the founding father of what is now known as *dynamic assessment* (Guthke & Wingenfeld, 1992; Lidz, 1995; Minick, 1987). In the early 1930s, at the height of the enthusiasm for IQ testing, Vygotsky was one of the first (if not the only one in his time) who defined the limitations of IQ tests based on the idea of disability as a process, not a static condition, and on his understanding of development as a dialectical process of mastering cultural means. He noted that standardized IQ tests inappropriately equalize the natural and cultural processes and, therefore, are unable to make the differentiation of impaired functioning that can be due to cultural deprivation or can be the result of organic damage. In the essay "The Difficult Child," Vygotsky (1993) described the case of a bilingual Tatar girl (a nation within the Russian Federation) who was diagnosed as having mental retardation. In fact, her poor performance on the standardized cognitive tests was due to her sociocultural deprivation and related to her limited knowledge of both Russian and her native language. Vygotsky showed that as a result, she had not attained the level of acculturation expected at her age: Her overall development was frustrated and she appeared to have mental retardation according to an IQ test. The most appropriate test in this case should be a developmental assessment, which, Vygotsky insisted, should concentrate on mental processing and certain qualitative metacognitive indicators, such as cognitive strategies employed by the child, the type and character of mistakes, the child's ability to benefit from the help provided by the examiner, and the child's emotional reactions to success and failure. Although Vygotsky had no chance to elaborate on his ideas to formulate specific assessment operations, he set the background for a family of testing procedures commonly recognized as dynamic assessment (DA).

DA is an interactive procedure that follows a test-intervene-retest format focusing on the cognitive processes and metacognitive characteristics of a child. Through an analysis of a child's pretest and posttest performance following test-embedded intervention, an evaluator can derive important information about the child's cognitive modifiability, his or her responsiveness to an adult's mediation, and his or her amenability to instruction and guidance. Therefore, the

DA provides information that is not readily available through standardized testing but is crucial for effective remediation, which is the ultimate goal of this assessment. As observed by Lidz (1995), traditional standardized assessment trails the child's cognitive development to the point of failure in his or her individualized (independent) functioning, whereas DA in the Vygotskian tradition leads the child to the point of his or her achieving success in joint/shared activity. A breakthrough in practical application of the DA procedures in special education is attributed to the works of Feuerstein and colleagues (Feuerstein, Rand, Hoffman, & Miller, 1980). Today, DA is still mostly a supplementary procedure to the traditional assessment; however, the next century may witness an accelerated shift from standardized testing toward dynamic assessment (Haywood, Brown, & Wingenfeld, 1990). A group of prominent researchers in different countries—the United States (Brown & Campione, 1987; Lidz, 1991; Swanson, 1995), Canada (Das, 1995), Israel (Feuerstein & Gross, 1997; Haywood & Tzuriel, 1992; Kozulin, 1998), Great Britain (Evans, 1993), Germany (Guthke & Wingenfeld, 1992), and Russia (Ivanova, 1976; Lebedinsky, 1985; Lubovsky, 1990; Vlasova, 1984)—are productively developing different aspects of DA in its application to individuals with different disabilities.

COMPENSATION, REHABILITATION, AND EDUCATION

Vygotsky wrote that the effectiveness of the compensatory strategies may be relatively independent of the severity or type of the child's disability. Timeliness and appropriateness in the methodology used are more important. One of the most outstanding confirmations of this rather bold statement was the work of Vygotsky's compatriot Sokoliansky (cited in Meshcheriakov, 1979) with deaf-mute-blind children. Vygotsky had the innovative idea that the most efficient compensation for the loss or weakness of natural functions can be achieved through the development of the higher psychological functions. Paradoxically, although the natural processes (visual, auditory, motor, etc.) may be impaired, the objects of rehabilitation are the cultural processes of abstract reasoning, logical memory, voluntary attention, goal-directed behaviors, and so on. Vygotsky (1983) pointed to the limitations of traditional sensorimotor training, saying that pure biological compensation (e.g., superior hearing in the individuals who are blind) has been an exception rather than the rule, whereas the domain of higher psychological activities has no limits: "Training sharpness of hearing in a blind person has natural limitations; compensation through the mightiness of the mind (imagination, reasoning, memorization, etc.) has virtually no limits" (p. 212).

In Vygotsky's view, special education programs should have the same sociocultural goals as general education programs. Their specificity is in addressing the secondary disability syndrome; that is, countering the negative social

INCLUSION AS THE FUTURE DESIGN FOR SPECIAL EDUCATION

consequences of the primary disability. Instructions in special education should follow the same principle as general education: that education leads development. In the essay "Defect and Compensation" Vygotsky (1993) wrote about the "two-sided nature" of a handicap: an underdevelopment or absence of the functions related to an organic defect and formation of an adaptive-compensatory mechanism. The effectiveness of this mechanism depends on the adequacy and timeliness of the methods of correction used in educating the child. The focus of the compensation should be the intensification of cultural enlightenment, strengthening of the higher psychological functions, the quantity and quality of communication with adults, and social relationship with a collective (i.e., an organized group of peers). Vygotsky believed that a physical or mental impairment could be overcome by creating alternative but equivalent roads for cultural development. Common laws of development (for children with disabilities and their nondisabled peers) include internalization of the external cultural activities into internal processes via psychological tools and mediated learning provided by adults. The concept of the internalization of psychological tools as the main mechanism of development has a special importance for rehabilitation in the field of special education. Different tools (e.g., various means of communication) may convey essentially the same educational information and the same meaning. Vygotsky (1983) said, "Different symbolic systems correspond to one and the same content of education. . . . Meaning is more important than the sign. Let us change signs but retain meaning" (p. 54). Vygotsky pointed out that civilization has already developed different means (e.g., Braille reading, sign language, lip-reading, finger-spelling) to accommodate the unique means of acculturation for a child with a disability through acquiring different symbolic systems. We should continue developing special psychological tools to address special needs, concluded Vygotsky. This appeal was made well before the era of sophisticated electronic gadgets and computers, and is now more compelling than ever.

Using an organized peer group (a "collective" in Vygotsky's terminology) as a remedial factor is not a particularly popular approach in special education (Evans, 1993), although it was found that students with special needs may benefit both academically and even more so in socioemotional domains through peer-mediated activities (Scruggs & Mastropieri, 1998). According to Vygotsky, a collective is an effective means of mediation and a powerful facilitator in forming the higher psychological function in children with disabilities. In a group of peers under the guidance of an educator, a child with a disability may extend his or her ZPD. In fact, Vygotsky believed that the collective has the most promising remedial potential for a child with a disability (1993). This aspect of Vygotsky's legacy applied to children with mental retardation has an interesting and practically significant development in Russia (Lubovsky, 1990; Rubinshtein, 1979; Vlasova, 1984) and may be useful for special education in the United States (Gindis, 1992). Lately, one can observe growing interest in this idea (Topping & Ehly, 1998).

Within his general theory of child development, Vygotsky created a comprehensive and practice-oriented paradigm of educating children with special needs. His idea that the development of a child with a disability is determined by the social aspect of his or her organic impairment creates a new perspective for socialization/acculturation and overall remediation of children with special needs. It took Vygotsky several years to develop his unique vision for the future model of special education that may be called (using his own words) "inclusion based on positive differentiation" (Vygotsky, 1995, p. 24). (The positive "differential approach," according to Vygotsky, means a favorable societal outlook on a child with a disability, from the point of view of his or her strengths, not weaknesses; Vygotsky, 1995.) In order to properly comprehend and fully appreciate his conceptualization on this matter, we have to understand the historical background of the development of this idea and Vygotsky's dialectical mode of thinking (see Kozulin, 1990; Yaroshevsky, 1993).

A reader of Volume II of *The Collected Works of L. S. Vygotsky* may be somewhat confused that Vygotsky was equally critical of what he called the "unlawful segregation" of students with disabilities and "mindless mainstreaming" of children with special needs. It is true that in the early stages of his career as a researcher and an administrator, Vygotsky called for "normalization through mainstreaming" of all children with disabilities, going sometimes to the extreme. In many aspects, his earlier writings had a lot in common with what is now called "the full inclusion model," as described in Stainback, Stainback, and Forest (1989) and Lipsky and Gartner (1996). Vygotsky passionately argued against what he called "the social prejudices against the handicapped" (see, for instance, the essay "Principles of Education for the Physically Handicapped," [1993]), an appeal that found a deaf ear in Stalinist Russia (McCagg, 1989) but was fully appreciated a half century later in the United States (Newman & Holzman, 1993). In fact, Vygotsky's idea of social inclusion of children with disabilities into the sociocultural life of their communities as a condition of effective rehabilitation and compensation was never realized in his native country (Lubovsky, 1996). His criticism of a negative model of special education as a combination of lowered expectations, a watered-down curriculum, and social isolation sounds very much up to date (Fuchs & Fuchs, 1994).

On the other hand, in his latest works, Vygotsky expressed firm conviction that only a truly differentiated learning environment can fully develop the higher psychological functions and overall personality of a child with a disability. Special education should not be just a diminished version of general education, but a specially designed setting where the entire staff is able to exclusively serve the individual needs of the child with a disability. It should be a special system that employs its specific methods because students

with disabilities require modified and alternative educational methods. Vygotsky insisted on creating a learning environment that would supply students with disabilities alternative means of communication and development, and on using those psychological tools that are most appropriate to compensate for their particular disability. Students with disabilities need specially trained teachers, a differentiated curriculum, special technological auxiliary means, and more time to learn. How realistically can these demands be met in a general classroom situation? Vygotsky's main premises were that a child with a disability must be educated with a special set of psychological tools (he actually used the phrase sign system). The process of arming a child with a disability with these tools must take place within their ZDP and in a mainstreamed sociocultural milieu where compensation for the secondary defect should take place through the experiences and opportunities that are as close as possible to normality. In Vygotsky's view, the main objective in the field of special education was the creation of what he called a positive differential approach. Special education in his vision should be a system that employs its specific methods (because students with special needs require modified and alternative educational methods), but remains within the mainstreamed sociocultural situation. The main goal of special education, therefore, is not only to compensate for primary defects through facilitation and strengthening of intact psychological functions but, mainly, to prevent, correct, and rehabilitate secondary defects by psychological and pedagogical means. The mainstreamed sociocultural environment is the only adequate context where it can occur.

CONCLUSIONS

Vygotsky formulated a unique theoretical framework for the most comprehensive, inclusive, and humane practice of special education known in the 20th century. By no means did he leave a completed system, ready for application and free from contradictions or blind spots. It is rather an approach than a paradigm, a blueprint for further elaboration rather than a tested model. The timeliness and fruitfulness of many of Vygotsky's theoretical concepts in the domain of special education have been substantiated by empirical data accumulated within the half century since his death. Scientific validation and actual implementation are still to be seen. Vygotsky's appeal to consider psychoeducational assessment and methods of training/teaching as a sociocultural process is finding acceptance with thousands of professionals throughout the world. His idea that the development of a child with a disability is determined by the social implication of his or her organic impairment creates a new perspective for socialization, acculturation, and development of children with special needs. Vygotsky's scientific legacy contains a theoretical framework that might integrate all branches of contemporary special education. The socially, culturally, and developmentally oriented theory of the late genius has the potential to

unify, restructure, and promote special and remedial education as a science, profession, and social institution.

Despite the fact that special education became the testing ground for many of Vygotsky's innovative ideas, this domain itself remained for a long time in the shadow of his scientific heritage. On the whole, this issue of *Remedial and Special Education* testifies to the extraordinary timeliness of Vygotsky's ideas. Publication of this issue creates a knowledge base for theoretical and practical implications of Vygotsky's ideas within the U.S. system of special education. Indeed, Vygotsky's scientific legacy sets a course to follow for special education at the cusp of the 21st century. ■

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