THE AFFECTIVE ESTABLISHMENT AND MAINTENANCE OF VYGOTSKY'S ZONE OF PROXIMAL DEVELOPMENT

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ABSTRACT. Many recent articles, research papers, and conference presentations about Lev Vygotsky's zone of proximal development (ZPD) emphasize the ''extended'' version of the ZPD that reflects human emotions and desires. In this essay, Michael G. Levykh expands on the extant literature on the ZPD through developing several new ideas. First, he maintains that there is no need to expand ZPD to include emotions, as its more ''conservative'' dimensions (cognitive, social, cultural, and historical) already encompass affective features. Second, Levykh emphasizes that an emotionally positive collaboration between teachers and students in a caring and nurturing environment must be created from the outset. Finally, he asserts that culturally developed emotions must mediate successful establishment and maintenance of the ZPD in order to be effective. According to Levykh, Vygotsky's notion that learning can lead development represents a crucial contribution to our understanding of teaching and learning by clearly showing that emotions are vital to human learning and development.

Some have argued that Lev Vygotsky's concept of the zone of proximal development (ZPD) can be extended to integrate the affective dimension.[1] There has been an enormous proliferation of articles, research papers, and conference presentations about the ZPD in fields such as mathematics, science, computer science and technology, language acquisition and teaching, and so on; many of these emphasize the ''extended'' version of the ZPD that reflects human emotions and desires. The popularity of an extended version of the ZPD, especially among teachers of the physical sciences, supports Vygotsky's notion that learning can lead development and reflects an overdue acknowledgment and recognition of the fact that emotions are a vital part of human learning and development.

This essay expands on the extant literature on ZPD through exploring several new ideas:

1. The more ''conservative'' features of ZPD (social, cultural, and historical) already encompass both affective and cognitive dimensions; hence, there is no need for an ''extended'' version of the ZPD.

2. An emotionally positive collaboration and cooperation between teachers and students in a caring and nurturing environment must be created from the outset.

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1. See, for example, Holbrook Mahn and Vera John-Steiner, ''The Gift of Confidence: A Vygotskian View of Emotions,'' in *Learning for Life in the Twenty-First Century: Sociocultural Perspectives on the Future of Education*, eds. Gordon Wells and Guy Claxton (Cambridge, Massachusetts: Blackwell, 2002); and Peter Nelmes, ''Developing a Conceptual Framework for the Role of the Emotions in the Language of Teaching and Learning'' (paper presented at the third conference of the European Society for Research in Mathematics Education, February-March 2003, Bellaria, Italy), http://www.dm.unipi.it/~didattica/CERME3/proceedings/tableofcontents_cerme3.html.

3. Students' and teachers' culturally developed emotions must mediate successful establishment and maintenance of the ZPD for it to be effective.

To fully appreciate the complexity of the systemic multirelational (tripartite) nature of the ZPD, its implied affective genesis, and its educational values, one also has to appreciate Vygotsky's understanding of the dynamic emergent nature of the child's cultural development within the dialectical paradigm. In a nondialectical way of thinking, an either/or approach would determine the "class membership" of a specific psychological point of view (for example, either cognitive or affective, either learning or teaching, either individual or collective, either thesis or antithesis). In contrast, a dialectical approach would accept these "seeming" opposites and allow them to interact with each other in a dialogical way so as to bring to light their "struggle" with each other and guide it to a useful fruition, a synthesis. After a quick yet extremely important detour into Vygotsky's understanding of cultural development that leads to the formation of higher mental functions, *novo-obrazovaniye* (new formations), I will uncover the notions of *obucheniye*, mediation, cultural artifacts, and internalization, so as to shed light on the relation between learning and development, and to establish the affective genesis of the ZPD. I will then develop in detail the three main claims stated previously, but not until I have addressed each individually and synthesized them with each other by way of conclusion.

The main claims of this essay are based on the following assumptions that are located at the center of Vygotsky's notion of cultural development:

a. The tripartite model of cultural development — development of personality, cultural emotions, and behavioral mastery — is an interdependent and complex systemic and multirelational process that occurs within a sociocultural-historical context.

b. The balanced development of all three processes (development of personality, behavioral mastery, and cultural emotions) is required for the successful cultural development of a child as a whole.

c. The individual emotional experience (being part of personality) seems to be foundational to (consciously, subconsciously, and unconsciously) the person's perception, attention, memory, decision making, behavioral mastery, and overall world orientation.

A FEW WORDS ON INTERPRETING VYGOTSKY'S WRITINGS

Many of Vygotsky's writings were translated quickly at the height of the "cognitive revolution" in the West, sometimes in multiple translations or editions, and thus have been subject to multiple interpretations — and sometimes misinterpretations (for instance, using the term "cognitive tools" instead of a more appropriate translation from the Russian, "psychological tools"). In addition, the

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significance of the affective component is often ignored in many contemporary educational and psychological interpretations and applications of Vygotsky's work, mainly for the following reasons:

1. There is a gap between the typical Western treatment of emotions as grounded in the exclusively personal experience of individuals and Vygotsky's approach, which recognizes emotional development in the context of historically and culturally established practices. Such collective practices emphasize both self-control and self-expression for the benefit of societies as well as individuals.

2. In contrast to the mainstream Western approach to emotions, Vygotsky differentiated between lower (direct, natural, biological, primitive) and higher (indirect, culturally developed through mediation and internalization) mental functions (for example, emotions).

3. Unlike many Westerners, Vygotsky believed that affect and intellect are not two mutually exclusive poles but two inseparable mental functions. His individual belief reflected the entire Russian culture where "the emotional/motivational aspect of [learning and teaching] has always been at the center of attention both theoretically…and practically."[2]

4. Although affect for Vygotsky was the beginning and the end of the child's entire cultural development, due to his fatal illness (tuberculosis), he never completed his theory of emotions.

For these reasons, many Western readers have criticized Vygotsky's writings without understanding their fuller linguistic and cultural context. Poor translations do not help. To counter this tendency, it is important to keep in mind that Vygotsky lived a very short (thirty-seven years) and yet scientifically prolific life and that his political and psycho-educational views were subject to dogmatic socialist propaganda attacks, which were instigated by the Russian government and its scientific community (including some of his friends, colleagues, and students). Furthermore, because he suffered from tuberculosis during the last two years of his life, most of his later work was dictated from memory to a few remaining loyal students, colleagues, and his wife, and he never had a chance to review, polish, and revise this work. However, written three quarters of a century ago, even in translation, his work addresses the most burning issues that are still at the center of the current educational debate in North America.

SYSTEMIC MULTIRELATIONAL DEVELOPMENT AS UNDERSTOOD BY VYGOTSKY

Vygotsky's concept of child development was based on G.W.F. Hegel's and Karl Marx's dialectical philosophies; he understood it as a process that occurred within the dynamics of a particular sociocultural-historical context. To understand Vygotsky and his notion of cultural development as it relates to learning, one has to depart

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2. Alex Kozulin and Boris Gindis, "Sociocultural Theory and Education of Children with Special Needs: From Defectology to Remedial Pedagogy," in *The Cambridge Companion to Vygotsky*, ed. Harry Daniels, Michael Cole, and James V. Wertsch (New York: Cambridge University Press, 2007), 359.

from the traditional limitations of Western philosophy influenced by the assumption of a Cartesian mental theater, and "establish a dialogue with the Russian-Spinozian background," where affect and intellect are synthesized.[3]

For Vygotsky, the process of historical development is manifested in a systemic, dynamic emergence from the past, to the present, and through the present into the future. Such a continuum of historical development is not a smooth direct transition from one stage to the next or from a lower psychological function to a higher one, but rather a zigzag of fundamental changes in quality and direction, arriving at a completely new plane. Vygotsky stated that "each higher mental function is a specific neoformation" (*novo-obrazovaniye*).[4] The Russian word *obrazovaniye* has a dual meaning: "education" and "formation." Thus, the term *novo-obrazovaniye* reflects the formation of a new mental "educational" system, a system that can "educate" or guide the other mental systems (and their functions) it encompasses to further cultural development. Every neoformation results from a personality struggle with the new demands of a specific environment during a period of crisis, and it reflects the origin of the new psychological structure, a reconstruction of the personality that reveals "a dialectical understanding of the process" of development.[5] Such a dynamic notion of development is reflected not only in the constant emergence of new systemic formations, but also in the ever-changing relations between the new and the old (or central and peripheral) mental systems, and between the child's personality and the environment.

According to Vygotsky, a higher mental function reflects "a uniquely cultural form of adaptation which involve[s] both an overlay on and a reorganization of more basic psychological functions."[6] Such cultural reorganization, Vygotsky contended, can only take place through the use of cultural tools as mediators and through the formation of new psychological systems (neoformations). Vygotsky clearly differentiated between the natural and the cultural development of the child, and he also emphasized the inter- and intradependent nature of dynamic reciprocity between the emergence of the new system and the further development of its parts. The origin of all the newly formed systems in the process of cultural development is social. Thus, those systems become part of an individual personality after being internalized through the social relations that develop among people. Hence, one of the main themes in Vygotsky's scientific inquiry is the social nature of cultural development: what was once social (occurring through interactions with people) becomes individual.

3. Dorothy Robbins, *Vygotsky's Psychology-Philosophy: A Metaphor for Language Theory and Learning* (New York: Kluwer Academic/Plenum, 2001), 14.

4. Lev S. Vygotsky, *Scientific Legacy*, vol. 6 of *The Collected Works of L.S. Vygotsky*, ed. Robert W. Reiber, trans. Marie J. Hall (New York: Plenum Press, 1999), 42. This work will be cited as *SL* in the text for all subsequent references.

5. Lev S. Vygotsky, *Child Psychology*, vol. 5 of *The Collected Works of L.S. Vygotsky*, ed. Reiber, trans. Hall (New York: Plenum Press, 1998), 190.

6. Lev S. Vygotsky, *Problems of the Theory and History of Psychology*, vol. 3 of *The Collected Works of L.S. Vygotsky*, ed. Robert W. Rieber and Jeffrey Wollock, trans. Rene van der Veer (New York: Premium Press, 1997), 107.

Vygotsky used Hegelian dialectical philosophy to equate sociohistorical context with dynamic change as a result of the struggle that takes place between the organism of the child and the environment, as well as the struggle that occurs within the child's organism, that is, between his lower and higher mental functions and within higher mental functions. Here, it might also be useful to consider the emotionally laden roots of the word "struggle." The Russian term *bor'ba protivorechiy* actually means a struggle, fight, or conflict between contradictions or oppositional forces. According to Funk and Wagnall's *Standard College Dictionary*, struggle is a noun that represents (1) a violent effort, or series of efforts; and (2) a conflict, strife, or battle. According to Aleksandr Kunin's *Russian-English Phraseological Dictionary*, the word "struggle" is used in phrases such as class struggle, a life-and-death struggle, a struggle for existence, and the struggle for peace. It might be interesting to note that, although the result of a struggle (for example, the result of a struggle for peace) might be a positive outcome and thus reflect positive emotions, the process of struggle itself is far from being considered a pleasant action.

No matter what context it is used in and what philosophy or culture it comes from, the word "struggle" typically refers to an emotionally laden, negative experience of tension, disagreement, and battle between two (or more) opposing forces. Notice, that there is no question here as to whether the experience of struggle is emotional or not. The question is not even whether this emotional experience is negative or positive. The word "struggle" first and foremost denotes a negative emotional experience because of the negative origin of the word itself. On the one hand, the struggle itself is initiated by the experience of emotional dissonance between opposing forces, and, on the other hand, the struggle results in an emotional outcome. That is, all new formations (newly developed higher mental structures and functions) that appear and develop as a result of a struggle will carry an emotional imprint. As a result of the struggle, new culturally developed emotions reflect a wide spectrum of complexity, penetrate the deepest layers of the culturally developed personality, and emerge in every stage and process of the child's cultural development.

Such complexity in the nature of struggle is revealed through the dynamically emerging development of new, qualitatively different super systems, which represent relations between individual mental functions and the environment. Vygotsky "arbitrarily call[ed] these psychological systems, these units of a higher order that replace the homogeneous, single, elementary functions, the *higher mental functions*" because these "new psychological systems…unite in complex cooperation a number of separate elementary functions" (*SL*, 61). Accordingly, formation and development (and thus any changes) in such complex entities (super systems) facilitate new formations in the relational development of every higher mental function. Consequently, such super systems become dynamic cultural mediators to further the cultural development of the child.

Vygotsky stated, "affect and intellect are not two mutually exclusive poles, but two mental functions, closely connected with each other and inseparable, that

appear at each age as an undifferentiated unity.''[7] He warned against the practice of separating emotions and cognition. He stated that ''the separation of the intellectual side of our consciousness from its affective, volitional side is one of the fundamental defects of all traditional psychology.''[8] According to Vygotsky, since every newly formed system is situated within the relational development of other systems, its features come from and are infused in all the other systems and subsequently appear in the new systems as well. Being a dynamically emergent developmental system, the ZPD also encompasses both affective and intellectual features reflected in behavioral mastery.

For Vygotsky, mastery of behavior represents the highest form of human will-power, where, being unsatisfied with their current behavioral condition, human beings first determine for themselves the need for behavioral change, and then create a series of artificial tools and signs to support that particular change.[9] They then execute their plan by using those tools and signs as mediating tools to master their own behavior. In fact, it is not only the mastery of behavior, but also the whole process of cultural development that derives from such volitional processes.[10] Human beings must use cultural tools to mediate (or influence) the environment, and only then, by mastering the environment, do they master their own behavior. Vygotsky showed clearly that ''everything that distinguishes man from animal in the psychological sphere is closely connected with the fact that in the process of historical development of man, mastery of himself, his own behavior, proceeded parallel to mastery of external nature'' (*SL*, 64).

Therefore, all the features of external mastery are transferred into internal or self-mastery. Consequently, the features of every newly formed system reflect features similar to those of the ''collective'' — what was once between people. In fact, Vygotsky stipulated that ''higher mental functions arise from collective social forms of behavior.''[11] Such an intricate interwoven dependency and interdependency within and between the systems of cultural development led Vygotsky to believe that the synthesis of intellect and affect will appear (although in a possibly different proportional relation to other higher mental functions and to themselves) in every newly formed system. In addition, every change in a newly formed system will inevitably lead to comparable changes in the relational values of every sub-system. Vygotsky's understanding of the child's cultural development within the dialectical paradigm is directly connected to the relation between learning and development.

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7. Vygotsky, *Child Psychology*, 239.

8. Lev S. Vygotsky, *Izbrannye psikhologicheskie issledovaniya* [Selected Psychological Investigations] (Moscow: Izdatel'stvo Pedagogika, 1956), 53.

9. Lev S. Vygotsky, *The History of the Development of Higher Mental Functions*, vol. 4 of *The Collected Works of L.S. Vygotsky*, ed. Rieber, trans. Hall (New York: Plenum Press, 1997).

10. G.G. Kravtsov, ''The Problem of Personality in the Context of Cultural-Historical Psychology,'' in *The Problem of Development* [online abstract] (Moscow: Vygotsky Institute, 2006), http://vygotsky.mgppu.ru/1223.

11. Vygotsky, *Child Psychology*, 168.

Vygotsky's dialectical approach to development stands in opposition to the mainstream Western educational views that are mainly grounded in somewhat "linear" Piagetian thinking.[12] For example, for Jean Piaget, "the process of development appears to be a process that is governed by natural laws and happens as a maturational type of the process of development, and 'obucheniye' (teaching-learning) is interpreted only as a pure 'vneshneye' [externally driven] utilization of possibilities that are appearing in the process of maturation."[13] In contrast, Vygotsky believed that the process of cultural development is manifested in the appearance of higher mental functions that reflect the social origin of the child's interaction with his or her environment (teachers, peers). That is, the process of development is not a direct and natural process, but rather indirect, artificial, mediated (governed) by cultural laws of teaching-learning and, "in contrast to Piaget… *proceeds not toward socialization, but toward converting social relations into mental functions*."[14] These differences between Piaget and Vygotsky are not unimportant and inconsequential issues, but are fundamental to Vygotsky's philosophical beliefs about the role learning plays in a child's development.

The social origins of the whole process of children's cultural development and its relation to educational practice can be best represented by the concept of the zone of proximal development (ZPD). Here, Vygotsky made his most important contribution to the connection between learning and development by differentiating between them, stating that "the developmental processes do not coincide with learning processes."[15] Although it might sound surprising to some mainstream Western scholars, the ZPD is not only about learning, but also about development. Vygotsky concluded that under certain conditions the learning process can and should lead the process of the child's natural development. The result of the difference between the level of development led by learning and the level of natural unmediated development (with no help from teachers or more knowledgeable peers) produces ZPD.

The notion of the ZPD — "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" — is one of the first and most popular notions from Vygotsky's writings to be appreciated by the English-speaking population.[16] However, the notion of the ZPD is also frequently misinterpreted and misunderstood in the West not only because of the difficulties in bridging between the

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12. Natalia Gajdamaschko, "Vygotsky on Imagination Development," *Educational Perspectives* 39, no. 2 (2006): 36.

13. Ibid., 35.

14. Vygotsky, *History of Development of Higher Mental Functions*, 106.

15. Lev S. Vygotsky, *Mind in Society: The Development of Higher Psychological Processes* (Cambridge, Massachusetts: Harvard University Press, 1978), 90.

16. Ibid., 86.

English translation and interpretation within the Cartesian as opposed to the dialectical paradigm, but also because Vygotsky used the notion of the ZPD in the three interconnected, yet separate, contexts of (1) developmental theory (the emerging psychological functions of the child), (2) applied research (the difference between the child's individual and aided performances), and (3) school-based concept-formation studies (the interaction between ''scientific'' and ''everyday'' concepts in school learning).[17] This essay focuses on the first two contexts.

The ZPD reflects Vygotsky's belief that learning can lead development under certain conditions that are created by educators as ''specifically designed learning activities that provide a framework for guided construction.''[18] In particular, when a child solves a problem that is beyond his or her developmental capabilities with the assistance of another more capable peer or an educator, the results demonstrate his or her potential psychological development better than if he or she tries to solve this problem independently. In other words, the assistance that the child receives with solving a problem, first, enables educators to look into the near future of the child's mental development and uncover his or her true potential for development, and, second, speeds up the process of the child's development of higher psychological functions. With the help of the ZPD educators can determine not only the mental functions that have already developed, but also the functions that are still in the process of developing.

Vygotsky's ZPD reflects a cultural process of assistance through cooperation and collaboration. It uses cultural tools, signs, and symbols to mediate the process of learning (that is, the instrumental method[19]), where the assistant quite often becomes the mediator. More important, such a process of assistance is driven by the educational motivation to facilitate the attainment of the highest level of the learner's academic and personal achievement and acculturation. In other words, educators' higher expectations of their learners help to build a culturally appropriate ZPD. The processes awakened in the child as a result of the assistance received are internalized by the child and ''become part of the child's independent developmental achievement.''[20] ZPD is future-oriented, and takes into consideration past and present achievements (that is, the mental processes that were already developed) while also bringing to light processes that are about to be developed in the very near future. Thus, it is inadequate to direct learning toward the child's actual level of development because all of the child's mental functions on that level have already developed. It is equally inadequate to direct learning toward a level that is way beyond the child's current developmental capabilities. Rather, learning should be directed toward the child's immediate potential for development. The ZPD is a much better indicator of the child's future intellectual

17. Kozulin and Gindis, ''Sociocultural Theory and Education of Children with Special Needs.''

18. Alex Kozulin, *Psychological Tools: A Sociocultural Approach to Education* (Cambridge, Massachusetts: Harvard University Press, 1998), 33.

19. Vygotsky, *Problems of the Theory and History of Psychology*, 85–89.

20. Vygotsky, *Mind in Society*, 90.

development than his or her mental age (as calculated by IQ). In fact, as Vygotsky contended, the greater the child's ZPD, the greater his or her potential learning.[21] The size of the ZPD is not a fixed possession but "refers to the extent to which a child can take advantage of collaboration to realize performance beyond what is specified by independent performance and relative to age norms."[22]

The ZPD is a dynamic process that also reflects constant changes in the emotional connections among all participants. According to Holbrook Mahn and Vera John-Steiner, Vygotsky combined affective and intellectual features in his notion of the ZPD, consistent with his belief that emotions are the beginning and end of the entire cultural development: "Vygotsky's caring support…derived in part from his understanding of the relationship between affect and reason, and the importance [in] education reform of an expanded notion of the ZPD that included emotion."[23] Vygotsky was always a strong opponent of treating intellectual and affective aspects of human life as separate. He elevated a qualitatively different system, a system that represents the *relation* among the psychological functions over the functions themselves. Such a relation, he believed, creates its own fluid and ever-evolving system. When Vygotsky talked about the emergence of a new dynamic system that reflects a certain relation among the known functional systems unified by affect and intellect, he was really talking about a holistic system of cultural development — a system of systems — the ZPD.

Functionally, the ZPD is a complex, creative collaboration among all of the participants with each other and through the environment. The ZPD process inevitably leads to new psychological formations, which in turn allow for a transition to the child's next developmental level. In addition, the ZPD process facilitates the formation of new knowledge that is based on and thus reflects affect and intellect. As a result, the ZPD is not only a process and a product but also a synthesis of intellectual and emotional functions. At this point, we should continue our analysis of the ZPD within the Russian context of *obucheniye* in order to appreciate the zone's dynamic interrelational dependency on and origins in human emotions.

Obucheniye and ZPD

Although the Russian language has words equivalent to the English terms "teaching" and "learning," within the sociohistorical context of Russian education, there is another word, "*obucheniye*," which represents for Vygotsky a system of reciprocal relation between learning and teaching. On this view, emotions play an important role not only in the process of students' learning, but also in the process of teaching. Teachers must show their students that the reason they teach is not simply because they have valuable information to share with their students,

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21. Lev S. Vygotsky, *Thought and Language* (1934; repr. Cambridge, Massachusetts: MIT Press, 1986).

22. Seth Chaiklin, "The Zone of Proximal Development in Vygotsky's Analysis of Learning and Instruction," in *Vygotsky's Educational Theory in Cultural Context*, ed. Alex Kozulin, Boris Gindis, Vladimir S. Ageyev, and Suzanne M. Miller (London: Cambridge University Press, 2003), 53.

23. Mahn and John-Steiner, "The Gift of Confidence," 12.

but, more important, because they care about their students' present and future well-being and overall development. Vygotsky maintained that as a result of such a caring process of teaching, students not only develop trust toward their teachers, but also develop interest, appreciation, and even love of the subject matter taught. A safe and emotionally positive collaboration between teachers and students creates a more complete ZPD and motivates the child's further intellectual and emotional development toward its highest level.

Hence, the educational advantage of facilitating appropriate culturally developed emotions during the process of *obucheniye* is not limited to students. Relating Vygotsky's understanding of the importance of the collective to education, we can see that a successful teacher-student relation that serves as a solid platform for successful learning begins when teachers exhibit a sense of emotional openness, especially at the initial stage of teaching. Such openness facilitates a sense of wonder among students and stimulates their imagination and, thus, enhances the process of learning. Vygotsky stated that ''Psychologists have demanded of the teacher educational inspiration, and it is this which defined in their eyes the personality of the teacher.''[24] He also emphasized that culturally developed emotions are socially constructed. As they are internalized, they play a key role in shaping motivation and thought.[25] Therefore, ''it [only] makes sense to attend closely to the affective aspects of teachers' workplace[s], and to the ways that emotions inform what are commonly seen as the purely academic aspects of their labours.''[26]

The process of establishing and maintaining the ZPD is dynamic and encompasses the development of the individual personality. In fact, the whole purpose of education (as a manifestation of *obucheniye*), as far as Vygotsky was concerned, is to ''realize through methodical influence and selection one and only one personality'' (*EP*, 317). That is, the process of education that is established by the ZPD must appeal to the child's personality. However, the results of learning within the ZPD (that is, the internalized behavior of the child) must also be directed toward further cultural development of the child's personality. ''Education always denotes a change,'' Vygotsky stated. ''If nothing changes, then nothing has been taught'' (*EP*, 104). The ZPD serves precisely as an indicator and a facilitator of such dynamic change in the child's potential for further learning and cultural development.

The nature of the ZPD — as with the nature of internalization, mediation, and cultural development in education — is social. For Vygotsky,

> Education…determines the process of the child's mastery of the psychological tools-signs;
> being at first external, independent of the individual consciousness (but absolutely social),

24. Lev S. Vygotsky, *Educational Psychology*, trans. Robert Silverman (Boca Raton, Florida: St. Lucie Press, 1997), 341. This work will be cited as *EP* in the text for all subsequent references.

25. Lev S. Vygotsky, *Problems of General Psychology*, vol. 1 of *The Collected Works of L.S. Vygotsky*, ed. Robert W. Reiber and Aaron S. Carton, trans. Norris Minick (New York: Plenum Press, 1987).

26. Annie DiPardo and Christine Potter, ''Beyond Cognition: A Vygotskian Perspective on Emotionality and Teachers' Professional Lives,'' in *Vygotsky's Educational Theory in Cultural Context*, ed. Kozulin et al., 323.

these signs are mastered by the subject and become transformed from external to internal ones (are internalized).[27]

In particular, within the ZPD process, the social origin of both culturally developed emotions and mastery of behavior can be seen in a collective atmosphere, where the dynamics of collaboration within the group are reflected in the individuals who make up that group, and vice versa. With regard to this point, it is important to emphasize the fact that learning activities are "deliberately constructed on the basis of collaborative learning."[28]

Mastery of learning activities (tools) leads to mastery of environment, while the mastery of environment, in turn, leads to mastery of one's own behavior. That is, whatever was experienced by the group is later experienced by the individual. Similarly, in the words of Vygotsky: "What the child can do in cooperation today, he can do alone tomorrow."[29] Thus, Vygotsky stated that "emotion [and all related intellectual features that are activated within the ZPD] grows as a function of the audience that experiences it." He illustrated this point with the following example:

> Shame experienced in front of a crowd of thousands is thousands of times more powerful than shame experienced in front of a single person. The same may be said of the emotion of satisfaction, which directs all our reactions to an ultimate goal, and which grows and increases in magnitude the larger is the group in whose channel it travels. (*EP*, 192)

Of course, the amplification or reduction of the experience of shame or satisfaction will also depend on the importance attributed to the particular audience by the one experiencing shame or satisfaction. Performers, for example, report that they experience much stronger anxiety when asked to perform in front of an individual or small group of people well known to them rather than a large group of strangers. Since the emotions of an individual are the function of the audience (for example, the teachers and peers within the learner's ZPD), it is vitally important to establish an encouraging and trusting emotional environment from the outset.

Here, it might be useful to ground the present analysis of ZPD further, not only in the educational (teaching-learning) context of cooperation and collaboration that creates a trusting and nurturing environment, but also in one of Vygotsky's most important notions, the notion of mediation.

Mediation Through Cultural Artifacts Within the ZPD

Another valuable concept that Vygotsky — "under the influence of the Hegelian notion of 'cunning of reason'"[30] — brought into his scientific inquiry is the concept of mediation through the use of cultural tools or artifacts (anything made by human work or art). It is interesting that not only artifacts can serve as tools. Vygotsky suggested that gestures, language, sign systems, and human emotions also can be used as psychological tools to mediate the development of higher

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27. Mikhail Yaroshevsky and Georgy S. Gurgenidze, epilogue to Vygotsky's *Problems of the Theory and History of Psychology*, 350.

28. Kozulin, *Psychological Tools*, 162.

29. Vygotsky, *Thought and Language*, 188.

30. Alex Kozulin, introduction to Vygotsky's *Thought and Language*, xxiv.

mental functions. Although in Western literature these tools are often called cognitive, a more appropriate translation of the original Russian would be "psychological" tools. Human beings have a system of acts that limits the forms of their behavior, but they also are capable of extending the range of their actions with the help of tools.[31] According to Vygotsky, culturally developed emotions can be used as psychological tools to master the child's learning process and behavior, and to develop personality and overall cultural growth. "Emotion," he argued, "is not less important a tool than is thinking" (*EP*, 107) in helping the child mediate the transition to a higher level of behavior and learning.

One has to remember that Vygotsky understood learning as a complex future-oriented process that is dynamically and historically situated in "an immediate social context."[32] This is reflected in mastery of behavior, which, in turn, lays the groundwork for personality development. Successful learning is never direct but rather is always mediated by cultural and psychological "human" tools. All of these tools help humans master the natural world around them and, in doing so, master themselves. The process of mediation is reciprocal — that is, the development of personality facilitates the process of learning (which for Vygotsky is identical to behavioral mastery), and vice versa, both through emotions as mediator. Further, as they mediate the development of personality and behavioral mastery, emotions are also being developed. In other words, the objects of development (personality development and behavioral mastery) become mediators to their original mediator (emotions), while the original mediator develops as an object of focus. Thus a mediator (emotions) takes on the role of object of development, while the object of development (personality or behavioral mastery) takes on the role of mediator. In addition, while being used as a mediating tool in the child's cultural development, any artifact is itself modified. It is only when the child masters one form of behavior or another in his or her learning process through mastering the tools of cultural mediation — "stimulus of the second order…[that] must be specially established by the personality" (*SL*, 47) — that the child brings the development of his or her personality to a higher level. Learning (which is never complete without teaching, and thus always denotes *obucheniye*), according to Vygotsky, is a dynamic process that emerges as a result of the appropriation of cultural and psychological tools that mediate behavioral mastery, thus leading to the development of personality.

As we can see, the process of mediation rejects the direct cause-and-effect logic of traditional psychology and reflects the emergent nature of mind within jointly mediated activity. Vygotsky's new approach of cultural-historical development by means of mediation through tools and signs is based on the concept of internalization — the only process that allows lower mental functions to be developed into higher mental functions. Vygotsky believed that the process of

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31. Vygotsky, *Problems of the Theory and History of Psychology.*

32. Alex Kozulin, *Vygotsky's Psychology: A Biography of Ideas* (Cambridge, Massachusetts: Harvard University Press, 1999), 255.

internalization lies at the root of cultural development and represents the powerful urge individuals feel to interiorize or appropriate certain elements of social behavior. He called this process a "revolution" because, according to him, there must be some extreme change within the child that prompts him or her to appropriate what was once social.[33]

During such a revolutionary process, as the functions that are internalized move inward, they reconstruct and unite old functions in a qualitatively different way. The reconstruction is triggered by the formation of a new psychological-functional system. Such a system takes the lead in the child's general structure of behavior and overall cultural development, as it unites all the mental functions that used to be separate. The process of internalization is not a simple transfer of one of the functions inward, but rather "a complex reconstruction of its whole structure" (*SL*, 55). Vygotsky's experimental work demonstrates that during the process of internalization, natural functions are changed qualitatively and become embedded within newly created psychological systems. All the previously discrete functions are united under one roof and serve to motivate future behavior. Thus, both the learning process and the cultural development of the child can only be facilitated through the process of internalization with the help of cultural mediators or tools.

It is interesting to note that the very concept of cultural tools reflects the culturally developed emotions of the society. If we examine the word *"kul'tura"* (culture) in the Russian language, we find that it signifies the sum total of achievements in an industrial, social, and intellectual sense. It also refers to the highest level of something — in particular, development, a specific ability (physical culture, the culture of speech), education, and upbringing.[34] Similarly, in English the word "culture" represents

> (1) the totality of socially transmitted behavior patterns, arts, beliefs, institutions, and all other products of human work and thought; (2) intellectual and artistic activity, the works produced by it; and (3) a high degree of taste and refinement formed by aesthetic and intellectual training.[35]

In his writings, Vygotsky used the word "culture" in three different ways, to suggest (a) the processes of creation and the products of art (including literature), (b) an essential mediational asset to the development of higher psychological functioning (as a result of cultural development), and (c) a distinction between "cultural" and more primitive people.[36] In other words, "culture" seems to presuppose (1) the work of art, the creational process of which begins, proceeds, and is replete

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33. See, for example, Vygotsky, *Mind in Society*; Vygotsky, *Problems of the Theory and History of Psychology*, 117–119; and Vygotsky, *Scientific Legacy*, 55.

34. Sergei I. Ozhegov, ed., *Slovar Russkogo Yazyka* [Dictionary of the Russian Language] (Moscow: State Publishers of Foreign and National Dictionaries, 1961).

35. See http://www.thefreedictionary.com/culture.

36. Michael Cole and Natalia Gajdamaschko, "Vygotsky and Culture," *The Cambridge Companion to Vygotsky,* ed. Harry Daniels, Michael Cole, and James V. Wertsch (New York: Cambridge University Press, 2007).

with human passion and human emotions from both the creator of the art and the user or appropriator; (2) the process of cultural development that leads to the development of higher psychological functions; and (3) a cultural person. Cultural development is always deeply rooted in human emotions. Mastering cultural tools should lead to mastering one's own cultural emotions.

Vygotsky stipulated that "the law of the *transition from direct, innate, natural forms and methods of behaviour to mediated, artificial mental functions that develop in the process of cultural development*" is crucial to the process of developing higher mental functions that stands at the center of the child's learning process and cultural development.[37] This transition from social to individual forms of behavior ultimately turns out to be the platform developing all higher mental functions. This platform facilitates the child's cultural development and eventually makes it possible for the child to master his or her own behavior. For Vygotsky, this mastery of the psychological tools or signs that are transformed from social to individual — what he called internalization — directs the child's development. Thus, Vygotsky stated, "Through others, we become ourselves."[38]

Specifically, the child first uses the sign as a behavioral means to connect with the social environment and, in a sense, to control it. Then, in the process of internalization, use of the sign becomes the way for the child to control his or her own behavior. Thus, talking about the social origins of the higher mental functions, and hence the process of mediation within the ZPD, Vygotsky concluded that

> Every symbolic activity of the child was at one time a social form of cooperation and retains, along the whole path of development to its very highest points, the social method of functioning. The history of higher mental functions is disclosed here as the history of converting means of social behaviour into means of individual-psychological organization. (*SL*, 41)

In describing the operation of tools and symbols in the child's development, Vygotsky observed that when the process of solving a problem is made more difficult for the child, the connection between the child solving the problem more intelligently and his emotions becomes more visible:

> One way to increase the production of egocentric speech is to complicate a task in such a way that the child cannot make direct use of tools for its solution. When faced with such a challenge, the children's emotional use of language increases as well as their efforts to achieve a less automatic, more intelligent solution. They search verbally for a new plan, and their [emotional] utterances reveal the close connection between egocentric and socialized speech.[39]

What can be inferred from the preceding passage is that there is a co-relational association between the child's effort to achieve a less automatic and more intelligent solution to the problem (including his or her emotional state) and the appearance of a stronger emotional connection between egocentric and socialized speech. The very process of internalization from social speech (speech for others) to egocentric speech, and then to inner speech (speech for oneself), is not merely emotionally laden, but originates in human emotions and desires.

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37. Vygotsky, *Child Psychology*, 167–168.

38. Ibid., 170.

39. Vygotsky, *Mind in Society*, 27.

In addition, just as we can establish and maintain successful and productive relations with others, so can we establish and maintain a successful dynamic interactive process of the ZPD. The positive relation between the child and the environment (a teacher or an able peer) determines the degree to which (1) the ZPD is successfully established and maintained, and (2) these relations are internalized. For Vygotsky, the question is not how one child or another behaves in a group, but rather "how…the group create[s] mental functions in one child or another… Functions initially are formed in the group in the form of relations of the children, and then they become mental functions of the individual."[40] Emotions are the basis for any human relation. The child's positive relation with a teacher or an able peer allows him or her to feel safe in revealing what he or she does not know or understand, to trust his or her educator (or facilitator), and to develop an interest in the subject matter and the methods of its acquisition. The teacher's (or more able peer's) relation to the child must first and foremost be grounded in a basic human respect and concern for other human beings (especially the child), as well as care and concern for the child's education, welfare, and overall development. Thus, the dynamic process of establishing and maintaining the ZPD is successful only when emotionally laden reciprocal relations between the learner and the instructor allow for participants' comfort and trust, which are manifested in constant negotiation of the subject of inquiry and the way it is presented and acquired.

Is there a ZPD for any student, even in an uncaring environment? Although it is possible to acquire new information and new types of behavior even in "an uncaring environment," Vygotsky believed that the new information and behaviors cannot become permanent unless they are internalized. That is, the child would never "feel right" about using information or taking actions that have not been internalized. The child can develop higher mental functions only through internalization, which is only possible in a nurturing and caring environment. For example, when we ask a student to exhibit different, more appropriate behavior, we are not looking for the mere appearance of a difference in the student's actions. Such an artificial behavior would not last, and the student would most likely return to his or her old "habitual" behavior in a split second when "no one is watching." Therefore, we are looking for (1) new relational connections within the student's mind, for "the mind with all its subtle and complex mechanisms forms part of the general system of human behavior"[41]; and (2) the student's new relation to others, that is, his or her emotional anticipatory experience in the environment.[42] In fact, the way the child interacts with others is the way the child "interacts" with him- or herself. All the child's social relations are reflected in the development of higher mental functions and, thus, in the child's personality. A caring and nurturing environment within the ZPD established and maintained by teachers can mediate (facilitate) the child's cultural development. Put differently,

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40. Vygotsky, *History of Development of Higher Mental Functions*, 107.

41. Vygotsky, *Problems of the Theory and History of Psychology*, 152.

42. Mikhail Yaroshevsky, *Lev Vygotsky*, trans. Sergei Syrovatkin (Moscow: Progress Publishers, 1989).

the ZPD appeals to the whole personality of the child as it facilitates the development of higher forms of behavior through culturally developed emotions within a particular sociohistorical context.

As should be clear from this discussion, the concept of the ZPD addresses the whole person. Human emotions and desires, as Vygotsky contended, are a fundamental part of a complete human being. Vygotsky himself passionately believed this and used it as the foundation for his theoretical and practical research.[43]

PRACTICAL IMPLICATIONS OF THE ZPD

Unfortunately, "Vygotsky never proposed any specific methodology (in the Western sense of this term) for a study of the ZPD or its use as an assessment technique," leaving this up to the creativity and imagination of his followers.[44] While the goal of this essay is to reveal the theoretical underpinnings of the ZPD's dynamic multirelational complexity as it encompasses all the intellectual and affective features of human beings situated within social-cultural-historical context, it is also important to consider practical applications of the ZPD. The following example from an adult English-as-a-second-language (ESL) class might shed some light on these.

In covering the theme "At the Doctor's Office," a group of adult lower intermediate ESL students were given new vocabulary about the most common types of diseases, the names of doctors/specialists, and basic conversational tools to use at a doctor's appointment. The material included conversations, stories, articles from the local newspaper, and a booklet containing local governmental guidelines on medical services. The students had been introduced to jazz chants, the notions of rhythm and rhyme, and sound-alike words previously. The students were asked individually, as part of their homework, and later in class in groups of two or three, to come up with sound-alike words and rhymes for most of the new vocabulary. Then, with the help of the teacher, they started to discuss the appropriateness of combining certain rhymes with certain situations. If a specific situation required a word combination that the students had not developed, the teacher would try to come up with one or would provide an initial conversational phrase or rhyming medical vocabulary and prompt the students to complete the phrase. The appropriateness of using humor was also discussed and implemented with the help of the teacher. Sometimes the teacher would present a similar situation from a different jazz chant or song so that the students could use them as more suitable examples. By the fifth class session, developing rhymes for these medical terms and situations at the doctor's office was the only topic that these students were discussing in class, during the break, and (according to their families and friends) at home. The following week, the students, in collaboration and cooperation with each other and with the guidance of their

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43. See Lev S. Vygotsky, *The Psychology of Art* (Cambridge, Massachusetts: MIT Press, 1971); Vygotsky, *Thought and Language*; Vygotsky, *The Collected Works of L.S. Vygotsky*, vols. 1, 3, 4, 5, and 6; and Vygotsky, *Educational Psychology*.

44. Kozulin and Gindis, "Sociocultural Theory and Education of Children with Special Needs," 353.

teacher, were able to create a complete jazz chant, which was put to music and recorded by the students. From that point on, the jazz chant became the first and the last classroom activity, and the favorite topic of discussion. Even after the students went on to study the next topic in their curriculum, "At the Supermarket," one could still hear some students singing the jazz chant "At the Doctor's Office" in the hallways during breaks.

Such collaborative and cooperative activity is the core of affective establishment and maintenance of the ZPD for the following reasons:

• It can create a nurturing and safe environment in which students feel comfortable expressing their individual cultural and social concerns, and are also supported in dealing with these through mediation using the communicative tool of creating lyrics and music.

• It can trigger prior affective and intellectual knowledge and experience.

• It can cement and perfect students' knowledge of new vocabulary and grammar, while focusing on the interaction and negotiation of how they use their ideas.

• It can enhance the students' pronunciation (through emphasizing rhythm and intonation) in the target language and thus build their communicative skills.

• It can solidify synthesis among listening comprehension, speaking, reading, and writing skills.

• It can facilitate memorization of whole chunks of authentic and idiomatic discourse.

• It can transfer newly acquired information from working memory to long-term memory.

• It can facilitate a positive learning experience and appreciation for the subject being taught (whether ESL or any other subject).

• It can explore sociocultural aspects of the target language (for instance, rules of conversational turn-taking).

Because it is future-oriented, the ZPD appeals to the whole personality and builds upon the students' previous affective and intellectual knowledge and experience as it establishes creative teaching-learning environments in the here and now that promote mutual respect and trust. These environments facilitate creative risk-taking behavior and acceptance of constructive criticism. Students are inspired by the teachers' trust and creativity as they create the target discourse (jazz chant) through the secondary discourse (their discussion and debate in English about the appropriateness of their chosen rhyming phrases and idiomatic expressions). Both students and teachers are part of this collaborative educational inspiration, within which the students create their own knowledge and communicate it to others in a safe, emotionally supportive environment. Students can internalize whatever was experienced by the group and later can externalize their

newly acquired knowledge and behavior with confidence and mastery; in this way, they mediate their own cultural development.

<div align="center">CONCLUSION</div>

Vygotsky considered education the driving force behind the cultural development of the child because, on his view, *obucheniye* leads development. He was convinced that the task of educators is to transform their students (no matter how lazy, uncultured, uneducated, untalented, ill-behaved, and unwilling to learn they might be) into culturally developed personalities, people who will lead exemplary lives and be useful, productive, and instrumental in the further development of the society at large. The following proclamation lies at the center of his beliefs and truly represents him as a psychologist, educator, and, most of all, as a passionate and caring human being: ''People with great passions, people who accomplish great deeds, people who possess strong feelings, even people with great minds and a strong personality, rarely come out of good little boys and girls'' (*EP*, 1). Unlike many mainstream North American educators who believe that learning lags behind the development (maturation) of the child, Vygotsky believed that learning can and should *lead* the development of the child. For example, as Vygotsky saw it, the child's personality is not innate and unchangeable, but rather a product of cultural development through the internalization of cultural and psychological tools.

As noted previously, the establishment of the ZPD during the process of *obucheniye*, which includes learning and teaching within the historical context of interaction and collaboration, is a complex dynamic process of a tripartite nature that can lead the child's development. The complexity of the ZPD is found not only in its constituent parts (the participants, their interaction and collaboration, the type of tools, the type of mediation they use, and the cultural-historical context) but, even more important, in the fact that it is ''a system of systems.''[45] As such, according to Vygotsky, the ZPD has an enormous influence on its parts and on the relations among those parts, as well as on the relation between the child and his or her environment. Establishing and maintaining the ZPD not only facilitates a successful learning process and the development of higher mental functions that in turn lead the child's cultural development, but it also fosters the continued development of the child's consciousness.

Finally, in every step of cultural development, and as a result of struggle, there is always the appearance of a central neoformation (*novo-obrazovaniye*), the newly formed psychological system) that guides the development. The struggle presumes emotional involvement and the results of the struggle are newly and culturally developed emotions. Where there is no struggle, there is no development. Cultural development is always triggered, accompanied, and permeated by emotional development. In fact, Vygotsky was adamant in his belief that ''the emotions have to be considered as a system of anticipatory reactions that inform the organism as to the near future of his behaviour and organize the different forms of this behaviour'' (*EP*, 106). For the teacher, therefore, the emotions become an extraordinarily valuable tool for the education of various reactions:

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45. Mahn and John-Steiner, ''The Gift of Confidence,'' 4.

> No form of behaviour is so vigorous as when it is associated with an emotion… No moral sermon educates like a real pain, like a real feeling, and in this sense, the apparatus of the emotions seems like an expressly adapted and subtle tool by means of which behaviour may be influenced effortlessly. (*EP*, 104)

It is precisely through effectively mediating the culturally developed emotions as motivators that the ZPD can be established and maintained so that the development of the child's higher mental functions will be successful and thus lead to cultural development as a whole.