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Revisiting Vygotsky and Gardner: Realizing Human Potential

NINAH BELIAVSKY

The two individuals who have had a tremendous influence on my own theories and my own philosophy of education are the Russian psychologist, intellectual, and social activist Lev Semenovich Vygotsky (1896-1934), and the leading American developmental psychologist Howard Gardner (b. 1944). The philosophies of Vygotsky and Gardner have much in common, even though their lives have been separated by different continents, different political regimes, different languages, different cultures, and almost a century of innovative research in the fields of psychology and education.

I argue that Vygotsky’s ideas should be viewed through the prism of Gardner’s theory of Multiple Intelligences. The combination of these concepts can shed new light on education—on teaching and learning. By doing so, we would enable the students to reach a higher level of cognitive development.

This article intends to suggest that Vygotsky’s dream of maximizing the Zone of Proximal Development can be realized by utilizing Gardner’s approach of nurturing the students’ combination of intelligences. This idea of teaching and learning will allow educators to teach ahead of development, to teach for understanding, to motivate and promote the students’ creativity and imagination, and to encourage their personal, social, and academic growth.

Lev Vygotsky

Seventy-two years have passed since Vygotsky died on June 11, 1934. He was only thirty-seven years old. “Vygotsky was a product of his time: an intel-

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Beliavsky

Vygotsky's theory was the idea that higher mental functions, such as thinking, logical memory, and human consciousness, have their origins in human social life.

Vygotsky believed that culture should be passed down to future generations in a Socratic, rather than a dogmatic, way. He believed that everyone should be given the tools to live up to their highest potential. For Vygotsky, psychological development could not be separated from human history and human culture. The notion of development as growing out of the interactions of human beings with one another, especially the interaction of adults and children, offers a collectivist vision of human psychological growth that is especially different from American ideas of individualism and predetermined stages of psychological growth. Vygotsky believed that the child has to be exposed to the array of intellectual and cognitive “tools” developed over the centuries by human beings—tools such as language, mathematics, music, and art.

He stressed that systematic instruction in the formal disciplines—Latin, Greek, mathematics, and composition—is beneficial to the development of students’ mental facilities in general. Studying the formal disciplines would lead to higher-order thinking and thus enhance “scientific” concepts. In other words, the systematic learning of scientific concepts in one field translates into developmental changes, abstract thinking, and greater logical thinking and logical flexibility. Recently, this notion is being welcomed by American psychologists. For example, in one study in the United States a group of American psychologists demonstrated that specialized training in medicine, law, and psychology seems to have an effect on real-life problem solving requiring statistical and logical reasoning.

In American educational psychology, Vygotsky is famous for his concept of the Zone of Proximal Development (ZPD). Behind this is the notion that a child’s cognitive development occurs within a social milieu. The teaching-learning process (instruction) does not occur in isolation. The role of instruction for enhancing cognitive development is a joint activity—a collaborative effort between the child and a more knowledgeable partner, such as an older sibling, a parent, a teacher, etc. Therefore, the analysis of cognitive functioning requires studying how a child’s social interaction with more competent peers of their culture is mastered and internalized. In other words, to understand a child’s cognitive development, we need to examine specific patterns of social interaction in which the child participates.

The most detailed description of the concept of ZPD can be found in a lecture entitled “Dinamika umstvennogo razvitia skol’nika v svjazi s obucheniem,” delivered by Vygotsky at the Bubnov Pedagogical Institute.
on December 23, 1933, a year before he died. In that lecture, Vygotsky was challenging such researchers as Binet and Meumann, who claimed that one cannot start teaching children unless they have reached a certain level of development. These researchers tried to establish the “lowest possible thresholds” from which the teaching of various school subjects might be started. In order to establish these thresholds, a child was asked to perform certain tasks independently, without the aid of the experimenters. The degree to which the child was able to solve the task was measured and calculated, and this “score” became indicative of the development of his intellect—hence his IQ score.

The IQ test was devised by the French psychologist Alfred Binet in 1900 in Paris as a measure that would predict which children would succeed and which would fail in primary grades in school. This test became a success, and “like other Parisian fashions, the IQ test soon . . . made its way to the United States.”

Psychologists and educators like Henry Goddard, Lewis Terman, and Robert Yerkes saw the great potential of the IQ test and devised it in such a way that it could be administered to hundreds of students at one time. By the 1930s the tests became very popular. Work on the development of such tests continued through 1950s, and they are still being improved to this day (the SAT, GRE, LSAT, among others).

Vygotsky argued that this testing gives only a partial picture of the child’s intellectual development. He claimed that in addition to this “lowest threshold” there exists another dimension—an “upper boundary.” If the same child is asked to perform the same task, but now with the aid of the experimenter, the child can reach a higher performance score—hence an “upper boundary.” A different child, for that matter, may not profit as much from the above assistance. In other words, children with the same mental age may perform the same when working independently but differently when help is offered. Some will benefit more compared to others. This difference between independent performance and aided performance seems to be peculiar to each child. Based on this, Vygotsky proposed his notion of the Zone of Proximal Development. “The zone of proximal development of the child is the distance between his actual development, determined with the help of independently solved tasks, and the level of the potential development of the child, determined with the help of tasks solved by the child under the guidance of adults and in cooperation with his more intelligent partners.”

Vygotsky believed that the measurement of ZPD is a more accurate way to predict the child’s future development or potential. The first level, or that determined by a child’s performance on independent tasks, can be called the “actual development level.” This is a level of development of a child’s mental functions that has been established as a result of certain completed
developmental cycles; it represents the already matured functions. In other words, it represents the results of yesterday.

When a child’s mental age is determined with the help of IQ tests, it almost always points to the actual developmental level. Suppose that now we offer leading questions or show that same child how the problem is to be solved, and the child then solves the problem much better. Vygotsky claims that the performance of this child, who is cooperating with a more knowledgeable partner, is characteristic of his future development. Thus, the child’s performance in this instance reveals the results of tomorrow. This level is the second level of the child’s development. This assisted performance represents the child’s future development or the child’s potential. Therefore, the Zone of Proximal Development defines those functions that have not yet matured but are in the process of maturation. “The actual developmental level characterizes mental development retrospectively, while the Zone of Proximal Development characterizes mental development prospectively.”

The child who is able to profit from jointly performed tasks has a larger Zone of Proximal Development and will do better in school because what he can do with help today, he will be able to do independently tomorrow.

To substantiate this claim, Vygotsky referred to the results of the American researcher Dorothea McCarthy. Her research showed that among children between the ages of three and five there are two groups of functions. One group of functions was the ones the children already possessed; the second group of functions they could only perform with aid but could not perform independently. In other words, there were some tasks they could perform independently and other tasks that they could perform only under the guidance of or in cooperation with an adult. McCarthy demonstrated that the second group of functions is at the actual developmental level of five to seven year olds. What these children could do with help at the age of three to five years, they could do independently when they reached the age of five to seven years. Therefore, Vygotsky claimed that based on the above, educators can judge what will happen with a child between five and seven—if other conditions of development stay the same, of course.

Vygotsky’s Zone of Proximal Development empowers psychologists and educators with a tool through which they can better understand the maturation processes that have already been completed and those that are beginning to mature and develop. The state of a child’s mental development can only be determined with the two levels—the actual development level and the Zone of Proximal Development. Vygotsky believed that the measurement of the Zone of Proximal Development is a more accurate means to predict the child’s future IQ development or potential.

The above concepts supported the idea that the philosophy of education needed to be changed; the interaction between learning and development
needed to be revisited. What can educators draw from the diagnostic tests of development? Before educators believed that instruction should not exceed the limits of development. This meant that this type of instruction was directed toward the developmental stages that were already completed.

Educators discovered that this philosophy of education was flawed while looking at studies involving children suffering from mental retardation. Earlier studies had established that mentally retarded children were not capable of abstract thinking. Based on this, educators decided to eliminate teachings of abstract thinking and base all education on the use of concrete methods. It was quickly observed that this teaching system failed, not only because it did not help these children overcome their innate handicaps but also because it reinforced their handicaps by suppressing any traces of abstract thought that such children have.

The same is true of normally developing children. When learning is oriented toward development levels that have already been completed, learning fails. This type of instruction is ineffective because it does not aim for a new stage of development but instead lags behind. Vygotsky argued that learning must be in advance of development. His notion of the Zone of Proximal Development enables educators to do just that.

According to Vygotsky, an essential feature of learning is that it creates the Zone of Proximal Development. In other words, learning awakens a variety of internal developmental processes, which can take place only when the child is interacting with people in his environment. Once these processes are internalized, they become part of the child’s independent development achievement. Therefore, learning is a necessary and universal aspect of the process of developing culturally organized, specifically human, psychological functions. From this perspective, “instruction is good only when it proceeds ahead of development, when it awakens and rouses to life those functions which are in the process of maturing or in the zone of proximal development. It is in this way that instruction plays an extremely important role in development.” For us, it means that instruction has to be challenging.

The concept of ZPD, the relation of teaching to cognitive development, as well as Vygotsky’s other ideas attracted the attention of Western psychologists only in the 1970s. Although delayed, their acceptance was enthusiastic. This was the time when Western psychologists such as Skinner (behaviorism) and Piaget (individually oriented cognitive psychology) were beginning to be called into question as being too simplistic. In the United States the concept of culture has finally emerged in the post-Piagetian period. It grew most centrally out of the work of Vygotsky and has been reinforced by such supporters as Jerome Bruner, Michael Cole, and Howard Gardner.
Human beings are not only biological creatures, they are also cultural creatures. In fact, as Gardner states it, “much of the story of human development must be written in the light of cultural influences in general, and of the particular persons, practices, and paraphernalia of one’s culture.” In other words, the stages of psychological growth cannot be predetermined, like hair color, because “intelligence, or intelligences, are always an interaction between biological proclivities and the opportunities for learning that exist in a culture.”

If there are both biological and cultural opportunities for learning, intelligences may be realized. But if there are no cultural opportunities intelligence may not be realized. Imagine Beethoven without the musical culture of his time. The student is not alone in school or in the environment. He draws inferences and learns concepts with the help of other people or props in his environment. His intellect cannot be isolated or decontextualized. In Gardner’s terminology, intelligence is “distributed” in the environment, as well as in the head, and the “intelligent student” makes use of the intelligence distributed throughout his environment. This view of the intellect being “distributed” within the environment challenges the isolated view of the intellect and thus leads to a contextualized view of intelligence.

Furthermore, people do not learn in the same way. Studies of cognition suggest that there exist many different ways of acquiring and representing knowledge. These individual differences need to be taken into account in our pedagogy as well as in our assessment of learning. These notions led Gardner to his theory of Multiple Intelligences (MI), which is a critique of the notion that there exists one single human intelligence that can be assessed by standard psychometric instruments.

MI theory claims that there are multiple ways to understand the world around us. Not one potential but many different potentials exist inside the brain. Gardner suggests that there are at least seven or eight intelligences. We all have them. This makes us human. However, no two people, not even twins, have the same combinations of these intelligences. This is important for teachers to know because they can count on every one of their students to have all eight intelligences, albeit in different configurations. Because there are many intelligences, there are many ways to understand the world. Ideas should be taught in more than one way. This will enable teachers to reach more students and teach students what it is like to think in more than one way. In other words, students should be taught flexibility and provided with multiple views for understanding the physical world, the social world, the human world, and the artistic world. If we teach only one way, we will reach only one kind of student.

Most teachers teach through the first two intelligences—linguistic and mathematical—because that is the way schools operate and intelligence is
assessed. Those students who have other intelligences are left out; they lose motivation and self-esteem and are not praised as they should be for their other talents and abilities (other than linguistic and mathematical). Think of famous violinists Yehudi Menuhin and Yasha Heifetz; pianists Vladimir Horowitz and Glenn Gould; composers Ludwig Van Beethoven and Peotr Ilyich Tchaikovsky; famous dancers Maya Plisetskaya, Anna Pavlova, Isadora Duncan, and Martha Graham; or famous painters Francisco Goya, Henri Matisse, Vasili Kandinsky, Marc Chagall and Ilya Repin: Are they considered intelligent in our society?

What happens to those students who are not strong in the first two intelligences—the linguistic and the mathematical—but have other strengths, such as musical or spatial? They feel left out and unmotivated; they lose self-esteem and school becomes very difficult. Therefore, Gardner suggests that if we want those students, and all the rest, to understand we should take advantage of multiple intelligences.

How do teachers take advantage of multiple intelligences? Well, teachers need to approach the explanation of a certain concept in different ways. If you understand something well, you can think about it in more than one way—you can capture it in many forms of intelligence. We can think of a concept linguistically, musically, artistically, and so on. Gardner suggests that we think of a topic as a room with five entry points or five different doors. Students will choose to enter through the one that is most convenient, at first, and then they can explore other perspectives, thus developing multiple perspectives on an issue. Awareness of these entry points can help the teacher introduce new material in ways in which it can be easily grasped by a range of students. A skilled teacher is the one who can open a number of “doors” on the same concept—the one who can shine light from different perspectives and motivate students. These entry points roughly correspond to the seven or eight intelligences.

**Linguistic Entry**

Students love stories. When teaching about the German composer Beethoven (1770-1827), teachers can tell students short anecdotes about his romantic nature, sloppy handwriting, and misnamed Für Elise (actually named after Therese Malfatti). Beethoven composed Für Elise, his romantic bagatelle, in 1812 to the woman he loved and admired. Supposedly he may have proposed marriage to the woman in the title, unsuccessfully, the year before he wrote the piece. Beethoven dreamed of happiness with a woman but it was never to be because of his awkwardness and lack of grace. Nevertheless, he was a romantic with a sloppy handwriting. Not surprisingly, the woman of his dreams was not Elise but Therese Malfatti. To this day we owe this mistake in identity to Beethoven’s poor handwriting.
I also tell students an anecdotal story about my own connection to Beethoven through my father, a violinist, who knew Jan Sibelius, the Finish composer who met Beethoven’s music messenger and learned something about the great master—Beethoven had hairy arms. This story had been told to me and I tell the story in detail to my English-as-a-Second-Language (ESL) students, thus making an almost direct connection between the eighteenth century and the twenty-first century.

When teaching about Verdi’s opera *La Traviata*, teachers could talk about the real Alexander Dumas’ love affair with a courtesan, Marie DuPlessis, who died from consumption, which is the basis for his novel *La Dame aux Camélias*. Teachers could also show photos of the grave where the true Traviata (Marie DuPlessis) is buried.

**Mathematical Entry**

People love numbers; for example, my eight year old understands everything in numbers. “How many minutes do I need to practice the piano?” or “If I practice, how much candy can I get?” My eight year old will see the logic and will follow the instructions if she sees the benefit. She understands the causality of if/then. This approach may be too abstract for someone more artistic. My twelve year old, for example, is aesthetic in her approach to understanding.

**Musical Entry**

Some people love art and music. You can explain major concepts through listening to music, watching and discussing films, and looking at art. When teaching history—for example, a historical event such as the French Revolution and Napoleon’s rule—teachers should not just ask students to memorize the dates and facts. Students should be told about “Eroica” and listen to Beethoven’s Third Symphony and talk about his ripping up the dedication page to Napoleon in rage when Napoleon crowned himself the emperor of France in 1804. Students should be shown paintings by the French painter Jacques-Louis David (1748-1825), such as *The Consecration of the Emperor Napoleon and the Coronation of Empress Josephine*. This painting and many others are in the Louvre in Paris; students can look at clips from art videos and reproductions from art books.

Teachers could ask students to watch *Les Misérables* or watch clips in class. In New York the Broadway play ran for many years and has many popular melodies (for example, “castle in the clouds”). I took my ESL class to the Broadway show and afterwards the students met and interviewed the actors. This was a unique opportunity for learning.
Hands-On Entry

Some people do not like to listen or to watch; they like to do things, and for them a hands-on approach is more helpful. Working in groups, collaborating with classmates, role playing, debates, drama, etc. are examples of hands-on activities. If teaching about Helen Keller, the deaf and blind child, students can be taught American Sign Language. Students could work in groups and come up with interview questions for an imaginary meeting and interview with Helen Keller and her teacher Ann Sullivan. The students can make this information into a short skit and act it out.

Of course, everything cannot be taught five, six, seven, or eight ways. That is not realistic or practical. But everything should be taught in more than one way. If we teach more than one way, we (1) reach, motivate, and interest many more students, and (2) show students what it is like to really understand something from many angles—thus providing a very rich representation of a concept.

Through a New Lens

I believe that Gardner’s Multiple Intelligences Theory can help students reach their potentials by developing their particular spectrum of intelligence through a multifaceted approach to understanding. By teaching in more than one way and by approaching the given topic through numerous angles, we not only reach many more students and show our students what it is like to really understand something by providing a very rich representation of a concept but, most importantly, we motivate the students and thus provide an opportunity for creative growth. Motivation, I believe, is a key element for successful education, which, in turn, promotes imagination and creativity.

I argue that Gardner’s MI theory can be used as a tool for bringing to life Vygotsky’s concept of the Zone of Proximal Development. Remember that Vygotsky’s dream was to restructure the educational experience and to find a way to help children reach their potentials. His ideology rested on the notion that one has to teach ahead of development so as to maximize the child’s Zone of Proximal Development. Today, we can do this with the approach offered by Gardner. We also need to restructure our educational experience by thinking of teaching in a new light. I believe that by incorporating Gardner’s MI theory into our instructional approaches, we can maximize cognitive development and thus expand the Zone of Proximal Development.

The idea of teaching and learning that will allow educators to teach ahead of development, to teach for understanding, to motivate and promote the students’ creativity and imagination and encourage their personal, social, and academic growth has long been the goal of our educational system.
By joining the visionary forces of two great educators, Lev Vygotsky and Howard Gardner, we now can achieve this noble goal. By maximizing Vygotsky’s concept of the Zone of Proximal Development and utilizing Gardner’s theory of Multiple Intelligences, educators can develop a universal approach to furthering children’s abilities as we nurture their individual intelligences.

Therefore, our goal for today’s education should be to carry Vygotsky’s legacy and bring his ideas to life using Gardner’s Multiple Intelligences theory. Our goal is to expand the Zone of Proximal Development in order to maximize individual potential. The way to do this is to recognize and understand the student’s cognitive profile, his strengths and passions, and then nurture the combination of his intelligences. This will undoubtedly yield motivation, which is the foundation of imagination and creativity. This kind of learning and teaching will thus lead the student to a higher level of cognitive development and place him on a new level of intellectual possibilities—a new plateau with the richness of the world within his reach.

NOTES

2. Ibid.
7. Vygotsky, qtd. in Van Der Veer and Valsiner, Understanding Vygotsky, 337.
9. Ibid., 87 (emphasis added).
10. Ibid.
11. Vygotsky, qtd. in Rogoff and Wertsch, Children’s Learning, 46.
15. Gardner, Multiple Intelligences, 221.
17. See the appendix for an explanation of the intelligences.
Appendix: Howard Gardner's Multiple Intelligences

(1) Linguistic: The ability to think in words and use language effectively both orally and in writing. That of a poet or a writer (for example, Vygotsky, Tolstoy, or Shakespeare).

(2) Mathematical/Logical: The ability to think logically and use numbers. That of a scientist, a law professor, a mathematician, or a programmer (for example, Albert Einstein, Bill Gates).

(3) Musical: The ability to think musically and recognize rhythm, pitch, and melody. That of a musician (for example, Verdi, Beethoven, Tchaikovsky, Gould).

(4) Visual/Spatial: The ability to imagine spaces, form, color, line, and shape. That of a pilot, a sculptor, an architect, or a chess player (for example, Bobby Fisher, Yury Gagarin).

(5) Bodily: The ability to “think” with the body. That of a dancer or an athlete (for example, Isadora Duncan, Maya Plisetskaya).

(6) Interpersonal: The ability to understand other people; the ability to understand another person’s motivations and intentions and respond effectively. That of a teacher, a salesperson, a religious leader, a politician (for example, Anne Sullivan, Mao Tsetung, Gandhi).

(7) Intrapersonal: The ability to understand yourself. We use this type when we have to make decisions about where to live, whom to live with, what work to pursue, what to do if we have to change arrears, spouses, countries, etc.

(8) Naturalistic: The ability to make fine discriminations in the world of nature and to recognize and classify plants, minerals, and animals in nature (for example, Charles Darwin).