

Zones of Proximal Development: Mundane and Magical

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Abstract

This discussion builds on Vygotsky's description of the ZPD as a "collective way of working together" to present a more radical, complex and broadly practical ZPD than that of most contemporary research. Presented as both magical and mundane, this ZPD is seen as an activity, not as a zone. It refers to what people create together, rather than to a characteristic of individuals. It is a way to understand the unity of learning and development, rather than learning isolated from development. More specifically, it is seeing and relating to ZPDs as performance stages created by groupings of people who develop along with their stage-making, rather than as a means of assistance to move a child along to the next stage of development. The social-cultural practice of ZPD activity—simultaneously creating the zone and what is created—is deconstructed in both Vygotsky's writings and *the tool-and-result methodology* of the author. Illustrations of educational projects and practices utilizing this approach from different countries are discussed.

Introduction

If the concept of the zone of proximal development (ZPD) is familiar to you, chances are you associate it with scaffolding or other ways of supporting someone learning something through the assistance of another person who has expertise in that something. You are likely to understand successful educational practices to be ones in which a more capable "other" guides someone less capable through a learning process in which the interaction between the more and less capable is of utmost importance. And that such interaction is premised on knowing the difference (the ZPD) between what the less capable can do "alone" and with help. This is, more or less, the way the ZPD is described in textbooks and the vast majority of research studies.

My goal in this chapter is to show you a more radical, complex and broadly practical ZPD than that one. "My ZPD" stems from two sources. First, from a refusal to

pigeonhole its discoverer, Lev Vygotsky, as a learning theorist or cognitive psychologist and, likewise, to not reduce his discovery to an instrumental tool applicable to the school-like acquisition of knowledge and skills. Second, “my ZPD” stems from what is now forty years of practical, on-the-ground educational, therapeutic and cultural community building work I have been involved in—always in conjunction with reading and re-reading the volumes of Vygotsky’s writing that are translated into English. This way of working is not putting Vygotsky’s theory into practice. It is, instead, an attempt to actualize his call for a non-linear, non-temporal relationship between theory and practice, which he expressed in a new conception of method. Vygotsky called it a “search for method” and this is what I have tried, with my colleagues, to creatively imitate all these years.

The search for method becomes one of the most important problems of the entire enterprise of understanding the uniquely human forms of psychological activity. In this case, the method is simultaneously prerequisite and product, the tool and the result of the study (Vygotsky, 1978, p. 65).

Vygotsky is here asserting the uniqueness of human psychological activity, and recognizes that we will not be able to understand such activity without a new method designed specifically for that task. This is a radical departure from the scientific paradigm in which human beings and non-humans are investigated in the same manner—namely, with method being a tool that is used to yield results. For Vygotsky, understanding human life requires that we create a method different *in kind* from the existing instrumental one. Most important, the activity of doing so (“the search for method”) will generate both tool and result *at the same time and as continuous process*. This unity—method as tool and result—is something to be practiced, not applied. To capture the dialectical relationship of this new conception, Fred Newman and I called this *tool-and-result methodology*, in contrast to the instrumental *tool for result methodology* of psychology, other social science and educational research (Newman & Holzman, 2013/1993). My understanding of the ZPD has emerged, in tool-and-result fashion, as part of my ongoing search for method.

It’s a ZPD, not a ZPL

The ZPD has been framed by educationalists and psychologists as a phenomenon to explain and ultimately support learning. In my view, if Vygotsky had meant the ZPD to be a feature solely of learning, he would have called it a *ZPL (zone of proximal learning)*. But he didn’t. He coined the phrase *zone of proximal development*. And he did so

because what interested him was development, specifically, the process of children's psychological development. Learning as a thing in itself was not of interest, but *learning in its relationship to development* fascinated him.

Vygotsky explored possible relationships between learning/instruction (in Russian there is one word for both—*obuchenie*) and development. He rejected the view that was prevalent in his day and remains so today—that learning follows and is dependent upon development—and was critical of teaching that was based in this belief: "Instruction would be completely unnecessary if it merely utilized what had already matured in the developmental process, if it were not itself a source of development" (Vygotsky, 1987, p. 212). Learning/instruction is a source of development, he proposed, because it "leads" development: "The only instruction which is useful in childhood is that which moves ahead of development, that which leads it" (p. 211)... "pushing it further and eliciting new formations" (p. 198). As I understand it, what Vygotsky is proposing here is a new kind of relationship between development and learning/instruction. This new relationship is one in which development and learning are not temporally related, but are in a dialectical relationship of unity or totality, with learning "leading." Activating or bringing into existence this unity (learning-leading-development) is a qualitative transformation of the whole child (Newman and Holzman, 2013/1993; Holzman, 1997).

Here is where the ZPD comes in or, more precisely, the ZPD as I have come to understand it. Vygotsky used the phrase in different ways at different times in his writings and lectures and, as Glick (2004) has noted, different translations of his work complicate the matter even further. By far the most common understanding of the ZPD is that it is a characteristic or property of an individual child. This understanding is on display in Vygotsky's discussion of the ZPD in the context of general abilities testing among children entering school and has stimulated considerable research in the domain of 'dynamic assessment' (see chapters by Kozulin, Poehner, and others, this volume). Depictions of the ZPD as a property of individuals can be found in passages from Vygotsky's writing such as the following:

The psychologist must not limit his analysis to functions that have matured. He must consider those that are in the process of maturing. If he is to fully evaluate the state of the child's development, the psychologist must consider not only the actual level of development but *the zone of proximal development* (Vygotsky, 1987, pp. 208-9).

However, at other time, Vygotsky wrote of the ZPD as one of the ways that learning-leading-development is a social, not an individual, phenomenon. ZPDs are created through joint, cooperative activity in children's daily life, as we read in the following passage:

What we call the Zone of Proximal Development ... is 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 guidance or in collaboration with more capable peers (Vygotsky, 1978, p. 86).

Most empirical research that studies joint activity in the ZPD looks neither at peers nor at collaboration, but rather at a child's interaction with a single, more capable individual who is most often an adult, someone who is termed "expert" in contrast to the "novice" child. This dyadic (as opposed to group, whether ensemble or collectivist) interpretation of the ZPD is also the common one given to Vygotsky's oft-quoted statement of the social nature of development:

Every function in the child's cultural development appears twice: first on the social level and later, on the individual level; first *between* people (*interpsychological*), and then *inside* the child (*intrapsychological*). This applies equally to all voluntary attention, to logical memory, and to the formation of concepts. All the higher mental functions originate as actual relations between people (Vygotsky, 1978, p. 57).

There is nothing here that should limit "between people" to a child and one other person. Moreover, other passages in Vygotsky's writings directly emphasize that the socialness of learning-leading-development is collective, and that what is key to the ZPD is that people are doing something together. For example, "Learning awakens a variety of internal developmental processes that are able to operate only when the child is interacting with people in his environment and in cooperation with his peers" (Vygotsky, 1978, p. 90).

Vygotsky also emphasized the collective activity of the ZPD in his writings on children with "special needs" such as those with retardation, deafness or blindness (Vygotsky, 1993; 2004). He believed that such children were held back primarily due to the secondary stigma they were heir to, that of being related to as limited, less than and deficient. They should not be written off, remediated or segregated and placed in schools with only children like themselves, because none of these practices allow for learning-leading-development. Development (qualitative transformation) is a collective accomplishment—a "collective form of 'working together'" he called it in an essay entitled, "The Collective as a Factor in the Development of the Abnormal Child" (Vygotsky, 2004, p. 202). In this same essay he characterized the social, or interpsychological, level of development as "a function of collective behavior, as a form

of cooperation or cooperative activity” (p. 202).

I read Vygotsky here as saying that the *ZPD is actively and socially created*, rather than it being an entity existing in psychological-cultural-social space and time. For me, the ZPD is more usefully understood as a process rather than as a spatio-temporal entity, and as an activity rather than a zone, space or distance. In my own work, which I discuss later, I approach the ZPD as an *activity*. ZPD activity is at once the socio-cultural activity of people together creating the “zone” (the learning-leading-development environment) as well as what is created (learning-leading-development). The method, in this case, is simultaneously tool-and-result.

How are ZPDS Created?

What kind of socio-cultural activity produces learning-leading-development? How do social units (collectives, ensembles, groups, dyads, triads, etc.) create ZPDs? How do babbling babies and their families together create developing “language” (speakers, listeners, writers, readers, etc.)? How do human beings *become who we are not* (qualitatively transform) in all the ways that we do?

Non-Knowing Growing

Here is where the magic and the mundane enter center stage—together. Families of very young children create ZPDs without knowing *that* they are creating them. They create ZPDs without knowing *how* to create them. Indeed, when we are very little, we do not even know that knowing is something to do, let alone aspire to. And yet, we do become knowers. Every day, children become epistemologists without employing epistemology. Vygotsky himself recognized this mundane and magical characteristic of human life. He identified “the child’s potential to move from what he is able to do to what he is not” as the central characteristic and creative activity of learning-leading-development (Vygotsky, 1987, p. 212).

The question of how children, as well as adults, can move from what they are able to do to what they are not raises, for me, the broader question, *how can we become what we’re not?* It challenged me to think long and hard about what I learned as a developmental psychologist and psycholinguist. It encouraged me to study philosophy, especially philosophy of science and language and the philosophical writings of Marx (Marx, 1967; 1974; Marx and Engels, 1974). It helped me to make a shift from the prevailing everyday, scientific and educational ways of thinking and seeing people and environments. This entailed a shift from understanding the world as products to processes; from linearity and chronology to dialectics; from parts to wholes. It was also shift from understanding people as isolated, self-contained individuals to people as socio-

cultural actors and creators of our lives, and a shift from understanding development and learning as characteristics and behaviors of individuals to transformative activities of social ensembles.

These shifts have led me to the understanding that we are able to become who we are not because we *always* are who we are not. People are not merely who they are at a particular moment (developmental level, age, identity, etc.). People are simultaneously and dialectically who they are (which includes who they were before this moment) and who they are becoming or can become. This challenges Western logic (which underlies social science and educational practice) in which something is either A or not A—it cannot be both. Most social institutions (including schools, science, the media and politics) work overtime to socialize people to the “truth” that “everything is what it is and not another thing” (a statement supposedly made 300 years ago by the British theologian and philosopher Bishop Butler and oft repeated).

And yet everyone who spends time with infants, babies or toddlers defies the A not A, either-or rule. As soon as infants are born, they enter a physical-social-cultural world in which, barring extreme devastation or deprivation, the people in their lives immediately begin relating to them as simultaneously who they are and who they are not/who they are becoming, i.e., as helpless infants *and* as members of and participants in the family, community, culture and the world. Caregivers and relatives carry on conversations with infants, babies and toddlers before the little ones know how to talk, they play games with them before they know what a game is or its rules, they listen intently to the sounds they make and respond to them. I suspect that if asked to stop and think about what they are doing, nearly all parents and others would say that they know that linguistic understanding is not taking place and offer reasons that they do it anyway. What is magical is that they do it: in their everyday lives they suspend the everyday life rule of either-or and relate dialectically to little children. What is magically mundane and mundanely magical is that this is precisely *how* linguistic understanding becomes possible. Learning/instruction leads development because and as people are related to as simultaneously who they are and not who they are. It is a beautiful thing.

Playing and Performing

Neither Vygotsky’s ZPD nor mine is complete yet. One element of the dialectical equation is missing—play. For just as learning/instruction is a source of (i.e. leads) development in the ZPD, so too is play:

Though the play-development relationship can be compared to the instruction-development relationship, play provides a much wider background for changes in needs and consciousness. Action in the

imaginative sphere, in an imaginary situation, the creation of voluntary intentions, and the formation of real-life plans and volitional motives - all appear in play and make it the highest level of preschool development. (Vygotsky, 1978, pp. 102-3).

For Vygotsky, play creates an imaginary situation, and even the most imaginative, fantastical play contains rules. What makes play developmental is the interplay of imagination and rules. Imagination frees us; rules constrain us. Creating an imaginary situation frees the players from situational constraints and, at the same time, imposes constraints (rules) of its own. Vygotsky noted that in free or pretend play, the rules are of a special kind. They do not exist prior to playing, but come into existence at the same time and through the creation of the imaginary situation. In Vygotsky's words, they are "not rules that are formulated in advance and that change during the course of the game but ones that stem from an imaginary situation" (1978, p. 95). That is, they are rules created *in the activity of playing*.

For example, when a young child takes a pencil and makes horse-like movements with it, s/he is simultaneously creating this imaginary situation and the "rules" of the play (keep jumping, make whinnying sounds, don't write on the paper). When children are playing Mommy and baby, the new meaning that the imaginary situation creates also creates the "rules" of the play (for example, the ways that Mommy and baby relate to each other "in character"). In these examples, everything—the children who are playing, the pencil, horse, Mommy and baby—are what/who they are and, at the same time, other than what/who they are. Here is how Vygotsky captured the dialectical "otherness" and "becomingness" of the ZPD created in children's play: "In play a child always behaves beyond his average age, above his daily behavior; in play it is as though he were a head taller than himself" (1978, p. 102).

The "head taller" metaphor brings us back to the question I raised earlier, "How can we become who we are not?" and my proposal that the answer lies in the human capacity to do things without knowing either how or that we are doing them. Vygotsky was well aware that the opposite of the "know, then do" adage is key to development in early childhood. His identification of free play as playing without pre-existing rules just discussed is a description of doing without knowing how. Additionally, he noted that young children actively participate in their development without knowing that they are doing it. As he put it, "...before a child has acquired grammatical and written language, he knows how to do things but does not know that he knows.... In play a child spontaneously makes use of his ability to separate meaning from an object without knowing that he is doing it, just as he does not know he is speaking in prose but talks without paying attention to the words" (Vygotsky, 1978, p. 99).

The similarity Vygotsky is pointing to here between speaking in prose and play is

important, because it suggests continuity between learning/instruction and play. It is the case that Vygotsky regarded play as the leading activity of development during early childhood, eventually being replaced by other leading activities, namely, learning/instruction during schooling and labor during adulthood. Of course, this in itself does not imply that play ceases to be a driver of development beyond childhood. Moreover, Vygotsky's concentration on learning/instruction in formal educational settings may have led him to overlook the striking similarities between play and non-school learning and, in particular, the continuity of ZPDs of both learning/instruction and play. Indeed, those of us who have pursued this similarity in studying early childhood, middle childhood, adolescence and adulthood have come to appreciate that *all learning-leading-development is play* in the Vygotskian sense of playing without pre-existing rules.

Following this direction, I suggest that we can substitute the word performance for play and not lose any of the magic or mundaneness of ZPDs. We might even gain some, for performance evokes the magic of the theatre—its deliberate invitation to imagine and be captivated by people on stage being other than who they are, to play along with the players. Just as children go “beyond” their normal behavior as if “a head taller” in play, so too, do performers on stage. Performance in early childhood, as discussed above, is not in the performers' awareness. Adults and little children together create the “stage” and perform on it without any awareness that they are performing. Nevertheless, the countless “conversations” like this one: “Mama, baba, babababa”; “Yes, sweetie, that's a little baby doll” *both create and are* the scenes in an ongoing performance of “The Life of the Developing Baby.” In contrast, performers on the theatrical stage are aware that they are performing and so is the audience. This kind of deliberate performance highlights, experientially, the being-becoming dialectical “space” in which we live and in which development is always potential. This is the case both for scripted and improvisational theatre. While there are differences, to be sure, between these two forms of theatre, the being-becoming dialectic is at play in both.

Studying performances in early childhood and on theatrical stages, with an effort to understand what the casts of characters are doing as they build different stages and scenes, illuminates how the capacity to create new performances of ourselves as individuals and groupings (classroom, family, work team, community, etc.) is essential to learning and development at any age. Put another way, if you look at ZPDs through the lens of performance, you might see stages and scenes of a play rather than scaffolds and ladders. As Shakespeare said, “All the world's a stage...”

The language of theatrical performance (stages, scenes, characters, etc.) has helped me greatly in my work to understand the magic of people creating ZPDs and support people to create them everywhere. I think it has highlighted what had been hidden from view. Speaking in philosophical terms, theatrical performance and its

language allowed me to see performance not merely socio-culturally, but ontologically, as a characteristic and activity that human beings engage in in the most mundane of situations.

Imitation and Completion

Learning, development and play were not the only socio-cultural activities Vygotsky explored in his search for method to understand human life. He also delved deeply into the relationship between thinking and speaking, and the role that imitation plays in child development.

Vygotsky examined the activity of children's imitation and reviewed the ways it was understood because, as he put it, "A full understanding of the concept of the zone of proximal development must result in a reevaluation of the role of imitation in learning" (1978, p. 87). As he had done with existing understandings of learning and development, he found fault with the mechanistic view of imitation that he observed was "rooted in traditional psychology, as well as in everyday consciousness," and in which "the child can imitate anything" and that "what I can do by imitating says nothing about my own mind" (1987, p. 209). Children are not like parrots. They do not imitate anything and everything. They imitate only those things in their environment and relationships that are just beyond them, developmentally speaking. Children *creatively imitate* others in their daily interactions—saying what someone else says, moving to music, picking up a book and "reading," "talking" on a smart phone, and so on. In other words, ZPD activity consists of imitation, a key element in "The Performance of Being a Head Taller." Or, in Vygotsky's words, "Development based on collaboration and imitation is the source of all specifically human characteristics of consciousness that develop in a child" (Vygotsky, 1987, p. 210). It is how children are capable of doing so much in collective activity.

The partner to imitation in this ongoing developmental performance is *completion*. This is the Vygotskian term for the relationship between thinking and speaking, a topic that permeated his lecturing and writing. What is that relationship? Conventional wisdom today is pretty much the same as it was back in Vygotsky's day—words express our thoughts and feelings. This expressionist or pictorial view of language has been discredited by philosophers of language throughout the 20th century and by social constructionists and other postmodernists into this century. Yet it prevails. Vygotsky rejected this view in favor of a dialectical one. Speaking, he believed, is not the outward expression of thinking. It is, rather, part of a unified, transformative process that entails thinking-speaking. He stated this most clearly in the following two passages from *Thinking and Speech*:

The relationship of thought to word is not a thing but a process, a movement from thought to word and from word to thought ... Thought is not expressed but completed in the word. We can, therefore, speak of the establishment (i.e., the unity of being and nonbeing) of thought in the word. Any thought strives to unify, to establish a relationship between one thing and another. Any thought has movement. It unfolds (Vygotsky, 1987, p. 250).

The structure of speech is not simply the mirror image of the structure of thought. It cannot, therefore, be placed on thought like clothes off a rack. Speech does not merely serve as the expression of developed thought. Thought is restructured as it is transformed into speech. It is not expressed but completed in the word (Vygotsky, 1987, p.251).

There are, then, not two psychological behaviors—the private one of thinking and the social one of speaking. There is, according to Vygotsky, just one human socio-cultural activity: speaking-thinking, a dialectical unity in which speaking *completes* thinking.

Understanding how completion is part of creating ZPDs requires expanding Vygotsky's speaking-thinking unity beyond the individual. This is what Newman and I have done in our efforts to understand the Vygotskian influences on our work (Holzman, 2016/2009; Newman and Holzman, 2006/1996; 2013/1993). We reasoned as follows. If speaking is the completing of thinking, if the process is continuously creative in socio-cultural space, then the "completer" does not have to be the one who is doing the thinking. Others can complete for us. In fact, I have come to believe that they must. How would children be able to engage in language play, create conversation, perform as speakers before they know language if thinking-speaking were not a continuously socially completive activity in which others were completing for them?

The interplay of imitation and completion can be seen in the conversations that very young children and their speaking caregivers create. Here are two typical examples:

1.

Child: Bowwow.

Adult: Do you see a bowwow? Is that a little doggy?

Child: Ba. Ba.

Adult: Oh, I see! Bowwow's playing with a ball.

Child: Bowwow baba.

2.

Child: Coo-coo!

Adult: Want a cookie?

Child: Mama.

Adult: Yes, Mommy's giving you a cookie.

Child: Mama cookie.

Creative imitation and completion create the ensemble performance of conversation. The baby's babbling (rudimentary speech) is a creative imitation of the adult's speech. The adult completes the baby in Vygotsky's dialectical transformative sense. And so it goes, throughout the days of baby and toddlerhood, when the people in our lives are most supportive of us doing what we are not yet able to do, and most embracing of us as the simultaneity of who we are and who we are not. Out of this socio-cultural activity, a new speaker emerges.

The examples of child-adult talk just given are typically taken to be instances of linguistic or verbal behavior. This characterization, to me, misses the magic and mundane of what the ensemble is doing and how their activity (their performance, their language play) creates a new speaker. They are *creating meaning* in their joint activity, and this does not require knowing the meaning of the linguistic tools they are using to create, or how to use them. The meaning emerges in their activity as tool-and-result, that is, something new is created out of the instrumental (societal, tool for result) linguistic tools. As Newman and I noted,

While we cannot know what the child means when she/he imitates what is proximal to her/his development, we do know that the child almost certainly cannot mean what the adults means—e.g., what it means to mean is not the same for a novice and an expert. It follows, then, that what we know—and this is most important—is *that* the child means, because for the child meaning is not yet separated from the total activity meaning-making, as it becomes for the more fully alienated (societally adapted) adult (Newman and Holzman, 2013/1993, p. 70).

Newman and I were struck by the implications we saw in Vygotsky's characterization of imitation and completion as ZPD activity as we understood them. To us, it meant that meaning making was not merely a component of language development or the outcome of using language. It led us to see that the process of language development (becoming a languager) is not one of learning the language to make meaning. Quite the opposite. Vygotsky led us to believe that meaning-making "leads" language-making (dialectically, just as learning leads development). Engaging in language play with others, being related to as a speaker and language-maker before one is, being supported to perform as a conversationalist—all this (and, of course, the actions and relational subjectivity occurring simultaneously) is the joint activity, or ensemble performance, of the ZPD. Furthermore, such meaning-making performances are necessary to becoming a rule-governed, societal language user and language maker (Newman and Holzman,

2013/1993, pp. 112-118). This counter-intuitive characterization of language development has implications for second language (L2) teaching-learning-development, to be discussed.

Creating Stages/Performing ZPDs Everywhere

If all that has happened so far through these written pages is that I have reminded you that being human is social and cultural (with no denial of the biological; our biology “lives” in culture and society), I will be (semi-) satisfied. I think we need all the reminders we can get of our social, cultural and historical complexity and capability, given that the sources providing us with how to see and understand ourselves are, seemingly obsessively, promoting the brain as the source of and solution to everything. In such an environment, it becomes more difficult to see, appreciate and exercise our collective power to continuously create ZPDs. The extent to which I have helped you to see ZPDs as performance stages created by groupings of people who develop along with their stage-making, rather than as a means of assistance to move a child along to the next stage of development, is the extent to which I will be fully satisfied.

There is a move to performance occurring (Carlson, 2004; Friedman and Holzman, 2014; Gergen and Gergen, 2012; Schechner, 2014). It is global and multi-disciplinary. The move is being made by many, many people: those who see what people of all ages can do when they consciously perform and come to see themselves as performers; those who have come to understand development socially and dialectically and as occurring when people are related to as who they are-who they are not/who they are becoming; those who link play with theatrical performance to better understand what learning-leading-development is and how to reinitiate it; those who have been searching for ways to transform their classrooms and workplaces into communities of practice; those who have come to performance from seeing human development and community development as inexorably linked; and many more. They are performance educators, activists and researchers who work in schools, non-profits and NGOs, universities, outside of school programs, hospitals and mental health centers, prisons, consulting firms and human resource departments, refugee centers, women’s shelters, and think tanks. Many are involved in international networks and associations such as AIN (Applied Improv Network), IDEA (International Drama/Theatre in Education Association), PTW (Performing the World), and/or national and regional networks. Some of them have been directly influenced by Vygotsky and, in particular, the play and performance-based dialectical understanding of the ZPD put forth here and practiced in the many projects I have been involved in. (For history and discussion of these projects, see Holzman, 2016/2006). Others have not. I have chosen among the hundreds of them that I know to introduce you to several who work in educational settings.

As schools have evolved in the 21st century, being a good student and doing well does not require that students and teachers create, to use Vygotsky's phrase, "a collective form of working together." Despite this, and the fact that the explicit and implicit rules of education actually discourage ZPD-creating activity, many teachers and teacher educators are determined to involve students in some form of co-creation of their learning environment. They do so with the convictions that learning is a socially creative activity and that this kind of active involvement is an effective way for people to develop as learners, and with the recognition that teachers will be more effective and students more involved and do better on school learning tasks.

The ongoing work of Brazilians Fernanda Liberali and Cecelia Marghales is a case in point (<https://digitmed.wordpress.com/universities/pucsp/fernanda-liberali/>). Since 2004, these socio-cultural researchers have led LACE (Linguagem em Atividades no Contexto Escolar), a project of the Applied Linguistics Department of Pontificia Universidade Católica-São Paulo. With the overall aim of improving teaching and learning in Brazil's public and private schools, LACE created an unusual research group, one that includes all the stakeholders—administrators, teachers, and primary, middle and high school students, in addition to university faculty, graduate and undergraduate students. While there are approximately 30 core members, any specific event or meeting may include as many as 100 people across the spectrum of socio-economic status, age, gender and educational level. In 2016, a partnership with a school for the deaf added middle and high school students and their teacher/interpreters to the research group sessions. Creating such a large and diverse ZPD is an important factor of LACE as an innovative experiment in developing "a collective form of working together."

The group has been influenced by Bahktin, Friere, Vygotsky and the play and performance-based dialectical understanding of the ZPD put forth here. LACE creates environments where people play with each other and perform in new roles, creating new kinds of relationships. They have found that, with such a diverse group of people, performance and play activities, including improv exercises, break through differences of societal status and "level the playing field."

The researchers begin each session by setting the stage for a performance scene that participants are immediately incorporated into when they enter the session space. For example, during LACE's study of the concept of building friendships, one session began as a 1960's dance party. Each session ends with small groups working on developing a curriculum project to use back in their work settings and performing the project for the whole group. Everyone, young and old and formally educated and not, participates in discussions of complex theoretical and philosophical concepts, methodology, educational practices and politics.

Jaime Martinez of New York Institute of Technology has brought a Vygotskian ZPD-creating approach together with service learning to fully integrate science,

technology, engineering, arts and math (STEAM) in public schools. His initial project was to bring engineering undergraduates to elementary school classrooms. They would be the “more capable others” who created ZPDs for learning engineering, math and science with students, not by teaching them but rather by creating stages to perform together as engineers. Martinez compares what he refers to as his “tool-and-result approach” to other ways educators are working with the challenges of STEM and STEAM (Martinez, in press). Earlier (Martinez, 2011) described his performance-based pedagogy as one way to meet the challenge of integrating technology into the teaching and learning environments of inner-city elementary and middle schools and undergraduate classrooms.

Mike Askew is another educator convinced that play and performance are key to developing a socially engaged community of learners. He is former director of BEAM (Be A Mathematician), the mathematics education publisher promoting mathematics teaching and learning as challenging and enjoyable. In addition, he provides practical guidance in making math fun in his many books and workshops for teacher and parents. Askew’s work as math educator and researcher at Monash University challenges the individualist understanding of teaching, learning and subject matter knowledge from a tool-and-result perspective:

Tool-and-result presents a double challenge to the research on teacher subject knowledge: firstly that the research itself constructs objects of knowledge, and, secondly, that knowledge in classrooms emerges within ongoing discourse. Vygotsky’s theory dissolves the notion that teachers ‘carry’ a store of mathematical knowledge that they ‘apply’ in classrooms, and which mediates between the established canon of mathematical knowledge and the emergent mathematics of the classroom. (Askew, 2008, p. 30)

Askew’s work shifts attention away from concern with the amount and quality of math teachers’ knowledge and toward how they *do* mathematics, and from relating to teachers and their students as acquirers of mathematical knowledge to relating to them as members and creators of a community of mathematicians. In no way does this diminish the necessity that teachers themselves have mathematical knowledge; rather, it shifts their attention from knowledge as a product to the *process* of creating environments for the learning/teaching of mathematics through the development of a community of mathematicians.

Turning to L2 learning and teaching, the move to performance is evident. Drama-based foreign language learning, both in regular language classrooms and specially designed target language theatre workshop courses, is growing as an educational practice

and subject for research inquiry (see, for example, Belliveau and Kim, 2013; Brunetto, 2015; Lutzker, 2007; Ryan and Marini-Maio, 2011; Tschurtschenthaler, 2013; Vetere, to appear). So, too, is the use of improv, which in addition to being incorporated into drama and theatre curricula and methods, is the topic of conversation on blogs, guides and manuals available on line, and the practice of increasing numbers of independently organized workshops led by applied improvisers. (See <http://larryferlazzo.edublogs.org/2012/07/23/the-best-resources-on-using-improvisation-in-the-eslefllell-classroom/>.)

Brunetto's *Performing the Art of Language Learning* (2015) is of particular interest to me. A narrative text on target-language theatre making, the book weaves the literature on performance, L2 learning and SCT in and out of students' reflections on their experience as performers, meaning makers and language makers and users. While Brunetto does not speak of ZPDs, with my Vygotskian lens I see them throughout the book.

Russell Cross is a researcher whose work in L2 pedagogy and teacher education is inspired by the play and performance-based dialectical understanding of the ZPD put forth here. In Cross (2012) he analyzed data from a content and language integrated learning (CLIL) program for Year 10 Japanese and geography in an Australian school. He attributes the success of the program to the fact that the integration of language and content "affords a space for creative pedagogical engagement in terms of learners making their own creative choices on what language to use, and how it could be used, to facilitate the learning of both language and content" (pp. 431-432). The students were supported to work together and did what they did not yet know how to do; despite not knowing Japanese or geography, they performed, together and with their teachers, beyond their current level, or "a head taller." Similar to Askew's concern with knowledge of mathematics as a thing in itself, Cross is wary of knowledge divorced from collective creative activity: "The ultimate goal of language learning—communicative competence... develops not from being 'taught' a knowledge of language (i.e., meaning), but from being engaged in creating understanding from the word and its 'sense' (p. 435). What occurred in the classroom, according to Cross, was that teachers and students created new conceptual understandings about content in geography *and* the language through which those understandings are being made, simultaneously. Harkening back to my earlier discussion of early childhood language development as the tool-and-result activity of taking the societal tools of language and refashioning them to make meaning that wasn't there before, Cross here speaks of the activity in this classroom as the refashioning of the societal tools to create something that did not exist before.

A Playful Conclusion

My story of a more radical, complex and broadly practical ZPD—an activity rather than a zone, what people create together rather than a characteristic of individuals, a way to understand learning and development rather than learning, a wondrous example of human mundane creativity and the magic of non-knowing growing—has been a difficult one to tell. This is because it is a story in which continuous process is the main character, performing on a world stage of products. In such a world, simultaneity is hard to see and experience, and dialectics is nearly impossible to grok. I have used invented terms, such as tool-and-result, learning-leading-development, being who we are-not who we are, and speaking-completing-thinking, as shorthands for the simultaneity and dialectical unity of process and product. But the use of language to reflect reality fails in this case, as it always does.

I have chosen to end, therefore, not with sharing a quote from the “real” Vygotsky, as I have done often throughout this discussion. Instead, I quote an actor performing Vygotsky. The scene is from a play written by Newman in which several pairs of brilliant thinkers meet “in history” on the eve of World War 1 (Newman, 1997).

In the scene (Newman, 1997, p. 648), Piaget and Vygotsky are talking together to discover what each other means by “zones” and “stages.” They have just finished tap dancing together. Vygotsky says: “What have we just done? Let us study the relationship between what we have just done and the characterization of what we have just done.” Piaget responds: “My understanding is that tapping begins in the feet. The feet move first and the rest of the body follows.” To which Vygotsky replies: “Aha! To me nothing moves first. Everything moves at once; the body—not just the feet—taps. Our obsession with stages—with what comes first—distorts history where there is no beginning and no end.”

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Further Readings

- Connery, M. C., John-Steiner, V. & Marjanovic-Shane, A. (eds.) (2010). *Vygotsky and creativity: A cultural-historical approach to play, meaning making, and the arts*. New York: Peter Lang.

Psychologists, artists and educators present research and practice in a variety of learning environments through the lens of Vygotsky's cultural historical theory, illustrating children's and adults' symbolic engagement in play, multi-modal meaning making and the arts.

- Holzman, L. (2016). *Vygotsky at Work and Play* (second edition). London and New York: Routledge.

An accessible, practical-philosophical portrayal of a unique performance-based methodology of development and learning that draws upon a fresh reading of Vygotsky.

Newman, F. and Holzman, L. (1993). *Lev Vygotsky: Revolutionary Scientist* (classic edition). London and New York: Psychology Press

The authors present their interpretation of Vygotsky's life and work as a scientific and political revolutionary whose discoveries have become the basis for new understandings and practices of what it means to be human, to learn and develop, and to be revolutionary.