

Editorial:

Vygotsky and Science Education

Michael Kamen
Southwestern University

Obuchenie, a Russian word with no direct English translation, meaning both teaching and learning became one of a number of terms and concepts I have recently been grappling with. Luis Moll (1990) described *Obuchenie* as “be[ing] used for both the activities of students and teachers, implicating a double sided process of teaching/learning, a mutual transformation of teacher and student.” But seeing this notion implemented in a real school in a small rural Russian city gave me access to its meaning more fully.

I had an opportunity to attend a week long “summer school” in Belaya Kalitva, Russia (an overnight train ride south of Moscow). This institute/workshop/conference was organized by the Vygotsky Institute at the Russian State University for the Humanities and led by the Institute’s director, Elena Kravtsova (Lev Vygotsky’s granddaughter). It was hosted at an elementary school that is one of a number of *Golden Key* schools in Russia. These schools boast an organizational structure, curriculum, and pedagogy based on the work of Vygotsky. In addition to attending presentations from both Russian Vygotskian scholars and an international group of participants we were fortunate to observe students at the elementary school during the week-long summer school.

The experience was transformational for me. I have drawn from Vygotsky for many years in my own work for scholarship, pedagogy, and instructional methods I share with beginning teachers to support their efforts to become good science teachers. Yet this experience quickly led me to confront my own understanding of concepts such as the *Zone of Proximal Development* and introduced me to deeper meanings as well other provocative ideas.

The ongoing scholarship of Vygotsky’s (and his peers and followers) theories and research, which may also be found under the rubrics of *Cultural-Historical Psychology* and *Activity Theory*, continues to hold my attention as a powerful theoretical frame to inform science education thought and practice. I am intrigued by Lois Holzman’s (1997) assertion that a purely epistemological theory of learning provokes a limited view of development and in turn supports curricula and pedagogical decisions that actually limits a child’s development and learning. Her argument suggests that if we limit our theoretical and research perspective to *knowledge* we are missing important aspects of development. The question becomes how we can support a child’s mediation with their *cultural-historical* world through *activity* where learning is leading development.

These ideas are just touching the surface of exciting scholarly endeavors that range from research on applying Vygotskian theory to science education to new

translations of Vygotsky's *unedited* works. To push the understanding of Vygotsky's work (and those who continue his scholarship) in relation to science education I have decided to dedicate the first-ever *special issue* of the Electronic Journal of Science Education to Lev Vygotsky. My friend, science educator, and Vygotskian scholar, Colette Murphy from the Queens University in Belfast, Ireland will serve as co-editor of this issue. We invite manuscripts relating or applying Vygotskian theory and research, cultural-historical (sociocultural) theory, and activity theory to science education/science teacher education issues from early childhood through to university level, including informal science and environmental education. Manuscripts reporting research, presenting theory, and/or arguing innovative perspectives will be considered for publication. See call for papers on the EJSE website for submission information. The deadline for submission is September 30, 2010.

References

- Holzman, L. (1997). *Schools for Growth: Radical alternatives to current educational models*. Mahwah, NJ: Lawrence Erlbaum Associates, Inc
- Moll, Luis C. (1990). Introduction. In Luis C. Moll (Ed.), *Vygotsky and education: instructional implications and applications of Sociocultural Psychology* (p. 24). Cambridge, UK: Cambridge University Press.