

Comment

Dialogue in education

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The term “dialogue” refers to people conversing or talking with one another. Researchers and practitioners in the education field who hold a sociocultural perspective on intellectual development believe that “talking” plays a significant role in learning. This perspective is grounded in the work of Lev Vygotsky, who proposed that human development occurs on two levels, first socially (intermental) and then psychologically (intramental).¹ “Central to Vygotsky’s theory is the idea that children’s participation in cultural activities with the guidance of others allows children to ‘internalize’ their community’s tools for thinking” (note 7, page 682 quotes in original). Thus, education is a “co-construction of knowledge”² whereby more knowledgeable participants (experts, teachers, facilitators) help those less knowledgeable (novices, students, learners) to understand the activity and the constituent actions and artifacts by involving them as fully as possible while providing help and guidance with those parts that the learners cannot yet manage on their own. Furthermore, those more expert work within the learner’s zone of proximal development: “an essential feature of learning is that it creates the zone of proximal development; that is, 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” (note 1, page 90).

This process of co-construction is discursive, with language serving as a negotiating medium that connects humans with the world of objects and other people. In science education, classroom researchers proposed that students should become “fluent speakers of science”;³ that science teachers should help students make sense of the talk which surrounds them, and relate it to their existing ideas and ways of thinking;⁴ and that students’ reasoning abilities and scientific understanding can be advanced through improvement in their use of language.⁵ Comparatively, research on learning science outside of schools, such as in museums,⁶ is not as extensive. Nonetheless, educational and psychological researchers recognize the social nature of such learning environments; for instance, family visits on holiday or adult peers on a social outing. These investigations reveal the learning that possibly take place in museums by examining the conversations in which people engage (see, for example, notes 8 and 9). They are premised on the idea that “language is how experience becomes knowledge” (note 8, page 139).

Experiences in museums are multivariate; that is, —“for each museum experience there are multiple influences and multiple outcomes” (note 10, page 4). Museums are places where socio-historical, scientific, and artistic knowledge and objects are preserved, studied, displayed, and communicated. They are, as well, social places where people gather to experience, explore, and extend their understanding and appreciation of this knowledge. Thus, conversations are a naturally occurring process that researchers and educators use as indicators of the meaning, and hence the learning, that people may gain from their visits to museums. “Meaning emerges in the interplay between individuals acting in social contexts and the mediators – tools, talk, signs, and symbols systems – that are employed in those contexts” (note 11, page 4). Put differently, human thinking is shaped by the social activities, using the tools—especially the language—invented by its culture, which are temporally and geographically influenced.

Notes and references

¹ L. Vygotsky, *Mind in society: The development of higher psychological processes*, Cambridge, MA, Harvard University Press (1978).

- ² G. Wells, *Dialogic inquiry: Towards a sociocultural practice and theory of education*, New York, Cambridge University Press (1999).
- ³ J.L. Lemke, *Talking science: Language, learning, and values*, Westport, CT: Ablex Publishing (1990).
- ⁴ J. Leach and P. Scott, *The demands of learning science concepts: Issues of theory and practice*, *School Science Review* **76** (1995) 47.
- ⁵ N. Mercer, L. Dawes, R. Wegerif and C. Sams, *Reasoning as a scientist: Ways of helping children to use language to learn science*, *British Educational Research Journal* **30** (2004) 359.
- ⁶ I use the International Council of Museums' definition of "museum" (ICOM, 1989) as a "non-profit, permanent institution in the service of society and its development, open to the public, which acquires, conserves, researches, communicates and exhibits the tangible and intangible heritage of humanity and its environment for the purposes of education, study and enjoyment." I specifically focus on museums within the domain of science, such as natural history museums, nature centers, science centers, and botanical gardens.
- ⁷ B. Rogoff, *Cognition as a collaborative process*, in D. Kuhn & R. S. Siegler (Eds.), *Cognition, perception and language: Handbook of child psychology*, 5th ed., Vol. 2, New York, John Wiley & Sons (1998).
- ⁸ D. Ash, *Dialogic inquiry in life science conversations of family groups in a museum*, *Journal of Research in Science Teaching* **40** (2003) 138.
- ⁹ J.M. Hohenstein and L.U. Tran, *The use of questions in exhibit labels to generate explanatory conversation among science museum visitors*, *International Journal of Science Education*, **29** (2007).
- ¹⁰ G. Leinhardt and K. Crowley, *Museum learning as conversational elaboration: A proposal to capture, code, and analyze museum talk [Electronic Version]*, from <http://museumlearning.com/paperresearch.html> (1998).
- ¹¹ L. Schauble, G. Leinhardt and L.M.W. Martin, *A framework for organizing a cumulative research agenda in informal learning contexts*, *Journal of Museum Education*, **22** (1997) 3.
- ¹² International Council of Museums. (1989, August 2007). ICOM Statutes. 16th General Assembly of ICOM. 2002, from icom.museum/statutes.html#3

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