Art Education and Constructivism: A Compatible, Natural Fit

Joanna Black

What does *constructivism* really mean? It's an elusive word having several different connotations for art educators in particular. Those familiar with early twentieth century Russian art from World War One to the early 1920's will be familiar with constructivism as an art movement led by such artists as Vladimir Tatlin (1885-1953), Alexander Rodchenko (1891-1956), and filmmaker Dziga Vertov (1896-1954) who believed in art for utilitarian rather than for spiritual purposes. Science and technology inspired these innovators, but the movement was short-lived due to the political upheavals affecting Russian artists of the period (Janson, 1977; Sturken & Cartwright, 2002; Traub & Lipkin, 2004).

In this article, however, I will be discussing a rather different concept of constructivism. Within education, *constructivism* is a term that has been promoted by a number of seminal thinkers who have had an increasingly critical impact upon the field. Constructivism has been used to describe how teachers teach and how learners learn; it has also been linked to specific art programming in certain schools. In a recent article, Walling (2001) discusses five key influences on art education which will have a pronounced influence how art will be taught in the future. One of these five influences, constructivism, provides the focus of this article.

Jerome Bruner and Paulo Freire have been identified by some researchers as key individuals in the development of educational constructivism as we know it today (Fogarty, 1999; Milbrandt, Felts, Richards, & Abghari, 2004). Other researchers contend that John Dewey, Jean Piaget, and Lev Vygotsky have played more critical roles in the development of this theory (Abdal-Haqq, 1998; Freedman, 2003; Fogarty, 1999; Kozma, 2003; Prater, 2001). It is the work of these education theorists that I will highlight.

DEWEY, PIAGET, & VYGOTSKY

John Dewey is considered to be the forefather of constructivism. Freedman (2003) points to the roots of constructivism in Dewey's pragmatic approach to bringing everyday life experiences into the classroom and making community ventures a part of the everyday curriculum. Dewey coined the term *directed living* in which learners participate in hands-on workshops, developing skills and knowledge by means of experiences and resources provided by teachers. Particularly important for Dewey was the provision of concrete situations in authentic, practical learning situations. Students acquired and expressed their knowledge through collaboration and creativity. Dewey believed that knowledge was derived from action and independent thinking. Learners had to be committed to the learning process and that commitment arose from learning experiences that were personally meaningful and significant to the students. Dewey believed that knowledge was acquired in classes where a community of learners shaped and developed significant learning environments together. Much of Dewey's educational approaches are accepted today as common practice;

but in the early to mid-1900's, when his ideas were first disseminated to the public, they were considered radical.

Piaget's work was instrumental in shaping constructivist theory through his research on *genetic epistemology,* the study of knowledge acquisition and development in children. He broke down learning into four steps and identified the building of cognitive structures called *schemes* or *schema*. These are created by patterns of skill acquisition and knowledge development that connect to specific acts of intelligence. Piaget analyzed the ways in which these schemes build upon one another and work in progression with each structure, superseding and building upon the one before it.

Further developing this theory, Piaget looked at the process of what he termed *adaptation*, identifying ways in which people transfer and modify developed cognitive structures. *Adaptation* is comprised of both *assimilation* and *accommodation,* two sides of the spectrum. For Piaget, assimilation is the application of acquired pre-existing knowledge and skill development to different learning situations. He further identified the process of accommodation in which people change learned cognitive structures to adapt to new learning contexts and situations. Learners must constantly modify schemes that they develop to align with new environments. Papert (1999) pinpointed Piaget's influence, stating that in education Piaget "*has been revered by generations of teachers inspired by the belief that children are not empty vessels to be filled with knowledge (as traditional pedagogical theory had it) but active builders of knowledge — little scientists who are constantly creating and testing their own theories of the world. And though he may not be as famous as Sigmund Freud or even B.F. Skinner, his contribution to psychology may be longer lasting. As computers and the Internet give children greater autonomy to explore ever larger digital worlds, the ideas he pioneered become ever more relevant*" (p. 2).

Vygotsky concluded that children construct their own knowledge by forming new mental representations rather than reproducing knowledge fed to them.

Interestingly enough, even though Piaget and Vygotsy had similar ideas, Vygotsky had only read Piaget's work shortly before he met his untimely death at age 37 due to the censorship of Vygotsky's works during Stalin's control and Russia's cold war era (Davis Films, 1994). Like Piaget, Vygotsky concluded that children construct their own knowledge by forming new mental representations rather than reproducing knowledge fed to them. While Piaget focused on the individual learner, Vygotsky placed much more emphasis on the learning process as a social act involving more than one person.

According to Lefrancois (1994), Vygotsky believed that learning is developed through socialization first and foremost. He had three fundamental themes that applied to education: culture, language, and what Vygotsky terms the *zone of proximal growth or development*. Culture is defined by human beings' capacity to use tools and symbols. According to Vygotsky, these tools and symbols differentiate us from animals and, as a result of their usage, humans create highly developed cultures that become extremely influential in the determination of what we learn and the skills we need to develop. Higher mental functions are also developed through the impact of culture. This leads us to his second theory that language development is developed through the impact of culture and is instrumental in children's mental development.

We are not as accustomed to evaluating a child's performance based on assistance from his or her peers, children at other developmental levels, adults who guide and help students, or from experts in the field.

It is the last theme, the *zone of proximal growth or development (ZPD)* which is most significant. The zone of proximal growth or development is the comparison between, on the one hand, the developmental level of a child through the examination of independent problem-solving called the *level of independent performance* versus, on the other hand, the potential problem-solving capabilities a learner has when guided by more competent peers or an adult known as the *level of assisted performance*.

This social interaction is key to understanding Vygotsky's theory. In simpler terms, educators in our Western culture often examine a child's independent performance by utilizing standardized testing and/or marking portfolios done by the child independently. This method of evaluation indicates the best the child can do individually. We are not as accustomed to evaluating a child's performance based on assistance from his or her peers, children at other developmental levels, adults who guide and help students, or from experts in the field. Nor are we familiar with observing the difference between individual test results and the results after students have been helped from those who are more knowledgeable. Gallant (2004) notes the importance of educators focusing on the zone of proximal development writing: "[a] *child's actual developmental level indicates a child's level of mental development at a particular time. It indicates the functions that have already matured in the child. A child's ZPD (zone of proximal development) defines those functions that have not matured yet, but are in the process of maturing and developing. A child's ZPD permits us to outline the child's immediate future and his overall dynamic state of development.*"

The ZPD is constantly shifting as the child develops new mental concepts and new skill levels. According to Vygotsky, children should be evaluated on the highest level or ZPD and be challenged by activities designed just beyond their individual level of independent performance. Vygotsky's objective was to foster independent, self-regulating learners "*who could work with others to use the lessons of the past to push the envelope of the present. Understanding the zone of proximal development expands the ways teachers can guide and influence a child's active learning*" (Davidson Films, 1994).

OTHER CATEGORIES OF CONSTRUCTIVISM

The idea of constructivism can be broken down into sub-categories. One of these, *social constructivism*, reflects Vygotsy's emphasis on the instrumental importance social interaction plays in affecting and shaping the individual learner. Another category *psychological constructivism* reflects Piaget's emphasis upon the educational development of the individual child supporting his/her interests and needs. In fact, there are numerous subcategories of constructivist theory such as *emancipatory constructivism* and *radical constructivism* which extend beyond this article; readers who wish to pursue these are directed to the following texts: Abdal-Haqq, 1998; Gregory, 1995, 1997; Richardson, 1998; Vanderstraeten & Biesta, 2004.

What Dewey, Vygotsky, and Piaget have in common is the belief that people learn by internalizing knowledge and building mental constructions. This is quite different

than the typical emphasis on rote learning, imitation, repetition, memorization of facts, and alleged truths emerging from the expert teacher. In constructivist learning environments, learners must:

a. compile, reject, and accept information;
b. categorize, analyze, and ruminate on the knowledge provided; and
c. create and comment upon knowledge formed from individualized understandings.

The ideas formed could result in the production of essays, reports, creative writing, and art. *"Therefore, from the Constructivist perspective learning is the construction of meaning by gathering personal experiences. No fact or single interpretation is so important as to bring a halt to the learning process, to overrule the learner's personal interpretation"* (Prater, 2001, pp. 44-45).

CONSTRUCTIVISM AND POSTMODERNISM

The nature of knowledge in constructivist theory is compatible with the postmodernist paradigm wherein objective truths are no longer believed possible and learners build upon subjective, non-objective meaning. *"Meaning is also seen as fluid and contextual: a disparate array of interpretations can be derived from any given work since meaning is subject to the varied perspectives of artists and viewers... Modernist theories which explained social interaction in terms of opposing binary poles (male/female, capitalist/ socialist, conservative/liberal) have been replaced by connective models that better reflect the multifaceted nature of human existence"* (Clark, 1996, p. 2).

CONSTRUCTIVIST EDUCATORS AND LEARNERS

The constructivist educator is an altered being. Taking into consideration the nature of the constructivist approach to learning, the role of the teacher has changed in constructivist classrooms. No longer is the educator believed to be *the sage on the stage,* lecturing and imparting age-old truths onto blank slates. There are many words to describe this new Piagetian role for teachers: *guide, manager, co-explorer,* or *facilitator,* providing stimulating environments in which rich resources are at students' disposal. Gregory (1997, pp. 132-133; see also Dunn, 1996, p.6) compares the key differences between the traditional educator and one guided by constructivist principles. He regards the traditional educator as one who follows the Aristotelian model of teaching which differs greatly from the constructivist model. Additionally, traditional educators conceal the practice and ways in which knowledge is constructed, whereas constructivist teachers reveal subjective biases, varied perspectives, and the processes through which knowledge has been developed.

Constructivist educators place considerable importance upon their students' prior knowledge and experiences, allowing them to build upon these, to modify and to develop them even further. Constructivist educators recognize and develop learning from children's varied needs and interests. Teachers set up projects, provide resources, and create supportive structures to enable student success and foster the process of knowledge creation and building (Kozma, 2003). Peers, older children, adults, and sometimes experts in the field work with these learners to

Constructivist educators place considerable importance upon their students' prior knowledge and experiences, allowing them to build upon these, to modify and to develop them even further.

provide challenging learning situations sometimes involving collaborative learning and co-learning experiences. Through their construction of projects, constructivist educators foster active, self-directed student learning, and promote student inquiry in which their learners control their own educational experiences and formulate new ideas.

As we have seen, constructivist theory has been shaped by the ideas of Piaget, Vygotsky, and Dewey. The role of the student cannot help but be affected by the changing role of the teacher, for they are interconnected, constantly affecting one other. In this model, learners have more control over their own learning (Gregory, 1997). Pupils change from being passive onlookers to active classroom learners engaged in a problem-solving, knowledge-building approach to learning which parallels Piaget's theories of childhood development. (Abdel-Haqq, 1998; Assey, 1999; Fogarty, 1999; Gregory, 1997; Kahn, 1993). Assey (1999) writes that "*the constructivist model focuses on learning though posing problems, exploring possible answers, and developing products*" (1999, p. 6). Note that product is a key word as art production is by definition the creative making of art products, namely artworks in visual art classrooms. Students learn to recognize and appreciate different perspectives and interpretations while at the same time learning to develop their own knowledge base and defend their own viewpoints (Gregory, 1995). In this learner-centered approach learners can, in conjunction with their teachers, assist with the creation of their own objectives, help plan their own learning processes, and direct their own course of knowledge building. Similar to Dewey's emphasis on community learning experiences, Vygotsky's theory is apparent here: learners in a truly constructivist environment depend on their knowledge building communities, using teachers to guide them along with their peers and the community-at-large to further develop (Kozma, 2003). Since knowledge building is developed through collective, community-constructed interaction these learning environments should be enriched, diverse, fertile, and abundant (Kahn, 1993).

The role of the student cannot help but be affected by the changing role of the teacher, for they are interconnected, constantly affecting one another.

CONSTRUCTIVIST THEORY IN THE CLASSROOM

Much has been written recently about constructivist theory in our present-day classrooms with many writers and researchers advocating for the exclusive implementation of constructivist theory. Most proselytize that administrators and educators must implement this theory only. In actual classrooms, however, I have observed that many teachers employ a constructivist approach to teaching combined with more traditional or eclectic approaches, ranging from lecturing and the teacher-centred approach, to the project-driven, child-centred approach (Black, 2002). Indeed, many teachers utilize traditional and constructivist methodology simultaneously.

These different approaches can be observed within the span of even one lesson given by one educator. This use of multiple strategies within a classroom is highlighted in the research findings of Saye (1997, 1998) and in those of Wiske et al. (1988) who examined technology usage in U.S. schools. It also supports Weiss' (1992) research into vacillating teacher/student roles in co-learning situations, and Cuban's (1993) observations of teachers who perceive that educators can mix differing

teaching styles from *manager* to *authoritative instructor* depending on particular classroom circumstances and requirements.

Incorporating constructivist practices into art classrooms is by no means a great leap. Art educators have often practised project-driven, problem solving, student-centred approaches, particularly when designing studio art curricula. Indeed, very few of today's art educators teach in the Walter Smith style of mechanical industrial drawing which demanded that pupils follow directions for making copies of copies (Chalmers, 2000, pp. 82-87). Today, it is common practice for teachers to adopt the role of *bricoleur*. They mix teaching styles and teaching content, often covering the disciplined-based art education (DBAE) areas of art history, art criticism, aesthetics, and studio production. Content is delivered through: demonstrations; discussions; teacher, class, or peer critiques; and lectures.

This is in addition to the art educator carefully preparing to teach and challenge students with a student-centred, studio-based assignment on, for example, expressionism using acrylic paint for a portraiture study, or the way in which light can be manipulated and distorted in watercolour landscape studies using three-dimensional perspective. This way of proceeding is more oriented to a constructivist approach in which the educator sets up a challenging studio assignment which leaves latitude for individuals to seek knowledge, self-express, document process, and finally make a diverse work of art differing from those done by others in the class. Moreover, according to Vygotsky who advocated that many parties should challenge the student, it is not uncommon for art educators to establish group projects, especially those involving the creation of artworks for school and/or community usage in which peers can challenge each other within the group-working structure. A less common strategy involves bringing into the classroom visiting artists and experts from the field or, alternatively, having students visit galleries and artists in their studios. Abdal-Haqq (1998) notes that, "*Some subjects, such as mathematics, are more 'bounded' than others by rules, formulae, and procedures. They are more likely to be regarded by teachers as producing problems and tasks to which there are 'correct' answers. Individual interpretations and construction of ideas and concepts are less likely to be encouraged by teachers than in subjects such as literature and writing*" (p. 4). Indeed, visual arts, commonly categorized as a member of The Arts in general, alongside the disciplines of music, drama, and dance, is a subject in which educators are expected to foster creativity.

Today, it is common practice for teachers to adopt the role of *bricoleur*.

IN CONCLUSION

I have already discussed constructivism as being one of Wallin's (2001) five key influences on art education. Another one of Wallin's influences is technology. In fact, constructivism and technology are a good fit, as many researchers note that in many countries the use of technology is part of an instructional shift toward the implementation of constructivist theory in classrooms (Kahn, 1993; Kozma, 2003; Seung & Willis, 1998). Indeed, with more art educators incorporating digital technologies into visual arts curricula, it seems as if further employment of constructivist approaches to education is a compatible, natural fit: *it makes sense*.

REFERENCES

Abdal-Haqq, I. (1998). *Constructivism in teacher education: Considerations for those who would link practice to theory*. (Report No. EDO-SP-97-8). Washington, DC: Office of Educational Research and Improvement. (ERIC Document Reproduction Service No. ED426986).

Assey. J. (1999). *The future of technology in K-12 arts education*. Paper presented at forum on Technology in Education on Envisioning the Future, Washington, D.C.

Barron, J., & Collier, C. (2001). *Technology in its place: Successful technology infusion in schools*. (pp. 21-25 & 74-78). Los Angeles, CA: Jossey-Bass.

Black, J. (2002). Topsy-turvy teacher-student relationships: An examination of digital multimedia teaching and learning (Doctoral dissertation, University of Toronto, 2002). *Dissertation Abstracts International, 63*, 6.

Chalmers, G. (2000). *A 19th century government drawing master: The Walter Smith reader*. Reston, VA.: National Art Education Association.

Clark, R. (1996). *Art education: Issues in postmodernist pedagogy*, Reston, VA: National Art Education Association.

Cuban, L. (1993). *How teachers taught: Constancy and change in American classrooms,1880-1990*. New York, NY: Teachers College Press.

Davidson Films. (Producer). (1994). *Vygotsky's developmental theories: An introduction.* [Videotape]. (Available from Davidson Films Inc., 231 E Street, Davis, CA. 95616).

Dunn, P. (1996). More power: Integrated interactive technology and art education. *Art Education, 49*(6), 6-11.

Fogarty, R. (1999, November). Architects of the intellect. *Educational Leadership*. 53(3), 76-78.

Freedman, K. (2003). *Teaching visual culture: Curriculum, aesthetics, and the social life of art*. New York, NY: Teachers College Press.

Gregory. D. (1995). Art education reform and interactive integrated media. *Art Education, 48*(3), 6-16.

Gregory, D. (1997). *New technologies in art education: Implications for theory, research, and practice*. Reston, VA: National Art Education Association.

Janson, H. (1977). *History of art: A survey of the major visual arts from the dawn of history to the present day*. (Rev. ed). New York, NY: Prentice-Hall.

Kahn, P. (1993). *Control and power in educational computing*. Paper presented at the annual meeting of the American Educational Research Association, Atlanta, GA.

Kozma, R. (2003). Technology and classroom practices: An international study. *Journal of Research on Technology in Education, 36*(1), 1-14.

Lefrancois, G. (1994). *Psychology for teaching.* Belmont, CA: Wadsworth.

Milbrandt, J., Richards, B., & Abghari, N. (2004). Teaching to learn: A constructivist approach to shared responsibility. *Art Education, 57*(5), 19-33.

Papert, S. (1999). *Scientists and thinkers: Jean Piaget*. Retrieved November 29, 2004 from *http://www.time.com/time/time100/scientist/profile/piaget.html*.

Prater, M. (2001). Constructivism and technology in art education. *Art Education, 54*(6), 43-48.

Saye, J. (1997). Technology and educational empowerment: Students' perspectives. *Educational Technology, Research and Development, 45*(2), 5-25.

Saye, J. (1998). Technology in the classroom: The role of dispositions in teacher gatekeeping. *Journal of Curriculum and Supervision, 13*(3), 210-234.

Seung, H., & Willis, J. (1998). *A web–based instructional resource for teacher education: Constructivist approach*. Paper presented at the annual meeting of the Society for Information Technology and Teacher Education International, Washington, DC.

Sturken, M., & Cartwright, L. (2002). *Practices of looking: An introduction to visual culture*. New York, NY: Oxford University Press.

Traub, C., & Lipkin, J. (2004). *In the realm of the circuit: Computer, art, and culture*. Trenton, New Jersey: Pearson.

Vanderstraeten, R., & Biesta, G. (2004). *Constructivism, educational research, and John Dewey*. Retrieved November 25 from Utrecht University site: *http://www. bu.edu/wcp/ Papers/ Amer/ Amer Vand.htm*

Walling, D. (2001). Rethinking visual arts education. *Phi Delta Kappan, 82*(8), 626-630.

Weiss, J. (1992, June*). Dances with knowledge: Co-learning as a teaching/learning process.* Paper presented at the annual meeting of the Canadian Educational Research Association, Charlottetown, PEI.

Wiske, M., Zodhiates, P., Wilson, B., Gordon, M., Harvey, W., Krensky, L., Lord, B., Watt, M., & Williams, K. (1988). *How technology affects teaching*. (Report No. ETC-TR87-10). Cambridge, MA: Harvard Graduate School of Education and Education Development Center.

Dr. Joanna Black *is an assistant professor in the Faculty of Education*
University of Manitoba, Winnipeg, Manitoba, Canada R3T 2N2
blackj@ms.umanitoba.ca