CONSTRUCTING INFORMATION LITERACY: A VYGOTSKIAN APPROACH

Melanie Lazarow
University of Melbourne

ABSTRACT

The prominent educational theories of Vygotsky have just entered the discipline of information literacy. I will concentrate on three of his themes: the dialectical interdependence of the environment and the self, the need to relate to a student's potential rather than his or her achievement, and the inadequacy of most current measures of information literacy.

INTRODUCTION

> I don't want to discover the nature of mind by patching together a lot of quotations. I want to find out how science has to be built, to approach the study of the mind having learned the whole of Marx's method. (Vygotsky, 1978, p.8)

The theme of this conference, "Lifelong learning: whose responsibility and what is your contribution?" are complex questions. We all consciously or unconsciously have a pedagogy which we use in our approach to student learning. I choose to consciously use Vygotsky's model to implement cooperative learning, action-based learning, and critical learning. Vygotsky was an early 20th century Russian Marxist and his theories of learning were dialectical, humanist, and materialist.

Essentially, what Vygotsky brings to education is the concept that learning (in our case, information literacy), is a dialectic relationship and is revealed in the dynamics of a process in motion, change, formation, and distinction, in its movement and change. (Vygotsky, 1993, p. 247)

In a system where profit is paramount, virtually all the things that get produced under capitalism – cars, houses, food, books, degrees – are not produced because they are useful (though they may be), but in order to be sold on the market. This activity of producing things and products (including students), not for human need but to make a profit, has profound effects on us. The environment we interact with in the process of creating knowledge is invisible to us in many ways.

Don Watson (2003) describes the language of managerial exploitation which has become invisible, like this,

> One day perhaps someone will be interested enough to trace the point at which this journey into fog began. Was it the Chicago School of economics? When supply side economics became the main game of politics? Was it the management revolution? Microsoft?...Or when Labor parties stopped pretending to be socialist and gave up the fight against the corporation?…In the years since then business language has been steadily degenerating, mauled by the new religions of technology and management. (p. 24)

While Don Watson only goes so far (but in a delightful way) to exposing language we should not use, Vygotsky sees language as developing out of a system we should challenge.

COMPARITIVE MODELS OF INFORMATION LITERACY

Mohamed Elhammouni (2002) makes the point that many discussions of Vygotsky's work "go no further than to explore how development is the conversion of social relations into mental functions focusing on how individuals achieve that through mediation" (p. 90). I agree with Elhammouni when he says that it is essential, while considering questions of mediation (teaching) to not leave behind the question of the psychological cell of Vygotsky's theory: the social relations of production. Marx viewed the organized working class as crucial to understanding the balance of power at any one time.

This is in sharp contrast to one understanding of lifelong learning, most notably propagated by the World Bank, which sees learning as a process towards adapting to *capitalism. In "*Constructing Knowledge Societies: New Challenges for Tertiary Education", the World

Bank Group (2002) look at new demands that today's world markets and emerging technologies are making on higher education, and at some of the ways in which tertiary education is responding. Within an economic rationalist model of learning it sees workers adapting to the needs of capital to make nation states more profitable. The current conception of the university as a business fits this model.

Christine Bruce (1997) as a relational or phenomenography theorist**, e**xamines the varying experience of information literacy and proposes a relational model as an alternative to the behavioural model that dominated information-literacy education and research. While the relationships between learners, objects, teachers, ideas, contexts, and research are important, the Vygoskian model goes beyond the internal relationships.

Phenomenography's aim is to define the different ways in which people experience, interpret, understand, perceive, or conceptualize a phenomenon, or certain aspect of reality. This model allows for a dynamic way of looking at the relationships between aspects of reality, and much of its dynamic is shared with the Vygoskian approach.

Vygotsky differed markedly from Piaget who described learning as staged development. Vygotsky saw learning as preceding development and believed that development is a process, instead of a product to be obtained. According to Vygotsky, the development process that begins at birth and continues until death is too complex to be defined by stages (Driscoll, 1994)

The "Australian and New Zealand Information Literacy Framework: principles, standards and practice" (2004) states that "Information literacy education should create opportunities for self directed and independent learning where students become engaged in using a wide variety of information sources to expand their knowledge, construct knowledge, ask informed questions, and sharpen their critical thinking." However an unintended outcome of this framework has been the interpretation of the standards as stages. Mapping standards to the first, second and third year of a degree does not embrace faster and slower learners.

Collaborative learning, active learning, and experiential learning, all coincide with a Vygotskian model, but models that *only focus on objective, observable behaviours*, and discount mental activities, are incompatible with a Vygotskian approach.

VYGOTSKY AND THE MOVE FROM TRAINING TO TEACHING

Within the abovementioned Information-literacy framework, Mandy Lupton (2002) focuses on the following two critical-thinking outcomes, *"*Recognises interrelationships among concepts and combines potentially useful primary statements with supporting evidence" and "Analyses the structure and logic of supporting arguments or methods", to talk about the shifting and unsettling responsibilities of librarians who now have to teach. Within the University of Melbourne's Learning Resources Services section there is discussion and disagreement about how far a librarian should go in taking on teaching rather than training. It is inconceivable to me as a Vygoskian theorist that the critical-thinking aspects of information literacy can be left to others.

It is my practice to discuss the information component of information literacy with the lecturer, to ask her or him which aspects of information they perceive their students to have difficulty with, and to work with the lecturer to devise exercises and classes to overcome these difficulties. An example of this practice took place in a course that is compulsory at an early stage of the social work degree. The course coordinator identified a non critical use of Web sources as a problem. Together we devised an exercise that made students identify when the website was updated; who the author of the website was; whether the author had an overt purpose; and other aspects of validity, authority, currency, and subjectivity. The students had to visit two of eight websites chosen by the lecturer, and answer questions. The Web exercise counted for 5 percent of their total mark.

I agree with Lupton (2002) when she says,

> We are deluding ourselves if we believe that we are 'embedding' information literacy into the curriculum by delivering the standard 50-minute bibliographic instruction session, even if it is within the context of the subject. We are also misrepresenting information literacy...

The purpose of the University of Melbourne's Information Division is to "Provide members of the University with the most sophisticated forms of information and knowledge available and ensure that staff and students have the confidence to use information easily and efficiently"(University of Melbourne, 2004). Yet since 1996, government funding to universities has been reduced by some $AUD800 million a year – 15 percent of total revenue. By 2002, universities lost nearly one quarter of their public funding. Higher education would have to be well resourced and funded, as a priority, for universities in general to apply embedded models. A well resourced university would much better be able to meet stated purposes, and I acknowledge that other universities will have greater financial challenges.

Although I try to incorporate Vygotskian principles into my teaching by treating all students as potentially better students, by reflecting on a research problem so that others can join in the discussion, and by allowing debate and collaborative work in class, I cannot pretend to be implementing a total Vygotskian model in the current climate of fiscal austerity and user-pays philosophy in Australian higher education. This paper offers a perspective in the tradition of being a realist and demanding the impossible. The Learning Resources Services section of the University of Melbourne does not embrace the Vygoskian model and, to a degree, is reluctant to take on the critical thinking aspects of the information-literacy framework. I therefore have to balance a personal framework with the conflicting model used by the section.

VYGOTSKY AND COMPUTERS

In 1993 I initiated a computer-instruction program completed in 1996, called "Ariadne's Thread" It was an early guide to finding your way through the catalogue. A colleague, Paul Fritz, from the Multimedia Unit worked on the project to investigate techniques for visually mapping patterns of interactivity generated as students moved through the program. A graphic overview of an individual learner's experience was mapped and used as a focus for further development. Lessons were learned from this experience, and very different computer models are now being developed. The freedom that a computer program can give a student to work at his or her own pace, to contact a lecturer or tutor, to email questions when he or she is stuck, and to engage in discussion with other learners, all converge with a Vygotskian approach – as long as the community of learners is not ignored, and the package is not seen in isolation as a cost-cutting devise.

Vygotsky's theory effectively challenges the transmission theory of learning which has as its basis the concept that there is a static body of knowledge which has to be installed in the student's head. He reminds us that the learner changes the environment then the environment; has an impact on the learner – the process continuing in a dynamic manner. This is often referred to as a dialectical relationship, which has change as a central theme. When I lead a tutorial or a lab-based, hands-on class, I always make sure that while my knowledge may be greater than that of the students, I am open to them sharing their more exact knowledge. In a plagiarism and citation class, a student challenged me on my stipulation that cited electronic information should be printed and stored in case it is not archived and becomes untraceable. This led to debate, and I left the question open.

According to the Sunday Age newspaper (Cervani, 2003, December 28), a report to the Commonwealth Government's Department of Education, Science and Training, released on Christmas Eve, 2003 on the department's website, states that online learning does not always live up to expectations. According to the article, the report, "Online Teaching and Learning in Higher Education: a Case Study", examined the University of Southern Queensland postgraduate courses that were totally online. There were concerns that teaching "might be taking second place to commercial interests", the authors said (Department of Education, Science, and Training as cited in Cervani, 2003, p.3). The computer as a tool cannot stand outside the context of teaching as an historical human socio-cultural process. However the authors do state "We make no claims about the relative merits of online teaching and learning compared with face-to-face teaching; rather, we hold the view that 'good teaching is good teaching'. We hold that the main difference between the different delivery modes lies in the strategies and tactics available to achieve good teaching". An important implication from Vygotsky's argument is that within a computer-learning environment, there needs to be an increase of interaction between the teacher and the learner, as well as between learners. A corollary to this

proposition is that if the intended outcome of such learning experience is the improvement of problem solving skills, then the focus of such interaction should be on the skills and processes involved with problem solving.

POTENTIAL

Ruqaiya Hasan (2002) says that "as members of the human species we possess an almost unlimited potential for learning…however what we typically learn in our lifetime is constrained by our social (or class) location"(p. 537). At birth we are yet to acquire a mind. To become usable, the human brain needs experience. The type of experience we provide is crucial in the possibilities that students can use to create their consciousness of information literacy. Vygotsky believed that the construction and assimilation of knowledge that can be developed in collaboration is much greater that which can be attained alone. Thus, the value of learning, or the construction of knowledge, is increased through social interaction. The constructivist approach to learning emphasises authentic, challenging projects that include students, teachers, and experts in the learning community with a goal to create valuable, beneficial experiences that are more closely related to the collaborative practice of the real world. In my "avoiding plagiarism" classes I try and make the students reflect on their friends' styles of walking or writing emails, and I try to point out that each of us has an individual style. I point out that if we are reading an essay, and that individual's style is broken, then it alerts us to the possibility of plagiarism. I let the class take over. I don't talk or intervene for a while.

By letting the group break into smaller groups, learners help other learners in the construction of knowledge. This has serious implications for the role of teachers, because the line between teacher and student becomes blurred. The role of the teacher changes dramatically from transmitter of information to facilitator; guiding students to an awareness of their experiences. According to Doolittle and William (1999), the teacher's job "is to motivate, provide examples, discuss, facilitate, support and challenge, but not to attempt to act as a knowledge conduit."

Many interpretations of Vygotsky give much emphasis to the "zone of proximal development" (ZPD). Vygotsky said that if we determine a learner's level of development from observations merely of what she or he can do independently (of others), then we are leaving out a very important aspect of what learning is.

Because Vygotsky asserts that cognitive change occurs within the zone of proximal development, instruction would be designed to reach a developmental level that is just above the student's current developmental level. Vygotsky (1978) proclaims, "learning which is oriented toward developmental levels that have already been reached is ineffective from the view point of the child's overall development. It does not aim for a new stage of the developmental process but rather lags behind this process" (p. 89).

The essential part of teaching as a Vygotskian is the capacity to think on one's feet; to shift and change with the comments made; to meet the needs of silent member of the class; and to constantly check in a variety of ways that you are meeting student expectations, not just your own.

In differentiating what can be attained in cooperation with peers or teachers from individual attainment, Vygotsky reiterated one of his central themes: the source of development in higher consciousness is always social. Only later do these processes become individualised. Part of this understanding is that learning precedes the development of concepts rather than visa versa. It would not be an exaggeration to say that most of our work ought to be broadening the ZPD. To this end I have started to begin classes by asking students to turn to the person sitting next to them and to do an exercise of sorts. In a hands-on, social-work class for the subject, "Human Resilience across the lifespan" – where there was a choice of life events to focus on for a 1000-word essay – I asked students to tell each other what life event they were going to use. If there are an odd number of students I go and sit with one and act as part of the class.

The ZPD embodies a concept of readiness to learn that emphasizes upper levels of competence. These upper boundaries are not immutable, however, but constantly changing with the learner's increasing, independent competence. The Vygotskian model thoroughly challenges a statement I heard an information literacy librarian make along the lines that "there are some students you just can't teach". I prefer to think that there are just some teachers who can't teach.

ACTIVE AND COLLABORATIVE LEARNING

The implication of Vygotsky's concept of learning is that it is active. If we applied his approach to botanical classification, for example, we could say that for Vygotsky the essential thing is not a knowledge of taxonomic categories but a mastery of the classification procedure (definition and application of taxonomic criteria, the classification of ambiguous or borderline cases, determination of new members of a class and, most important of all, learning to execute the logical operations that interlink various classes, etc.). Using Vygotsky's method, information-literacy skills should be described as transferable, not generic. Obviously for lifelong learning, the skill itself is needed rather than the one-off capacity to perform a task. We teach concepts but, concepts that are situated in the activity base of the discipline.

In the classes already referred to "How to avoid plagiarism and cite correctly" an historical context to plagiarism is given by looking at the word's entry into the English language in the late 18th century. Before this time ownership of words and ideas was inconceivable. This class emphasizes finding an authentic voice rather than the punitive consequences of citing incorrectly, giving tools and conventions to do this.

I have noticed that collaborative learning is a substantial theme in this conference. Vygotskian educational theory endorses this idea. Proponents of collaborative learning claim that the active exchange of ideas within groups not only increases interest among the participants but also promotes critical thinking. Gokhale (1995) points to evidence that shows that cooperative teams achieve at higher levels of thought and retain information longer. A serious obstacle to Vygotkian collaborative achievement lies with the examination method of assessment. Unfortunately, the cumulative exam system dictates most methodologies within the lecture theatre and tutorial. The constant pressure of covering topics and getting courses completed in time for exams means that lecturers and librarians do not feel flexible enough to experiment with the types of learning projects described above.

EVALUATION AND ASSESSMENT

Much of the work we are doing in measuring or evaluating information literacy takes us back to the very problems Vygotsky grappled with: whether only the observable is real, the problems of who measures and why, and the problems of cultural biases. Vygotsky believed that we need to see how the observer influences results. He saw this subjectivity as necessary and would dismiss a positivistic attempt to pretend that observation or measurement can be neutral.

He pushed the boundaries of evaluation beyond the simple study of techniques and methodologies and pure statistical or mathematical results. Without subjective analysis, without thought and interpretation and the deciphering of data, we do not have scientific research.

Controversially, Vygotsky saw testing an individual, as if that individual has a fixed knowledge out of context, as absurd. Where collaboration is frowned upon, particularly in the examination room, Vygotsky saw collaboration as a natural part of social life.

Evaluating whole programs like the Council of Australian Librarians Administration Manual (Council of Australian University Librarians, 2003) is also carried out by investigating what has been achieved rather than what potentiality can be achieved. But as a qualitative method, the interview is better than the questionnaire because of its potential to provide rich ideographic data, the characteristics of which are in keeping with the interpretive framework. The interview is a flexible and probing means of data collection.

This survey instrument is "designed primarily for program-wide and institutional-level evaluation or research" (Council of Australian University Librarians, 2003) An example addressing the standard concerned with "Recognising need for information" is, "When I start an assignment, I decide how much information I need" It presumes that someone who was good at recognising their information needs would agree strongly with the statement, whilst someone who was bad at recognising when they needed information would disagree. But even as an experienced researcher, I would have difficulty defining what "how much" is. As a Vygotskian I do not oppose the survey and see

some merit in the anonymity of the collectivised results that can be used to measure changes at an institutional level over time.

Within the Vygotskian framework measurement of achievement of information literacy can only be done using a non-competitive, unthreatening, human-growth model. Some of the measures we use go partially towards this. None go far enough.

CONCLUSION

Vygotsky started from the conviction that humans should cease to be mere objects and start to live as subjects. We should cease to be prisoners of our social relationships and begin to develop our underdeveloped potential. Marx said that humans make history but not under the circumstances of their own choosing. We all have constraints. But we can all choose to be bold, adventurous, compassionate, and reflexive educators. If we understand that *both* students and information-literacy librarians and are active agents in the process of information-literacy development then we have to develop the structures and processes in the university system to support this idea.

REFERENCES

Australian and New Zealand Information Literacy Framework: principles, standards and practice. (2004). Retrieved March 27, 2004 from, http://www.anziil.org/index.htm

Bruce, C. (1997). *The seven faces of information literacy.* Adelaide: Auslib Press.

Cervani, E. (2003, December 28). Student debt to Canberra nears $10bn. *The Sunday Age*, p. 3.

Council of Australian University Librarians. (2003). *Information Skills Survey for Assessment of Information Literacy in Higher Education: Administration Manual*. Canberra: Author.

Doolittle, P. C., & William, G. (1999). Constructivism: The career and technical education perspective. [Electronic version]. *Journal of Vocational and Technical Education*, *16*(1), 65-85.

Driscoll, M. P. (1994). *Psychology of learning for instruction*. Boston: Allyn and Bacon.

Hasan, R. (2002). Ways of meaning, ways of learning: code as an explanatory concept. *British Journal of Sociology of Education*, *23*(4), 537-548.

Lupton, M. (2002). The getting of wisdom: reflections of a teaching librarian. *Australian Academic & Research Libraries*, *33*(2).

University of Melbourne. (2004, February 4). *About the Information Division*. Retrieved April 4, 2004 from, http://www.infodiv.unimelb.edu.au/about.htm

Vygotsky, L. S. (1978). *Mind in society*. Cambridge: Harvard University Press.

Vygotsky, L. S. (1993). The diagnostics of development. In R. W. Rieber & A. S. Carton (Eds.), *The fundamentals of defectology* (Vol. 2, pp. 241- 291). New York, London: Plenum Press.

Watson, D. (2003). *Death sentence : the decay of public language*. Milsons Point, N.S.W.: Random House Australia.

World Bank Group. (2002). *Constructing knowledge societies: New challenges for Tertiary Education*. Retrieved April 6, 2004 from, http://www1.worldbank.org/education/tertiary/cks.asp