

DOCUMENT RESUME

ED 368 688

SP 035 110

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 TITLE Show and Tell: An Appreciation of "Making" Activities.
 PUB DATE 2 Mar 94
 NOTE 14p.; Paper presented at a Meeting of the Western Canada Association for Student Teaching (Winnipeg, Manitoba, Canada, March 2, 1994).
 PUB TYPE Speeches/Conference Papers (150) -- Information Analyses (070) -- Reports - Descriptive (141)
 EDRS PRICE MF01/PC01 Plus Postage.
 DESCRIPTORS *Construction (Process); Course Content; Education Courses; Elementary Secondary Education; *Experiential Learning; Foreign Countries; Higher Education; Holistic Approach; Literature Reviews; Outdoor Education; *Preservice Teacher Education; Student Projects; *Theory Practice Relationship
 IDENTIFIERS University of Regina SK

ABSTRACT

This paper describes the incorporation of a "making" activity as part of a course for education majors at Queen's Faculty of Education of the University of Regina (Saskatchewan, Canada). The course was an introductory one in which students explored the methods and merits of outdoor and experiential education. Each student was given a piece of basswood, access to a shop and tools, and tutorial support and was asked to make a canoe paddle for a canoe outing planned for one of the final classes. "Making" is felt to represent the completion of learning by producing something. The paddlemaking activity brought about learning that took place in a participation framework and revealed that knowledge lies within a community of practice. The activity also involves social qualities, cultural concerns, and moral questions. A matrix is presented which situates "making" in three relational domains involving the learner interacting with himself or herself, with others, and with the context. The paper concludes that when "making" is included as part of the process of developing understanding, learning is broadened to include elements of mind, body, and heart. (Contains 10 references.) (JDD)

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SHOW AND TELL

An Appreciation of "Making" Activities

ED 368 688

This paper is to accompany the session "Show and Tell" --a presentation at the Western Canada Association for Student Teaching, March 2, 1994 at the University of Manitoba, Winnipeg. The session is intended to foster an appreciation of making activity and the possibilities for including such actions in teacher education particularly at the secondary level. The session will begin with personal narratives of experience which later will be situated within a learning matrix representing elements of making activity within three relational domains.

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Karne Kozolanka/WESTCAST '94

WESTCAST '94
The Western Canada Association for Student Teaching
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All of us have made something at one time or another: a sweater, a loaf of bread, a sketch or a carving. Apart from participating in sports, the clearest image I have of high school is the end table I made in woodworking class. It was different than most of the other tables. It had narrow pieces of wood, spaced and arranged on edge for the top. Making it was meaningful for me because I designed and made it on my own. After sitting in our living room for years it ended up in our family cottage.

"Making" activities, are usually restricted to the art studio or shop areas of schools. If one were to go through secondary school without taking any classes in the arts or technological studies, the chances are that little or no substantive making activity would be experienced. I suspect that the same is true for the teaching of pre-service teachers. This presentation is for those who like to make things as part of their teaching and learning, as well as for those who would like to be more expressive in their disciplines.

In many ways the development of arts and technological skills through education is not well balanced. Throughout our education system there is a strong emphasis on subjects such as the Sciences, Maths, History and English and too little emphasis on the development of the arts and skills involved in designing, making and doing. This is somewhat ironic since subjects such as

science, math, history and English are fashioned with "made" things--we study the creativity of others but do not emphasize it the way we could.

As a new instructor in a faculty of education, I was curious to find out what effect making activity would have on pre-service teaching interns. I decided to incorporate some making activity as part of my course to Bachelor of Education students at Queen's Faculty of Education. The course was one in which students explore the methods and merits of outdoor and experiential education. As an introductory course in the educational value of outdoor and experiential pursuits, it attracted students with little or no experience in this field.

Alfred North Whitehead (1929) in his book of essays described culture as "activity of thought and receptiveness to beauty and humane feeling. Scraps of information having nothing to do with it" (p. 13). Whitehead warned of inert ideas, ideas that were received but not utilized in some way. That our system of education has not heeded Whitehead is illustrated in this description by Williams:

whereby high esteem is accorded to those skilled at expressing themselves verbally and in marshalling arguments, while much less esteem is accorded to those who express themselves through designing and making, through coordinated effort of mind, of heart and of hand (1990, p. ix).

How then to push students beyond the intellectual challenges presented in their teacher-training? It seemed logical to ask students involved in a course exploring the outdoors as a classroom to make something that would be relevant to course aims--impelling them to coordinate efforts of mind, heart and hand. An evening canoe outing was planned for one of the final classes of the fall semester, a short trip in twenty-two foot Pathfinder canoes. The students were asked

therefore, to make a paddle in time for this trip. They were each given a piece of basswood and access to a shop and tools in the faculty. Of the thirty-four students in the class (half male, half female), most had no experience in working with wood or woodworking tools. A number of tutorials were offered as support in addition to contact with a woodworker at specific times in the shop. Many students chose instead to draw on their own resources. The results proved interesting.

The sight of students walking through the halls of the faculty over the following six weeks with boards underarm, then paddle blanks, then smoother versions created much talk and speculation. On the night of the canoe outing we gathered around a campfire for a shared supper. Students were asked to reflect with their classmates on what the paddlemaking had meant for them. What follows are a few of their comments:

I had built things out of wood but never a paddle--it was so amazing to see a smooth blade emerge from that rough board.

My paddle broke, but it's still mine, I'll do it again.

I did it! The most satisfying thing I did all year.

We worked as a group and learned from each other. We ate together, worked together and laughed together. The paddle was a terrific idea. We all made one.

Very proud of my accomplishment, I come from a "wood working family" (three brothers and a father). Being female, I was always excluded from this except for the "joe" jobs of fetching etc. So I had lots of experience observing and never doing. When I went home my father and I worked together on it! (This was wonderful, I hadn't talked to my father for four years).

In her book *Young lives At Stake*, British researcher and teacher Charity James (1968) describes three fundamental human behaviours associated with complete and meaningful learning: *enquiry*, *dialogue* and *making*. James believes that their inclusion is necessary in order for schooling to

be more like living, (similar to Whitehead's (1929) call for education to be useful). *Enquiry* is a process of formal investigation. *Dialogue* is the vital interchange between people or phenomena, a speculation about what is and a procedure that reflects mutuality. *Making* is quite simple: it represents the completion of learning by producing something. There has to be some kind of creation in order to complete the learning; a new formula, a painting, a wood carving, a dance or a play.

The focus in this paper will be to address making activities and their significance for teaching/learning. Cole (1990) helps with his explanation of the Soviet Sociohistorical School and their work on the relationship between culture and the human mind. Cole explains that:

Human psychological functions differ from the psychological processes of other animals because they are *culturally mediated*, are *historically developing*, and arise from *practical activity*. Each term in this formulation is linked to the other. Taken as a whole they provide a starting point for an approach to psychology that accords culture a central role in the constitution of mind (p. 283).

In simple terms, humans live in environments that are the results of reproductive and transformative making of artifacts by prior generations. It is these artifacts which help to mediate interactions with the world. For example, learning how to make a paddle can change a persons condition of existence in the world--no longer do they have to buy one, they can, with a knife and axe, fashion one from a tree if they so choose. The paddle is an artifact as well as a tool, the same as the knife and axe which were historically developed through numerous eras. When a human 'sees' a paddle in a log or tree or a sweater in a ball of wool (or on a sheep!), one "offloads a part of memory into the environment. Artifacts react on their makers in that they

fundamentally reorganize the process of remembering" (Cole 1990, p. 284). One never sees a paddle quite the same way again, or a tree for that matter.

Recent pressures on schools to make schooling experiences more "lifelike" and relevant to student and community needs have resulted in a resurgence in schooling programs that integrate elements of the larger social world to the classroom and vice-versa. Examples of this can be seen in efforts such as work-study programs, internships, co-operative education and other efforts to situate schooling within existing communities of practice. Two researchers who have done some work in examining such work cultures are Lave and Wenger (1991) who have found that "meaning, understanding, and learning are all defined relative to actional contexts not self contained structures" (p. 15). When one reconstructs the paddlemaking through their view that learning is a process that takes place in a participation framework, one begins to understand that knowledge lies within a community of practice. For example, oldtimers working with newcomers who are shown the ropes. In other words knowledge is achieved by people working together to solve practical problems. In this instance woodworkers, fathers, classmates and others with know how.

Lave and Wenger's accounts of situated learning are helpful in the training of teachers because they describe an enculturation process. They fall within Bruner's (1990) conception of learning as an "outside in" phenomena which could not be fully explained by an individualistic or what he calls a "western conception of selfhood" which views the person as strategic self-reckoner. Rather, Bruner views human action as that which:

could not be fully or properly accounted for from the inside out - by reference only to intrapsychic dispositions, traits, learning capacities, motives, or whatever. Action required for its explication that it be situated, that it be conceived of as continuous with a cultural world. The realities that people constructed were social realities, negotiated with others, distributed between them" (p. 105).

Bruner's vision of learning contradicts the popularly-held individualist view in which learning happens from the inside-out. As Little (1994) eloquently puts it:

On this view learning is seen to occur initially and involuntarily from the outside in and subsequently, volitionally, from the inside out as a process of critique. Learning from the outside in represents the view that human action cannot be fully understood from the intrapersonal perspective. Action must be situated within a cultural world that persons construct and negotiate with each other (p. 2).

Making activity helps humans to construct and negotiate such relationships. To further explore the complexities and possibilities for making activities in the realm of training teachers a matrix was constructed in order to situate making in three relational domains (Table 1-1). The matrix is intended to place making activity within a particular aspect of a community of practice represented by three dialectically related areas: Learner↔Self, Learner↔Others, and Learner↔Context. These relationships are dialectical in that they can be seen to contain opposite or contradictory ideas. For example, the tension contained in the Learner↔Self relationship can be seen in how humans are involved in habitual or routine activities which are necessary parts of living in the world. But not all living involves living in a patterned fashion all of the time. Humans often experience a need to move beyond the habitual and routine to that of deeper structure or essence. This willingness of humans to maintain or reproduce the status-quo and the desire to move beyond or transform present conditions can be described as a form of dialectical tension. Mediation of such relationships constitutes potential for learning. One means of mediation is through productive activity which is also dialectical in nature where it is possible

for artifacts to have technical or social qualities. In the paddle-making activity the students were involved in relationships through productive activity. This activity manifested itself in both technical and social artifacts which served to mediate various tension-filled relationships. For example, some students expressed how the making activity had served as a means to re-establish family social relations. Other student reflections point to reconciliation between a student's admitted low self-esteem and subsequent sense of accomplishment using unfamiliar tools and processes. The paddle making became a means for mediating different aspects of the Learner↔Self, Learner↔Others and Learner↔Context relationships. It should be noted that the conception of culture as artifacts as described by Vygotsky (1966) and White (1990), "applies with equal force to whether one is considering language/speech or the more usually noted forms of artifacts that constitute material culture" (cited in Cole, 1990, p. 285). This would mean that everyday language can also be conceived as technical or social artifact. For example, spoken words have both material and conceptual sides.

Moral questions are of equal importance and connected to understanding how making activity co-ordinates human beings with the physical world and each other. It is to this that we now turn. The culture of producing artifacts carries with it values that transcend the made objects. Pirsig (1974, p. 247) says that the quality of a piece of work is representative of the caring that went into it. In other words you cannot have a quality piece of work without having had due care invested as part of the process. Caring is an internal good or virtue. So when someone admires a quality piece they are also acknowledging a virtue of the person who made it. This way of knowing has less to do with the knowing of information than the capacity of the person to act

as a moral being. How do we know what is worth knowing? It is by exploring our capacities to function within communities of practice by examining what and how good teachers teach. It would not be a process guided by applied research and expertise but one guided by virtue, a virtue "is an acquired human quality the possession and exercise of which tends to enable us to achieve those goods which are internal to practices and the lack of which effectively prevents us from achieving any such goods" (McIntyre 1985, p. 191).

It remains then, for practitioners to push for a better understanding of what goods are internal to their practice (McIntyre, 1985). The teacher who introduces technological activity such as making into their classroom does so, I believe, in the light of his/her beliefs which are embodied in their classroom actions about why and how his/her subject ought to be taught. This relates to the work of Sockett (1993) who describes professional expertise as a matter of professional virtue rather than one practiced through an applied science knowledge base. For example, Sockett suggests that there is a collection of acquired moral qualities which are embedded in the social practice of teaching. He describes these virtues as honesty, courage, care and fairness which are displayed through a kind of practical wisdom. Challenging pre-service teachers to productive activity such as making provides not only strong metaphors but technical and social artifacts which can help to mediate theory-practice relationships. It is also an opportunity for learners to explore goods internal to their practice. When such challenges are presented, the art of teaching is experienced less as a technical enterprise and more as one in which new teachers are able to live with the ambiguity, difficulty and uncertainty that such explorations inevitably foster.

While the arts and technological studies have a long history of such processes in schools, the same cannot be said for other disciplines. It follows then, that one should ask "what opportunities do beginning teachers have, as Whitehead (1929) says to practice "the art of the utilization of knowledge?" (p. 16). What would such opportunities be like? The production of a new formula? A model of learning or a taxonomy? A sculpture that symbolizes or defines curriculum? When making is included as part of the process of developing understanding, one broadens learning to include elements of mind, body and heart. Making becomes a celebration of learning.

TABLE 1-1
RELATIONAL DOMAIN

	LEARNER ↔ SELF	LEARNER ↔ OTHERS	LEARNERS ↔ CONTEXT
<p>MAKING (Technical↔Social)</p>	<ul style="list-style-type: none"> - designing & creating objects according to the learners personal conception. eg- 	<ul style="list-style-type: none"> - collaborative involvement in craft processes. eg- 	<ul style="list-style-type: none"> - applying ideas in realistic creative acts. eg-
	<ul style="list-style-type: none"> - formulating new hypothesis eg- 	<ul style="list-style-type: none"> - convergent doing. eg- 	<ul style="list-style-type: none"> - understanding of materials, their use and limitations. eg-
	<ul style="list-style-type: none"> - responding and contributing to the maintaining of present and future conditions. eg- 	<ul style="list-style-type: none"> - collective making. eg- 	<ul style="list-style-type: none"> - cognisance of realities of creative process; frustration, flexibility, perseverance & ingenuity. eg-
	<ul style="list-style-type: none"> - responding and contributing to the transformation of present and future conditions. eg- 	<ul style="list-style-type: none"> - critical awareness of craft through others. eg- 	<ul style="list-style-type: none"> - heightened perception of what outcomes certain processes are likely to engender. eg-
	<ul style="list-style-type: none"> - applying one's ideas. eg- 	<ul style="list-style-type: none"> - commitment to cooperative making processes & felt obligation to a craft tradition. eg- 	

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