# Norman

## JENNIFER MACPHERSON

Education which claims as its goal David Hawkins' idea of the "enhancement of competence and the extension of independence" must describe this goal in terms of the culture within which it operates. The enhancement of competence, for example, requires a recognition of the conceptual framework the child brings to school, those skills, attitudes and ways of thinking about the world developed within the relevant culture during the child's preschool years, by experience, by social and family relationships and by language. Similarly, the extension of independence requires a recognition of this notion within the cultural framework. The idea of independence may in some cultures allow the individual to develop socially competitive behaviours; in others, activity, and thus independence, may be restricted in consideration of the social harmony of the group. To aspire to Hawkins' goal, a teacher who practices in a culture different from her own must recognize and base practice on those differences in order to reduce the cultural disparity between home and school.

An incident which occurred some years ago demonstrates the conceptual gulf that may exist between cultures, and its subtlety, which may allow a teacher to be unaware of, or to ignore the differences, and to pursue goals that are conceptually incompatible with those of her students.

### The incident

Money was no object in the early seventies in provisioning Northern schools with the latest, most relevant equipment for classroom use. My team partner and I were able to peruse catalogues and order virtually anything we wanted. Having been recent graduates of teacher training institutions, myself from southern Canada and my partner from Great Britain, we felt quite up-to-date and concentrated our selection on mathematical materials that would conform to a Piagetian model of children's learning in the "concrete operational" phase. We were to teach a combined Grade Two-Three class in the Northern Inuit settlement of Igloolik. Now approaching my second year teaching in Igloolik, I felt quite knowledgeable, and returning from my summer vacation brought back several pets that would live in the classroom — a pair of guinea pigs and a black rabbit.

The guinea pigs did not flourish. The first one died early in the fall. Trying to be culturally relevant, I asked an Inuk teacher-trainee who had been placed in our classroom for a practicum, to skin the dead animal and then have a look at its innards with any students who might be interested. I couldn't do it myself. The children were fascinated. As the second guinea pig obviously weakened, I wondered what I should do with it.

Several days later as I made my rounds of our rather informally structured classroom I noticed Norman, an eight year old, was busy again with the Lego. Norman usually chose activities he could pursue alone. He was carefully putting together an Inuit sled, a qamutik, from the Lego pieces he had selected. I was surprised at how well proportioned it was — the runners were curved up at the front and the crosspieces were separated just as the napu on a real qamutik would be. Norman's work was not to be disturbed. Later as I came by him again Norman was fashioning dogs — his father ran a dogteam and always used it for hunting. Again I was surprised to see how well proportioned a replica Norman was able to produce from the Lego pieces. This time I commented. I wanted him to know that I was delighted with what he was creating. Norman just smiled.

Some time passed before I was able to come back to Norman, and this time I was unable to respond. He had killed the sick guinea pig — though he didn't have much oral English, he could tell me that. It was now skinned and was being quartered. Norman always carried a jack-knife in his pocket. As I pondered over the proper way to deal with this situation, I noticed that Norman had completed the qamutik and dogteam. It was perfect.

In relation to the qamutik the dogs were prefectly proportioned. A box made of Lego had been placed at the back of the qamutik to represent the savikuit in which small possessions would be carried — and there they were, a gun, a snowknife and sleeping bag. The dogs were attached to the qamutik with pieces of string, fanned out as is the style of the region, with the lead dog well in front and the others on successively shorter traces. The strings came together before they were attached to the front of the qamutik. This was a perfectly proportioned model of what Norman saw his father use almost everyday. As the skin and the meat were added, it was becoming even "more perfect". I had to pause and consider my reaction.

I got my camera and took pictures, pictures of the model, pictures of Norman smiling beside the model and pictures of Norman. He was very proud of what he had produced. I had apparently reacted appropriately.

There are lessons to be learned from this incident, and likely the most signficant was the least obvious because it involves a conceptualization of space which is so basic to

*For the Learning of Mathematics* 7, 2 (June 1987)
FLM Publishing Association, Montreal, Quebec, Canada

the culture of the school that it is difficult to recognize the possibility of a different view. Others were a little easier to describe

Language as a means of communication did not largely interfere in the relationship between Norman and I. Although it was his third year attending school, Norman had shown little interest in acquiring facility in English beyond those basic phrases required to seek attention or the materials he wanted. At the time I would have described his ability in English as receptive rather than oral; however, on reflection, I think his understanding may have been contextual rather than verbal. The lack of a common language allowed us to develop a relationship based on action rather than words.

Within the context of Norman's social relationships, there were only limited possibilities for a woman, a Qallunaq woman, such as myself. The school pattern in which I allowed Norman to pursue his own learning and admired his accomplishments was confirmed in the incident that I have described. I assumed a role that within Norman's social framework would have been akin to an aunt — a non-threatening, non-dictating, non-sexual relationship in which I could respond positively to Norman's accomplishments which he viewed in the role that he aspired to as a hunter. Although this relationship placed me in a role that I was able to accommodate, it does not conform to the role of a teacher in a southern, middle-class school. The model of a teacher that Norman had already met in school, and would again, established goals for his behaviour, guided his action and judged his accomplishments. This teacher was most often a woman, a white woman. For Norman, this model had no culturally consistent equivalent

The pet guinea pigs which played a pivotal role for me in the incident I have described held a very different significance for Norman. The mystery of animals who did not work, did not provide food and were ascribed humanlike characteristics had only invaded the North in children's storybooks and school "readers" I could stand aside slightly of my cultural view of a pet and allow the first guinea pig to be skinned and dissected following its death, but I could not take action to relieve the suffering of a pet animal that was obviously dying. Norman had no difficulty with this, unencumbered with a view of animals that have human emotions, and was able to dispatch the guinea pig quite easily. It's likely that the fate of the first guinea pig, being skinned and dissected, allowed Norman to consider the possiblility of dealing with the second guinea pig in similar way himself. On the other hand, he may have responded to the situation in a manner he simply considered acceptable. Whichever the motivation for Norman's behaviour in this situation, he had, and would again, meet similar situations in which his actions would be consistent with his own cultural values but opposed to the culture of the school, and he would likely be punished in some way for his behaviour, a response which would have no comparable counterpart in his culture.

My discussion of the incident has thus far dwelled primarily on those aspects that fall within the realm of the "extension of independence" — language, social attitudes and relationships, and in the view of the continuum of life I would like to turn to the competence that Norman demonstrated, and its significance in seeking the "enhancement of competencies."

In producing a proportionally correct model of a dogteam and sled, Norman showed an extraordinary ability to deal with shape, with space, and with size which seemed inconsistent with his general disinterest in the number-based mathematics we offered in school. From my cultural perspective which includes a highly developed numerical conceptualization used to describe features of shape, space and size, it is almost impossible to separate the descriptor (the number) from the feature (shape, space and size). Norman seemed to demonstrate a sophisticated ability to deal with the ideas of shape, space and size without resort to number. If one considers Norman's first language, Inuktitut, this may not be surprising.

Inuktitut provides numbers from the idea of nothing, to the idea of six. A combination, six plus one, six plus two etc., allows one to count to ten. Very complicated combinations will allow for counting to twenty. Only those with considerable facility in the language would be capable of the combinations necessary to count to twenty. Traditionally, it was not necessary. There were one or two caribou, or there were many, for example. Nevertheless very sophisticated patterns of life developed without resort to number. Consider the skills necessary for a hunting culture, the ability one must possess to travel extensively over land and sea and return to one's original location, the ability to travel at times in adverse weather conditions. The skills necessary have required in the Anglo culture the development of sophisticated mathematical (number based) equipment. Consider the skills required to produce complicated items of clothing without resort to the use of patterns. In the Anglo culture the production of clothing required complicated numerical systems for measurement, and the reliance on patterns to successfully produce the required items

The particular skills which the Inuit have, with no sophisticated concept of number, have been utilized in a variety of ways. The Canadian Geographical Survey found that the extensive maps drawn by Inuit hunters were virtually accurate. The skill of Inuit seamstresses has been used to develop a viable parka industry, while at home these same people "copy" items they may have seen elsewhere (sometimes on pattern envelopes) in crocheting, knitting and sewing. The skills the Inuit have developed allow a very large proportion of them to participate in the Inuit sculpture industry

It would seem that the Inuit are able to accomplish tasks only manageable by the Anglo culture with numerical aids, because of a different conceptualization of shape, space and size — a visual conceptualization. A hunter who is able to accurately visualize the land is then able to reconstruct it as a map; a woman who is able to visualize the human body is able to produce clothing of suitable size; Norman who was able to visualize the dogteam and qamutik was able to produce a proportionally correct model. None of these tasks required the use of number.

Number is now present in the North, and it is interesting to note the variety of its use and how it is conceived to be useful. Money for example, has come into general use during the last thirty-five years in exchange for food and goods, and in exchange for labour. The same people who have no difficulty with the concept of number used in exchange may find it difficult to give credence to a caribou count. As weather stations have, with satellite assistance, begun to predict weather patterns, Inuit hunters have no difficulty accepting reports of current local weather conditions, but are suspicious of weather prediction, preferring the old tried methods of prediction. As the concept and extension of the use of number becomes more firmly established its application will continue to be haphazard as it conflicts with Inuit conceptualizations.

The mathematics programme presented to the Inuit children in our Northern schools is based on an assumption of the conceptualization of number and of the central position of this concept in the view of children have of the world around them. At a kindergarten level children are generally given a perfuntory opportunity to investigate their world without the application of number, using sand, blocks and water. This activity is augmented with extensive counting opportunities. By grade one the child is immersed in number — counting, adding and subtracting. The leap from the concrete view of the world to the numerically conceptualized view is rapid and treated as though the use of number was the concrete. Even the fingers, the "digits" with which we encourage children to count, are not numbered in Inuktitut. They, and the toes, have individual names. The visually based view of the world is dismissed as though it were inadequate to accomplish the tasks we deem important. Yet I have described the ability of Inuit to perform tasks without number which the Anglo population would find impossible. Norman was able to perform tasks that with a numerically based view of his world, he may have found very difficult. His view was visual and sophisticated. In failing to recognize the strong visual feature of the Inuit child's view of the world we fail to capitalize on or to enhance this competency.

As teachers in crosscultural situations we must be willing to question the most basic concepts on which we base school programmes and our relationships with the children whom we work and play. If we fail to do so we will not even begin to pursue the goal of the "enhancement of competency and the extension of independence"

---

> The terms in which the children represent their activity, and the reason for doing it, are presented to them by their teachers. Thus "work" is a term which teachers use to refer to the things which it is anticipated will be difficult, and is used when compulsion is being imposed. Phrases such as, "Get on with your work", "Have you finished the work I gave you this morning?", "Don't mess up Joan's work", and so on, occur frequently. They are not used neutrally. Sometimes they occur in a context of control, where the teacher is ensuring that the children do something they would avoid if were it not for the teacher's authoritative directions, but most often "work" is used to mark the distinction between activities which the children enjoy and those which they must be directed to perform in a disciplined manner. Thus when a teacher says: "You are going to work with a partner. Who are you going to work with?", to a child, the activities the child will engage in are not those which resemble play. Other activities are called other things, such as "table occupations", "games", "activities", "stories", and so on. They are not "work". Children reflect this back to the teacher when they can say, "I've still got to finish my work off". They have learned what the distinction is, with all that it implies.
>
> Graham Corran and Valerie Walkerdine