**HEART WISDOM: THE SEARCH BEYOND HEAD KNOWLEDGE**

Frank Ople

The thesis is proposed that the conventional approaches to the teaching of science, and particularly biology, has failed to place sufficient emphasis on the affective domain. The concept of knowledge is examined and suggestions are made as to how the situation might be improved.

**HAVING A RED FLAG!**

There is a very real danger that conventional approaches to the teaching of science, particularly biological science at school level, has resulted in the closing of as many educational doors as it has opened. Unfortunately the rather one-sided emphasis on information gathering and processing, while forming a sound basis for the development of problem-solving skills, often seems to discount as trivial the very values and feelings that contribute towards creative solutions to problem-solving. One of the doors that seems more closed than open is our approach to our environment! Not much is known about promoting caring, concern, appreciation and commitment; in fact, these words are not even remotely associated with classical science teaching. The very subject that claims to be able to enlighten pupils about their environment is all too often guilty of approaching it with a clinically sterile diagnosis and a naive optimism regarding technological or genetic solutions to problems that need to be addressed at the level of human emotions. This omission could result in promoting an anti-environmental ethic by studied neglect of commitment of any sort. In our frantic pursuit of information we may be guilty of ignoring wisdom.

**HEAD KNOWLEDGE IS NOT HEART WISDOM!**

If knowledge is that which is known, and may be equated with the possessing of information, then schools are largely organisations that disseminate knowledge. The concept of knowledge is examined and suggestions are made as to how the situation might be improved.

**TABLE 1** Ranking of perceived goals in science teaching.

<table>
<thead>
<tr>
<th>A SYNOPSIS OF THE OBJECTIVES IN THE PRIMARY SCHOOL: GENERAL SCIENCE COURSE</th>
<th>ACTUAL ATTAINED OBJECTIVES (RANK ORDER) (AUTHOR’S PERCEPTION)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. To guide pupils to respect and appreciate the wonders and beauty of nature</td>
<td>6</td>
</tr>
<tr>
<td>2. To inculcate in pupils a love of and interest in nature</td>
<td>6 if at all</td>
</tr>
<tr>
<td>3. To stimulate eagerness to learn through independent investigation</td>
<td>6</td>
</tr>
<tr>
<td>4. ... to learn and use correct scientific terminology</td>
<td>2</td>
</tr>
<tr>
<td>5. To inculcate the desired attitude towards research by encouraging them to perform investigations of their own</td>
<td>3</td>
</tr>
<tr>
<td>6. To provide pupils with these basic concepts and with that factual knowledge that is essential</td>
<td>1</td>
</tr>
</tbody>
</table>

Adapted from: The Education Gazette 5/10/1978.

There is a knowledge from without: a truth that is isolated, analysed, reduced to bite-sized chunks in our classrooms and divorced from feelings, values and opinions. Intuition, emotions, spiritual insights and awareness are fractured away from these facts, which are seen in lonely isolation. Objectivity and neutrality are prized. Subjectivity and commitment are suspect. This is a by-product of our classical, science-dominated, western-world view. Never before have we known so much and cared so little. Head knowledge alone is a totally inadequate goal for science teaching tomorrow. Our Western tradition of science emphasises facts, reasoning, intellect, quantitative analysis and matter. These are qualities normally associated with left-brain functioning (Figure 1a). Most of this knowledge comes from without. We load the mind and ignore the spirit. How can children learn to care under these conditions? (Figure 1b).

**FIGURE 1**

There is also a knowledge that comes from within. An awareness of a greater reality too often ignored. The Eastern tradition focuses on the innermost flowering of knowledge, feelings, emotions, intuition, qualitative evaluation, synthesis and spiritual matters take on special meanings. People and what they think and feel really matter.
Today some science teachers are searching for ways and means of promoting knowledge which also touches the heart and flows through to the hands as informed acts of caring and commitment. Facts are an essential part of this process, but never a final goal!

The past fifteen years have witnessed an exciting rediscovery in the West of the human heart as well as the mind. A wondering why in addition to what, how and when? We are beginning to find ways and means of blending our 'hard empirical sciences' with 'soft right-brain learnings' in recognition of a whole new dimension in learning, long understood in the arts but suppressed in the sciences.

THE STRING THAT CONNECTS

Facts without feelings are irrelevant, meaningless and downright dangerous! The world is not run on facts alone. Too often the string of wisdom that links the beads of fact is missing in the necklace of reality. (Figure 2).

FIGURE 2

"By the beginning of the 1980's almost everyone had come to accept that the way the world still operates - and probably always will operate - is governed as much by how people feel about things as by the cold, hard, logical application of 'just the facts'."

David Hansen

Objectives we claim to strive for for pupils (see synopsis of objectives items 1, 2 and 3 in Figure 1) do not flow from good information alone, but from an amalgam of their beliefs, emotions and past experiences regarding themselves, significant others and new information. Each child responds out of a totally different mixture where the only common ingredient may be the educational experience shared. We are sometimes naive to expect all children to respond in the same way to a beautiful experience. How can they? we will need to spend much more time promoting the experiences that develop feelings if we want to see the emergence of a new science that moves our pupils towards caring adulthood that invests our pupils' lives with human dignity again.

SOME EXPERIENCES THAT PUT PUPILS IN TOUCH WITH THEIR FEELINGS

(This section was originally illustrated on video tape and the following represents a synopsis of these ideas and other related activities).

1. Match a musical experience to a slide presentation and know ...

2. Create a visual feeling and know ...
   ... in water colours; inks; natural pigments; clay; plasticine; wood ...
   ... on bark peeling; on stone; on paper; on natural artifacts; in the sand ...
   ... of a reflection; a shadow; a form; a movement; a texture; a contrast; an association; an outline ...
   ... using brushes, pens, pencils, fingers, natural objects, a chewed twig.

3. To touch and look and know about ...
   ... colours in rock pools and sand ...
   ... Textures on surfaces ...
   ... Visible, yielding things ...
   ... Without seeing it (blindfold) ...
   ... Using legs and wrists and shoulders and bare feet ...
   ... Things we love to touch ...
   ... Things we are afraid to touch ...
   ... The beautiful ...
   ... The ugly.

4. To listen and know ...
   ... to be quiet together ...
   ... to be quiet alone ...
   ... to hum it ...
   ... to sing it ...
   ... to feel it vibrating around one ...
   ... to hear its inside sounds (stethoscope).

5. To look at from another view point ...
   ... from above it ...
   ... from below it ...
   ... from a worm's-eye view, alongside it ...
   ... from floating around it (underwater) ...
   ... from being buried beneath it (leaves) ...
   ... from being very close to it (microscope).

6. To discover a fueling and share it ...
   ... to identify it ...
   ... to analyze it ...
   ... to talk about it ...
   ... to refine it ...
   ... to cherish it ...
   ... to value it ...
   ... to communicate it, in mime; in poetry; in prose; in song.

SEEDS OF HOPE

If we want our science to engage the heart and hand as well as the head, then we must set aside time for feelings to develop. This means planting seeds of hope for an unseen harvest and it will take the same faith as the farmer who invests in what is yet unseen for the certainty that is eventually assured.

"Glorious saturation of soul is the reward of all who seek it in the bosom of nature."

Kahlil Gibran

Can these things be measured? Are they worthwhile? Yes to the first! As to the second, it all depends on what you believe the goal in education to be. This has certainly been reflected in our experience with student-teachers at Howbrey. (Box 1).

Is this the sort of environmental response you are looking for in your teaching? I am clearly this is for all - not just the primary school child. The secondary school pupil wants and needs this experience as well, and teachers will discover with surprise and delight that once the right climate is created, pupils are amazingly willing to get involved. The sooner we start the more readily these life-changing lessons are integrated and internalised in the personality of the child ... and head knowledge can begin to move towards a right use of their environment ... the beginnings of heart wisdom.
Is anybody listening out there?

REFERENCES


The Education Gazette. 5 October 1978.

Continued from p.18

field. This course thus re-inforces and provides a stimulating extension to the practical teaching programme which is an integral part of the training of each student at Edgewood. Teaching of nature however, makes its own particular demands upon the teachers. For the enterprising Fourth Year student, this provides a new challenge and something refreshingly different from what they have been doing during their previous three years of training.

CONCLUSION

It is common knowledge that students often feel unmotivated by many of the courses they are offered in the fourth year of their training. In most instances this is not due to the quality of the lecturing but because, to put it bluntly, they are 'tired of being lectured to'. It seems that there should be a clear break between the type of tuition offered in the first three years and in the final year. I submit that the course outlined above could serve as a model for some other fourth year courses. Clearly other models might be found to be just as, if not more, appropriate. This course follows closely the structure of one which was pioneered by the Johannesburg College of Education. I was impressed by the unstinting praise given by senior students at that college to their own Environmental Elective; seldom had I seen students so motivated by a course.

It is unfortunate that, at present, the Environmental Elective is offered only to Geography students. If, as at the Johannesburg College of Education, it were open to students from other disciplines, the course itself would be enriched; it could make justly claim to be an example of holistic education, and a far greater number of students could participate. Ideally lecturing staff from a number of disciplines should participate in the programme. It appears that this will be achieved only if a greater degree of flexibility is built into the Fourth Year timetable; this, in turn, can only be made possible if less time is spent lecturing to these senior students.

REFERENCES


Continued on p.26