

THE GREAT NEGLECTED OUTDOOR CLASSROOM !

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The attitudes of a small sample of teachers in the Western Cape towards fieldwork as a teaching methodology are analysed and discussed. Tentative conclusions are drawn as to why teachers either use or avoid using this approach to teaching.

A SOUTH AFRICAN PROBLEM?

A recent issue of *School Science and Mathematics* carried results of a survey of ecology teaching in selected Illinois high schools. One of the more disturbing results of this survey revealed that "Over half of the teachers responded that they 'never' or 'seldom' used field trips as a method of instruction" (Barber & Tomera, 1985). It is this author's hypothesis that the same is true in South Africa and that *fieldwork as a teaching methodology is an orphan in our schools.*

Close observation of teachers during pre-service and in-service training in Black and White institutions and in the English and Afrikaans cultural groups has provided convincing personal proof of the above statement. Furthermore, a sampling of a small group of science teachers in the Western Cape has confirmed the validity of the statement. Although the sample (refer to Table 1) was too small and unrepresentative (being overwhelmingly the English-speaking teacher of White pupils at Standard 2-5 level) to draw definite conclusions from, the results are nonetheless indicative of what is in fact taking place in some of our schools.

TABLE 1 *The nature of the sample.*

POSTS HELD	RACE OF PUPILS	LANGUAGE OF PUPILS
Infant school : 6%	White : 87%	English : 62%
Primary school : 74%	Black : 2%	Afrikaans : 30%
Secondary school: 20%	Mixed : 11%	Eng/Afr : 5%
		Xhosa : 3%

n = 45

An analysis of the results (refer to Table 2) reveals a discrepancy between theory and practice. There was absolute consensus among English-speaking teachers that fieldwork was desirable, yet only 78% adoption of this methodology in practice. Clearly problems have to be overcome to enjoy the full benefits of field experiences. Afrikaans-speaking teachers were less convinced of the intrinsic value of fieldwork, and almost half of them never employed these methods.

TABLE 2 *Analysis of attitudes to fieldwork by cultural group.*

FIELDWORK AS METHODOLOGY	Positive Response (%)	Negative Response(%)
1. FIELDWORK IS A DESIRABLE METHODOLOGY!		
Combined sample	92	8
English teachers	100	0
Afrikaans teachers	82	18
2. FIELDWORK IS A NEGLECTED METHODOLOGY!		
Combined sample	74 (12% undecided)	14
3. I MAKE USE OF FIELD TRIPS AT LEAST ONCE A YEAR.		
Combined sample	64	36
English teachers	78	22
Afrikaans teachers	55	45

If anything the method of sampling, former students of the author, would have generated an optimistic result biased in favour of fieldwork. It would be safe to assume that results in South Africa are, if anything, less favourable than those quoted by the Illinois survey. This is alarming considering the attributes of the field trip as an instructional method have been widely acclaimed by educators and researchers (Hickman, 1976; Booth, 1979) and confirmed by the author's own research in this field (Opie, 1979).

In a closely controlled attempt to measure the degree of affective development generated by exposing an experimental group of high school pupils to an ecology programme in which the only variable was the teaching method (fieldwork vs lecture-demonstration technique) the author concluded that:

1. Fieldwork substantially promoted positive affective development in the experimental group.
2. These gains were persistent over a period of time.
3. Effective biology teaching should be rooted in the local environment with examples selected in this context.
4. The present teaching corps can successfully promote effective environmental educational experiences provided that:
 - a. Field trips are included in the programme.
 - b. Pre- and in-service teacher training is provided in this methodology.
 - c. Local resource guides are developed to assist the teacher.

Clearly there is still much 'missionary work' to be done in this area and it is feared that South African teachers, despite their appreciation of the benefits of the outdoor classroom, "make extensive use of the textbook reading as an instructional method" (Barber & Tomera, 1985) as do their Illinois colleagues.

WHY TEACHERS GO ON FIELD TRIPS

Teachers in the survey who did make use of 'the outdoor classroom' were invited to rank in order of decreasing importance the reasons for using field trip methodology given in Table 3. The results are shown in Table 4. From these it is possible to conclude that:

1. Teachers who make use of field trips value the affective development objectives most highly i.e. ENJOYMENT and ENVIRONMENTAL EDUCATION (attitude and value development).
2. Fieldwork might be more closely linked to classroom practice in the English cultural group as the field exercise is seen to be an effective reinforcer of concepts covered indoors.
3. ENRICHMENT is accorded a lower status by both groups, but this is more noticeable in the Afrikaans cultural group, possibly due to the greater emphasis on symbols as a measure of achievement at school.
4. The apparent rank difference for FIELD SKILLS is not considered significant as the difference between the mean scores was negligible.

TABLE 3 Scale of potential responses for teachers using field trip methodology.

CATEGORY	ELUCIDATION
A ENJOYMENT	Informal educational opportunities
B ENRICHMENT	Material beyond the syllabus
C REINFORCEMENT	Practical demonstration of theoretical concepts covered
D FIELD SKILLS	Observation, measurement, hypothesis testing
E ENVIRONMENTAL EDUCATION	Attitude/value building goals

TABLE 4 Analysis of responses to Table 3.

Rank Order	Analysis of ranking and mean rank scores out of 5					
	COMBINED	\bar{x}	ENGLISH SAMPLE	\bar{x}	AFRIKAANS SAMPLE	\bar{x}
1	A	3,6	A	3,5	A	4,0
2	B	3,2	E	3,2	E	3,3
3	E	3,1	C	3,1	D	2,8
4	C	2,9	B	3,0	C	2,5
5	D	2,6	D	2,7	B	2,3

It is perhaps worth asking at this stage whether the major difference in cultural emphasis with regard to fieldwork cannot be due to an unhealthy isolation of theory and practice, where perhaps the textbook still dominates the teaching situation to a greater degree. There is evidence for this in

the recent report prepared by the HSRC (van Schaalkwyk, 1982) where, amongst others, the following conclusions were drawn:

1. The new inductive approach to biology teaching has created adjustment difficulties for many teachers whose training predated the implementation of this approach.
2. The senior secondary syllabi were too long to do justice to this approach.
3. The new emphasis should result in a shift towards learning broad concepts rather than a mass of facts.
4. This implies the need for new syllabi with:
 - a. Clearly detailed objectives rather than broad aims.
 - b. Guidelines for making the syllabi more relevant and hence interesting by adjustment to the local situation.

In the current absence of these new syllabi, which despite improvement still need to be unhitched from the 'University Horse' which seems to have taken the academic cart so far down the road of conventional rather than functional literacy in South Africa, there is a particularly pressing need for guidelines in using the outdoors in very local situations to be developed alongside of syllabus reform. This is already happening, but in a very disjointed and unco-ordinated way. Hopefully the newly appointed Council for the Environment will be in a position soon to make a major contribution in this field.

WHY TEACHERS AVOID FIELD TRIPS

The surveyed group who effectively never made use of the 'outdoor classroom' despite the obvious suitability of their subject were asked to rank the reasons given in Table 5 in order of decreasing importance. From these results, shown in Table 6, it is possible to conclude that:

1. Teachers are in broad agreement regarding the importance of the difficulties encountered in attempting fieldwork.
2. Time is seen as a greater constraint amongst Afrikaans-speaking teachers, which relates to the point made earlier that fieldwork is inclined to be viewed as an unrelated luxury exercise largely divorced from classroom practice.
3. Lack of experience is hence a greater problem for Afrikaans-speaking teachers and there is a greater perception of the need for guidance in this regard.
4. In this context Afrikaans-speaking teachers perceive it to be more difficult to obtain permission for fieldwork than their English-speaking colleagues.

TABLE 5 Scale of potential responses for teachers avoiding field trips.

CATEGORY	ELUCIDATION
A TRANSPORT	Difficulty of getting to site
B TIME	Curriculum demands
C PERMISSION	Authority to leave school
D EXPERIENCE	Inadequate knowledge of methodology
E GUIDANCE	Lack of suitable reference material

TABLE 6 Analysis of responses to Table 5.

Rank Order	Analysis of ranking and mean rank scores out of 5					
	COMBINED	\bar{X}	ENGLISH SAMPLE	\bar{X}	AFRIKAANS SAMPLE	\bar{X}
1	B	3,6	B	3,5	B	4,5
2	A	3,3	A	2,7	A	3,0
3	E	2,9	D	2,2	D	2,7
4	C	2,6	E	1,7	E	2,5
5	D	2,2	C	0,7	C	2,2

CONCLUSIONS

Frequently survey results serve no more than to confirm the 'gut level' responses that many associate with common sense. Other researchers have already identified these problems (Schreuder, 1977; Hurry, 1978). Schreuder identified the over-loaded curriculum and the lack of adequate preparation, to which Hurry added the gap between theory and practice which is highlighted by the author's own research (Opie, 1979).

Here is a message for teachers, teacher trainers and administrators alike. Can relevant life science be taught apart from the 'outdoor classroom'? Personally I do not believe it can!

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NATURE'S HEALING

In times of trouble,
 In times of despair,
 In times of hardship,
 In times of grief,
 In times of misery,
 Nature is there to fill the open gap in
 Man's heart.
 Nature is there to soothe the burning sore in
 Man's heart.

When you lift up your eyes and gaze at the
 Vegetation,
 You see the beauty of nature
 The tree standing there is green in summer.
 It serves as shelter for birds at night
 And gives a cool shadow by day.

The green leaves of the trees and the green grass
 Give life to mankind.
 Though mankind might have been filled with grief,
 Just the mere look at the vegetation, and a
 Feeling of gaiety is evoked from within.

When the grass is green and the flowers are swaying
 To and fro, mankind feels contented.
 He feels honour and respect for nature, including
 The Creator.
 When the sun is shining and the sky wide open,
 The vegetation clears all the hardships
 And misery in the heart of mankind.
 With all this happiness, Man realises the beauty
 And the healing power of nature.

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