

WHAT DO CHILDREN PERCEIVE AS SIGNIFICANT?



Sylvia Parker

Findings from research in Zimbabwe so far suggest that many areas and items within the physical environment of township children are perceived as significant. These include natural and man-made components of streets and yards. Examples are flowers, stones, smoke, dogs, cars, stores. Rubbish and waste scored low in written responses. Food, with its wide range of different items, may provide a feasible starting point for environmental education if pupil awareness is considered an advantage.

Introduction

This question is at the hub of research being carried out among Grade 6 children in Harare, Zimbabwe. The children involved are from high density urban areas (also known as townships). Their average age is 12 years. The purpose of the research is to establish:

- What outdoor physical features pupils are aware of.
- What knowledge they have of these.
- What importance they attach to these.
- What attitudes they attach to the quality of these.
- What changes they observe in their environment.
- What knowledge they have of the whereabouts, availability, and use of physical resources in their environment.
- What understanding they show concerning the maintenance of their physical environment.

Information about the above issues could provide useful guidance to curriculum developers in environment education and also in motivating starting points for teaching. Hitherto little research seems to have been carried out regarding children's actual perception of their environment.

An initial phase of the investigation was to seek written responses from a sample of 381 pupils. The following four requests were made:

1. Write about anything you would like to.
2. What do you do, see and what people do you meet out of school?
3. Write a letter to someone in another country about the place where you live, work and play.
4. Describe your route to school.

Pupils were invited to write in either English or their vernacular language. The first request was designed to be as open ended as possible. The other three requests attempted to direct pupils away from the immediate school environment to the surrounding one. Although the research was concerned with the *physical environment* it was felt that by asking for information about people and pupils' activities generally, pupils would not be prompted to focus on features that were normally insignificant to them, but those important to the researcher. It would be more valid to see how frequently aspects of the physical environment were mentioned. On analysis mention of people, description of social events such as street fights and thieving would be ignored.

Analysis of data: word count

A word count was made according to the following criteria:

- words must be mentioned more than once
- words must be common nouns
- words to do with people e.g. teacher, mother would be ignored
- words representing non-food items found inside the home e.g. cup, chair, to be ignored.

Findings of the word count for request four, 'Describe your route to school' are provided as an example, in Table 1.

Table 1: Responses to request

Number of different words counted	=	98
Total frequency count	=	1158
Number of pupils in sample	=	125

Rank order (top 15)

Word	Frequency	Rank Order
school	80	1
cars	75	2
dog	72	3
house	69	4
bus	62	5
flowers	57	6
bridge	45	7
cat	37	8
accident	36	9
stones	34	10
road	31	11
ambulance		
grass	27	12
trees	27	12
smoke	24	13
stores	23	14
street	21	15

Discussion

Isolated words at best only provide an indication of those things pupils are habitually conscious of. They bear no indication of knowledge about these, the importance attached to these nor attitudes to them. It was natural to anticipate in responses to request four that words such as vehicles, roads, school and house would feature. Less expected were items such as flowers, dog, cat, accident, ambulance, smoke and stones. When reading pupils' written contributions it was evident that many of their journeys were embroidered with imagined or once seen accidents. Smoke appeared to be produced by distant industries or local fires. The exercise was carried out during the late winter period in 1982 when smoke tends to hang in the cold early morning air.

Analysis of data: Content

Common nouns as recorded in the word count formed the basis for content analysis.

Figure 1 summarises the analysis of content for the fourth set of responses. Subdivisions within each category are indicated but not elaborated on here. Each bar represents quantitatively the number of items mentioned and their frequency in any one category.

Discussion.

The categories, 'streets', 'yard', 'local animals' featured as significant. Despite the presence of rubbish and waste in the high density environment, 'pollution' and 'waste' scored low. It could be that rubbish (outside the school and outside the tidy yards) was simply unnoticed by pupils. It might also be that rubbish has negative associations and was therefore considered undesirable to make mention of. It is of interest to note that local animals earn greater attention than rural or wild animals.

Analysis of data: Diversity

Categories of content analysis reflect total frequencies of items. They do not reflect how many *different* items or words make up the whole nor do they reflect the *weighting* of frequencies per item. These two concepts are embodied in the term *diversity* as used here. An attempt to establish diversity within the categories was made by 'borrowing' Simpsons Index formula. This is more usually applied when investigating diversity of an area of vegetation. (The more diverse the vegetation, the better the stability). Essentially the frequency of plants *per species* is assessed. This is related to the numbers of different species present and the total number of plants present.

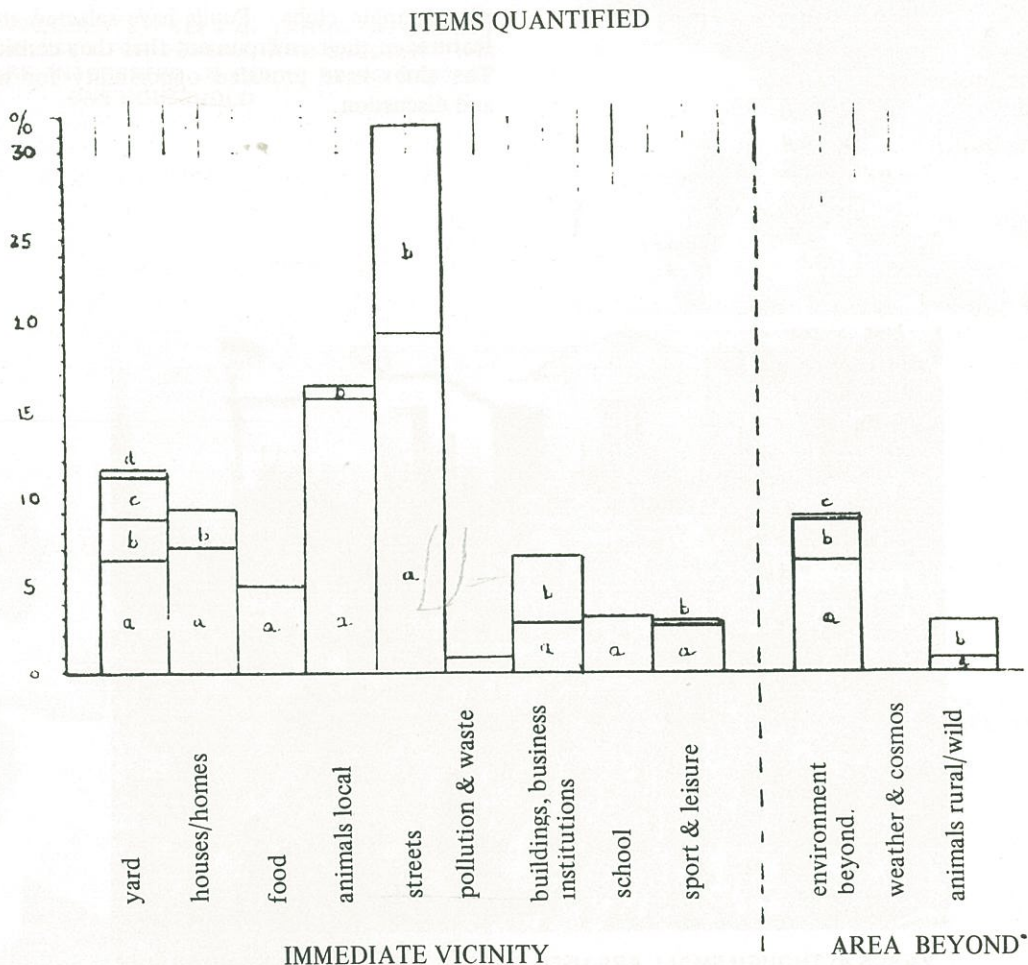


Figure 1. Content analysis: Request 4. Pupils' route to school.

The formula is as follows:

$$\text{Simpsons Index} = \frac{N(N-1)}{\sum n(n-1)}$$

where; N represents the total number of plants present
n represents the number of plants per species
 Σ is the symbol for sum of.

In the context of this research the Index has been applied in the following way:

N represents the total frequency of all items per category
n represents the frequency of individual or different items per category.

Hence each individual word or item takes the place of a plant species. The higher the index score the higher the diversity.

Table 2 gives categories in order of their diversity index. This is based on responses by pupils to all four requests made.

Table 2 Categories in order of diversity index.

Food	41,7
Yard	27,4
Animals rural/wild	19,7
Streets	18,8
Buildings, institutions, businesses	16,6
Environment beyond	15,0
Sport and leisure	14,4
Animals local	11,5
Houses/homes	10,9
Weather and cosmos	9,7
Pollution and waste	4,8
School	3,9



YARDS ALTHOUGH SMALL ARE USED FOR CULTIVATING VEGETABLES SUCH AS RAPE

Discussion

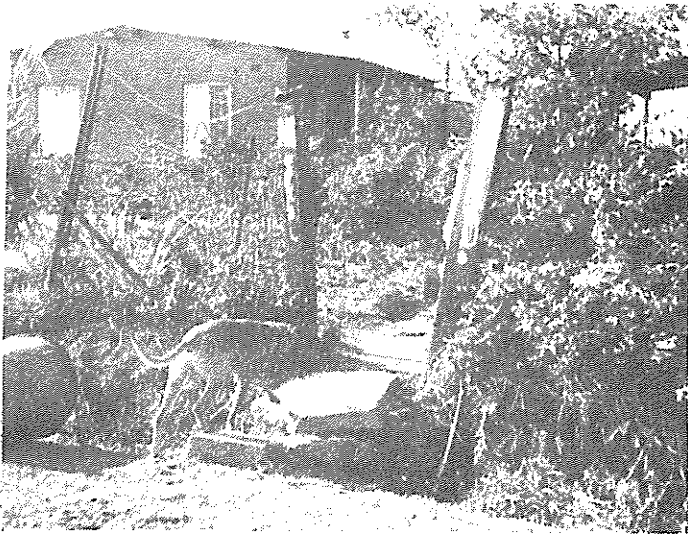
Somewhat surprisingly the category of food, which did not dominate in the quantitative analysis of content, showed up as having greatest diversity (41,7). This could mean that pupils are aware of a wide range of specific foods. No one or two foods stand out as being significant. It could also mean that the category food lends itself to a wide range of common noun words, unlike some other categories.

The 'yard' (27,4) is another category offering a range of diverse interest to pupils. 'Rural and wild animals' (19,7) while again not featuring as dominant in the content analysis, possibly provides many different focal points of awareness.

'Pollution' and 'waste' again scored low. It would appear that this does not form an appropriate starting point for environmentally oriented study if pupil awareness is considered to be an advantage. Neither does the physical environment of the school itself.

The degree of importance that can be attributed to this somewhat novel analysis of data is not clear. At best it should be seen as an attempt to explore areas of the physical environment in terms of range and richness. So far the study suggests that many areas and items within the physical environment are perceived by pupils to have significance.

The next phase of the research has been to run two outdoor photographic clubs. Pupils have selected and photographed features in their environment that they considered significant. The clubs have provided opportunity for written comment and discussion.



DOGS ARE A COMMON FEATURE IN TOWNSHIPS. RUBBISH IS REGULARLY COLLECTED BY THE MUNICIPALITY FROM BINS. YARDS ARE USUALLY TIDY AND FREE OF RUBBISH UNLIKE STREET VERGES AND OPEN LAND.

CHICKENS ARE FREQUENTLY KEPT IN YARDS. A VARIETY OF MATERIALS IS USED FOR FENCING AND SHELTER. THE YOUNGSTERS ARE INTERESTED IN DUCKS BEING KEPT BY ONE HOUSEHOLD



EMPHASIS IS GIVEN TO THE FENCING OF YARDS. LIDS FROM DRUMS HAVE BEEN USED TO MAKE THIS NOVEL FENCE.