

NOT JUST ANOTHER ENVIRONMENTAL EDUCATION TOOL - THE URBAN JUNGLE: DEVELOPMENT AND EVALUATION

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If widespread calamity or social distress does not bring us to our senses first, imaginative forms of education may do so more pleasantly (O'Riordan, 1981).

INTRODUCTION

One of the most significant problems facing urban communities today is the apparent lack of awareness among individuals of their environment, in particular, of its processes and makeup. Underlying philosophical perspectives have a direct bearing on the way society as a whole relates to the environment and are embodied in the values, attitudes and behaviour of every individual. Scott (1988) advocates that an instrumentalist ethos (one such perspective) of human superiority and control has been responsible for the tide of environmental degradation which prevails today. The perceived dichotomy between people and the environment has led to the environment being conceptualised as a resource and as such, able to be exploited, consumed and controlled by society. A new environmental ethic which places value on the symbiotic connectivity between people, other species and the environment has been advocated. An appropriate methodology for achieving this goal continues however, to evade educators today. As we hope to illustrate, the methodology employed in *The Urban Jungle*, a picture-building exercise (played cooperatively as an intra-group activity) or game (as a competitive inter-group activity), attempts to address such an ethic.

THE URBAN JUNGLE - RATIONALE

Awareness is a prerequisite for action-taking and response to issues of environmental concern. Without an awareness of the consequences of behaviour and its impact on the environment in its totality (by implication natural and built, technological and social, political, moral cultural and historical, and aesthetic aspects), problems such as pollution, soil erosion, agricultural

degradation and overexploitation of natural resources will persist. Given that the majority of South Africa's population live in urban settlements, coupled with a population growth rate of 2.3 per cent per annum, it is estimated that by the year 2000, a total of approximately 36 million people will reside in urban areas (Huntley *et al.*, 1989). It was against this backdrop that *The Urban Jungle*, a game which aims to create awareness of environmental degradation in an urban context and emphasise the interrelatedness of the components in such a system, was developed.

THE STRUCTURE OF THE URBAN JUNGLE

Failure to approach environmental problems holistically often results in the creation of new problems. A systematic approach focusing on the holistic, synthetic, interrelated nature of people and the environment is therefore desirable. The examination of the urban system as a whole or unit which consists of characteristic elements, is one such approach. The elements in such an approach have a dynamically symbiotic relation to one another and their interaction typifies the system's function (Duminy and Sohng, 1986). Instead of addressing individual ecological or environmental problems, this approach examines ecological units or systems holistically and then identifies problems and opportunities within those units or systems (EEASA, 1992). This was the approach taken in developing *The Urban Jungle*.

The various components and concepts depicted in *The Urban Jungle* include: air pollution (and acid rain); rural/river catchments (as a water and population source); commercial plantations; recreation and land use (open spaces, extinctions

and habitat loss, soil erosion); waste stream (sources and sinks); industry and central business district (overconsumption, pollution, overpopulation); fuel and transport (energy, pollution); deforestation; waste dump; sewage works; and school and the home environment (recycling, "environment-friendly" behaviour).

Based on the tested principles of *Madlusuthe's Farm*, the programme comprises three activities: (a) picture building; (b) problem solving; and (c) action taking. The details of how this game is played are not the subject of this paper, rather it aims to outline the value of this resource for use in non-formal situations as well as in the classroom.

Pilot studies were conducted during the early stages of development in a number of schools in central Durban. An evaluation based on observations and feedback from teachers regarding the potential of *The Urban Jungle* to achieve its principal objective of promoting awareness of the urban environment and concomitant responsible behaviour, is presented in this paper.

EVALUATION

Evaluation was carried out on the basis of whether the concept described met generally accepted criteria for effective environmental education (UNESCO-UNEP, 1978).

1. Tbilisi Principles for Effective Environmental Education Programmes

The principles applied in *The Urban Jungle* programme are in accordance with principles recommended at a world inter-governmental conference on environmental education in Tbilisi (October, 1977). These include the following:

- (a) **Consider the environment in its totality.** The utilization of an holistic and systematic approach to environmental education, such as that used in *The Urban Jungle*, ensures consideration of the environment in its totality.
- (b) **Emphasize active participation in preventing and solving environmental problems and working towards their**

solutions. Active participation is not only encouraged but also constitutes the ultimate objective of *The Urban Jungle* programme as a whole.

- (c) **Examine major environmental issues from a local, national, regional and international point of view.** The problems identified in the urban environment depicted in *The Urban Jungle* are ubiquitous on both a micro- and macro-scale. The emphasis on the picture as a "typical" town or city address the issue of scale.
- (d) **Emphasize the complexity of environmental problems and thus the need to develop critical thinking and problem-solving skills.** The urban system and the interrelatedness of its component parts and their associated problems are very complex. This is emphasized throughout *The Urban Jungle* programme. It is illustrated by the "busy" nature of the picture built as the game progresses. Furthermore, during the course of the problem-solving activity (part two of a three-part programme) attention is drawn to the fact that numerous acceptable solutions to the problems identified by the children exist and that no one solution will be applicable in every context.
- (e) **Focus on the learner's own community.** Each child brings into the classroom or centre their own "cultural package" through which they will interpret what is discussed and shared in a way which is specific to the particular environment in which they live (Horn and Cleaves, 1980). Problems identified in the picture constructed in *The Urban Jungle* may be real for one child and not for another. To illustrate, a child living in an informal settlement without water-borne sewage may identify more fully with the problems of water pollution that a child who does not.
- (f) **Relate environmental sensitivity, knowledge, problem-solving and value clarification at every school level.** The *Urban Jungle* package is readily adaptable for use by all age groups,

from junior primary through to tertiary level.

GENERAL DIDACTIC PRINCIPLES

The Principle of Totality

The basic premise of this principle is that it is a senseless exercise to introduce new subject matter to children and to expect them to internalise or digest it, if it is not assimilated into a structural unit (Duminy and Sohngé, 1986). One characteristic of the principle of totality is the need for a theme or topic around which subject matter can be centred (Duminy and Sohngé, 1986). Furthermore, during the first years of school, subject matter should be derived from the immediate environment of the children.

Gestalt psychologists advanced the notion that people observe the world that surrounds them as a whole and learning is promoted when subject matter is presented in this form, rather than in isolated parts (Epanchin and Paul, 1987).

The chosen theme of the urban environment as embodied in *The Urban Jungle* not only addresses the issue of a structural unit, but by highlighting the interrelatedness of the unit or urban environment as a whole, that is, by focusing on the symbiotic nature of components in the urban system, it meets one of the most basic principles of sound educational practice.

The principle of Motivation

To arouse interest and maintain a will to listen and to learn is a basic concern of every educational situation (Duminy and Sohngé, 1986). The closer education can be brought to life itself, the more success can be expected in achieving this goal. By introducing children to a range of environmental problems experienced in a "typical" urban environment (picture building activity 1 of *The Urban Jungle* programme), allowing them to identify specific problems experienced directly within their own communities (problem-solving activity 2) and then encouraging them to actively participate in reducing or eliminating that problem (action taking activity 3), one provides an avenue for spontaneous and intrinsically motivated interest.

The Principle of Environmental Teaching

From the above discussion it follows that it is essential that the child's home and community environment is taken into consideration when playing *The Urban Jungle*. The younger a child is, the more vital it is that education emanates from the home environment (Duminy and Sohngé, 1986). Not only is every child unique, but their social and cultural backgrounds strongly influence participation in the programme. It is therefore imperative that the teacher/educator/conductor of the game knows exactly the background of the children participating in the programme.

The value in environmental teaching lies in the unlocking of the reality of immediately surrounding environments to pupils (Duminy and Sohngé, 1986). It is important that children realise that what happens in their own life and in their own environment is regarded as important by the school, and vice versa, and that this further impacts on the livelihood and well-being of others in the same society of which they are a part. This realisation bridges the gap between the reality of life and the game being played. When the problems embodied in the subject matter under discussion emanate from the child's own environment, a more meaningful liaison between child and environment is acquired (Duminy and Sohngé, 1986).

THE VALUE OF GAMES / PLAY / SIMULATION IN ENVIRONMENTAL EDUCATION

There is no doubt that children learn through play, just as they learn, consciously and unconsciously, from all forms of experience (Jones, 1980).

Duminy and Sohngé (1986) affirm the child's interest in play and activity during the first years of school and further add that this interest is so strong that the problem seems not to be one of promoting motivation but of channelling the child's existing interests. Success in channelling is, however, only achieved provided interest in the theme or subject matter presented is not lost as it is channelled (Duminy and Sohngé, 1986). This requirement places a tremendous responsibility on

the shoulders of the teacher in a classroom situation, but *The Urban Jungle* package as a whole (including the instruction booklet supplied) provides adequate direction to both teachers and pupils.

TEACHER FEEDBACK

As a final test of the game's suitability, teachers were asked to comment on the programme as a whole. The following outline the most pertinent given.

- (a) The programme (excluding the third activity - "Action Taking") takes 30 minutes to complete. This approximates with the average length of a class period and can therefore be readily accommodated within the timetable of most schools.
- (b) Tempo change from high to low, from the beginning to the end of the programme was considered highly effective in retaining the attention span of children in most age groups. (The spirited and competitive nature of the picture building activity is followed by a problem-solving one which requires the children's full attention and critical thinking. The action taking part of the programme is more reflective and consolidatory in nature.)

APPLICATION

- (a) The game is the second part in a series of enviro-picture building games. Others include: *Madlusuthe's Farm, Reserve and Nature, and Catchments* (all of which are still in pilot form, cooperative in nature, and available through SHARE-NET).
- (b) *The Urban Jungle* may be used as an introduction to the entire school curriculum from primary through to tertiary level in both formal and non-formal education situations, as it addresses all aspects of geography, and

has potential application in the science and technology syllabi.

- (c) *The Urban Jungle* comprises a total of 20 picture cards, each one relating to others in the urban system, but also able to be studied independently. This provides 20 different themes for project work or individual research. Gower (1991) advocates 'theme teaching' as a means of addressing the many shortcomings of traditional curricula. Suggestions are given on the back of each picture card, referenced to particular Enviro-Fact information sheets, for research and project work.
- (d) Trench gardening as a worthwhile action taking activity was encouraged in the initial pilot testing run of *The Urban Jungle* and pupils of one Durban school undertook to establish such a garden within their school premises as part of the requirements of the Design and Technology section of the school curriculum.
- (e) *The Urban Jungle* package may be utilised as a cooperative picture-building board activity (as opposed to the competitive, team challenge activity for which it was developed). The emphasis now shifts to group discussion, questioning and negotiation.
- (f) For research purposes, this game may be used as an assessment tool. Most social scientists and educators use questionnaires and surveys to derive the data they require to answer their questions. It is suggested that *The Urban Jungle* could be used to gauge the level of environmental awareness in children and to determine how much they actually know about specific problems in their urban environment.

CONCLUSION

It is generally accepted that to motivate people to act in a responsible and 'environment -friendly'

manner requires a radical shift in individual attitudes and values. As attitudes and values are ingrained from youth, the need to work with children in both formal and non-formal education situations is underscored. As the foregoing discussion should highlight, the rationale behind and the methodology employed in *The Urban Jungle* could prove to be the most impactful and successful means of attaining the shift required to promote intrinsically motivated environmentally responsible behaviour in school children today.

1. Note: *The Urban Jungle* was released in mid-1993 and has since been used in many schools nationwide. Resources mentioned in this article are available from SHARE-NET at P.O. Box 394, Howick 3290.

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NOTES

1. The *Urban Jungle* is the second in a series of enviro-picture building games which has developed from the HL&h game, *Madlusuthe's Farm*, in conjunction with the Action Ecology fieldwork cards of the Natal Parks Board, the READ project cards developed by the SA Sugar Association and the Pick 'n Pay Enviro Facts series (all SHARE-NET resources).

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