ENVIRONMENTS, PEOPLE AND ENVIRONMENTAL EDUCATION: A STORY OF BANANAS, FROGS AND THE PROCESS OF CHANGE

Rob O'Donoghue

A story is used to address how the process of change has led to the development of political, social, economic and biophysical environmental stress. Comparative analogies illustrate how education as an institutional profession with an historically rooted didactic science perspective has not adequately responded to change, despite the emergence of both People's Education and Environmental Education as sensitising forums. The urgency for participatory engagement in meaningful change and the development of alternative perspectives of education are optimistically sketched as a possibility for reversing environmental degradation. To achieve this education should react both as an agency of change, and an agency that is changed by society. The profession must be equal to this dialectic challenge.

INTRODUCTION

This paper is an attempt to explore some aspects of a changing South African environment that led to the emergence of both People's Education and Environmental Education as diverse yet loosely complementary sensitising forums for educational change. It may be surprising to some, and somewhat alarming to others, that I tend to use these terms synonymously at times. It is more normal for educators to polarise these responsive movements. The former is commonly labelled as a scattered popular political reaction against the existing system, and the latter as either a desirable outdoor curriculum enrichment process, or as an alarmist conservation bandwagon. Because of possible confusion owing to these contrasting perspectives and a tendency of these sensitive issues to evoke emotive over-reaction, I have elected to explore them through a story, a fairy tale about 'Bananas, Frogs and the Process of Change'. A fairy story is easy to dismiss as fictitious by those who feel threatened by its contents, but there is often some deeper meaning accessible to those with courage enough to look. I will also digress from the story at times to illustrate the need for educators to more intensively explore and respond to environmental and people issues as an integrated whole, long overdue for serious attention in a growth and outreach process of change within South African education.

A FAIRY TALE OF CHANGE

In the manner of all good fairy tales my story starts. ... Once upon a time a prince of a frog lived under a banana tree. He felt happy in his moist, warm habitat. The banana tree did not seem to notice the frog or the obvious benefits it derived from the frog's eating habits. The two lived happily side by side oblivious of their mutual interdependence.

You have probably realised by now that both were a little naïve and egocentric. The banana plant thought it was a tree and the toad saw itself as a frog. Not that tree-like herbs and toads are in any way lesser organisms than trees and frogs except within the myopia of some cultural perspectives of warts and wise old men. Not only did they not see themselves for what they were but they each had an erroneous image of isolated self-reliance. This is not surprising because I forgot to point out that this story started a long, long time ago and things have changed since then. Now biological taxonomies and ecology have transformed these narrow, poorly differentiated perspectives and we are more likely to be aware of the interdependent dynamic nature of the environment.

You might think that I could have avoided this explanatory departure by starting the story with long, long ago. I chose not to, however, because it was not long, long ago but the other day that I saw just such a situation of bananas and frogs that prompted me to write this story.

But, to return to the story. In the convention of good fairy tales I must first develop my characters before the plot unfolds.

THE BANANA BUNCH

Bananas are bright, friendly souls, packed with get-up and go. Nutritionally everything they touch turns to gold. They arrived on these shores in about 1890 when Alfred Eyles, a missionary, obtained some plants from Indian migrant labourers to start a plantation on the Natal south coast (Banana Board 1987). *In the 1920's and 30's large scale plantations were thriving in the vicinity of Durban. By the 1950's and 60's environmental change was already taking its toll. Urban expansion, adverse weather, soil depletion, eelworm epidemics and a marketing advantage led to a mass migration to the Eastern Transvaal. Today these areas produce over 75% of our banana production. The 1950's and 60's produced an era of further change when the entire banana world was threatened by periods of market unrest. The banana plantation community constituted the Banana Board to establish a growers registration roll and ensure the maintenance of a secure marketing infrastructure. This brought on an era of prosperity when bigger, brighter, happy bananas lived in splendid plantations. An abundance of cheap labour and fertilizer, and scientific advances in disease and pest control all pointed to a bright future, but environmental change was once again lurking in the wings.*

At this exciting juncture I will pause in my story to illustrate how our education system has grown through a similar pattern of progressive change.

EDUCATION GOES BANANAS

Our current education system, in Southern Africa, is very much like the banana, as it also arrived on these shores from abroad to be selectively hybridised over many years into what we have today. Market unrest has in many quarters initiated some change, but in the last decade accelerated environmental change and a persisting lack of relevance are threatening its long-term viability.

Environmental Education and People's Education are two diverse movements that have become forums for change. The former is an international environmentalist movement and the latter a diverse local reaction, but both have started a search for cures to the dreaded disease of irrelevance. A myopic administration has been somewhat less than enthusiastic about these movements, particularly the latter, as it has been, in some cases, rather reactionary and negative about proposed cures. Granted, the mass amputations proposed by some within people's education have been rather ill-conceived and extreme at times. Then again, AIDS as an educational disease is a rather serious issue, especially as many in education are unaware of its malignancy and that they are carriers.

Educational AIDS, an 'Autocratic, Instructional, Deterministic, Scientific' perspective on education has tended to dominate education since the post-war

era. Since the 1960's it has developed into an epidemic of massive proportions. The disease is not easy to isolate and identify, however, and it has been only recently that a widening awareness of its seriousness has become apparent. You may not have heard of Educational AIDS but most of us seem to be carriers.

Hindsight enables us to see Educational AIDS emerge as a structural functionalist virus locked within the behavioural objectives movement. It later became more obvious within a progression of structuralist taxonomies in the 1960's and 70's. Bloom's Taxonomy is one symptomatic example which initially developed around a need for the structuring of examinations. (Bloom 1972). It was, however, to become one of the most fertile mutations of this virulent disease. An evaluation structuring instrument rapidly became transformed into an instructional instrument within a self-fulfilling cycle of apparent enlightenment and educational progress. Today many see this taxonomy as a 'sequential cumulative' hierarchy of process skills for the design of teaching programmes.

One does not have to look far to start knocking empirical philosophical and epistemological holes in much of these grossly simplified instructional planning routines, but these modes of thought and action still persist at the heart of most modern didactic frameworks. This structuralist technology-centred form of AIDS is a malignancy that has recently transformed education from a means of perpetuating and enriching society into a source of its possible demise. AIDS, an Autocratic, Instructional, Deterministic Science is still alive and well, at the centre of educational theory in most colleges of education today. Many aspects of modern didactics and education technology are truly a case of education going bananas.

Buckland (1987) proposes a socio-practical treatment of educational theory to enable the development of well grounded alternatives that embody greater humanism and intentional relevance. This exploratory movement without the total rejection of modern didactics will hopefully cause us to critically explore what is actually going on and lead to the emergence of a new set of 'conceptual goggles' (Kuhn 1970).

This might be possible, but Berger and Luckmann (1971, p.58) clearly illustrate that many social processes and personal factors count against our ability to break out of established modes of thought.

> "The validity of my knowledge of everyday life is taken for granted by myself and by others until further notice, that is, until a problem arises that cannot be solved in terms of it. As long as my knowledge works satisfactorily, I am generally ready to suspend doubt about it. In certain attitudes detatched from everyday reality - telling a joke, at the theatre or in church, or engaging in philosophical speculation - I may perhaps doubt elements of it. But these doubts are 'not to be taken seriously'. For instance, as a businessman I know that it pays to be inconsiderate of others. I may laugh at a joke in which this maxim leads to failure, I may be moved by an actor or a preacher extolling the virtues of consideration and I may concede in a philosophical mood that all social relations should be governed by the Golden Rule. Having laughed, having been moved and having philosophized, I return to the 'serious' world of business, once more recognize the logic of its maxims, and act accordingly. Only when my maxims fail 'to deliver the goods' in the world to which they are intended to apply are they likely to become problematic to me 'in earnest'".

It would seem that we, therefore, have to be shocked out of a state of Educational AIDS. Fortunately there is no shortage of shocking people and environmental issues to facilitate this change over the next few years. The important questions are however, will we see them, and will they be problematic in earnest?

BANANAS AND CHANGE

You might presently be as sceptical about the threat of AIDS in modern didactics, as the bananas in the story were when I confronted them as mal-adaptives who had blindly transformed and degraded significant tracts of the Southern African sub-continent. Even though they reject this idea, it is possible to show that they have both undergone significant physiological change as well as having initiated considerable environmental change.

Bananas today have almost entirely lost their sexual potency. They are incapable of sexual reproduction and can merely colonise local areas by asexual means. Their long term distribution, survival and genetic diversity is symbiotically dependent on test tube babies and the genetic engineering of man. That's all very well provided we don't run out of nuts and bolts. Most bananas living in their high density monoculture cities are aware of neither change in themselves nor of that in the environment around them.

Initially the clearing of land led to some biophysical change but this was to accelerate with the application of fertilizers, herbicides and pesticides. Greater productivity led to economic change when, as already mentioned, the Banana Board introduced grower registration, production targets and a marketing infrastructure. The environmental change within these apparently desirable developments has still not been fully realised today. The banana industry is prosperous for the registered growers and to a lesser extent for farm labour, but the growing market is effectively full and closed. No rural peasant or urban gardener can operate a small plantation and market a surplus in a supermarket or a retail outlet as the marketing network can refuse to supply retailers who use other sources of supply. (Nightingale 1987 pers. comm.). My purpose in illustrating these issues is not to criticise the banana industry or the middleman who wants to contract his outlets, but to graphically illustrate how *slow, long term environmental change may lead to the emergence of political, social, economic and biophysical issues.*

Political - *My freedom to grow and competitively market is being infringed by a bureaucracy that I perceive to be regulatory and restrictive.*
Social - *Shouldn't the starving be encouraged to grow these nutritional giants?*
Economic - *What about a bigger slice of the golden banana?*
Biophysical - *Where have all the frogs gone, or was it always like this?*

These issues and further responsive change all become part of a dynamic and complex process of escalating environmental stress.

EDUCATION AND CHANGE

Education has similarly both undergone some adaptation and has caused other change. At the moment, however, the forces of change have apparently outstripped the adaptive capacity of our institutionalised education bureaucracy. I am, however, hopeful that, unlike the impotent banana, education is capable of rapid adaptive change and development both from within and in response to sensitising constructs like Environmental Education and People's Education. Figure 1 illustrates how these forums can be seen within society as responsive to a similar complex of environmental forces and societal needs as outlined in the story of the banana.

Within their current delirium of AIDS, some education administrators seem to see education as an autonomous profession with its specialist scientific instructional laws. The same dualistic delusion seem also to make them see culture as an artistic, racial/linguistic identity. Education must, however, be engaged at the core of socio-environmental issues (political, social, economic and biophysical) to

realise that culture (human behaviour and values) is the root of the problem.

The international Environmental Education lobby is arguing from a biophysical, human survival perspective that culture as a societal-behaviour phenomenon is perpetuating widespread global environmental degradation manifest in human suffering, species extinction and habitat destruction. They see education as a strategic process towards positive, adaptive change in society.

People's Education is saying, 'We will be heard. We are angry and frustrated by our separated position where the education we have valued for so long has become a largely irrelevant paper chase with little hope of reward. There has also been an inflationary trend of escalating qualification demand that has helped us see that what we have had was not education but the acting out of an insidious social selection process in which all of the cards seem to be stacked against us.'

All have a point but the tension of conflicting perspectives is almost intolerable. There is little merit in debating here whether education is, or should be seen as, a didactic science, environment rehabilitation, a cultural change process or a sheep in wolf's clothing. This paper is exploring some aspects of conflict and change, not debating merits and solutions, and anyway, a frog just hopped in to protest that he is being left out of the story.

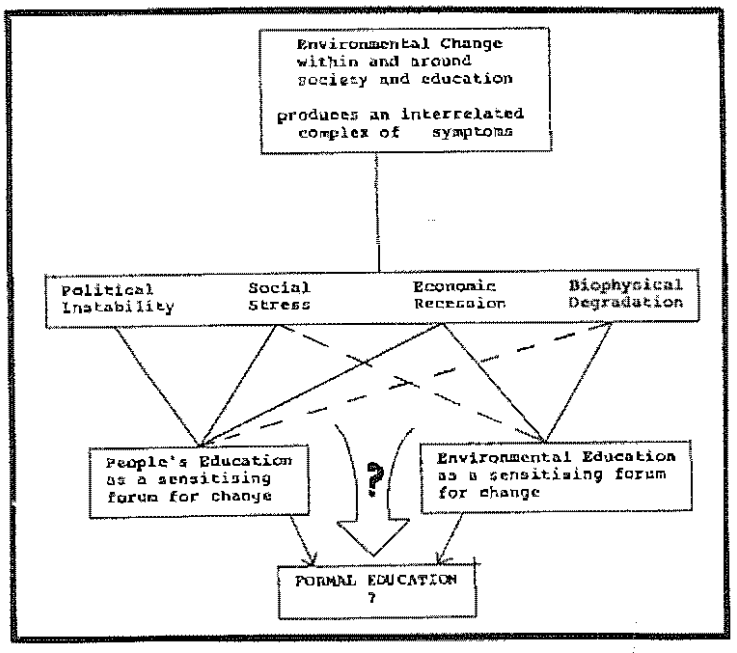

FIGURE 1 Forums of educational change.

THE FROG AND CHANGE

The frog has made a belated entrance to our story but he actually inhabited the Southern African region, initially in small numbers, before the banana arrived. He, and later non-indigenous immigrants, preferentially selected the warm, rich habitat of the banana plantation to thrive on the rich insect life and rapidly increased in numbers. With the widespread use of pesticides they have had to endure considerable constraints and hardships. They have exhibited an amazing capacity to adapt when they were indirectly denied an ecological niche on banana plantations. Pest control technology turned plantations into the rich green deserts they are today! Golden bananas only!

Despite their resilience and obvious adaptive capacity, frogs have borne the brunt of numerous stories like this old quasi-scientific fable.

> "If you can get a frog to sit quietly in a saucepan of cold water, and if you then raise the temperature of the water very slowly and smoothly so that there is no moment marked to be the moment at which the frog should jump, he will never jump. He will get boiled."

Bateson, a concerned environmentalist, after relating this story asks.

> "Is the human species changing its own environment with slowly increasing pollution and rotting its mind with slowly deteriorating religion and education in such a saucepan?" (1979, p.98)

My response to this would be yes, we probably are at the moment, but not without many frogs jumping. Many people both within and outside the education profession have started to hop up and down. The question remaining is, will this be noticed or initiate any significant change? Do those who can disrupt or delay change still believe the fable about the frog?

Political, social, economic and biophysical environmental problems are already well advanced and escalating rapidly but those sensitised to these problems need to do more than hop from one foot to the other, or hot foot it to greener pastures.

A NEVER-ENDING STORY

At this point I don't know how to continue, for as you probably know, the story is not about bananas and frogs but about people and environments, about us in our smouldering Southern African dilemma. We together will continue to write the story. There seem to be two major scenarios at the moment:

1. *Competitive frustration drove the frog into picking up an axe and chopping the banana down. The tree was not easy to fell and it came crashing down on the frog so both left the stage together. Or one could dream up some equally desperate variation.*

2. *On the other hand, with the new ecological constructs we have today, the frogs and bananas saw each other for the first time. They recognised a common environmental identity. They touched each other, and both turned into people, who reconcile their differences, work together and solve environmental problems. They then live happily ever after, walking, talking, and sharing freely of the same environment.*

A fairy tale beginning to a never-ending story, but, the story isn't over so I leave the ending unresolved and will put this story away with many of my other thinking tools. I am, however, optimistic that there is some truth in the fairy tale and that the second scenario may come true.

POSSIBLE HOPE OF CHANGE

This possibility will rapidly evaporate unless education can adaptively shake off the myopic 'conceptual goggles' of the AIDS virus and see itself as a grounded social regeneration process that builds bridges and equips our youth for life in a crisis-ridden world. E. Sheila Harri-Augstein (1977, p.88) pinpoints the critical need for this change when she states:

> "Within the crisis-ridden conditions which prevail in current societies, the structures of meaning of today can become the chains of tomorrow's minds. Emphasis needs, therefore, to be given to the processes whereby personal understanding is achieved, rather than to content of knowledge *per se*. Awareness and

control of the process by which meaning is attributed enables the individual to develop a mode of construing which facilitates competency in on-going transactions with chosen realities. It is this which becomes the selective factor in the struggle for personal growth and social survival, not knowledge and expertise in the content of the mindpool itself.

Learning how to learn, therefore, has a central function to play in contemporary education, and a self-organised learner can create personally viable structures of meaning from within a repertoire of idiosyncratic needs and purposes. Both the content and the purpose of the mindpool become changed as individuals seek to personally express and find themselves within their social context. Becoming a self-organised learner depends on overcoming the basic tendency towards the maintenance of stasis and the practise of habitual mechanisms of thought, and behaviour, so that alternate ways of acting on, and experiencing the world can be sought. The robot-in-man then becomes servant rather than master, and the learner is freed to explore and develop competence."

At the moment our society has been subject to the 'robot-in-man' for too long without change. This subconscious master has been the source of us unknowingly causing complex political, social, economic and biophysical crises. As educators we must stand partially accountable for failing to facilitate the development of children who are critical, adaptive seekers of new meaning with a rich repertoire of enquiry and action skills.

In this narrative I have gone out of my way to avoid giving you a string of socio-political issues or doom and gloom eco-facts and population statistics. These might make us angry, sit up and think, worry and act by jumping on the environmental education or people's education bandwagons to start a counter-revolution. This would probably be a not too productive start since the environmental stress signals of twenty years ago that have become the environmental crises of today occurred through a long process of slow cummulative evolutionary change or a lack of it. No amount of jumping up and down or optimistic King Canute attempts to regulate others and events is going to turn back the tide. We will soon be, and are in many ways, up to our necks.

A sobering thought is that we must be up to our necks together if we are to somehow avoid the first scenario. There is still the optimistic prospect of a counter-evolution, adaptive change that is led by a critical process in which:

- Education is both an agent of change and in turn is changed by society. (Fagerlind & Saha 1983).
- Educational change is not something that is done to people or for people but as people working together. (Stenhouse 1975).

If educators can achieve this, mankind will be entering the dawn of a new re-civilising process that must lead to positive adaptive social change by the people who will eventually sustainably and peacefully share the Southern African environment.

"A new ethic, embracing plants and animals as well as people is required for human societies to live in harmony with the natural world on which they depend for survival and wellbeing." (IUCN 1984).

Question
Are bananas really yellow, slightly bent, and do they always hang together in bunches?

Answer
It depends on the point of your view and their view of your point!

REFERENCES

BANANA BOARD 1987: Various reports and pamphlets.

BATESON G. 1979: *Mind and Nature: A Necessary Unity*. Wildwood House, London.

BENJAMIN H. 1939: 'The Saber Tooth Curriculum'. In Golby M., Greenwald J. & West R. 1965: *Curriculum Design*. Croom Helm, London.

BERGER P. & LUCKMANN T. 1971: *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Penguin, Harmondsworth, England.

BLOOM B.S. 1972: *Taxonomy of education objectives. Book 1. Cognitive domain*. Longman, London.

BUCKLAND P. 1987: 'Theory and Practice: The Link'. A paper presented at the Teaching Science Conference, Durban, May .

FAGERLIND I. & SAHA L. 1983: *Education and National Development: A Comparative Perspective*. Pergamon Press, Oxford.

HARRI-AUGSTEIN E.S. 1977: 'Reflecting on Structures of Meaning: A Process of Learning-to-learn'. In Fransella F. 1977: *A Manual for Repertory Grid Technique*. Academic Press, London.

IUCN 1984: *An Introduction to the World Conservation Strategy*. IUCN & UNEP.

KUHN T. 1970: *The Structure of Scientific Revolutions*. International Encyclopedia of Unified Sciences 2nd ed. enlarged Vols. 1 and 2: Foundations of the Unity of Science Vol. 2 No. 2 University of Chicago Press, Chicago.

NDVAK J.D. 1977: *A Theory of Education*. Cornell University, Ithaca N.Y.

SACHEO TRUST 1986: *The Right to Learn: The Struggle for Education in South Africa*. Ravan Press, Johannesburg.

STENHOUSE L. 1975: *An Introduction to Curriculum Research and Development*. Heineman, London.

YAMBERT P.A. & DONOW C.F. 1985: 'Are we Ready for Ecological Commandments?' *Journal of Environmental Education*.Vol. 17 No. 4 p.13 - 16.

Continued from p.2

symposia and workshops. In many ways its grass roots role has been developed by dedicated volunteers and can be epitomised by Ian Garland - a Natal farmer who for 35 years has worked tirelessly not only providing field study facilities, but who also has been personally responsible for introducing many thousands of people - of all races - to the ideals and concepts of environmental conservation.

The Society sees its role as supportive, even when taking the initiative. The task ahead of us all is so enormous that we must throw in every resource we have and E.E.A.S.A must be given all the support it needs. If ever we needed firm hands it is now. Let us never forget that in this, the richest country in Africa, there are a million people starving, at least another million who are malnourished and prey to disease and debilitation. Poverty stalks our land with all its attendant social problems; to achieve the high-flown language of environmental conservation we must first of all solve this awful problem.