

LEAVING 'BEHAVIOUR' BEHIND: An Alternative American Perspective on Environmental Action

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INTRODUCTION

Many environmental educators see *environmental participation* as a crucial element of their programmes. Perhaps originally inspired by the Tbilisi Document of 1977, for example (Unesco, 1980), these educators hope that their students will become environmentally aware, knowledgeable, responsible and active individuals. Intrigued by this notion of participation, I undertook a study in Belize, Central America to further explore some of the ideas that were presented in the literature. In the beginning I was unaware that the study would also become a personal journey, one during which I would begin to question some of the underlying assumptions which had been guiding me at the start. Thus, the process allowed me to reflect critically on the information presented in the literature. A very practical environmental education situation in Belize provided me with new information and I began to gather some different ideas. To illustrate the new ideas, I created a model of Positive Environmental Action. The model is presented in this paper, along with a discussion of how it was developed.

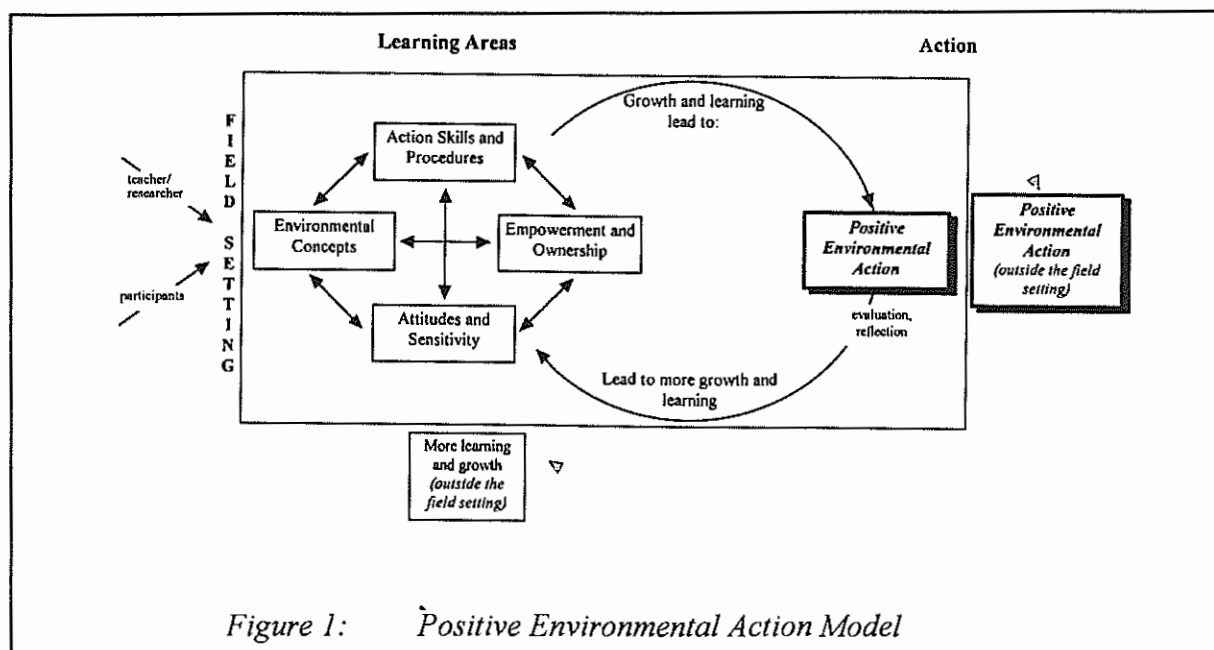
This paper is organised into four parts. First, the features of the Positive Environmental Action Model are explained. Next is a discussion of previous work in environmental education and an examination of how the new model is different. Third, some examples are drawn from the practical experience to illustrate in part how the model was developed. Finally, some limitations of the model are discussed, as well as some questions and ideas for future areas of study. A larger report (Emmons, 1994) discusses the study in more detail.

THE MODEL OF POSITIVE ENVIRONMENTAL ACTION

The model of Positive Environmental Action (Figure 1) has four important features. First, it emphasises positive environmental action instead of environmental behaviour as a goal. Second, the model focuses on the integration of multiple student learning areas and their combined effect on positive environmental action. Third, it views the relationship between *learning* and *action* as dynamic and circular, rather than as linear or terminal. Finally, the model focuses on environmental education in a non-formal, field setting. These features are explained in more detail below.

Environmental Action, not Behaviour

In this study, Positive Environmental Action was defined as a deliberate strategy that involves a process of decision, planning, implementation and reflection by an individual or a group. This action is intended to achieve a specific positive environmental outcome, either small or large. As such, action has an intentional quality that may or may not characterise behaviour. Terms such as "responsible environmental behaviour" (Hines, *et. al.*, 1986/87; Sia, Hungerford & Tomera, 1985/86) or "responsible citizenship behaviour" (Hungerford & Volk, 1990) do not adequately convey the meaning of positive environmental action. In understanding this distinction, consider the writings by Deci (1980) on self-determination. Deci described three types of behavioural response. Some kinds of behaviour do not involve self-determination at all, such as coerced behaviour. Behaviour can also be automatised or automatic, such



as habit. Lastly, and representing self-determined behaviour, it can involve the "human capacity for deciding how to behave" (Deci 1980:17). Thus, the term behaviour suggests a much broader concept than does the term action, in that it might be voluntary or involuntary, automatic or non-automatic. Behaviours include rather basic, individual responses that may or may not be deliberate efforts toward a certain goal. Positive Environmental Action, on the other hand, is self-determined behaviour. It is much more than training school children to place their recyclable materials in appropriate containers, for example. Although the environmental behaviour is achieved in such a case, the use of recycling bins is a product that may or may not have come about as a result of cognitive and affective processes and the use of action skills and strategies. However, if the children themselves decided to start up a classroom recycling programme they may do so in response to their knowledge and attitudes about recycling issues. With the guidance, but not the command of their teacher, they are able to understand and implement appropriate strategies. They become engaged in the *process* of action (deciding, planning, implementing, and evaluating), aimed at a particular *product*

(reduction of solid waste or re-using resources).

An Integration of Learning Areas

Prior research has focused heavily on the 'variables' that 'predict' environmental behaviour. It is agreed in much of this research that the predictors of environmental behaviour are both cognitive and affective (Asch & Shore, 1975; Axelrod & Lehman, 1993; Borden & Schettino, 1979; Hines, Hungerford & Tomera, 1986/87; Hungerford & Volk, 1990; Ramsey & Rickson, 1976; Ramsey, 1989/93). I drew on this prior research to identify important learning areas in environmental education that should be incorporated into the model. Several themes were common throughout the literature, and were grouped into four general areas in the model: environmental concepts; environmental attitudes and sensitivity; action skills and procedures; and empowerment and ownership. However, the model of Positive Environmental Action treats these four areas not just as 'predictors' or 'variables' of environmental action, but as important environmental education learning areas in and of themselves. Moreover, it does not treat each of these areas in isolation, or in a sequential,

additive, or hierarchical fashion. This new model explicitly illustrates an integration of the learning areas and suggests no time line for the occurrence of the various effects. Others have also explored the interactive or reciprocal nature of cognitive and affective learning. Brown (1971:5) for example has stressed that educational programmes are more productive when they recognise the student as a *'feeling-thinking human being.'* When one adds the goal of environmental participation, it follows that the student should be treated as a *'feeling-thinking-act'ng human being.'*

A Dynamic, Circular Relationship

It has often been stated that *'responsible environmental behaviour'* is the *'ultimate,'* *'primary,'* or even *'terminal'* goal of environmental education (Hines, Hungerford & Tomera, 1986/87; Simmons, 1991; Ramsey, 1993). The new model presented here does not view environmental action as any of these. Instead, positive environmental action has a dynamic and circular relationship with learning because students grow and develop as they carry out an action. For example, as they collect and examine information gathered in the process of action, students can learn new concepts. Students can also become empowered as they experience success in using environmental action skills, and develop new attitudes when they become deeply involved in a project. Because action is a *process* as well as a *product*, action goals are adapted and changed as new information and skills are acquired by the actors. With each cycle of action, the actors can reflect on their accomplishments, evaluate the weaknesses, and plan for another cycle of action. As Wals, Beringer, & Stapp, (1990: 17) have also suggested, an "... action plan can be modified and refined until it meets the students' criteria of success."

A Non-Formal, Field Setting

The model of Positive Environmental Action guides the development of an educational

programme in a non-formal, field setting. In such a setting, students have intensive and direct experiences in the natural environment over several days. It was hoped that this strong experiential element would overcome some of the shortcomings that have been identified in some school-based environmental education programmes. For example, Pomerantz (1990/91) found that environmental education materials used in schools tend to concentrate on basic knowledge and neglect other important learning areas. Singletary (1992) also provided evidence of this and added that many teachers are uncomfortable addressing environmental values. The use of a non-formal field programme in this study thus provided an opportunity to integrate the four learning areas in an attempt to achieve more wide-ranging results. It is also widely suggested that environmental sensitivity can only be built through positive contact with the natural environment (see for example Hungerford & Volk, 1990; Peters-Grant, 1986; McKnight, 1990), and that positive attitudes about various elements of the natural world can be increased through direct contact with them (Harvey, 1989/90; Newhouse, 1991). In addition, formal school settings can often be described as *'work'* settings which have few elements of play and enjoyment (Block, 1984). Non-formal educational settings can provide certain motivational elements that are often lacking in formal schooling. The elements of choice, challenge, novelty and cooperation can all motivate students to learn (Brophy, 1987; Csikszentmihalyi, 1975; deCharm, 1984; Stipek, 1988) and are often easily planned in non-formal settings. Students who choose to participate in a field environmental education programme tend to enter the setting with the expectation that they will enjoy the experience. It was hoped that enjoyment and recreation would motivate students in such a setting and make the educational goals more achievable.

LAYING THE 'BEHAVIOUR' GROUNDWORK: OTHER ENVIRONMENTAL EDUCATION MODELS

It is necessary at this point to describe other models that have featured strongly in environmental education in recent years, particularly in North America. Such models did help to guide this study in the beginning. Yet, it was clear later that their usefulness was limited for this practical situation in Belize, particularly with their focus on 'environmental behavior' as an ultimate goal. In recent years some models have become more elaborate and complex, but earlier ideas were based on very simplistic conceptualisation. An original model was basically linear and assumed that knowledge about the environment and related issues would lead to more favorable attitudes which, in turn, would lead to environmental action (Figure 2).

A similar linear model of environmental action suggests that increased environmental awareness or positive attitudes will lead to positive environmental

behaviors and action. Although these very basic models have been challenged repeatedly in the research, Simmons (1991) recently found that similar thinking still persists within the stated goals of nature and environmental education centers throughout the United States.

Instead of a linear model, Ramsey and Rickson (1976) proposed a more interactive model. According to the authors,

there is a circularity between attitudes and knowledge in that one does not solely cause or even precede the other, but rather some knowledge may lead to initial formation of attitudes which in turn lead to further gains in knowledge and so on (Ramsey & Rickson, 1976:15).

Hausbeck, Milbrath and Enright (1992:32) have extended this idea, saying that these variables (along with others) are completely interactive: "knowledge, awareness, concern ... are so interactive and reciprocally causative that we can only say they form a learning system." Borden and Schettino (1979) on the other hand maintained that factual knowledge (cognitive domain) and

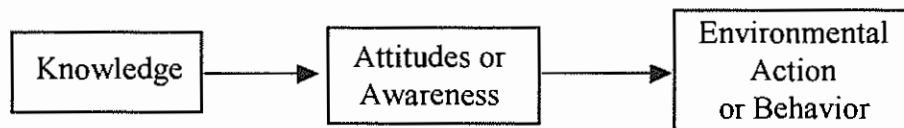


Figure 2: Basic Model of Environmental Action or Behavior

feelings of concern (affective domain) were independent variables in producing environmental action. They suggested that affective and cognitive factors appeared to be additive in producing environmentally responsible action, and concluded that the acquisition of knowledge does not

necessarily result in increased affect for the environment, or vice versa.

Research related to environmental participation has increased in the past few years and the models have become more elaborate. Two of the most often cited works

are Hines, Hungerford and Tomera (1986/87) and Hungerford and Volk (1990), both of which have explored environmental participation as a 'behavioural' problem. In other words, these models assume that desirable behaviour is the ultimate goal of environmental education, one that can be achieved by manipulating the identified variables. Hines, Hungerford and Tomera (1986/87) produced a model of 'responsible environmental behaviour' from a meta-analysis of related research (Figure 3). This model asserts that before individuals have any intention of acting to resolve an environmental problem, they must (a) have knowledge about the problem, (b) know which courses of action to take, (c) be skillful in applying the knowledge to a given problem and (d) have the desire to act, which is based on 'personality factors' (locus of control, attitudes, and personal responsibility). The authors insist that skill in applying knowledge is very important and that skills do not 'evolve naturally from knowledge' (Hines *et al.*, 1986/87:7). Finally, 'situational factors' can influence action separately. For instance, a person may be informed and motivated enough to carry out desirable behaviours, but may be unable to do so for some other reason (i.e. financial difficulties).

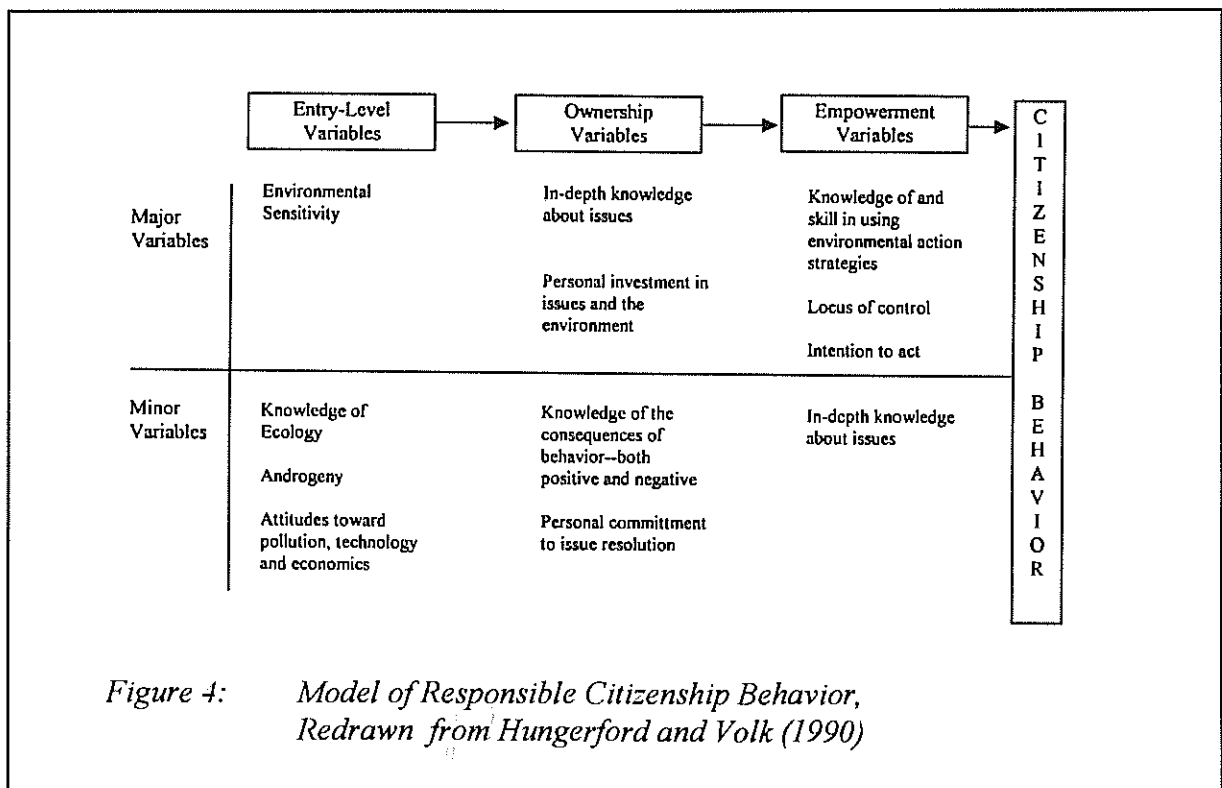
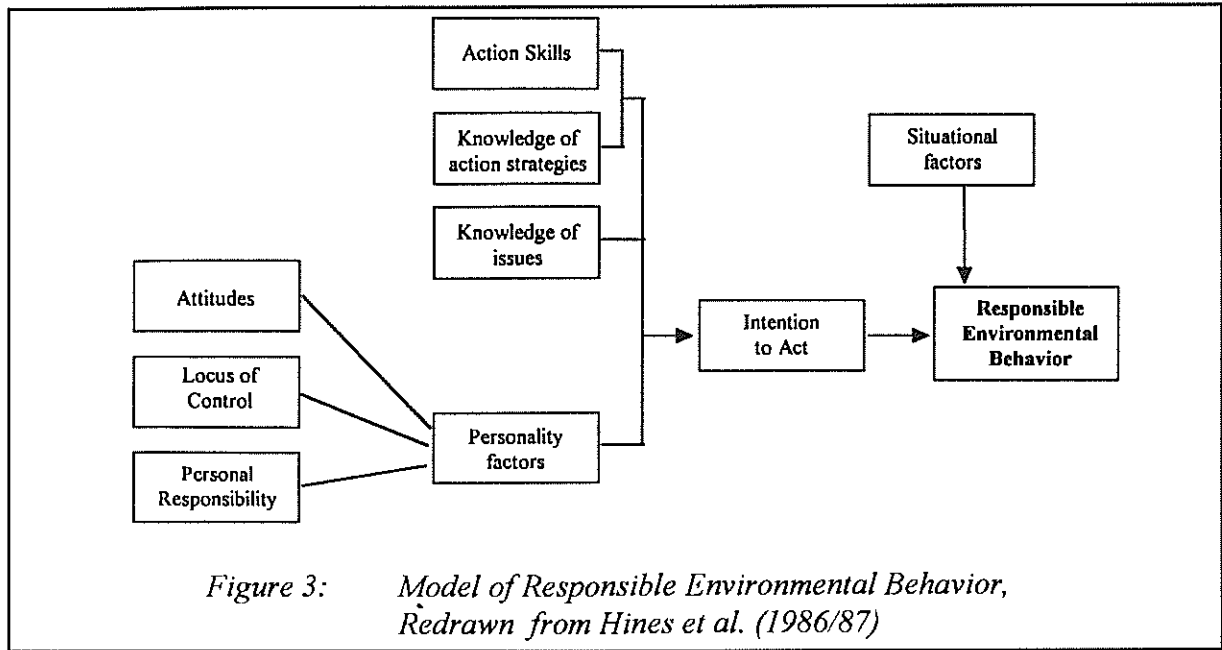
Hungerford and Volk (1990) have expanded on the model from Hines *et al.* (1986/87) and subsequent research to create a new flow chart with three categories of 'responsible citizenship behaviour' variables. Hungerford and Volk (1990) found no 'cause and effect,' or linear relationship between attitudes and action or knowledge and action. At the same time, the pursuit of the 'citizenship behaviour' goal in the model does occur in a more or less linear fashion. 'Entry level variables,' such as environmental sensitivity, are a prerequisite to any kind of action. Once the entry level variables are acquired, 'ownership variables' come into play. These make environmental issues personal to people, such as a personal investment in the issues and environment. Finally, 'empowerment variables' are

necessary, which give individuals a sense of their own capacity to make changes and solve problems.

The models by Hines and colleagues and Hungerford and Volk moved far beyond earlier explorations in environmental behaviour, but again, they appeared inadequate in the context of this study. The reader is reminded that the model of Positive Environmental Action has four main features that make it different than other models. First, it emphasizes action rather than behaviour. Recall that action has an intentional and autonomous quality that may or may not characterise behavior. Second, the model integrates four learning areas (environmental concepts, sensitivity and attitudes, action skills and procedures, and empowerment and ownership) as well as their combined effect on action. They are treated as a learning system rather than as separate variables. Third, action in the model is both a process and a product. It is not an ultimate or a terminal goal, but has a dynamic and circular nature. As action goals are reflected upon by the actors, they are adapted as needed in light of new information or skills. Finally, previous models tend to emphasize school-based environmental education rather than programmes in non-formal, field settings. By moving away from the formal arena, environmental education programmes can incorporate some different kinds of instructional strategies that motivate students toward learning and action.

THE PROGRAMME

A brief discussion of the actual practical programme provides background information on activities that were important for the model's development. In the programme, two small groups of students (a total of ten) were each invited to spend five days and four nights at the Cockscorn Basin Wildlife Sanctuary, a rainforest region of about 100,000 acres. The participants were students at a high school in a small coastal town and were female



between 15 and 20 years of age. Although environmental education opportunities for Belizean youth are on the increase, protected areas could fit into broader environmental education efforts in Belize. This programme was intended not only to explore the idea of

environmental action, but also to help identify how protected areas could fit into the total picture of environmental education efforts in Belize. As in the model of positive environmental action, the programme's objectives were built around the four

learning areas: environmental concepts; environmental sensitivity and attitudes; action skills and procedures and empowerment and ownership. A strong recreational component was also integrated into many of the activities. The learning goals for both groups of students were identical, but there were differences in the intensity of the instruction planned for each group. It was hoped that this difference in implementation would help to highlight how the students would learn in the different circumstances and what effect this might have on positive environmental action. The second group of students participated in more structured activities than did the first group and overall received a more explicit style of environmental education instruction. The instruction for the first group was more tacit and 'lessons' were often left to emerge spontaneously during outdoor activities instead of being planned in advance. (A more detailed account of the programme's curriculum and instruction can be found in Emmons, 1994.)

Programme Evaluation

Qualitative research methods were used to evaluate the programme, in an effort to understand the social situation from the perspective of the participants themselves (Cantrell, 1993; Erickson, 1986). Models of teacher research (Cochran-Smith & Lytle, 1993) and action research (Kemmis & McTaggart, 1982; McKernan, 1991; Robottom, 1985) were very useful, as they outline steps for on-site, systematic research by practitioners who are directly involved in *real* educational settings. The evaluation for the programme was formative, rather than summative and focused on improving the curriculum and methods used. Data was collected before, during and after the programme through interviews, questionnaires and participant observation. Other types of data included student writing samples, programme logs and schedules and other recorded material. Data recorded on audio and video tape were transcribed for analysis. The collection and analysis of data

were guided by Spradley (1979 & 1980), Miles and Huberman (1984) and Patton (1990).

The Action Project

The Action Project was one of the most important activities for both groups. Because of limitations on time, it was suggested to both groups that the project they chose would be an educational or a community awareness project. The activity served as a confluence of learning for the students and gave them an opportunity to combine their knowledge, feelings and creative abilities to teach others about Cockscomb. Because they were allowed to work together on topics and strategies of their choosing, students had products that they 'owned' and of which they could feel proud. The activity was also important because it ultimately provided most of the new information that was needed to further develop the model of Positive Environmental Action.

The Action Project was an optional activity for students. Each group had the choice to either proceed with a project, or to select an alternative activity. This 'voluntary' aspect of the Action Project also gave it the function to test the capacity of the programme as a whole to inspire action in students. After a discussion on types of different projects and audiences, messages and delivery methods, each group was left to discuss privately whether or not to proceed with a project. Both groups decided to proceed and drew on their learning and experiences during the programme to choose, plan and complete an action project. The first group of students produced a simple, but sincere poster for visitors and the second group produced a lengthy article that was later published in the *Belize Audubon Society Newsletter* (Figure 5). Students in both groups needed guidance in some of the skills and procedures required for their projects, particularly in making initial decisions and plans. The second group also needed help with editing. The project outcomes in part reflected the intensity of instruction received

by each group of students. The content of the newsletter article written by the second group, for example, reflected more in-depth learning than did the poster created by the first group, for whom fewer structured activities had been organised. In addition, participants in the second group took another form of action entirely on their own when they invited a young environmentalist they met at Cockscomb to speak at their school. This local youth had spoken to the students about environmental problems and about personal responsibility for taking action. After students returned to their school, they requested and received permission from their principal to invite the speaker.

DATA ANALYSIS AND DEVELOPMENT OF THE MODEL

Parts of the model were developed before the programme was carried out, and were based on the literature in environmental education and other educational areas. When evidence from the practical situation was gathered, such features could then be more closely examined and changed, if necessary. Other features were added or changed as new information came to light. It should be noted here that the current model is by no means a *final* model. As new information emerges in new circumstances, it must again be modified. In the following paragraphs two of the most important features of the model are discussed, with special reference to the practical aspects of the study. These two features are the integrative relationships between the learning areas and the circular and dynamic relationships between learning and action.

An Integration of Learning Areas

The different environmental education learning areas are depicted in the model in a way that illustrates that they are not merely 'variables' in the pursuit of a final desired goal. Instead, they compose a complex learning system. Learning in each area bears upon and interacts with learning in other

areas. Environmental education programmes should therefore integrate these learning areas and not treat them as separate entities.

Data from the programme was available to illustrate how such an integration took place in practice. Figure 6 shows how one specific activity, a night walk, integrated some of the learning areas. The experiences of conceptual grasp, sensitivity, attitudes and recreation meet together where the three circles intersect. For example, students' sensitivity was heightened as they closely inspected and learned about night creatures. The interrelationships between these learning experiences take on even more significance when they are related to positive environmental action in the centre of the three circles. The night walk provided students with different kinds of learning and feelings that could then be translated during the action project activity. In this manner, students could teach others from their own experiences. Without the action project activity, the opportunity for this translation into verbal form may not have occurred. Figure 7 is a similar diagramme that represents the learning of students during an activity called 'We CAN Make a Difference.' It featured Mario, a local youth activist, as a guest speaker. During the activity, Mario provided instruction in empowerment and ownership by explaining to students his own views and activities. Interacting with this input were opportunities for learning about environmental concepts, sensitivity and attitudes, and action skills and procedures. At the centre of the four ovals the positive outcomes - students' actions - are represented. As the discussion begins to include action, it leads us to the second feature of the model, the dynamic and circular relationship between learning and positive environmental action.

Dynamic and Circular Relationships

The action project in this programme helped to focus students and give them a place and time to reapply their learning and to pass

Group 1 Action Project Outcome: Poster (the original poster featured the following text plus illustrations).

TAKE A LOOK!!

Welcome one and all to the beautiful and interesting Cockscomb Basin. Cockscomb is an enjoyable sanctuary. In order for it to stay that way, we should protect animals and trees. Please be careful NOT to pollute the area. The sanctuary has many fascinating places to visit, such as: the river, trail tracks, water fall. You can take a look at the Victoria Peak, walk through the forest and do some bird watching. Note: To visitors we should all stand and help to preserve the sanctuary by giving a little DONATION for its betterments.

Group 2 Action Project Outcome: Newsletter Article (excerpts)

HOW IMPORTANT THE RAINFOREST IS TO US

The rainforest makes up two percent of the earth's surface, yet over half of all the world's plant and animal species live there...

Conservation means to use the natural resources wisely...

The rainforest is important to us because it provides shelter, food, clothes and medicine for animals and also for human beings. In our country the common sources of destroying the forest are fire and cutting. Some ways to protect the forest are reforestation, proper fire burning, and by creating sanctuaries...

In our country, hunting is a common method of providing food for the family. If hunters destroy all the animals, they will be extinct (no more). Another thing that is destroying the rainforest is the growing population in the country...

We Can Make a Difference!

Do you think the rainforest is here because it wanted to be here? No, everything that is here has its reason to be here, and we cannot change that. At the present moment, the people in the country should take more interest and be concerned about preserving the rainforest for the future. Our natural resources such as the forest, all the animals and the plants are important to us. We should be proud of what we have; we should stand up and say what is right about it; and we will see our success in preserving the beauty of our land and country.

Figure 5: Action Project Outcomes

this learning on to others. With a careful reflection on the data and outcomes of the programme, it appeared that the outcomes for both groups fit a basic model of positive environmental action. Yet while the action project outcomes validated such a basic model, more importantly they revealed its weaknesses. If the outcomes were the 'ultimate' goal of the programme, what

next? When the five-day programme ended and the students went back to their normal lives, what was to ensure that they would continue to seek out opportunities for action? Put another way, the action goal was achieved, but were the outcomes of a poster and a newsletter article really significant in the long term?

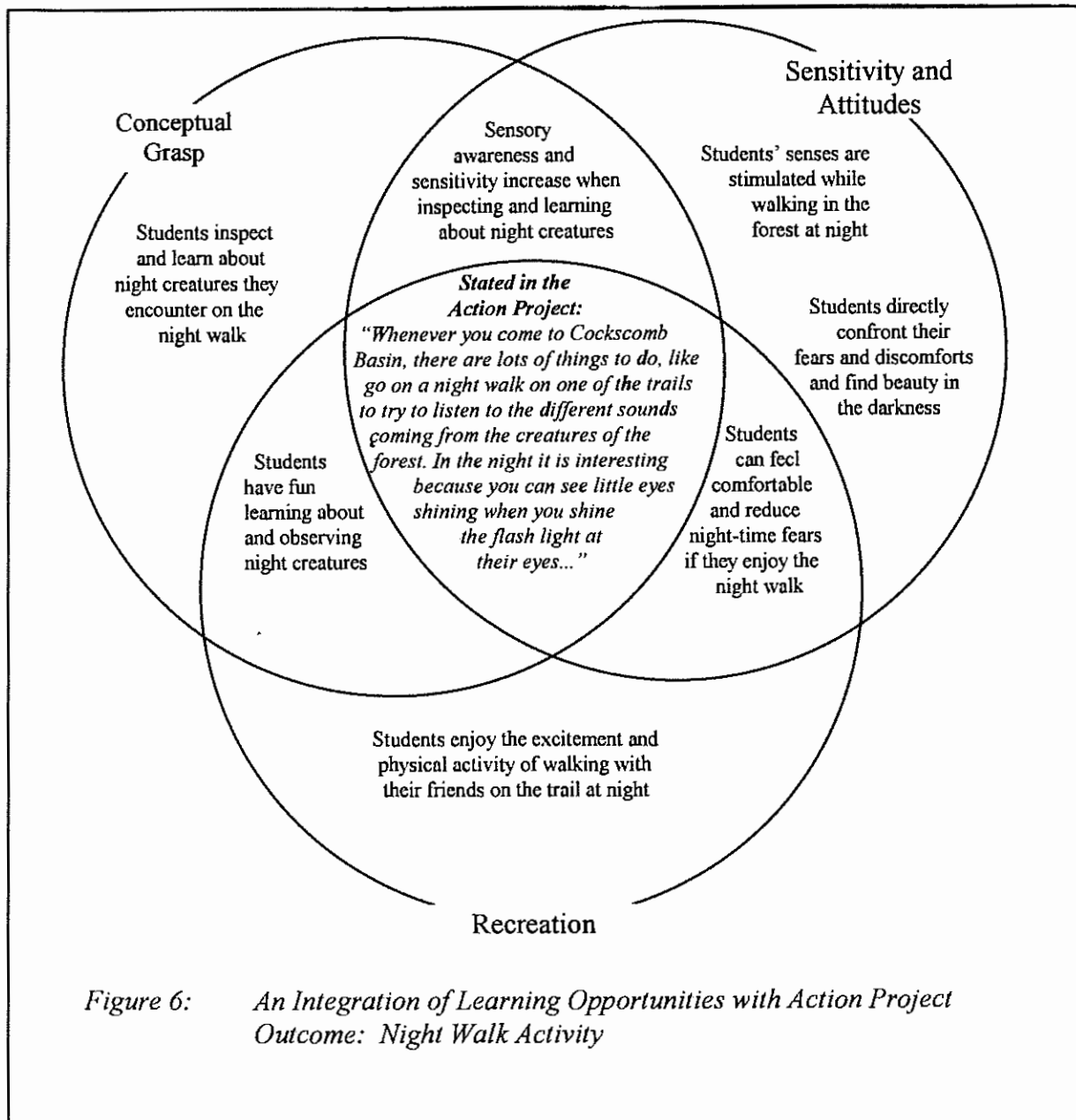
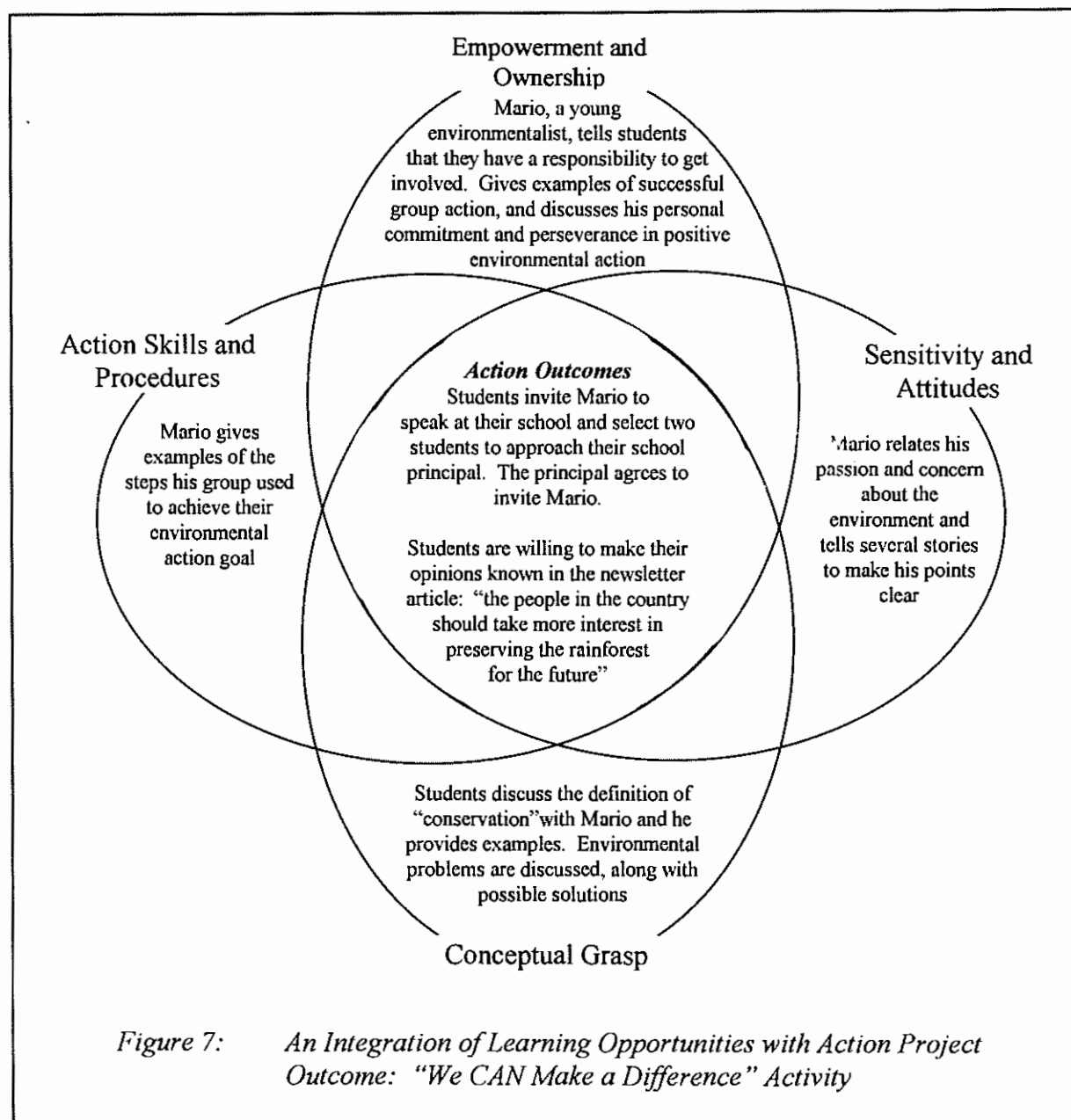


Figure 6: *An Integration of Learning Opportunities with Action Project Outcome: Night Walk Activity*

On the other hand, the action that the second group of students undertook on their own after their return to school (the invitation of the youth activist) represented not a terminal action outcome of the programme, but a continuation of action. Here was perhaps something more powerful. The action had been inspired by the programme, but it was not directed by the instruction or bounded by its limits. Thus, it was neces-

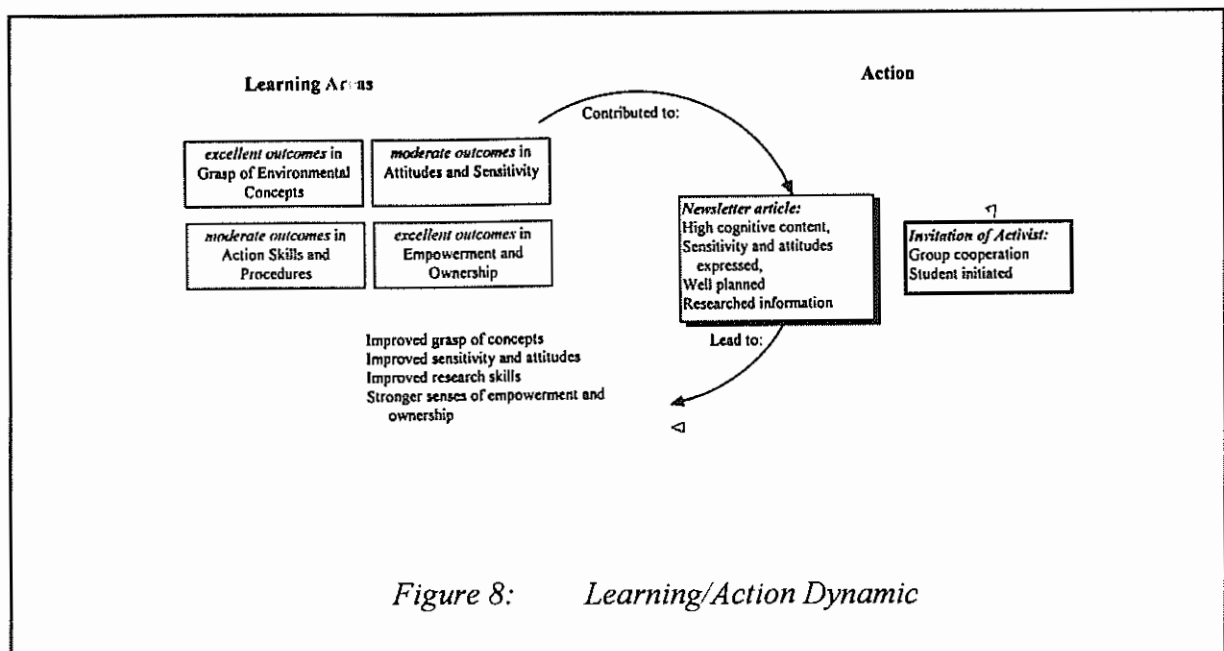
sary to illustrate in the Positive Environmental Action model a dynamic and circular relationship between learning and action. This feature suggests that students grow and develop as they carry out an action and they learn new concepts as they collect and process information. As they experience success and learn new skills, they become confident in carrying out new types of action later on. This process is similar to



the 'action research spiralling' described in participatory curriculum research models (see for example Kemmis & McTaggart, 1982).

Again, data from the programme can be used to illustrate this feature of the model. In Figure 8, the outcomes of the four learning areas are summarised on the left. These outcomes reflected learning opportunities of students in the second

group and were determined from the programme data. On the right of the diagram, the action outcomes of students are summarised. The newsletter article showed a relatively high cognitive content and expressed students' positive attitudes about the environment, as well as their concern and personal responsibility for its protection. Participant observation indicated that the students had adequately learned skills and procedures necessary for writing



the article. Again, a more important outcome occurred when students took action entirely on their own by asking their principal for permission to invite the young environmentalist to their school. This action indicated positive outcomes in action skills and procedures as well as in empowerment and ownership. It also took place outside of the field setting, indicating that they made use of continued opportunities for action even after the programme ended.

FUTURE DIRECTIONS

For the positive environmental action model to be valid as an alternative in environmental education, the discussion of it cannot stop here. The model must be repeatedly tested and examined in new situations so that it can be modified as necessary. The most obvious limitation of the model is that it could not be tested repeatedly over several cycles with the Belizean programme participants, or with other students. The model's focus on non-formal situations might also be seen as a limitation. While participation in a non-formal, field situation might be desirable for

every recipient of environmental education, it is not often a practical reality. In addition, typical 'school outings' in field settings are generally brief and are often mostly recreational. Particularly in developing countries like Belize, funding, staff, equipment and facilities for extensive non-formal environmental education are often difficult to obtain.

Several needs and areas for further study can be identified at this point:

1. We need more case studies in different situations to further test the features of the model, particularly the circular relationships between learning and environmental action. It is important to better identify the kinds of educational and other inputs that are needed to maintain a continuous, dynamic relationship.
2. Constraints to positive environmental action can be studied to help determine to what extent they interfere with action goals, and what measures might help overcome them. For example, is there a

loss of interest on the part of the students or teachers? Is there a lack of expertise or resources? What kinds of strategies would make students' efforts more effective?

3. We need studies of how the model can be altered or changed to fit new situations. Is a similar model valid for a predominantly formal schooling situation? How can better links between action efforts in formal and non-formal situations be established? Would variations of the model be required for different socio-economic or cultural situations? How must the model be changed to apply to South African environmental education, for example?

In conclusion, the Model of Positive Environmental Action is presented as an alternative to the behavioral models that dominate much of environmental education research, particularly in North America. The new model challenges some of the assumptions of these other models, particularly with its emphasis on integrated learning areas and also the circular relationships between learning and action. At the same time, it is a model that is still under development as new questions arise and new circumstances must be considered.

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