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ABSTRACT

A paradigm is proposed that would permit curriculum developers and others to specifically plan for training in environmental action as an integral and substantial component in this field. The three-part paradigm identifies and defines specific categories of action. It then identifies and illustrates the levels at which these actions can be taken. Finally, constraints that must be placed on action are posed as questions that should be answered before an action is taken. (RH)

A PARADIGM OF ENVIRONMENTAL ACTION

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Introduction

The science teacher - whether by choice or by chance - plays a major role in environmental education and chances are that he/she will continue to do so. A recent survey of 270 Missouri schools, reported by Trojcak and Harvey (1976), notes that in 55% of the secondary schools responding, the science teacher was responsible for the environmental education program. In a more recent survey of 200 Illinois Environmental Education Coordinators, Fryman (1976) reports that 46% of all coordinators responding stated that environmental education (hereafter referred to as EE) in their school existed as a formal part of the science curriculum.

Further, it is of more than passing interest to note that most teachers - or school districts - are using locally prepared materials to teach EE. In the Missouri survey (Trojcak and Harvey, 1976) it was reported that only 8% of the responding school districts used a commercially prepared program in EE. A similar situation appears to exist in Illinois schools where 54% of the 200 Environmental Education Coordinators reported that EE could best be described as an "informal-episodic treatment by teachers" (Fryman, 1976).

If these data can be generalized to EE practice throughout the nation, one can only assume that, as Tanner (1974) puts it, " . . . some teachers and other educators scurry off in all directions under the EE banner . . ." Irrespective of the plethora of instructional practices that characterize EE, one major thread seems to emerge from the wealth of literature which

now surrounds this area. That thread is the responsibility for EE to produce human beings with what is called an "environmental ethic". For the most part, the inference can probably be made that this ethic should result in a citizenry which is capable of taking ecologically-sound environmental action focusing on the remediation of environmental issues. If so, it is apparent that somewhere . . . someone . . . some agency should have constructed a model of environmental action which would permit teachers and educational planners to produce educational materials which would maximize the human being's ability to assist in the solution of environmental problems. This has not been the case. This article, therefore, deals with a critical need in EE - the need for a paradigm of environmental action.

The literature abounds with definitions of environmental education and strategies for building toward awareness and an appropriate "environmental ethic." A few of these references deal directly with environmental action and/or the processes inherent in action strategies. One notable example is the following:

> Above all, environmental education is oriented toward the development of values that are translated, ultimately, into action. . . . each student must acquire an environmental ethic, a concern for a moral commitment to his responsibility to the environment. (Hawkins and Vinton, 1973)

Another major example rests with the model of substantive structure for environmental education developed by Gary D. Harvey (1976) in which he identifies environmental action as a major goal of what he refers to as man-environment relationship education (MERE).

Similarly, there are other generic paradigms or models which incorporate environmental action as an integral part of an overall strategy for environmental education. Some of these reflect a direct reference to implementing environmental action as a part of an overall environmental education program

without presenting an action paradigm per se. (Stapp and Cox, 1975). Others tend to imply a need for environmental action training (Allman et al., 1976; Lovet, 1974). In such cases, action components do not reflect all of the dimensions of environmental action known to society. Also these action training components are dealt with episodically, without syntactical organization.

The writers (1976) in a recent publication which attempts to operationalize "environmental literacy", propose that literacy is, in part, reflected by human beings who have knowledge of and the ability to communicate the need for environmental action strategies, who have the ability to use those skills inherent in environmental action strategies, and who are willing to use action strategies in an effort to remediate environmental issues.

The literature is heavily weighted toward awareness and the inference may be made that most writers perceive that awareness can, in fact, lead to effective citizenship responsibilities. However, there also exist in the literature both intuitive and empirical evidence that this is not the case. Again, Hawkins and Vinton (1973) seem emphatic when they state, "Awareness, appreciation, and understanding of the environment are only the first steps and do not necessarily lead to effective action."

It seems educationally defensible and necessary to assume that the development of awareness will not generate citizenship participation in environmental problem solving. Barbara Winston (1974) puts this situation into critical focus when she writes:

> There is no indication that awareness will result in students' environmental concern. . . .expressed concern for improved environmental quality does not offer conclusive evidence that students have had an attitude change significantly committing them to behaviors that will lead to improving environmental conditions.

Given the veracity of this position, it would be possible to hypothesize that many human beings who have developed sound environmental ethics are frustrated in their ability to take effective action simply because they are unaware of the action possibilities that exist, i.e., they have had no preparation specifically geared toward action.

The need for providing training specifically directed at environmental action strategies is succinctly reflected by William B. Stapp (1971) when he notes, " . . . few programs emphasize the role of the citizen in working, both individually and collectively, toward the solution of problems . . ."

Further, the potential consequence of providing action training in education is discussed by VandeVisse and Stapp (1975) who write, "Citizens are more likely to become involved in environmental issues if they are aware of how they can have some effect upon decision-making."

Due to the need inferred by both the literature and personal experience in environmental education, a paradigm is proposed which would permit curriculum developers and others to specifically plan for training in environmental action as an integral and substantial component in this field. This type of curriculum development will become a reality only when the profession has a model available which adequately reflects all dimensions of action. Such a paradigm results from an analysis of environmental action strategies themselves, the levels at which these strategies are utilized by individuals and organizations, and the logical constraints placed on action, i.e., those questions which should be answered by citizens before an action is taken.

Therefore, the three-part paradigm which follows identifies and defines specific categories of action. It then identifies and illustrates the levels at which these actions can be taken. And, finally the constraints that must be placed on action are posed as questions which should be answered before an action is taken.

Action Paradigm

Part I: Categories and Definitions of Environmental Action

There appear to be six (6) categories of environmental action. These are: (1) persuasion; (2) consumerism; (3) political action; (4) legal action; (5) ecomanagement; and (6) interactions of these. Operationally, the writers define each of these as follows:

(1) Persuasion: An effort to verbally motivate human beings to take positive environmental action as a function of modified values, e.g., argumentation, debate, speech making, letter writing.

(2) Consumerism: An economic threat by an individual or a group aimed at some form of behavioral modification in business or industry (e.g., boycotting) or some conservative mode of behavior with respect to goods and/or services (e.g., discriminating and conservative use of goods and services).

(3) Political Action: An effort aimed at persuading an electorate, a legislator (or legislature), or executive governmental agency to conform to the values held by the person or persons taking that action, e.g., lobbying, voting, supporting candidates.

(4) Legal Action: Any legal/judiciary action taken by an individual and/or organization which is aimed at some aspect of environmental law enforcement - or, a legal restraint preceding some environmental behavior perceived as undesirable, e.g., law suits, injunctions.

(5) Ecomanagement: Any physical action taken by an individual or a group aimed directly at maintaining or improving the existing ecosystems, e.g., reforestation, landscaping, installing bird boxes.

(6) Interaction: Any combination of two or more of the above action modes, e.g., letter writing for consumerism or political action, combining boycotting and lobbying for solutions to international issues.

Part II: Levels of Decision-Making for Environmental Action

Fundamentally, environmental action results from the activities of either an individual or a group of individuals working cooperatively. Although there are glaring exceptions to the rule, in principle one finds that the individual acting alone is of restricted effectiveness in promoting major activities. This limitation is largely a function of the power base from which the individual operates. This is not to be interpreted that the writers consider individual actions to be wasted. Indeed not! However, it would be wise to acknowledge and appreciate the increased effectiveness of cooperative action.

Further, one should consider the ability to maximize the effectiveness of the action as a correlate to the scope of the organization. Certainly, national organizations exist on a power base much more powerful than the neighborhood coalition. The figure below is an effort to diagram this principle.

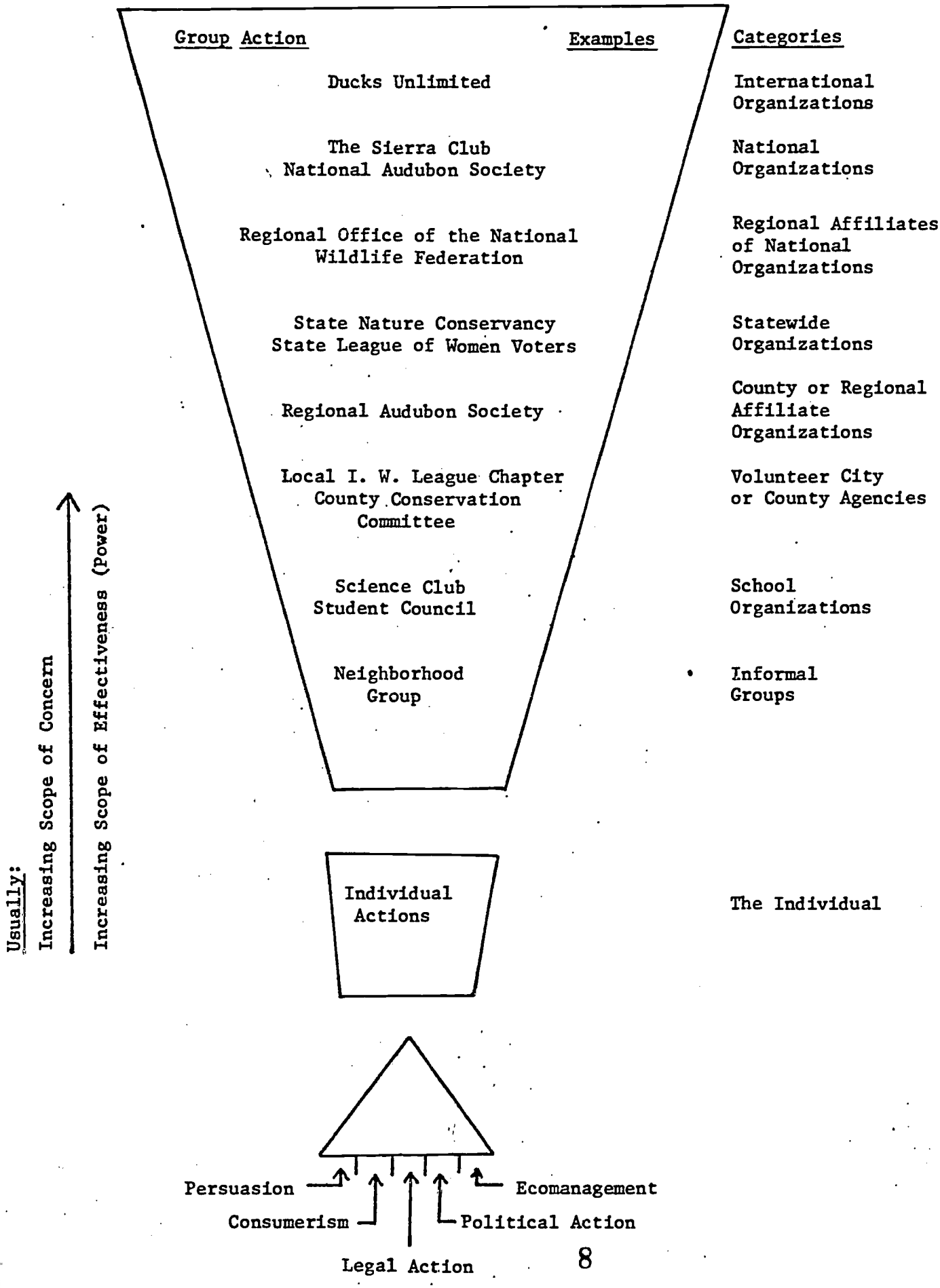
The argument may be raised that there are innumerable times when individual action is more appropriate than group action. Further, it may be argued that groups are merely aggregates of individuals working together and that the power of the group depends primarily on the actions of individuals within the groups. However, the organization per se permits those individuals to maximize the influence of their values. The influence, for example, of the 150,000 members of Ducks Unlimited is potentially far greater than the effectiveness of those individuals acting separately, without organization. It appears eminently important for educators and citizens alike to conceptualize the realities of group vs individual action as they relate to environmental problem solving.

Part III: Action Analysis Criteria

Given that the individual - or the group - understands the options available for action and the levels at which the action can be initiated, it follows that a particular action decision needs to be analyzed and evaluated before it is taken.

LEVELS OF ENVIRONMENTAL ACTION AND DECISION-MAKING

Individual and Organizational



It is probably true that an individual - or a group - selects a particular action in terms of whether it will get a particular job done and whether it is commensurate with the values held. Sooner or later, however, the decision must be inspected on other grounds as well. To ignore one or more of these criteria could be disastrous.

The writers, therefore, propose a set of thirteen (13) questions which should be answered before a particular action is undertaken. Further, it is felt that these thirteen questions need to be made available to environmental education instructors and students in order to increase the sophistication with which actions are taken. The questions follow:

1. Is there sufficient evidence to warrant action on this issue?
2. Are there alternative actions available for use? What are they?
3. Is the action chosen the most effective one available?
4. Are there legal consequences of this action? If so, what are they?
5. Will there be social consequences of this action? If so, what are they?
6. Will there be economic consequences of this action? If so, what are they?
7. Are my (our) personal values consistent with this action?
8. Do I (we) understand the procedures necessary to take this action?
9. Do I (we) have the skills needed to take this action?
10. Do I (we) have the courage to take this action?
11. Do I (we) have the time needed to complete this action?
12. Do I (we) have all of the other resources needed (other than the above) available to make this action effective?
13. What are the ecological implications of this action?

Evaluating the Paradigm

As with any theoretically based model, this paradigm's substantive structure exists on a framework of logic which is, at least in part, based on empirical observations. This particular paradigm is a vehicle for curricular decision making - a model that must be tested and retested before being accepted, rejected, or revised. This phenomenon is not uncommon in education. It is reflected by the widely accepted and generic environmental education model published by Stapp and Cox (1975). In science education it is exemplified by the substantive structure of Science: A Process Approach (Gagne, 1970) and others.

Initial evaluation of such a paradigm could be reflected by numerous activities. Among these is a philosophical examination and evaluation by peers. It is basically the same kind of examination originally made when the paradigm was being constructed - an inspection and comparison against what is, i.e., information currently available concerning action and its role in environmental education and problem solving. A second mode of evaluation would be the very pragmatic assessment of whether the paradigm could be utilized in environmental education curricular development. Such a project is currently under way at Southern Illinois University at Carbondale (Hungerford et al., 1976). Further, said paradigm must be evaluated in the context of whether students can acquire the knowledge and skills necessary to implement action strategies once curricula have been developed and implemented.

A summative evaluation of the paradigm would occur when an assessment is made concerning the willingness of students (who have been given training in the paradigm) to actually engage in ecologically sound environmental action at a citizenship level of performance. This behavior is, in essence, a criterion level of performance and an ultimate goal of environmental education.

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