

THE UNIVERSITY OF ALBERTA

TEACHER ATTITUDE AND INVOLVEMENT  
IN OUTDOOR EDUCATION

by



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## ABSTRACT

The purpose of this study was to investigate the degree of relationship between the attitudes which Edmonton Public School teachers have towards outdoor education as a desirable and valid teaching method and their actual involvement or participation in providing outdoor experience for the students. To accomplish such a project, it was necessary to construct a Likert-type attitude questionnaire.

The questionnaire was administered as a pilot study of thirty-six Edmonton Public School Board teachers before its modification and application to the major study. For the main project a stratified random sample of ten per cent of the E.P.S.B. teacher population was made so that 333 subjects were selected. Seventy-five per cent of the questionnaires were returned.

The resulting information was key-punched on computer cards and submitted to an odd-even split half technique for ascertaining reliability. The responses of the two groups (participants and non-participants) were compared using the Kolmogorov maximum deviation test. The Mann-Whitney U test was applied to evaluate the significance of difference between the mean scores of the two groups on each item. Wilcoxon's Coefficient of Differentiation was then performed to ascertain the degree of association between each attitude item and participation or non-participation in outdoor education activities.

Statistical treatment of the data revealed that most teachers in the Edmonton Public School system have a favourable

attitude towards outdoor education. On every attitude item in the questionnaire, those teachers who had been involved with providing outdoor education opportunities for their students demonstrated a more positive attitude towards this activity than non-participant teachers.

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## CHAPTER I

### STATEMENT OF THE PROBLEM

#### Introduction

##### The Environmental Issue.

Environmental damage has been going on for years, but it is only recently that a general concern and a growing awareness has come about that we are face to face with an ecological crisis. Most of us now recognize the need for immediate measures to arrest the palpable threat to the quality of life, and realize that there is no single-formula solution to the problem. Numerous individuals and groups in both public and private life are currently attempting, in their own ways and in their own specialized fields, to cope with, or at least to push back to some degree, the impending crisis. Municipal authorities, scientists, doctors, technicians, federal and provincial legislators, city planners, university faculties and students, phil-anthropists, and corporations are increasingly involved in finding ways to prevent the further impairment of our environment, to slow down its rate of deterioration, or to repair the damage done thus far.

The problem has, of course, reached its most serious proportions in the developed nations where industrialization and technology are highly advanced. Nevertheless, the crisis is now beginning to assume a full global dimension and is becoming a concern for the developing nations as well (1:39). Environmental pollution presently

threatens islands as well as continents, rural as well as urban populations, the high seas as well as the coastal waters, the tropics as well as the tundras, the Volga as well as the North Saskatchewan, and the Caspian Sea as well as Lake Erie (2:63). Moreover, we are coming to realize that what is done to the environment in one place today is likely to affect it in other areas as well: often in synergistic ways (3:24).

Implicitly connected with this development is the phenomenal acceleration of energy conversion by man in the last two centuries: a conspicuous and fundamental indication of man's obsession with consumption. Much of this energy is derived from non-renewable resources which are rapidly being depleted (4:237). Unfortunately, political systems usually allow new technologies to operate before ultimate hazards are known; usually for "economic" reasons.

The environmental problem is not particularly new; what is new is the sudden and widespread public recognition of environmental quality as an issue. Actually, it reflects a social movement which has followed a rather familiar historical pattern - from relatively isolated interest groups in professional circles, through book publications and governmental attention, to mass media coverage and public concern. "Environment" being something that no public spokesman is likely to oppose, it has reached public prominence in an atmosphere of general agreement and acceptance.

Like any other social movement, the environmental "cause"

has a set of ideologies that prescribe a certain rationale and particular goals. The fact that this movement is attempting to relate environmental problem situations to basic human values in everyday understandable terms has brought these groups a considerable amount of popular success. Slogans abound, culprits are identified, and the need for vast reform is repeated and acknowledged incessantly. When converted into action programs, however, the unity of aroused sentiment disintegrates into a profuse array of well-intentioned but largely misdirected efforts. Believing that "something should be done" is quite different from specifying what should be done; and at this point, political and social ideology become stifled in a conflict between basic values and individual self-interest motives (5:39).

#### Technology and Science: the Scapegoat.

Frustrated by the divergency of action programs which defy coordination due to this conflicting self-interest, survey studies have provided a picture of a population presently typified by a confident concern: a belief that technology and science hold the answer to major problems. This reflects very well what has been called the "technologic ethic" or "the myth of the machine" in Western society (6:40). It describes a confidence that technology got us into the environmental crisis, and technology will get us out." Consequently, what is now evolving is the development of a "new" integrated science and technology of the environment to cure what are considered the evils of the "other" established science and

technology which is presently destroying the environment.

Fighting technology with technology points up an interesting paradox in contemporary Western society. Because of its obvious connection, "technology and science" is an easy scapegoat with which to associate the responsibility for the environmental crisis. But the basic aura of the power and goodness of both technology and science is so deeply entrenched in the central religious values which underlie Western society's system of beliefs that, ultimately, it is to both technology and science that man now securely turns for an answer.

Barry Commoner (7) is a good example of an individual who is linking developments in science and technology with environmental distress. As a biologist, educator and concerned ecologist he has been a leader in explaining what has happened in the environmental crisis and how it has happened. He has indicated that technological developments work on the environment in two ways. Through machines and energy conversion, technology amplifies man's power to change the environment; and secondly, science and technology have synergistically created entirely new substances and introduced them into nature (8:57). Commoner has not yet explained the "why" of the environmental crisis.

Lewis Mumford has written prolifically (6) in an attempt to de-emphasize the role given to technology by many modern scholars such as Leslie White (9). In his prologue to The Myth of the Machine (6:3-13), he states his position succinctly; the condition of man is actually threatened by a benevolent myth which the "megamachine"

has created in the minds of men from the seemingly concrete evidence of "progress."

"Success" and "progress" have become value-laden catch-words in Western society. They conjure up ideas associated with time saved, augmented power, increased goods and consumption, the controlling of nature, and with the displacement of real organisms with organisms that simulate the real ones or vastly magnify some single function they perform. The vast implications of both "success" and "progress" have become functional imperatives in Western thought. They remain axiomatic and absolute only because they remain unexamined.

Since the culturally-imposed image of man in the West is essentially iconographic and homocentric, individuals experience themselves as a centre of energy and consciousness--which sometimes manages to control its environment but at other times feels completely dominated by it. In this light, a somewhat hostile relationship between the human organism and its social and natural environment is understandably fostered. This anti-nature position can be presently seen in the behaviour of control-obsessed engineers, corporation personnel selling consumption itself, and media professionals fixated on the spectacles of political and economic crises.

It would seem, therefore, that although most of Western society has become aware of the impending environmental crisis and although pocket minority action groups are trying to convert the resultant concern into well-intentioned programs, this level of

activity will never realize the widespread success it seeks. Not only are these individuals combating a conflict among varying self-interest groups within a given population but they are rubbing against the very moral fibre on which are based many Western attitudes (10:415). Moreover, the whole phenomenon is taking on the complexion of man's latest fad. Western man, it seems, has become too de-sensitized by his historical heredity of rational thought. For any movement such as this to gain enough momentum within society to undertake such a qualitative task as environmental repair and control, will first require a widespread sensitivity training process in which the target population is exposed to attitude change influences. Perhaps one of the most powerful of these influences would be experience in the natural environment itself, where the cooperative relationship between man and nature can best be learned.

#### Western Religious Heritage: the Real "Why"?

The general acceptance of a sub-conscious, undeclared war against nature is an attitude deeply grounded in Christian dogma (11:350). The fact that most people do not think of these attitudes as Christian is really irrelevant. What is important is that no new set of basic values has been accepted in our society to displace those of Christianity. To understand this requires planned attitude change at strategic social strata. The Christian axiom that nature has no reason for existence except to serve man must be rejected.

To understand the importance of the planning for a change

of attitudes toward the natural environment necessitates an historical review of the origin of Western man's anti-nature attitude and its implicit interconnection with both science and technology.

The way people behave with regard to their natural environment depends greatly on what they believe about themselves in relation to things around them. Human ecology has always been deeply conditioned by beliefs about man's nature and destiny--that is, by religion. Thus each of the world's civilizations has produced elaborate mythologies which provide a story of creation.

For Babylonian, Sumerian, and ultimately, all of Mesopotamian man, nature and humanity existed in harmony (12). This peaceful co-existent relationship was greatly enhanced by the prevailing polytheistic intellectual patterns of the period; for the belief was strong that every element, every object, every natural phenomenon had a will of its own and that the gods embodied each of these forces.

Different from the anthropomorphic images of gods in the religions of the near east, ancient Egyptian religion pictured the gods of natural forces as they perceived those forces in real life (13). For example, Re, the god of the sun was pictured as the sun itself and not embodied in some human form. Nor were the gods ascribed human personalities. Consequently, the evolution of man in Egyptian mythology was only a part of the development of the universe as a whole. The divine world--a carbon copy of the natural world with the added quality of infinite existence--was the centre of concern for Egyptian man.



Ancient Greeks believed that behind all specific manifestations of life lay an archetypal, or ideal, form. Every tree, every spring, every stream, every hill had its own genius loci, or guardian spirit. These spirits were accessible to men, but were very unlike men. Before one exploited nature at a specific point, it was important to placate the spirit in charge of that particular situation. Moreover, the intellectuals of the ancient West denied that the visible world had had a beginning. Indeed the idea of a beginning at all was impossible in the framework of their cyclical notion of time.

The structure of the early Christian church comprised a very distinctive synthesis of elements derived from Judaism, Greek philosophy, the Greek conception of social organization and distinctive contributions of its own (14:391). From Judaism, it inherited a striking story of creation. By gradual stages, a loving and all-powerful God had created light and darkness, the heavenly bodies, the earth and all its plants, animals, birds, fishes, and man, both male and female. Man named all the animals, thus subtly establishing his dominance over them; and, although his body was made of clay, man was simply not a part of nature: he was made in God's image. Lynn White Jr. (11:346) has called the victory of Christianity over paganism "the greatest psychic revolution in the history of our culture" because by destroying pagan animism, Christianity, especially in its Western form, made it possible to exploit nature in a mood of indifference to the feelings of natural objects. The

(15:5). Henceforth an essential part of Christian life came to be the shaping of secular society in the interest of Christian ideals (14:400). Christianity became so diffused within the society in which it operated, that it could assume that the whole population was subject to its jurisdiction. So it was that Christian values were institutionalized through the socialization process of society itself (14:401). The church thus became a crucial focus of psychological support over a very wide range of human concerns. It was a source of direct models, not only for values at the most general level, but for modes of organizing social relationship patterns at a relatively general normative level.

#### Religious Foundations of Science and Technology.

Science, until the middle of the nineteenth century, was traditionally aristocratic, speculative and intellectual in intent; technology on the other hand was lower-class, empirical and mainly action-oriented. Mumford (6:91) has attempted to establish that the increase in pre-historical man's technology was the first evidence that man had become a thinking animal. Technology remained in the realm of the individual level until personal communication and primitive social tendencies were demonstrated in the evolution of irrigation for agricultural purposes by Neolithic man. The social nature of man evolved (as it were) in the shadow of his technology and derived many of its structural features from this technology. Indeed, it would seem to be no mere coincidence that history's first evidence of an established social structure was also what Mumford has described as

the first megamachine (6:163); for in order to complete the colossal technological task of constructing the pyramids, Egyptian society was itself organized into an hierarchical social construct, the blueprint of which, even modern man is yet to discard.

Throughout the contemporary world, the most successful technology has proved to be Western, and all significant science seems to be Western in style and method (16). However, the leadership of the West, both in technology and in science, is far older than the so-called "Scientific Revolution" of the seventeenth century, or the so-called "Industrial Revolution" of the eighteenth century. In fact, these two phenomena follow two long and separate developments.

In 800 A.D., the West began to apply water power to industrial processes. In the twelfth century, this was followed by the harnessing of wind power. From these techniques, power machinery, labour-saving devices and automation rapidly developed. By the end of the fifteenth century, even the smallest nations of Europe were able to demonstrate their technological superiority by conquering and colonizing throughout the world.

The distinctive Western tradition of science began in the late eleventh century with a massive movement to translate the Arabic and Greek scientific works into Latin. Until this time, science scarcely existed in the Latin West, even in Roman times. By the late thirteenth century, however, Europe had seized global scientific leadership from the faltering hands of Islam.

In the Christian dogma of creation, God had made nature. It was logically implied, therefore, that nature must reveal the divine mentality. Consequently, a field of religious study called natural theology was undertaken to examine nature for the better understanding of God. In the early church, and always in the Greek East, nature was conceived primarily as a symbolic system through which God spoke to man. This view of nature was essentially artistic rather than scientific.

In the Latin West, however, natural theology became the effort to understand God's mind by discovering how his creation operated. Quite understandably then, every major scientist, from the thirteenth century onward, explained his motivations in religious terms.

It was Francis Bacon who ultimately initiated a pragmatic justification for society's commitment to the marriage of modern science and technology. By linking this partnership to the immediate human desires of health, wealth and power, which were accepted as an integral part of the quasi-religious concept of progress, (stemming from a latent Christian notion of self-perfection for divine ends) he was successful in making the arrangement an even more binding one (17:106).

During the Reformation period, especially in the Calvinist doctrine of predestination, the individual became the focus of religious responsibility where formerly this had existed in the mediation of the church and its priesthood through the sacraments. The individual

was now given a positive assignment to work in the building of the Kingdom of God on Earth. If the Renaissance was initially an outgrowth of the predominantly Catholic culture of Italy, then the development of learning, especially science, in the post-medieval period was certainly shared by ascetic Protestantism. The Christian conscience, rather than the doctrines and structural position of the visible church, became the focus for standards of social evaluation.

It is easy to look for the role of ascetic Protestantism as a "rationalization" to seek "self-interest" which is the very antithesis of religious motivation. Although commonly misinterpreted, what Weber (18) specified was the harnessing of profit-making to systematic methodical work in worldly callings in the interest of economic production through free enterprise. However, his main point about the Protestant ethic and capitalism was the importance of the subordination of self-interest in the usual ideological sense to the conception of a religiously meaningful calling. Only with the establishment of this component, was sufficient drive mobilized to break through the many barriers which were inherent, not only in the European society of the time, but more generally to a more differentiated development of economic production (14:412). Thus, modern Western science and technology was intimately cast in a matrix of Christian theology. The dynamism of religious devotion, shaped by the Judeo-Christian dogma of creation, gave impetus to it.

### Philosophical Alternatives.

In recorded Christian history, there is but one blemish marking the tidal trend of general acceptance of the Christian attitude toward nature. Only Saint Francis of Assisi stands out as a radical to the Western view of natural theology. His conviction that man should be deposed from his monarchy over creation that a democracy of all God's creatures be substituted was founded on his belief in the virtue of humility--not merely for the individual, but for man as a species. Assisi was dismissed as a mad radical.

Besides the pre-classical Greeks and the Eastern branch of Christianity, most Far Eastern religions also hold an alternative to Western natural theology. Zen Buddhism, for example, conceives of the man-nature relationship as very nearly the mirror image of the Western Christian view (19:147). Zen, however, is deeply conditioned by Asian history, a fact which disqualifies the cognition of its many implications by Western enthusiasts. In many North American native religions and social orientation (15:5), in the Romantic poetry of the eighteenth and nineteenth centuries, in Chinese landscape painting of the eleventh century, in the ceremonials of the Bushman hunters and in current Whiteheadian philosophy, there is a deep sense of engagement with the landscape, with profound connections to surroundings and to natural processes central to all life.

Man Seeks the Land Ethic.

Derived from our distinctive Judeo-Christian history, then have come several basic philosophical ethics. One deals with relationships between individuals; a second attempts to integrate the individual to society, and especially in a democracy, to integrate social organization to the individual. Until only recently, however, no ethic has dealt with man's relationship to the natural environment. In fact, this environment is still considered as property. Consequently, the man-land relationship is strictly an economic ethic (originally developed from Roman law) which entails privileges but not obligations (20:145, 10:402). This relationship is readily seen today in the compulsion placed on ecologists to articulate their subjective concerns for a quality environment in economic terms. This type of attitude needs to be changed and embodied in a third ethic, a land ethic: an internalized sensitivity for the aesthetic quality of the natural environment, if any extensive pollution control measures are going to be widely acceptable.

All ethics rest upon a single premise: that the individual is a member of a community of interdependent parts. His instincts prompt him to compete for his place in that community, but his ethics prompt him to cooperate also (10:403). In this context Aldo Leopold's "land ethic" would simply enlarge the boundaries of the community to include the natural environment (19:403):

...a land ethic changes the role of Homo sapiens from conqueror of the land-community to plain member and citizen of it. It implies respect for his fellow-members, and also respect for the community as such.

Individuals can only be ethical in relation to something they can see, feel, understand, love, or otherwise have faith in, however. An ethic to supplement and guide the economic relation to land, therefore, must presuppose the existence of some mental image of the land as a living entity. How can this be instilled?

#### The Role of Education.

A consensus of informed opinion is increasingly turning to recognize education as a long term insurance for both spearheading and acting as a catalyst for the development of attitudes conducive to environmental quality (21:7). Developing an integrated science of the environment with established principles and substantiated generalizations based on a conceptual framework for understanding how man and environment interact has been advocated by some educators (22, 23, 24, 25). This development is essential, but insufficient by itself. Technological and intellectual measures would have no meaning without a complimentary development of conscience or emotional concern on the part of students, already separated from the natural environment by a series of social, institutional, and technological middlemen (26). Furthermore, the stimulation for an environmental science has primarily come from academically-oriented committees concerned about environmental quality. It is thus apparent that a wide spectrum of citizens representing diverse backgrounds and environments is not being involved. In fact, most of the initiatory programs being experimented with at the present time (mostly by extension courses offered through universities or secondary school



evening programs) have been inadvertently designed and scheduled in such a way as to attract only the well informed, the professional, and working adults who have a flexible time schedule (27:96). Few programs have been designed for the needs of central city residents. If educators insist on submitting environmental education as a whole to the status of add-on teaching units, they may increase youthful cynicism about adult hypocrisy (21:8-9), and succeed in widening the credibility gap between ecological understanding and a commitment to change (28:54).

#### The Place of Outdoor Education.

Perhaps a more direct exposure to nature itself would have more aesthetically impressionable effects. Frequently exposing children to the natural environment throughout their formalized educational experience in a myriad of different ways for many different purposes could nurture the qualitative respect of sensitization which is needed to avoid reducing the environment to economic equation. From the schools would come graduates with positive attitudes towards the desirability of environmental quality (29). This is the important role in which outdoor education can function.

Outdoor education, as distinct from environmental education, is a process of education which utilizes the outdoor medium to teach that which can be effectively learned there (20:21). (Although its application is not restricted only to school programs, this dimension will receive full attention here.) As a means of curriculum enrichment, it applies to many subject matter areas within formalized

education (31:2). Above all, it utilizes teaching methods and techniques based on a philosophy of first-hand experience, and learning through direct contact in the community and natural areas. This connection with reality has been called for repeatedly in the work of such educational notables as Rousseau, Basedow, Pestalozzi, Froebel, and Dewey (32:169-175).

This role for outdoor education: attaining positive attitudinal objectives, as opposed to strict content or knowledge packages, through the method of direct experience in the outdoors, is strongly reinforced in perceptual psychology and cognitive attitude theory. Children gain an understanding of themselves in relation to the natural environment through direct experience and significant external authorities (especially parents, teachers, and peers). From observing the behaviour of first parents, then teachers and peer groups, the individual arrives at certain attitudes toward the natural environment by a process of inductive reasoning. If children could be exposed to many positive attitudes coming from many different sources, a nonconscious ideology of respect for the natural environment could be fostered. Then, because central values are based on primitive nonconscious beliefs, this type of value could be replicated and internalized in the behaviour and attitudes of future citizens. People would no longer just rationally intellectualize about the technology of the environment, but would be sensitized enough to "feel" the necessity of legislation, or increased taxes for pollution control or whatever measures require public sympathy to

enact.

As education now becomes more visible, economic constraints are imposed. Both parents and concerned citizens are making increasingly greater demands for accountability from the school systems. Outdoor education is one area in which active leadership can demonstrate increased accountability (33:4). Indeed, the importance of education is greatly manifested when one considers that in a free society it is always the individual who must bear the ultimate responsibility for the choices that are made and the actions that are taken.

#### Need for the Study

##### The Canadian Scene.

No province in Canada has yet set down official policy regarding outdoor education. Only one, Ontario, has pertinent legislation. In 1965, the Ontario Schools Administrative Act was amended to permit those school boards with over ten thousand students to buy property outside their own jurisdiction for conducting a natural science school (34:17). This move came after considerable widespread pressure from most school boards throughout the province.

##### Developments in Alberta.

Until just recently, neither the Alberta Department of Education nor the province's School Act had anything to say regarding outdoor education. Excursions and field trips were consequently left to the initiative of local school boards and an increasing

number of enthusiastic teachers.

Effective on August 1, 1970, however, an additional discretionary power was given to Alberta school boards by an order-in-council from the Department of Education. It revised section thirteen of the province's School Act to include (35:36):

(The Minister of Education hereby delegates his power to the schools boards to the extent that they may)...with respect to instructional materials other than textbooks, prescribe any such materials provided that a teacher who uses materials other than those prescribed by...(the Minister) or the board is responsible to the board for the use of those materials.

Under section 138 (c) of the School Act, the boards were also given the power to (35:52):

...arrange for, undertake or sponsor, for its pupils and at its own cost or otherwise, educational, cultural, or recreational trips inside or outside its district or division.

These are the first policy stipulations which have important implications for outdoor education in Alberta. Yet very few school systems have really come to grips with the problem of formulating specific policy statements in this regard.

#### Efforts by the Edmonton Public School Board.

In Edmonton, there has been a positive move in this direction. The Outdoor Education Committee of the Edmonton Public School system in April, 1971, drew guidelines for approval by the Edmonton Public School Board. The central statement of policy was (36:23):

The Board believes that a school system has a primary responsibility to provide opportunities for students to develop an "environmental conscience" which recognizes that, just as an individual is an integral part of human communities in a human environment, he is also an integral part of the natural communities in a larger natural and physical environment.

The objective of the recommendations which follow was to stimulate the Board to delegate the development of programs to the Superintendent so that this policy statement could be realized

(36:23):

1. the development of programs in which
  - a) educational opportunities are enhanced by the utilization of resources from communities in both environments.
  - b) artificial barriers existing between "education" and "real life" experiences are minimized.
  - c) a concern for the preservation of natural resources as well as a social concern for the conditions of man is emphasized.
2. a broad use in schools of
  - a) community resource persons to add breadth, depth, reality, pertinence, and cogency to the curriculum.
  - b) materials from and about man-made facilities.
  - c) living materials as representative samples of life in the natural environment which is peculiar to the geographical area in which the school is located and in which the student lives.
  - d) examples of the physical environment, in order to exemplify the basic materials from which life is derived and upon which life depends.

3. an extensive use of the environments

- a) to provide experiences with an appreciation of the social, technical, industrial, governmental, and cultural institutions, agencies, and social patterns which exist in the human community.
- b) to provide experiences with the development, utilization, and implications of the many man-made aspects of the human environment.
- c) to provide experiences with various organisms in terms of recognition, description of life cycles, and their interrelatedness with other organisms and with the physical aspects of their natural environments and communities.
- d) to provide experiences with and a sensitivity to the various aspects of the physical environment in order to examine the relationship between these factors and all factors of both the human and non-human environments.

Complimentary to this action, a Consultant for Outdoor Education was appointed on April 1, 1971, based on a memorandum prepared for W. R. Prunkl, Assistant Superintendent for Curriculum Development, by the Outdoor Education Committee (37). In the memorandum it was suggested that a person be appointed to coordinate and conduct a program at the district level and that he work closely with a committee of teachers, administrators, and community resource people. The responsibilities for the consultant were assigned as follows (36:21):

- a) Establish a committee on outdoor education which would include teachers, administrators, students and representatives from the community.
- b) Prepare a concept statement and policy on outdoor education.

- c) Develop a general content outline for outdoor education. This should be accomplished by the consultant with the cooperation of the outdoor education committee and subject matter specialists.
- d) Conduct an inventory of the resources available for outdoor education in the community and surrounding area.
- e) Identify resource persons in the community who possess certain specialized abilities which might be utilized in the program.
- f) Develop a handbook of resources and resource persons for the use of teachers.
- g) Act in a liaison capacity between cooperating agencies, resource persons and the school system.
- h) Prepare leadership for the program.
- i) Institute a pilot program in the spring and summer of this term.
- j) Develop administrative procedures for the successful operation of the program.
- k) Inform parents and other citizens through an effective public relations program about the objectives of the program and how it will be conducted.
- l) Evaluate the program periodically.

#### The Concept of Environmental Education:

Outdoor education has been conceptualized within the Public School system as an integral and functional part of Environmental Education. Four basic objectives have been formulated for the Edmonton-Program of Environmental Education (38:6):

- 1. Develop students who are knowledgeable about the interrelated biophysical and sociocultural environments of which man is a part.

2. Develop in students an awareness and understanding of environmental problems and of possible solutions to these problems.
3. Develop in students a concern for environmental quality that will motivate them to respect and maintain a quality environment and to work towards solutions of environmental problems.
4. Develop students who are knowledgeable of the various means by which they can play an effective role in achieving solutions to environmental problems.

In attempting to achieve these stated objectives, the development of a program along four patterns has been envisioned (38:8). The first pattern is to assimilate or incorporate environmental material into the existing core or basic programs such as biology, general science, and social studies. The second method for Environmental Education will be outdoor education. Other means of meeting the objectives will be through the study of relevant and topical issues, and through school and community projects. Although each pattern is a distinctive approach by itself, there can be and probably will be considerable overlapping from one to another. It is within this four-part framework, therefore, that outdoor education is conceptualized.

#### The Place of Outdoor Education.

Development of a knowledge, understanding, and an appreciation of the natural environment through actual experience is the definitive framework for outdoor education (38:16). Above all, it is envisioned as a means of curriculum enrichment which offers unique opportunities for direct laboratory experience in identifying



and resolving real-life problems, and for attaining concepts and insights about human and natural resources (38:16). Unfortunately, the creation of objectives for outdoor education specific to Edmonton have gone the way of many of their educational predecessors. There has been, as yet, no clearly defined attitudinal objectives stated in behavioural or performance terms (39).

At the present time, the Edmonton Public School system has what must be considered as one of the most well-developed conceptual bases for outdoor education in Canada. Application of this into a system-wide practical program is still in its infant stages, however. Since any developmental process must entrench itself firmly within the existing system, the progress of widespread teacher and student use of the outdoor education method in Edmonton is seen to be controlled by certain limitations in existing information. The complexity of the recent explosion in many diverse outdoor activities and a lack of complete statistics for these activities, for example, has created a problem of assessing the current status and trends in outdoor education (36:3).

#### The Importance of Teacher Attitudes.

Ultimately, the key to the success of any outdoor education program lies in the hands of the classroom teacher (40:37). If the teacher sees value in outdoor experiences and is enthusiastic about working with his class in an outdoor setting, he will find the means for doing so. On the other hand, the teacher who looks negatively on outdoor experiences will find many reasons for keeping

his class indoors. Thus, the attitudes and competencies of the teacher are of vital importance to the outdoor education movement. With such an important focus on teachers as the past initiators of this type of program, little is known about how Edmonton Public School teachers are attitudinally predisposed towards becoming involved in outdoor education.

Teachers are valid external authorities. They help to achieve for students, especially in the younger years, perceptions of relationships between things which are abstracted into important basic beliefs about themselves and their environment. If teachers have a negative attitude towards the value of the preservation of the natural environment as implicated in a lack of outdoor experiences and indifferent treatment of environmental issues in class, students nonconsciously add this dimension to their belief structure. The importance of teachers in this process is the reason why research in teacher attitudes was undertaken.

#### The Problem

Is there a positive relationship between positive teacher attitudes towards outdoor education and direct teacher involvement in this method of teaching students?

#### Limitations of the Study

The research in this study is confined to the development of an attitude scale to measure a positive or negative teacher

orientation towards outdoor education.

### Definition of Terms

Outdoor Education. Outdoor education is a method of teaching which emphasizes learning in the outdoors by directly experiencing those principles in each subject which can best be taught in the natural environment.

Outdoor Experience. Any learning situation which is conducted outdoors. This would include field trips, field study in the schoolyard, all-day expeditions, and resident camp situations.

Resident Outdoor School. (School Camping and/or Resident Camp). An aspect of general education involving learning experiences that can best be achieved through a twenty-four hour group living experience in a camp-like setting. This experience may be as short as one day or as long as three or four weeks.

Environmental Education. A distinct academically-oriented discipline with its own research and course content pertaining to the environment. Content from botany, physical geography, geology and zoology, for example, would be contained in a course such as this.

Edmonton Public School Teacher. Any teacher employed by the Edmonton Public School Board.

Student. Any boy or girl attending a school within the Edmonton Public School system.

Attitude. A latent, relatively stable organization of beliefs, reflecting both intensity and direction of feeling toward a particular psychological object, whether it be concrete or abstract (41:2, 42:112).

Psychological Object. Any symbol, phrase, slogan, person, institution, ideal or idea toward which people can differ with respect to positive or negative effect (41:2).

Attitude Scale. A series of questions that will accurately draw from the respondent intensity of feeling from positive to negative.

Internal Consistency. The degree to which the series of items which are given a single total attitude "score" are really interrelated and can be accepted as having a single attitudinal meaning, rather than a mixture of different kinds of attitudinal responses.

Teacher Involvement. (in outdoor education). Active teacher participation in providing outdoor experiences for his students.

### Hypothesis

There will be no significant difference in the relationship between teachers' attitudes towards outdoor education activities and their actual participation or non-participation in these types of activities.

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## CHAPTER II

### ATTITUDE AND BEHAVIOUR: A THEORETICAL CONSIDERATION

#### Preamble.

The values which affect society's behaviour toward the environment are fundamental, widely held, and deeply involved with one's perceptions of the world. For example, society attaches an almost mystical importance to the inevitability of "progress" and to the value of economic growth; so much so that these ideas are seldom examined, even though they are by no means shared by other people around the world or even by all segments of this society. Progress is not inevitable, and growth, whether in human population or in gross national product, does have finite limits.

If our behaviour towards the environment is indeed based on unexamined values and faulty suppositions, then it should be the business of education to examine these values and challenge these basic assumptions. While this idea may sound somewhat radical, nothing less direct will stand a chance of being effective in changing social behaviour. After all, one's presumptions about the nature of the world and one's role in it are widely held in society because they are constantly reinforced. The communications media, the behaviour of our peers, and even our folk culture confirm these perceptions of the world. Examination of these perceptions must start in the schools since they also tend to reinforce whatever values are

widely held by society at any given time. Indeed, they are one of the means by which we institutionalize our beliefs and transmit them to succeeding generations.

Much of this communication is done through implicit messages which are a part of the school environment and may or may not be contained in textbooks or other teaching materials. For instance, one of the most important messages from the point of view of environmental significance has to do with the child's perception of his role in society and of his ability to affect his environment. A teacher who comes from a different cultural background from that of his students and who lives in a different neighbourhood will not likely share the same environmental perceptions as his pupils. If, at the same time, that teacher has a low estimation of the ability of his students to relate to the broader social community in coping with their problems, a message of futility and isolation all too clearly comes through to those children.

A self-contained classroom isolated from the surrounding community provides a sterile atmosphere for learning about environmental problems, whether one approaches them from the point of view of their social or physical basis. But perhaps more importantly, this kind of classroom environment may impart implicit messages about the relevance of environmental concerns, messages with obvious negative implications for the way in which those children will perceive their role in effecting environmental change.

The more successful environmental programs have undoubtedly

contributed to the willingness of the schools to open the classroom doors to new experiences. The growing public concern over environmental degradation is now reinforcing that movement and the result may be the best chance yet for introducing behaviourally effective educational programs. To realize this opportunity, schools must make use of that particular environment perceived by their students. In effect, they must teach through the environment, in addition to about the environment, as a generalized objective of study: favourable attitudes must be stressed! (1, 2:14, 3:46, 4:41, 5:91-92, 6:36). If schools are to affect the behaviour of students in order to moderate society's impact on the environment, teachers must lead students to explore the social interactions and the whole system of human values, concerns, and assumptions which underlie our behaviour.

The key to preserving the human environment is inescapably the collective behaviour of individual citizens. In the final analysis, the success of environmental education will be measured in terms of its ability to change the behaviour of society.

#### A. The Theoretical Orientation: Perceptual Psychology

##### Introduction.

The concern of this work is to understand and to demonstrate the relationship which exists between an individual's attitude towards a specific attitude object and his overt behavioural response towards that same object: in this case, teacher attitudes towards, and

participation in providing students with outdoor education activities. Discussion of any theoretical explanation of this relationship between attitude and behaviour, however, necessarily involves the acceptance of certain basic assumptions about the nature of man, behaviour, and attitude. To this end, a perceptual orientation for the discussion of man's behaviour has been chosen. It must be emphasized before proceeding that a frame of reference (in this case, the perceptual approach) may never be evaluated as right or wrong, but is merely utilized as a matter of convenience.

#### Two Basic Theoretical Orientations.

Human behaviour has been conceptualized as representing an interaction between an individual and the environmental situation (7:23). Through man's insatiable curiosity to discover all he can about his own interaction with his surroundings, at least two very broad frames of reference have evolved to explain man's behavioural capacity. The more traditional of these is the behaviour-istic approach of the Skinnerians. Basically, this orientation has developed from the assumption that people behave the way they do solely because of the influence of external forces or "stimuli" to which all people are inevitably exposed. This way of looking at behaviour has become familiar (usually at a subconscious level) to most people. For example, one learns very early in life that subjecting a person to the proper pressures or rewards often makes it possible to control and direct his behaviour. Although this

orientation has developed understandings about human behaviour that are of great significance to every aspect of human society, (eg., advertising) it has been rejected by many opponents as being too "mechanistic" (8:10) or "mechanomorphic" (witness B. F. Skinner's plea for the development of a technology of behaviour in his latest book, Beyond Freedom and Dignity (9)). It is also referred to as the "objective frame of reference" (10:19).

More recently, a "humanistic" movement has developed in psychology called the "perceptual" or "phenomenological" orientation to human behaviour. This approach is deeply concerned with the manner in which an individual interprets his own experience. It believes that people do not behave according to the facts or "forces" as others see them. Instead, it is believed that individuals behave according to the stimuli as they interpret them (8:17).

The origins of this orientation may be traced from the earliest beginnings in Gestalt psychology (11) which initially developed in opposition to the standard behaviouristic approach of Pavlov and Watson. The influence of the Gestalt psychologists along with Kurt Lewin's work (12, 13) with the concept of "field theory" in social psychology and his concern for the effect of motivation on behaviour, helped develop this "gestalt" or "perceptive" orientation toward wider acceptance. However, it was Snygg and Combs (8) who greatly strengthened the foundations of this movement with the publication of Individual Behavior in 1949, which Combs subsequently revised in 1959. They did this by clearly delineating

an extensive and comprehensive outline for this new "perceptual" approach, thereby contributing a stable theoretical foundation for what shortly after proved to be the most virile and exiting movement in psychology during the 1950's.

Interestingly enough, this perceptual orientation is not just an isolated psychological school of thought, for it corresponds closely to the philosophical school of phenomenology, which expounds that reality lies in an individual's experience of an event (8:21). It is thus an approach that is deeply interested in the person's own experience. It seeks to understand the nature of people's feelings, beliefs, attitudes, and values.

#### The Perceptual Approach.

Basically, the phenomenological approach is founded upon several fundamental assumptions. Perhaps the most essential is the principal belief that a major characteristic of life is a tendency for the individual to maintain some semblance of organization or wholeness to his existence (8:42). Durkheim first expressed this as attaining some level of social "structure" (14). It seems that the mere preservation of the physiological organism as the fundamental motive of human behaviour cannot stand alone; for man does not live in a physical world exclusively. The universe in which he lives and maintains his organization is a universe of ideas, values, people and societies. Like the larger organization of which he is a part (society) and the smaller organization of

which he is a product (body), he attempts to maintain organization. Indeed, the self which man seeks to maintain is not just his physical body, but the self he has come to consider as his personality.

Man, according to this frame of reference, is rational. He seeks understanding: he tries to make sense of the world around him: he has discriminating and reasoning powers (15:164). Man seeks a situation in which he can adjust to his environmental setting, where he has more time to obtain feedback from reality testing, and where he has a number of realistic choices. But man is also irrational. This is especially true where a quick response is required without adequate time to think, where there are limited response alternatives, and where deep emotional needs are aroused (15:165). Behavior is viewed as being purposeful (8:17). It always has a reason. Sometimes the reasons may be vague and confused, in which case, an individual's behaviour is equally vague and difficult to predict. When one observes other people from an external, objective point of view, their behaviour may, at times, seem irrational because one person does not experience things as other people do. But subjectively, at the instant of behaving, each person's actions seem to be the best and most effective act that he can perform under the circumstances, even though this may not be true in prospect or retrospect.

Within the framework of these general assumptions and the evolving concept of perceptual psychology, therefore, the phenom-

ological approach sees behaviour as a function of human perception (8:24, 10:11). Indeed, the concept of "perception" is one of the most fundamental ideas in this orientation. Kelly has defined it (16:624) as an information-gathering function of an individual whereby there is a selective transactional process with the external stimuli of an individual's environment. This perceptive or "cognitive" process is highly subjective and arbitrary, based as it is upon that which already exists in the person's previous perceptive experience.

What actually comprises an individual's perceptive world first became of interest to the Gestalt psychologist. They were the first to conceptualize and study the organization of what they called the individual's "perceptual field." Festinger (17) later referred to the same concept as a person's "cognitive world" in his theory of cognitive dissonance. Essentially, what both are striving to express is that the perceptual field or cognitive world of each individual is "reality." It includes all the physical and non-physical universe plus all the individual's past human experiences. Although the content and form of this perceptual field is fluid, there is also a degree of stability in that it is always organized and meaningful (8:23-27).

The perceptive orientation also deals with the concept of "need" as a precursor of behaviour. In his analysis of learning, Travers (18:12) has stated that a person acts or behaves to satisfy a need. Adam Smith first postulated that people are



motivated by a need for food, clothing and shelter. This is probably partly true; but is "need" really an absolute necessity to human welfare? Maslow (19) has posited a hierarchy of prepotency of needs, indicating that needs such as belonging, self-esteem, self actualization and cognitive needs may not be satisfied until the more basic needs such as the physiological needs and the safety needs are satisfied first.

The perceptual approach specifies that man not only seeks the maintenance of an organized self but actually seeks to develop a more adequate self. This orientation, therefore, makes a close correlation between "need" and "motivation", and sees man's most basic need as the drive for personal adequacy. Maslow (19) speaks of this as a need for self-actualization and self-realization, while psychotherapists describe it as the need for growth (8:46). Adherents to the theory of cognitive dissonance speak of this phenomenon in terms of an adequate "self-concept." In fact, they maintain that individuals are generally "motivated" to achieve a favourable self-concept. Indeed, the perceptual psychologist would say that if behaviour is always directed at the satisfaction of a need then from the point of view of the behavior himself, he is never unmotivated. For in any situation, out of all the things one might perceive, one perceives what is meaningful and what helps to maintain the organization of the perceptual field, in order to fulfill the fundamental need of adequacy.

## B. Attitude Organization and Structure

### Introduction.

Attitude problems have long been recognized as a central part of social psychology in accounting for socialization and individual social behaviour. This is quite understandable. The products of social interaction are revealed, psychologically, as sets of attitudes formed by the individual (21:333). Socialization of the human child consists in large degree of the individual's internalization or learning of the values, norms, roles, and way of life of his family and that part of society in which his family lives. Consequently, a large share of textbooks and research articles published in this field deal with the measurement of some specific social attitude, the refinements of existing measurement techniques, or with the experimental studies of attitude change. Yet the fundamental problems of attitude determination and change are still far from settled.

### General Orientation.

In order to measure anything, one has to know something about the properties of what one is measuring. An examination of the concept of attitude may be made in terms of the perceptual frame of reference described in the previous section of this chapter. More specifically, a functional approach has been chosen which was first isolated and expounded by Katz in 1960 to explain the nature and dimensions of attitude.

The basic assumption of this approach is that attitude formation must be understood in terms of the needs they serve. Since this orientation gives primary attention to the functions which attitudes can perform for the personality, the exponents of this approach concern themselves with studying the motivational bases of specific attitudes. A strong foundation was initially established for this approach by Smith, Bruner and White (22) who first analyzed the different functions which attitudes achieve for the personality. In doing so they gave most of their attention to the perceptual and cognitive processes involved.

Attitude has been defined (23:112) as a relatively enduring organization of beliefs around an attitude object or subject which predisposes one to respond in some preferential manner towards that specific object. Opinion is the verbal expression of an attitude, but attitudes can also be expressed in non-verbal behaviour. Attitudes include both the affective, or feeling core of liking or disliking, and the cognitive, or belief, elements which describe the object of the attitude, its characteristics, and its relations to other objects. All attitudes must include beliefs, but not all beliefs are attitudes. When specific attitudes are organized into an hierarchical structure, they comprise "value systems." Basically then, attitudes may be said to be comprised of cognitive beliefs about, and affective feelings for a given object. However, making a direct extrapolation from what a person says or how he behaves, to what he believes (his true attitude) is a

perplexing game which social scientists have yet to solve with acceptable consistency.

### Belief Structure.

Attitudes may ultimately be understood in terms of their component beliefs. From perceptual psychology comes the concept that any single belief is based on fact - or better still, what a person believes to be fact. These are facts as he sees them, not as others see them; and if no facts are known there is no belief, and consequently, no attitude formed.

From the time an individual is born, he starts assembling facts. These bits of information are collected under two primary influences: through direct trial-and-error types of experience, (which are continually validated, modified, or nullified by further experience) and through valid significant authorities (such as parents, teachers, and peers). Simultaneous to this accumulation of facts, the subconscious processes of abstraction and generalization are constantly manipulating an individual's storehouse of incoming information so that a growing number of associations between the "things" which comprise an individual's external environment and the person's "self" gradually evolve. As an individual's personal experiences continuously accumulate he develops an increasingly broad understanding of himself and his environment. At the same time, these relationships between "things" and the "self" are formed and solidified into factual or conceptual packages which may be called "beliefs."

Not all of a person's beliefs are of equal importance to the individual (23:6). Rather, it is those beliefs directly concerning one's own existence or identity, beliefs shared with others, and those beliefs most functionally connected with other beliefs which acquire a position of centrality in an individual's evolving belief system. Moreover, it appears that the main characteristic of these beliefs which take on the quality of centrality in a person's belief system, are relatively undifferentiated. That is, they provide a foundation of primitive premises from which a person's inductive or syllogistic reasoning begins to develop more differentiated, higher-order beliefs. As an individual's belief system acquires more diversity and grows in complexity, it develops a rather profuse vertical and horizontal structure. Ultimately, these different beliefs in varied combinations form the components of attitudes.

#### Attitude Structure.

Attitudes form a hierarchical structure within the personality of an individual and may be described by several dimensions. For example, attitudes are held with a greater or lesser intensity (15:84) depending on the strength of the affective (or emotional) component. If an attitude is held with little emotional content, then that attitude is not very central and may be changed with comparative ease. Conversely, if an attitude is held with strong emotional conviction, it is extremely difficult and usually impossible to change even though the attitude

itself may be illogical or irrational.

The cognitive, or belief component suggests two additional dimensions: the specificity or generality of an attitude, and the degree of differentiation of the beliefs. An attitude can be very specific or it can be quite general--depending upon whether it refers to a specialized type of object or situation, or to a whole class of objects or situations. Different attitudes also have varying degrees of differentiation (15:186). This is a direct function of the number of cognitive components contained in the attitude. Consequently, if an attitude is of low differentiation it has a simple structure and may be easily changed. In the case of low differentiated attitudes, once a single item of belief has been changed, the whole attitude may be quite easily changed (24:160-163). Conversely, a highly differentiated attitude with many cognitive components is harder to change because there are many more elements within the attitude structure with which to neutralize the impinging opposite or dissonant influence.

#### Value Structure.

Certain primitive or basic beliefs which are central to the development of a person's higher-order beliefs and attitudes are referred to as "values." Consistent with this idea of values is a rather different dimension of attitude: that is, the number and strength of its linkages either directly or indirectly with a related value system (15:189). Indeed, the strength of an attitude is considerably enhanced if the number of linkages with a

value system are increased, especially if these links are tied to a value system which is closely related to an individual's conception of himself. Similarly, if an attitude is part of a value system which is closely related to an individual's self-concept, then this attitude assumes a place of some centrality within the attitude hierarchy. In each of the latter examples, attitudes are only changed with great difficulty.

#### The Functional Approach to Attitude Formation.

Stated simply, the functional approach is the attempt to understand the reasons people hold the attitudes they do. The reasons sought, however, are at the level of psychological motivations and not at the level of indiscriminant external events and circumstances. According to this orientation, the major functions which attitudes perform for the personality can be grouped according to the following motivational bases: the instrumental, adjustive, or utilitarian function; the ego-defensive function; the value-expressive function; and the knowledge function.

The Adjustment Function. Essentially this function is a recognition of the fact that people strive to maximize the rewards in their external environment and to minimize the penalties. The child develops favourable attitudes toward the objects in his world which are associated with the satisfactions of his needs and unfavourable attitudes toward objects which thwart or punish him.

In general, then, the dynamics of attitude formation with respect to the adjustment function are dependent upon present or past

perceptions of the utility of the attitudinal object for the individual. The clarity, consistency, and nearness of rewards and punishments, as they relate to the individual's activities and goals, are important factors in the acquisition of such attitudes. Both attitudes and habits are formed toward specific objects, people, and symbols as they satisfy specific needs. The closer these objects are to actual need satisfaction and the more they are clearly perceived as relevant to need satisfaction, the greater are the probabilities of positive attitude formation.

The Ego-Defensive Function. Many of one's attitudes have the function of defending one's self-image. At some time or another, all people employ defense mechanisms, but they differ with respect to the extent that they use them and some of their attitudes may be more defensive in function than others. The mechanisms by which the individual protects his ego from his own unacceptable impulses and from the knowledge of threatening forces from without, and the methods by which he reduces his anxieties created by such problems, are known as mechanisms of ego defense. They include the devices by which the individual avoids facing either the inner reality of the kind of person he is, or the outer reality of the dangers the world holds for him. They stem basically from internal conflict with its resulting insecurities. In one sense the mechanisms of defense are adaptive in temporarily removing the sharp edges of conflict and in saving the individual from complete disaster. In another sense they are not adaptive in that they handicap the individual in his social



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adjustments and in obtaining the maximum satisfactions available to him from the world in which he lives.

The Value-Expressive Function. While many attitudes have the function of preventing the individual from revealing to himself and others his true nature, other attitudes have the function of giving positive expression to his central values and to the type of person he conceives himself to be. Thus one needs to take account of the fact that not all behaviour has the negative function of reducing the tensions of biological drives or of internal conflicts. Satisfactions also accrue to the person from the expression of attitudes which reflect his cherished beliefs and his self-image. The reward to the person in these instances is not so much a matter of gaining social recognition or monetary rewards as of establishing his self-identity and confirming his notion of the sort of person he sees himself to be. The gratifications obtained from value expression may go beyond the confirmation of self-identity. Just as we find satisfaction in the exercise of our talents and abilities, so we find reward in the expression of any attributes associated with our egos.

The Knowledge Function. Individuals not only acquire beliefs and attitudes in the interest of satisfying various specific needs, they also seek knowledge to give meaning to what would otherwise be an unorganized chaotic universe. People need standards or frames of reference for understanding their world, and attitudes help to supply such standards.

The need to know does not imply that people are driven by a thirst for universal knowledge. But they do want to understand the events which impinge directly on their own life. Moreover, many of the attitudes they have already acquired give them sufficient basis for interpreting much of what they perceive to be important to them. They may not provide a complete picture of the world, but they are often close enough to a possible world so that new information will not modify old attitudes unless there is some inadequacy or incompleteness or inconsistency in the existing attitudinal structure as it relates to the perception of new situations.

### C. The Attitude-Behaviour Relationship

Attitudes towards any aspect of experience--the objects or people about one, one's own behaviour, or the issues of the day--depend in some measure on the utility of such events in helping a person achieve his goals. In other words, attitudes are related to motive satisfaction. But they are not only dependent on motivation. They may also play a role in determining the motivation that leads to action (i.e., they may be independent variables). This suggests that attitudes are related to action.

There is still little consistent evidence supporting the hypothesis that knowledge of an individual's attitude toward some object will necessarily allow one to predict the way he will behave with respect to that object. Indeed, what little evidence there is to support any relationship between attitude and behaviour comes

from studies showing that a person tends to bring his attitude into line with his behaviour (25, 26), rather than from studies demonstrating that behaviour is a function of attitude.

Considerable divergency characterizes the thought among researchers regarding what may be called the "action" or "behavioural" component of the attitude construct. Fishbein (27) and Peak (28) have each explained quite differently (i.e., Fishbein with the behavioural approach and Peak with the functional approach) that an attitude should not be expected to serve as an adequate basis for predicting all behaviour, since it is rarely more than one of several components of the motive structure. Beginning in 1950 with the now famous California investigation of the authoritarian personality (29), however, many attitude inventories have been developed which have enabled an investigator to predict a subject's behaviour towards a specific subject or object with respectable accuracy.

To compile a list of research evidence to support or reject the relationship between attitudes and overt behaviour would necessitate a work of vast proportions. It must be stressed, however, that the relationship between attitudes and action is not always a positive or direct one. Nevertheless, it must also be emphasized that if one desires to construct an attitude scale which will be reliably predictive of overt behaviour, there are certain principles or understandings to follow which will enhance the possibility of success. These will be discussed in considerable detail in a later chapter.

If resultant behaviour is conceptualized as a compromise

or interaction between goal-directed motivations, a person's self-concept, and existing situational variables (such as obstacles or detours) then attitudes must be considered to be the most important determinants of behaviour. (Attitude is conceived here as the confluence and/or inhibition of individual motives in interaction with situational demands--In keeping with the perceptual approach to psychology.) Therefore, an interrelationship between a given attitude and given situational variables can predictably result in a given range of overt behaviour towards the attitude object (30).

#### Summary.

The main purpose of this chapter has been to outline several theoretical explanations which have been used as the general assumptions from which the original problem was formulated and the resulting attitude scale was constructed. In order to achieve this, man's behaviour was first explained in terms of a perceptual orientation. The acquisition of attitudes was then accounted for by using the functional approach, which is actually a modification of cognitive theory, and is also deeply rooted in perceptual psychology.

Resulting from the examination of perceptual psychology it was concluded that behaviour is the result of an interaction between goal-directed motivations, a person's self-concept, and situation variables. As such attitudes were deemed to be the most important determinants of behaviour.

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## CHAPTER III

### STUDENT AND TEACHER ATTITUDES TOWARDS OUTDOOR EDUCATION

In addition to a comprehensive search for an appropriate and consonant theory to adequately and meaningfully explain attitude formation and its relationship with behaviour, research in the literature was confined to the development of a list of significant environmental influences which affect student attitude formation and behaviour acquisition, and to a survey of relevant literature pertaining to teacher attitudes towards outdoor education

#### Student Attitude Formation

It was emphasized in the theory of attitude formation expounded in the previous chapter that an individual non-consciously forms basic belief patterns which are the foundations for the construction of attitudes from two primary sources. These were: 1) significant external authorities (such as parents, teachers, and peers), and 2) through the accumulation of personal trial-and-error experience. It is the significant external authorities, particularly teachers, that this review will concentrate upon.

Two major tenets of social learning theory provide the guidelines for explaining attitude and, consequently, behavioural acquisition by the student (1:37). Role theory has provided extensive research into identification and imitative behaviour; and those theorists concentrating on interpersonal relations and

group dynamics have studied the reinforcement effects of interpersonal behaviour.

Identification and imitation are the two means by which the young are socialized in the family circle early in life and in the larger society later (2:26). Both concepts involve the tendency for a person to reproduce the actions, attitudes, or emotional responses exhibited by real-life or symbolized models (3:89).

A child's behaviour is a function of the learning that results from interaction with his environment, particularly his social environment (2). Many studies (3, 4, 5, 6) consider it conclusive that social learning is facilitated most frequently through the exposure of the role aspirant to a variety of stimuli and reinforcements provided by significant external authorities.

Models are utilized in all cultures to promote the acquisition of socially sanctioned behaviour patterns. However, the most important models for the primary socialization of the young child are those people in his most immediate environment, usually the parents (2, 7, 8). (Socialization here, refers to all the processes by which an individual acquires his personality characteristics, motives, beliefs, attitudes, values and standards.) Furthermore, it has been found that this role behaviour acquisition is not so much a function of the parents' (and teachers') instructions and disciplinary techniques as it is from the total behaviour they (parents, teachers) themselves exhibit during continuous contact with children (1:25). Indeed, an exemplary model is one of the best tools in

controlling the behaviour of young people (1:34, 8:51). For not only do such models establish the appropriate patterns of behaviour for various situations, but they reflect the norms of stipulated behaviour and serve to determine the kinds of activities that young people can or cannot do (1:35).

Since the primary agents of socialization in the beginning of the child's life are the parents, it would seem that the instillation of favourable environmental attitudes and behaviour is most crucial in the first few years of school and that both teachers and parents share this responsibility.

#### The Role of the Teacher.

The place of the teacher as a pertinent role model for the student has less significance than that of a parent or close peer (9:44). However, the opinions that he expresses regarding environmental matters, the importance he places on this aspect of the curriculum, and his own personal behaviour, combine to contribute significantly towards the attitude acquisition of the student.

The teacher who initiates outdoor education activities is no longer "a voice in the wilderness," for this behaviour is very much in tune with the ecology fad which is presently sweeping the country. The teacher's actions in this case are strongly reinforced by the media and consequently, his position of influence becomes more prestigious.

A series of studies on prestige suggestion have shown that people will believe or do what prestigious sources suggest

(10, 11). The connotations for the importance of teacher involvement in outdoor education are obvious.

### Teacher Involvement In Outdoor Education

In Outdoor Education, Smith and others (12) have expressed the opinion that teachers must have special preparation if they are to conduct learning activities outside the classroom (12:247). To substantiate this point of view, the authors listed three characteristics necessary for a preparation program (12:247).

1. A knowledge of human growth and development which helps teachers and leaders understand (a) the nature of learning in informal and life-like situations; and (b) the behavior of children and youth in out-of-classroom settings, particularly in the outdoor environment.
2. Competence in teaching methods in informal outdoor settings, and an ability to relate such experience learning to classroom objectives and activities.
3. A general knowledge of the outdoor environment and the nature of outdoor activities, with competencies in outdoor interpretation and the teaching of outdoor skills.

Smith, et al. further suggest that one reason why more teachers have not been using outdoor instructional activities is that too often the preparation and pre-service experiences of teachers are related primarily to classroom situations with emphasis on the teaching of abstractions (12:248). Other authors, too, have suggested some reasons why teachers may not be using these out-of-school activities in their teaching.

Freeberg and Taylor (13) list five factors that influence classroom teachers in their use of outdoor instructional activities (13:59):

Some of the fear that many classroom teachers have regarding outdoor education programs includes: (1) lack of class control because of the informal nature of the experiences; (2) public sentiment about being out of school; (3) a lack of comprehensive knowledge concerning arrangements and scheduling; and (5) a sense of responsibility for the safety and welfare of their students while off school grounds.

Several possible reasons for the slow progress of outdoor education have been suggested by Macmillan (14:6):

Perhaps the greatest hindrances to the development of an outdoor education program have been in the reticence of teachers to undertake the program or the fear of excessive cost to the school system. Often teachers, principals, and school boards have felt that the learning of the 3 R's would be jeopardized. Lack of community response and parental objection have held back many efforts.

Hammerman wrote what a classroom teacher might say (15:19):

It's just too much bother. There are notes to send home, parents to involve as advisors, or to help with transportation. It will break up our classroom routine.

It has been stated by Norberg that (16:257):

This lag in using field trips may be due partly to the fact that some teachers consider field trips hazardous and troublesome.

Palmer has enumerated further discouragements (17:484):

Many teachers have regarded class field trips with strong disfavor. Such trips have often taken too much time; required special permission from an administrator; involved problems of transportation, finance, discipline, and liability. There is also the likelihood that field trips will prompt student questions that are not answered in the textbook.

The reality of the situation was also exposed by Sharp, who said in a 1952 article (18:24):

The teacher is confronted with the reality that he has not been trained, in his teacher education program, to cope with the material presented in the open spaces.

In another article, Sharp has stated (19:21):

Some teachers take to outdoor teaching quite naturally. Others learn the new techniques gradually. Some resist completely. It is largely a matter of training. In the main, teachers are trained to do the work in classrooms and other controlled places. They cannot be expected to discover immediately how to handle groups of children in the classroom of the out-of-doors. A teacher using the out-of-doors has to overcome the fear of not knowing something when she is asked.

Vinal suggested special training for teachers to overcome their reluctance to use outdoor instructional activities (20:202):

Most teachers will have to be given the opportunity of internship...Some teachers have to be trained to relate what is going on [outdoors] to the classroom.

Many authors have suggested reasons why teachers are not using outdoor instructional activities as effectively as they could, but the most comprehensive treatment to date is probably that of Hug (21) who analyzed the factors which influence elementary teachers to utilize outdoor instructional activities. He found that experience in camp leadership positions, a personal interest in the out-of-doors, and participation in many outdoor-related leisure time activities tended to influence teachers in a favourable way towards outdoor education. He also found that those teachers who had reached a higher level of education, who had finished their formal education

more recently, and who had taken outdoor-related courses themselves, were more inclined to use this method. An understanding of the values of outdoor instructional activities also tended to encourage teachers to become involved themselves.

The notion that "textbook" or "basic" materials must be covered tends to discourage elementary teachers from using outdoor instructional activities in their teaching (21:165), as does the lack of curricular materials. Generally speaking, when a teaching situation involves a small class size, ample reference materials, teaching aids and equipment, and an abundance of outside resource people to help the classroom teacher, teachers use outdoor education.

#### Teacher Attitudes towards Outdoor Education

Very little research has been completed regarding teachers' attitude orientation towards outdoor education. Chase (12) developed the first outdoor education inventory for testing the attitudes of primary school teachers. It is currently being used in several states to evaluate outdoor education programs in terms of the changes in attitude toward outdoor education by program participants. In addition, it can be used to design outdoor education programs so that they concentrate on outdoor education in curriculum areas in which program participants need instruction. Attitudes towards the use of outdoor education in each of the academic disciplines can also be ascertained.

An extensive descriptive survey has just been completed by

the Metropolitan Toronto School Board (23). Principals and teachers were canvassed for their attitudes towards outdoor education, the activities they were undertaking, and the types of facilities that were being used. Although the conclusions were expressed in a very comprehensive way, there was a generally favourable attitude of acceptance on the part of both administrators and teachers. As a probable result of this report, and the supportive literature which is being produced by parents' organizations in this city (24), there is a good chance that the thirteen presently-existing conservation centres will soon be supplemented.

### Summary

#### Student Attitude Formation.

A child's attitudes evolve from two general sources: his own personal experience and through the influence of significant external authorities. As a significant authority, a teacher's influence on a student's attitude formation is not as strong as that imposed by his parents and peer group. A teacher nevertheless, has a responsible and important role to fulfill in this aspect of the socialization process. What a teacher verbally expresses is not as influential on attitude formation as his total day-to-day observable behaviour in contact with his students (2, 7, 8, 9). Consequently, an actual pupil experience in outdoor education and the personal integrity of teacher behaviour in matters concerning the environment, both have more effect than any amount of classroom intellectualizing



can, in influencing favourable student attitude acquisition towards the natural environment.

#### Teacher Involvement in Outdoor Education.

Many articles and theses have recently been completed to explain what factors influence teachers to utilize outdoor instructional activities (12, 13, 14, 15, 16, 17, 18, 19, 20, 21). Based upon this research, it may be generally concluded at this point in time that teachers who have past experience in camp leadership positions, who have a personal interest in and actively participate in outdoor-related activities during their own leisure time, who have recently reached a higher level of formal education, who have taken outdoor-related courses themselves, who have a manageable class size, and have accessibility to ample reference materials and resource personnel, will be more likely to provide their students with outdoor learning opportunities.

#### Teacher Attitudes towards Outdoor Education.

Attitude research concerning the subject of outdoor education has centred almost exclusively on the attitude change of students as a result of a planned outdoor experience. This is completely justified, since the major educational objective of any experiential method such as outdoor education should be measured in affective terms. Indeed, the very fact that some level of measurement has been attempted has made outdoor education more educationally valid and therefore, more feasible in the minds of a greater number of educational

administrators, teachers, and parents. However, very little work has been performed in trying to ascertain teacher attitudes towards outdoor activities. What research does exist (21, 22) makes no attempt to correlate specific attitude orientations with actual participation in outdoor education.

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## CHAPTER IV

### METHODS AND PROCEDURES

#### A. The Pilot Study

##### Research Design.

Attitude was previously defined as a relatively enduring organization of beliefs around an attitude subject or object which predisposes one to respond in some preferential manner towards that particular subject or object (1:112). If this is true, then an attitude should actually be evidenced by a variety of responses to some specified set of social objects or situations (2:336). For the concept of attitude does not refer to any one specific act or response of an individual, but is an abstraction from a large number of related sets of responses (3:335).

Some thinking on the nature of attitudes has led those social scientists concerned about quantification to perceive them as straight lines, running from positive, through neutral, to negative feelings about the object or issue in question. Attempts at measurement concentrate on trying to place a person's attitude on a straight line or linear continuum in such a way that he can be described as mildly positive, strongly negative, and so on, usually in terms of a numerical score or else by means of ranking (4:107). There is no proof, however, that this model of a linear continuum is necessarily correct, though it does make things easier for measurement

purposes. Attitudes may just as well be shaped like curvilinear circles or overlapping ellipses or even multi-dimensional formations.

There are, nonetheless, certain quantitative qualities which are known about attitudes. For example, an attitude has intensity (5:129). It may be held with greater or lesser vehemence (6:32). In fact, a U-shaped relationship exists between the attributes of intensity and content. That is, the more extreme attitudes, both positive and negative, which are held with much vehemence are ones which touch upon one's fundamental philosophy of life, whereas the more neutral position, or attitudes which are more superficial are defended with far less intensity (7:63). For the purposes of measurement in this survey, it must be assumed that objective attitudes can be scaled by a quantitative technique so that each person's opinion can be represented by some numerical score.

#### Design of the Likert Scale.

There are different quantitative methods of attitude measurement called attitude scales. Essentially, these scales are mathematical models which relate observed responses to a specific attitude (in this case, toward Outdoor Education). However, the problem of measuring an attitude is one of selecting a scaling model by which the response data can be directly related to the attitude variable (2:337).

The content of an attitude is determined by the responses which constitute it. Many sources call this set of behaviours an

"attitude universe" (2:338, 8:14, 9:148). Generally speaking, then, attitude measurement consists of assessing an individual's responses to a set of social objects or situations. This is done by observing a sample of behaviour from an attitude universe. Each behavioural element in the attitude universe is the response to a particular situation or object. The particular situation or object that makes the response, together with a specified set of response categories, is called an "item." A series of items collected together to measure one variable is then called a "scale."

The use of attitude scales was initiated by Thurstone in 1928 when he contrived his method of Equally-Appearing Intervals (10). For the purposes of this study, however, a Likert Summated Rating technique has been chosen. This method provides for a rough ordinal sorting of people with regard to a particular attitude (11:92).

Three principles of measurement which must be met by all attitude scaling methods are: validity, reliability, and unidimensionality or homogeneity. The validity of a research design is realized when there is a high correlation between the elicited attitude as measured by the scale and the action attitude or actual attitude which is behaviourally demonstrated by an individual. The first problem in validation is to delimit and define the attitude universe (12:92). There are three kinds of attitude universes elicited verbal attitudes exemplified by questionnaire responses (type used for this study); spontaneous verbal attitudes; and action attitudes. In many instances, face validity is used because it is

reasoned that since the scale represents the attitude universe, it is valid by definition. A more substantial test of validity, however, is to study the judgments of a group of experts rating the relevance between a specific attitude and the individual questionnaire items. Both of these methods of establishing content validity were used in this study.

Forty attitude statements were chosen by the author for their face validity based on a format used in the Chase Outdoor Education Inventory (13). Items were considered valid if they expressed an attitude within the philosophy and definition advocated by the Edmonton Public School Board (14, 15, 16) which is essentially the same as that expressed in the writings of Julian Smith (17, 18) and Sharp (19, 20) and is repeated by much of the Outdoor Education literature published by many school boards in Canada (21:6, 22:2, 23, 24, 25, 26, 27, 28, 29, 30). This number was subsequently pared to fifteen after their submission to the thesis committee members, the Outdoor Education Consultant for the Edmonton Public School Board, and most of the members of the Environmental and Outdoor Education Committee of the Edmonton Public School Board.

Sixty educational objectives were chosen by the author from respective curriculum guides and program of studies bulletins of the Alberta Department of Education (31:1, 32:4-5, 33:4, 34:4, 35:3, 36:89, 128, 37:5, 38:5, 39:4, 40:2, 41:3, 42:2, 16:6) based on their face validity of satisfying one critical criterion: the specific



educational objective could be enhanced through the methodology of outdoor education. Educational objectives which pertained specifically to certain subject areas were then submitted to the respective subject area supervisors at the Edmonton Public School Board (44, 45, 46, 47, 48, 49, 50). Thirty-three educational objectives were validated in this way. A questionnaire consisting of forty-eight items was then assembled for the pilot study.

Each item of an attitude questionnaire must adhere to certain rules of "type" and "form" (2:341-44). "Type" refers to the content of an item. In a Likert scale, each opinion statement is very sensitive to changes in wording (51:126). Five categories of response are provided for each item: strongly approve, approve, undecided, disapprove, and strongly disapprove. These categories are scored 5, 4, 3, 2 and 1 respectively. If an item is cast in a negative sense with "strongly approve" indicating an unfavourable attitude, then category scoring is reversed. An individual's scale score is thus the sum of his scores on all the items.

Item "form" refers to the manner in which each item is related to the attitude continuum. Items on a Likert-type scale should have operating characteristics that are monotonically increasing functions of the attitude variable (1:351). That is, the more favourable a person's attitude, the higher his expected score for each item. The characteristics of item "type" and "form" were carefully adhered to in the construction of the scale (see Appendices A and B).

Since attitude scales are developed as research tools for studying the relation of attitudes to other variables, high reliability is also an indispensable property of a scale. A Likert-type attitude scale is comprised of a series of items chosen from an item pool based on their validity. Since each item must also be reliable, some form of item analysis is necessary. Usually, this process should take place by correlating each item with some reliable outside criterion. Since there is really none available for attitude, an internal consistency method was performed. Items were first evaluated by administering them to a group of respondents (as in the pilot study). When this data was collected, the relation of the item score to the total score on the set of items was then an index of the discriminating power of the item. Items with high discriminating power were selected for the final form of the questionnaire. In this way, a scale approaches unidimensionality (scale measures a single variable) and a reliability coefficient of .85 is often achieved.

#### The Sample.

For the purposes of the pilot program three schools were chosen from all those in the Edmonton Public School system: these were James Gibbons Elementary School, Hillcrest Junior High School, and Jasper Place High School. These three were selected on the basis of two criteria. Each school is in close proximity to each of the other ones; and these schools were easily accessible to the experimenter.

Under the direction and assistance of Dr. J. Yusep, Director of Service Research, and Mr. N. Sim of the Department of Research, Development and Information of the Edmonton Public School Board (E.P.S.B.), the names, addresses, and telephone numbers of all teachers working in the above-named schools were drawn by the E.P.S.B. computer which is housed in the E.P.S.B. administration building. The resulting printout organized the potential subjects in alphabetical order according to school. From figures obtained from Dr. J. Yusep, it was established that a total of 3325 teachers are presently working for the E.P.S.B.: 1600 in elementary schools, 839 in junior high schools, and 886 in senior high schools. These statistics were utilized to set a ratio of 2:1:1 for the purposes of a proportional selection of subjects. That is, based on the approximate 2:1:1 ratio obtained from the total teacher population breakdown, it was decided to select teachers for testing the pilot questionnaire according to the same ratio.

A total of 155 names were recorded on the pilot printout excluding principals, secretaries, and nursing staff. From this number, it was decided to use one per cent of the total E.P.S.B. teacher population, or thirty-six subjects as the total sample. Applying the 2:1:1 ratio obtained from the total teacher population, this meant that eighteen teachers would be used as subjects from James Gibbons Elementary, nine from Hillcrest Junior High, and nine from Jasper Place High School. Then with the permission and endorsement of Dr. E. A. Mansfield, Director of Educational Research,

each of the principals from the three schools was contacted by letter (see Appendix C) and informed that randomly selected teachers from their particular school would be contacted to participate in a questionnaire survey in the near future.

From the computer printout sheets, sixteen (instead of eighteen) teachers were randomly selected from James Gibbons Elementary School (actually, random selection was impossible in this case because the school only had sixteen teachers), ten teachers were randomly picked from all those teaching at Hillcrest Junior High School, and eight teachers were selected randomly from among all the teachers at Jasper Place High School. Each of the selected teachers was contacted by letter (see Appendix D) and by telephone so that a mutually agreeable time could be arranged for the personal administration of the questionnaire. Appointments were set up so that all selected teachers from the same school could conveniently attend. These appointments were carried out after school hours in vacant classrooms at the respective schools. The main reason for conducting the pilot in this manner was to allow the experimenter to determine whether the definitions and each of the questions in the survey instrument were meaningful to the subject teachers.

### Results.

The data resulting from the questionnaire was keypunched on computer cards for sorting. The results were analyzed using the DESTO 2 program from the Department of Educational Research Services, University of Alberta. This program performed an odd-even

split half technique of interval consistency (1) on the group of teachers who had participated in outdoor learning activities, (2) on the group of teachers who had not participated, and (3) on all data. The reliability coefficients thus obtained were: (1) 0.9525, (2) 0.9128, and (3) 0.943.

The responses of the participants and non-participants were compared using the Kolmogorov maximum deviation test. This statistical procedure was used on every item in the questionnaire to test the ability of each to discriminate between the two groups. For this particular sample, if an item scored a chi-square value above 5.99 the test item was considered to show a significant difference between the groups. Test items achieving this score or above were: numbers 14, 37, 40, 44, and 45.

The Mann-Whitney U test is a method of statistical inference for evaluating the significance of difference between the mean scores of the two groups (participants and non-participants) on each item. The results of this test should correlate closely with those of the Kolmogorov test. The Mann-Whitney U test was applied to the data using the NON P05 program from the Department of Educational Research Services. It indicated that items 14, 37, 39, 40, 44, and 45 were significant at the .05 level, thus correlating almost exactly with the Kolmogorov test.

Wilcoxon's Coefficient of Differentiation was performed to ascertain the degree of association between the two types of test variables: one nominal and one ordinal. With this measurement any coefficient which approaches a 1.0 value indicates a very high

relationship between that particular attitude variable and either involvement or non-participation in outdoor education activities. Table 1 shows that the highest correlation values were associated with items 14, 37, 39, 40, 44, and 45. There was no coefficient showing a value over 0.485 (item 44) which would indicate that there was no significant difference between attitudes towards outdoor education as expressed by participants and non-participants as illustrated by the pilot study sample of teachers.

No problems were encountered in any of the three appointments regarding nebulous terms or vague interpretations within the body of the questionnaire.

#### Discussion.

A high value for reliability was obtained by the odd-even split half method of interval consistency. An examination of the frequency distribution in both groups indicated that most responses fell in the three categories: agree, undecided, disagree. This, in addition to the scores exposed by the Kolmogorov and Mann-Whitney U tests indicated no significant difference in responses between the two groups. There are several possible explanations for this result: 1) the pilot study was administered to only a small population, thus not allowing for a bell-shaped frequency distribution of scores or a difference in polarization of scores between groups. Administration of the test to a larger group would show better discriminating power of the items; 2) because of the nature of the attitude subject,

Table 1

## Wilcoxon Correlation Coefficients of Association: Pilot Study

Variable	Theta Correlation of Association	Variable	Theta Correlation of Association
1.	0.14198	25.	0.12346
2.	0.21605	26.	0.24383
3.	0.12963	27.	0.17284
4.	0.34568	28.	0.04630
5.	0.33951	29.	0.22531
6.	0.04938	30.	0.11111
7.	0.28395	31.	0.09877
8.	0.16667	32.	0.14815
9.	0.31173	33.	0.25000
10.	0.25617	34.	0.27778
11.	0.14815	35.	0.20988
12.	0.12037	36.	0.17593
13.	0.16667	37.	0.41358
14.	0.45988	38.	0.09877
15.	0.26543	39.	0.43827
16.	0.05556	40.	0.41975
17.	0.22222	41.	0.06173
18.	0.10185	42.	0.18519
19.	0.07716	43.	0.13580
20.	0.05556	44.	0.48457
21.	0.20370	45.	0.43210
22.	0.08025	46.	0.24383
23.	0.11111	47.	0.23765
24.	0.0*	48.	0.33333

\*Correlation is 0.0 if non-participants and participants are equally distributed with regard to a particular attitude variable.

both participants and non-participants believe in the educational validity of outdoor education and its desirability for use in schools; 3) there is a difference between the two groups, but the item construction of the existing questionnaire does not have the ability to indicate this.

#### Recommendations.

1. The existing questionnaire should be withdrawn completely and a new one constructed with fewer items (ie., ten or less). This survey should then be readministered to the same pilot group of teachers.

2. The existing questionnaire should be maintained as it presently exists and administered to the larger sample of the teacher population.

3. The existing questionnaire should be supplemented by a subjective evaluation which would provide teacher participants and non-participants in outdoor education with an opportunity to express the reasons why they have become involved or have decided not to, as the case may be. This supplementary measure would allow for a wide cross-section of opinion and greatly aid in the construction of a revised questionnaire if the original test still failed to discriminate between the two groups of teachers.

#### Conclusions.

It was decided to act on the third recommendation. The pilot questionnaire was maintained in its exact form for the purposes



of the major study. A brief voluntary question sheet (see Appendix E) was then added to this questionnaire so that subjective feedback from those teachers wishing to express themselves could be facilitated. It would then be possible for these responses to be evaluated (based on a frequency distribution) for the purpose of including the most popular ideas in a further development of the questionnaire. Teacher responses to this supplement would also afford additional insight into the attitudinal motivation of teachers to participate or not to participate in outdoor activities.

#### B. The Major Study

##### The Sample.

It was determined from figures provided by Dr. J. Yusep, Director of Service Research, that there were 3325 teachers employed by the E.P.S.B. for the academic year 1971-72. Sixteen hundred of these were in the elementary schools, 839 were in the junior high schools, and 886 were in senior high schools. For sampling purposes, a respective ratio of 2:1:1 was established, thus allowing for a proportional selection of subject teachers in the same frequency of distribution as they were employed within the E.P.S.B. system.

Specific details of the actual selection procedure were discussed with Mr. N. Sim of the Department of Research, Development and Information before the computer selection took place. It was decided to select an existing program on file. The resulting print-out provided all the names of every teacher in alphabetical order.

These were organized according to the alphabetical order of the school, and the printout also arranged the schools according to division (i.e., elementary, junior high, and senior high schools). Principals of senior high schools, nursing and janitorial staff members were eliminated from the sample by means of deleting their job code numbers in the computer selection. Teachers in administrative positions at the E.P.S.B. administration building were also deleted by the same procedure.

Within this existing program, a supplemental program was written by Mr. N. Sim whereby only every tenth teacher was selected from the alphabeticized teacher list as organized according to school. In this way, the 2:1:1 ratio between elementary, junior high, and senior high school was automatically attained in the drawn sample. Selecting every tenth teacher in this manner provided a total sample size of 333 (166 from the elementary schools, eighty-four from the junior high schools, and eighty-three from the senior high schools).

The resulting printout sheet organized the teachers in alphabetical order according to school code numbers. Their respective home addresses and telephone numbers were also provided. In addition to this, the computer produced addressograph labels for every teacher selected to be part of the major sample. This measure eliminated the tedious task of having to write by hand each envelope sent through the mail. Dr. E. A. Mansfield, the Director of Educational Research again provided his endorsement of the study in a letter to each

principal in the Edmonton Public School system (see Appendix F).

Each subject was subsequently sent: 1) a copy of the survey questionnaire to complete (see Appendix B), 2) the supplement to the questionnaire to allow for subjective evaluations by teachers (see Appendix E), 3) a self-addressed, prepaid envelope addressed to Mr. Burt Demeriez, the Outdoor Education Consultant at his office in the E.P.S.B. administration building, 4) a letter from Dr. E. A. Mansfield explaining the importance of the project to the individual teacher (see Appendix G), and 5) a copy of the cover letter sent to the school principals (see Appendix F). School board stationery with the official E.P.S.B. letterhead was used for all correspondence regarding the survey.

Before the questionnaires were sent, each one was given a code number between the figures 001 and 333. This number was recorded on the printout sheet beside a subject's name and then the corresponding addressograph label was applied to the manila envelope holding that particular numbered questionnaire. This was done so that when the replies were returned, follow-up procedures could be instituted to encourage returns from non-respondents.

#### Initial Administration of the Questionnaire.

The questionnaire package was sent to the teacher's private residence in all cases. It was reasoned that this measure would negate the possibility of the questionnaire being reduced in significance among all the other E.P.S.B. correspondence. Subjects were given one full week (seven days) from the estimated time of reception

to make their replies. After this cut-off date, follow-up procedures were put into operation. By the first cut-off date, 182 replies had been received; three of these had been returned unopened because the address was incorrect. These were deleted from the study. The initial rate of return on the questionnaire was, therefore, 54.24 per cent. Of these, 125 respondents, or seventy per cent of those who completed the questionnaire, also completed the supplemental question sheet.

#### Follow-up Procedures.

Subjects who had not answered the first questionnaire were identified by matching the code numbers of the returned questionnaires with those on the printout sheets. Those who failed to answer the first time were sent: 1) another copy of the questionnaire, 2) the supplement to the questionnaire to allow for subjective evaluations by the teachers, 3) a self-addressed, prepaid envelope as before, and 4) a follow-up letter of explanation and encouragement from Dr. E. A. Mansfield (see Appendix H).

Again, teachers were given one full week (seven days) from the estimated time of reception to make their replies. By the second cut-off date, sixty-eight more questionnaires had been returned, boosting the rate of return to 74.85 per cent, or 247 questionnaires overall. Thirty supplemental question sheets accompanied these sixty-eight additional replies: making a forty-four per cent return rate for the follow-up, supplemental question sheets. Of the 247 completed questionnaires then, a total of 155, or 62.76

per cent of them were accompanied by completed supplemental question sheets.

Upon consultation with Dr. Mansfield, Director of Educational Research for the E.P.S.B. (52) it was decided to delete both a second follow-up procedure (a telephone schedule had been drawn up), and a follow-up procedure to determine the reasons why twenty-five per cent of the teachers had not responded. There were several reasons in support of this decision. The questionnaire had been administered during the latter part of April and, including the follow-up procedures, had extended into the better part of May. This is a busy time for teachers, and a time which also seems most favoured by many experimenters to flood the school system with a host of survey instruments. Due to the dictates of economic necessity, teachers in recent years have carried on an unofficial and sporadic verbal conflict with administrators over the extent of their teaching load and the amount of preparation time. While gaining increased financial benefits, Edmonton Public School teachers have been saddled with fewer preparation periods and an increasing student-teacher ratio.

A seventy-five per cent return rate was considered to be most favourable under these circumstances; and consequently, it was Dr. Mansfield's wish to maintain good public relations between the Department of Research, Development and Information, and the teacher population by excluding any further contact with teachers regarding the Outdoor Education Questionnaire.

It was decided to maintain the same statistical procedures for handling the data of the major study as were used for the pilot study. The answers from the questionnaire sheets were coded onto an IBM Fortran coding form from which the data could be key-punched onto computer cards. After the cards were sorted they were arranged in decks for six computer runs. An odd-even split half technique was used to determine the reliability of three groups: 1) participants, 2) non-participants, and 3) both of these groups together. A Kolmogorov maximum deviation test was then used to test the ability of each attitude item to discriminate between the two groups. As in the pilot study, a Mann-Whitney U test was utilized to evaluate the significance of difference between the two groups on each item. Wilcoxon's Coefficient of Differentiation was then performed to test the original hypothesis. A high correlation coefficient for any one attitude item indicated a high degree of relationship between that specific attitude and either involvement or non-involvement in outdoor education.

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## CHAPTER V

### PRESENTATION AND INTERPRETATION OF DATA

#### Introduction

The purpose of the study was to examine the attitude orientation which Edmonton Public School teachers have towards outdoor education and to evaluate any relationship which may exist between these attitudes and their possible behavioural consequences (ie., actual participation in this method of teaching).

The major survey consisted of sending attitude questionnaires to 333 randomly selected teachers within the Edmonton Public School Board. Of this total, three were returned unopened because of a faulty address, and 247 completed questionnaires, or 74.85 per cent of those sent, were returned. Besides the questionnaire, a supplementary subjective question sheet (see Appendix E) was also sent under the same cover. Of the 247 questionnaires that were completed, 155 were accompanied by the supplementary question sheet, or 62.76 per cent of all those returned.

It was found that ninety-five of the total number of respondents (247) had included themselves in the "non-participant" category. That is, 38.42 per cent of the teachers indicated that they had not participated in outdoor learning activities with their students as part of the formal curricular school program during the period between January, 1971, and December, 1971. Consequently, it was

established that 61.58 per cent (or 152 respondents) of the sampled teacher population had participated in outdoor education activities. It was interesting to note that among the ninety-five non-participants seventy-three returned subjective question sheets: a total of 76.8 per cent of the non-participant respondents. Only eighty-two of 152 participant respondents included the subjective question sheet, or fifty-four per cent of responding participants. These figures are summarized in Table 2.

Table 2

## Summary of Response Statistics

	Participants	Non-Participants	Total
N of Respondents	152	95	247
% of Total (247)	61.6 %	38.4 %	74.9 % (of 330)
Subjective Answer Sheets n (%)	82 (54 %)	73 (76.8%)	155 (62.8%)

ResultsReliability.

The data resulting from the questionnaire was key-punched on computer cards for sorting. An odd-even split half technique of internal consistency was used as the measure of reliability. In order to perform this the results were analyzed using the DESTO 2 program from the Department of Educational Research, University of

Alberta. The reliability coefficients thus obtained were: 1) 0.9701 for the group of teachers who had participated in outdoor learning activities, 2) 0.9433 for those teachers who had not participated, and 3) 0.9695 for both participants and non-participants together.

#### Kolmogorov Maximum Deviation Test.

The responses of the participants and non-participants were compared using the Kolmogorov maximum deviation test. This statistical procedure was applied to every item in the questionnaire to test the ability of each to discriminate between the two groups. Although both maximum deviation values and chi-square values were given for each item the maximum deviation value was ignored because the sample size was over thirty. Chi-square values were therefore, used to test item discrimination. It was established (1:299) that if an item showed a chi-square value of 5.99 or above, then that item was significant at the .05 level of probability. Values of 9.21 or above indicated item significance at the .01 level of confidence. Thirty-seven items had the ability to discriminate between the two groups at the .01 level of confidence. An additional seven items were significant at the .05 level. The remaining four attitude items (numbers 28, 29, 41, and 42) were considered to be non-discriminatory.

#### Mann-Whitney U Test.

The Mann-Whitney U test was performed on the data to determine the significance of difference between the mean scores of the

Table 3 (continued)

Item No.	Participants		Non-Participants	
	Mean	S.D.	Mean	S.D.
31	4.16	0.69	3.92	0.67
32	4.30	0.66	4.07	0.58
33	4.45	0.64	4.16	0.68
34	4.30	0.69	3.80	0.82
35	4.27	0.64	3.94	0.70
36	3.94	0.79	3.16	0.93
37	3.77	0.79	2.97	0.86
38	4.25	0.59	3.80	0.72
39	4.09	0.77	3.56	0.84
40	3.81	0.87	3.08	0.92
41	3.41	0.85	3.18	0.88
42	3.91	0.73	3.58	0.80
43	3.96	0.70	3.40	0.87
44	3.95	0.72	3.34	0.88
45	3.93	0.74	3.30	0.89
46	4.34	0.70	4.04	0.59
47	4.36	0.66	4.05	0.57
48	4.47	0.57	4.23	0.55

With small samples the value for U is normally the indicator of significance of difference. However, for samples over twenty, the value for the z distance from the mean must be used (1:297).

A z value of .4750 or higher was found to indicate significance at the .05 level of confidence (1:289). Similarly, a value for z of .4951 or above showed a discriminatory significance of a particular item at the .01 level. Table 4 summarizes the results obtained from the Kolmogorov and Mann-Whitney U tests. For each value of chi-square and z distance, the level of significance is

Table 4

## Results of the Kolmogorov and Mann-Whitney U Tests

Kolmogorov Test				Mann-Whitney U Test			
Item	Chi-square	z	Distance	Pos.	Item	Chi-square	z
Kolmogorov Test				Mann-Whitney U Test			
Item	Chi-square	z	Distance	Pos.	Item	Chi-square	z
1	33.745**	6.377 <sup>1</sup>		2	25	10.216**	4.049
2	36.859**	7.064		2	26	9.434**	4.136
3	26.463**	6.765		2	27	11.677**	3.655
4	25.857**	5.845		2	28	4.411	2.601
5	101.419**	-		2	29	2.814	1.893
6	21.717**	6.342		2	30	7.964*	2.757
7	15.402**	4.665		2	31	6.133*	2.915
8	22.172**	5.456		2	32	8.985*	3.269
9	23.403**	6.042		2	33	9.151*	3.681
10	27.817**	5.908		2	34	11.684**	4.981
11	14.745**	3.667		2	35	8.815*	3.838
12	9.344**	3.640		2	36	23.804**	6.422
13	28.130**	6.618		2	37	30.616**	6.860
14	33.610**	8.403		2	38	12.499**	5.026
15	34.213**	8.350		2	39	12.195**	5.055
16	16.688**	4.531		2	40	28.097**	5.994
17	13.320**	4.023		2	41	2.326	2.087
18	10.128**	4.158		2	42	4.200	3.245
19	7.061*	4.120		2	43	19.101**	5.296
20	12.808**	5.509		2	44	18.225**	5.514
21	10.722**	5.703		2	45	14.924**	5.494
22	14.358**	5.185		2	46	17.044**	4.110
23	15.393**	4.082		2	47	16.217**	4.300
24	8.559*	4.250		2	48	12.277**	3.492

<sup>1</sup> all z distances were significant at the 0.01 level

\* significant at the 0.05 level

\*\* significant at the 0.01 level

given. "Pos." indicates the group having the higher ranks on a particular item, where "1" means non-participant, and "2" means the participant group.

Wilcoxon's Coefficient of Differentiation.

Wilcoxon's Coefficient of Differentiation was utilized to ascertain the degree of association between a nominal and an ordinal variable. With this measurement, any item coefficient which approaches a value of 1.0 indicates a high relationship between that attitude item and involvement (since all the "Pos." values for Mann-Whitney U were "2") or participation in outdoor education activities. Table 5 shows that the highest correlation values were associated with items 1, 2, 3, 5, 9, 13, 14, 15, and 36. Item 5 had the highest correlation coefficient showing a value of 0.75.

Table 5

Wilcoxon's Coefficient of Differentiation indicating  
Degree of Association between Positive Attitude and Participation  
in Outdoor Education Activities

Item No.	Theta Corr.	Item No.	Theta Corr.	Item No.	Theta Corr.	Item No.	Theta Corr.
1	0.450	13	0.428	25	0.286	37	0.491
2	0.484	14	0.518	26	0.281	38	0.326
3	0.453	15	0.594	27	0.242	39	0.352
4	0.398	16	0.299	28	0.171	40	0.432
5	0.746	17	0.264	29	0.127	41	0.148
6	0.454	18	0.296	30	0.183	42	0.222
7	0.314	19	0.274	31	0.196	43	0.368
8	0.378	20	0.368	32	0.219	44	0.383
9	0.414	21	0.343	33	0.250	45	0.385
10	0.388	22	0.349	34	0.345	46	0.278
11	0.257	23	0.274	35	0.258	47	0.289
12	0.251	24	0.280	36	0.458	48	0.232



Generally speaking, both the participant and non-participant groups indicated a positive orientation towards the desirability and educational validity of outdoor education activities. This was illustrated by the high frequency of positive attitude responses obtained on most items. Table 6 allows a closer study of this trend.

Table 6

Frequency of Response from Participants (152) and  
Non-Participants (95) for each Questionnaire Item

Item No.		Positive			Undecided			Negative		
		Strong (5)		4	3		2	Strong (1)		
		Non- Part	Part		Non- Part	Part		Non- Part	Part	
1	95	24	54	59	1	10	1	2	0	1
2	85	16	61	57	4	21	1	1	0	1
3	68	11	78	62	4	13	1	8	0	2
4	80	19	64	59	7	10	0	5	0	3
5	60	4	77	20	7	29	7	31	0	11
6	59	9	64	40	20	28	8	15	0	4
7	78	25	69	58	4	10	0	2	0	1
8	70	15	66	56	13	20	2	5	0	0
9	87	25	61	48	3	21	0	2	0	0
10	74	14	73	72	4	8	0	1	0	1
11	52	9	64	57	26	23	7	6	2	1
12	49	12	74	57	25	19	3	8	0	0
13	68	10	81	72	2	12	0	2	0	0
14	65	5	78	53	8	20	0	14	0	4
15	62	3	68	43	20	29	1	19	0	2
16	67	17	76	68	6	8	2	3	0	0
17	69	21	77	68	3	5	2	2	0	0
18	31	7	68	36	44	37	7	13	1	3
19	38	10	92	56	18	24	3	6	0	0
20	51	10	87	58	12	21	1	7	0	0
21	48	10	85	56	16	20	2	9	0	1
22	34	7	93	50	23	29	1	10	0	0
23	89	32	56	56	6	6	0	2	0	0
24	54	16	88	61	7	18	2	1	0	0
25	32	9	75	39	38	34	6	14	0	0
26	46	10	81	57	20	25	4	3	0	1

Table 6 (continued)

Item No.	Positive			Undecided			Negative			
	Strong (5) Non- Part	4 Non- Part	3 Non- Part	2 Non- Part	Strong (1) Non- Part					
27	73	25	73	65	3	5	2	1	0	0
28	38	11	88	64	22	17	3	4	0	0
29	59	27	78	58	13	7	1	4	0	0
30	75	30	70	63	4	3	2	0	0	0
31	48	15	81	61	20	17	2	3	0	0
32	61	20	77	63	11	13	2	0	0	0
33	77	30	68	52	3	13	3	1	0	0
34	62	18	75	48	11	23	3	7	0	0
35	56	17	81	60	13	15	1	4	0	0
36	37	4	74	36	34	29	6	25	0	2
37	27	2	70	25	47	40	7	26	0	3
38	49	9	90	66	12	15	0	5	0	1
39	47	8	76	50	23	28	5	8	0	2
40	34	5	67	26	38	41	12	20	0	4
41	16	5	49	30	68	40	17	19	1	2
42	29	7	84	52	33	29	5	6	0	2
43	31	7	86	40	31	35	3	12	0	2
44	31	5	85	42	31	32	4	15	0	0
45	33	4	79	43	35	29	4	18	0	2
46	69	18	68	65	11	12	3	1	0	0
47	68	18	72	65	9	13	2	0	0	0
48	77	27	68	65	6	3	0	1	0	0

#### Supplementary Subjective Question Sheets.

Non-Participants. The supplementary subjective question sheets asked teachers to express the factors which influenced them to participate in their particular curricular area. Of the ninety-five non-participants who answered the questionnaire, seventy-three also responded to the supplementary question sheet.

Once all of the question sheets had been sorted into the appropriate participant or non-participant piles, each sheet was examined for the reasons it was suggesting. In most cases the respondents provided more than one factor which influenced them not to participate in outdoor activities. Although there were no preconceptions by the experimenter concerning what factors would be mentioned or what categories these subjective responses would fill, many of the reasons that were put forward by the responding teachers, did, in fact, categorize themselves. As a result, fourteen different factors emerged to explain why approximately forty per cent of the teacher population does not participate in outdoor education. These have been listed in order of frequency of response in Table 7.

Table 7

Factors Influencing Teachers NOT to  
Utilize Outdoor Education Activities

Order of Priority	Frequency of Response	Factors and Sub-factors
1.	42	Time: - too much time required to plan a project - too much time away from the regular curriculum - lack of preparation time - it cuts into "free" time - "the time involved can better be spent in the classroom"

Table 7 (continued)

Order of Priority	Frequency of Response	Factors and Sub-factors
2.	25	Administrative "red tape": <ul style="list-style-type: none"> <li>- problems of timetabling</li> <li>- problems with consent forms</li> <li>- unwillingness of administration to provide substitutes</li> </ul>
3.	16	Prohibitive Costs: <ul style="list-style-type: none"> <li>- especially transportation</li> </ul>
4.	16	Lack of Structure: <ul style="list-style-type: none"> <li>- makes measureable outcomes difficult to determine</li> <li>- classes are usually too large and cumbersome</li> <li>- most attempts at organization are chaotic</li> <li>- students view the event as a "holiday"</li> </ul>
5.	12	Not applicable to my subject area: <ul style="list-style-type: none"> <li>- librarian</li> <li>- industrial arts</li> <li>- home economics</li> <li>- beauty culture</li> </ul>
6.	9	Weather: <ul style="list-style-type: none"> <li>- too unpredictable</li> <li>- the winter in Alberta is prohibitive</li> </ul>
7.	8	Lack of Knowledge: <ul style="list-style-type: none"> <li>- especially about the logistics involved in planning a project</li> </ul>
8.	7	Responsibility for Liability: <ul style="list-style-type: none"> <li>- apprehensive about responsibility in case of an accident</li> <li>- unfamiliar with liability insurance</li> </ul>

Table 7 (continued)

Order of Priority	Frequency of Response	Factors and Sub-factors
9.	6	Lack of Knowledge about Areas in the Edmonton Region that can be Utilized: - those that are presently available are too remote
10.	4	Lack of Instructional Guidance and Direction: - no curriculum objectives to follow
11.	4	Lack of Suitable Resource People: - these are needed for a valid experience
12.	1	The outdoor setting is no better than indoors!
13.	1	Outdoor education is not applicable to the primary grades!
14.	1	It is against the rules to take a class outside!

Participants. Of the 152 participants who answered the questionnaire, only eighty-two of them also responded to the supplementary question sheet. The same procedure was followed in compiling a factor frequency list for participants as was used for non-participants. Upon completion of this step, eighteen factors had been isolated to explain why teachers tend to participate in outdoor learning activities with their students. These reasons have been listed in Table 8.

Table 8

Factors Influencing Teachers to  
Utilize Outdoor Education Activities

Order of Priority	Frequency of Response	Factors
1.	34	0. E. stresses first-hand experience: - involves learning-by-doing - theory and practice become one - involves a realistic learning situation
2.	18	It increases awareness of and sensitivity to the natural environment.
3.	15	It inspires pupil interest: - it is motivational for further theory in the classroom - students should also be included in the planning stage
4.	11	It leads to greater student-teacher co-operation: - it enhances student-teacher relations
5.	9	The teacher was personally interested in outdoor activities.
6.	7	It has valid social significance: - leads to greater social concern for other people - leads to greater social awareness - helps students to accept people for what they are
7.	4	It provides a more permissive atmosphere.
8.	4	It allows for variety in the program: - a refreshing experience

Table 8 (continued)

Order of Priority	Frequency of Response	Factors
9.	4	It influences the development of favourable attitudes and feelings.
10.	3	It is interdisciplinary and multi-sensory.
11.	3	It is motivational in terms of creative writing.
12.	3	It increases the vocabulary of the student.
13.	2	Teacher has easy accessibility to a natural area.
14.	2	It complements the curricular material.
15.	2	Urban students are almost strangers to the natural environment and it is they who need outdoor education the most.
16.	1	There was parent volunteer assistance available.
17.	1	There was availability of transportation.
18.	1	There was money available.

Among those participant respondents who also answered the supplementary question sheet (82 teachers) the great majority of them listed a few factors which tended to dissuade them from participating in outdoor education in addition to the reasons they gave for becoming involved. As a general impression from reading the

155 question sheets, the feeling of teachers towards outdoor education as a method of teaching seemed to indicate that from their point of view, it is economically inefficient, more time-consuming, technically more difficult, but educationally more effective than classroom learning.

### Discussion

#### Statistical Analysis of the Questionnaire.

The Kolmogorov maximum deviation test and the Mann-Whitney U test both indicated that the questionnaire items (except for variables 28, 29, 41, and 42) had the power to significantly discriminate between participant and non-participant teachers in outdoor education. For each item, participants showed a greater positive orientation towards the attitude items.

Only in one case (item number 5) did an attitude variable distinctly divide the two classes of respondents into a clearly-defined positive or negative orientation. This statement involved not having time to participate in out-of-door activities. Most participants answered this statement indicating a positive orientation, whereas most non-participants answered either positively or "undecided" indicating a negative orientation (see Table 6). All test items should have had this discriminating power.



Teacher Attitude and Involvement.

1. Both participant and non-participant groups strongly agreed that outdoor education enriches and complements many course content areas in the school curriculum. The group of respondents who indicated that they had actually participated in outdoor education activities showed a higher mean score than the non-participants. This difference between responses was significant at the .01 level of confidence on the Kolmogorov maximum deviation test. The relationship between this attitude and involvement in outdoor activities only had a correlation coefficient of 0.43, however.

2. Those teachers who have participated in outdoor education strongly agree that this method stresses the involvement of the learner. This attitude was endorsed not only on the formal questionnaire, but also on the subjective question sheets. Non-participants, although affirming this same attitude, did so in a much less positive manner. This difference between responses was significant at the .01 level of confidence on the Kolmogorov test. A correlation coefficient of 0.48 on the Wilcoxon test indicated that there was no real significant association between this attitude and actual involvement in outdoor education.

3. Both groups of teachers agreed that outdoor education increases the opportunities children have to assume real responsibilities. As indicated by the respective mean scores, the participant group was more affirmative in this attitude. The difference between the two groups was significant at the .01 level of confidence and a

correlation coefficient of 0.45 signified the lack of association between this attitude and involvement.

4. Outdoor education is applicable to all grade levels. This attitude was strongly endorsed by both groups. As in all of the attitude items in the questionnaire, the participant group demonstrated a higher mean score and thus had a more positive attitude towards outdoor education than the non-participant group. This difference was also significant at the .01 level of confidence on the Kolmogorov maximum deviation test for all attitude variables in the survey except for items 19, 24, 28, 29, 30, 31, 32, 33, 35, 41, and 42.

5. The consideration of time was isolated as the most significant factor separating participant and non-participant teachers. In this study, the time factor had a correlation coefficient of 0.75, indicating a close positive relationship between a teacher's willingness to subordinate the time factor and his actual involvement in outdoor education. Non-participant teachers were unwilling to do so. This difference between the groups was significant at the .01 level of confidence on the Kolmogorov test.

Among the factors recorded by respondents to the subjective question sheet, the time element was the significant influence mentioned most often. Teachers who have not participated in outdoor activities indicated that too much time was involved in planning a project of this nature, and that time had to be taken away from the regular curriculum. These teachers mentioned the lack of preparation time and generally signified that the time could be better spent in the

classroom.

6. Teachers in the Edmonton Public School system agreed that every professional teacher education program should include a practical experience in outdoor education. A correlation coefficient of 0.45 on the Wilcoxon test indicated a strong but not significant relationship between this attitude and involvement in outdoor education.

7. Both participant and non-participant groups strongly endorsed the attitude that outdoor education enhances the importance of the "joy of discovery."

8. The attitude that outdoor education enhances student-teacher relations was supported by both groups of teachers and was strongly reinforced by participant respondents on the subjective question sheets.

9. It was agreed that outdoor education is more constructive than destructive. A correlation coefficient of 0.41 on the Wilcoxon test indicated a strong but not significant relationship between this attitude and involvement in outdoor education.

10. Both groups strongly endorsed the attitude that outdoor education activities have a valid place in formal education.

11. Less emphatically supported was the belief that teacher in-service training in outdoor education is of considerable advantage. This point was not mentioned by either group of teachers on the subjective question sheets.

12. The feeling that outdoor education is beneficial to

the physical health of the student was positively endorsed by both groups, but not strongly so.

13. The fact that outdoor education stresses multi-sensory learning was strongly endorsed, especially by the participant group. This feeling was also mentioned by some participant respondents as a factor influencing them to utilize outdoor education activities. A coefficient of association of 0.43 was obtained on this item.

14. There was a significantly positive relationship between the belief that teachers could see how outdoor education could complement their particular curricular subject and their active involvement in outdoor education.

15. A significantly positive correlation of 0.59 was established between a teacher attitude of wanting to participate more in outdoor education and their actual involvement in this activity.

16. Items 16 to 23 in the formal questionnaire (see Appendix B) asked teachers to respond to general objectives which have been included in most of the curriculum guides published by the Department of Education for the Province of Alberta. Of these eight variables, three were strongly endorsed by both groups. Participants and non-participant teachers believed that the following objectives could be enhanced through outdoor education: 1) to recognize the significance of the interdependence of all forms of life (item 16); 2) to appreciate the significance of the effects of the environment on human life (item 17); and 3) to acquire an appreciation of the manifestations and beauties of nature--both in the natural state and as revealed

through science (item 23). Each of the eight items in this section obtained a very low correlation of association coefficient on the Wilcoxon test and item 19 (to solve problems of a social and scientific nature) only elicited a difference of group response at the .05 level of confidence on the Kolmogorov test.

17. Items 24 to 35 in the formal questionnaire (see Appendix B) asked teachers to respond to objectives which pertained specifically to Environmental Studies. Within the administration of the Edmonton Public School Board (E.P.S.B.), this includes Mathematics, Science and Physical Education. All items appearing in the final form of the questionnaire were endorsed by the respective subject supervisors of the E.P.S.B. Of the thirteen items included in this section of the survey, five were very strongly endorsed by both groups of teachers. These variables were: 1) to develop in students an awareness and understanding of environmental problems and of possible solutions to these problems (item 27); 2) to learn the reasons for, and the techniques of, collecting and maintaining appropriate biological specimens and to develop an appreciation of the importance of these activities (item 29); 3) to develop an understanding of the principles of ecology (item 30); 4) to develop recreational and utilitarian skills (item 32); and 5) to develop a wholesome interest in physical activities for wise and constructive use of leisure time (item 33). Since the attitudes of both participants and non-participants so closely equated to each other, the correlation coefficients

of association obtained from the Wilcoxon test for most of the items in this section were significantly low. (The range was from 0.13 (item 29) to 0.35 (item 34).) Most of the items of this section were notably unable to obtain a difference between the responses of the two groups. This was emphasized by the low chi-square values obtained by the Kolmogorov test. Items 24, 30, 31, 32, 33, and 35 were only significant at the .05 level of confidence. Items 28 and 29 were only significant at the .25 level.

18. Items 36 to 40 (see Appendix B) included objectives which pertained specifically to Communications. The E.P.S.B. administration includes Language Arts, Drama and Modern Languages within this category. Each item in the final questionnaire was endorsed by the respective subject supervisor. Of the five items appearing in this part of the survey, not one was strongly reinforced by the teachers. However, item 36 (to effectively communicate with others both orally and in writing) had a correlation coefficient of 0.46 which indicated a relationship of some importance between this attitude and involvement in outdoor education.

19. Items 41 to 48 in the formal questionnaire (see Appendix B) asked teachers to respond to objectives which were related to the Humanities. Within the E.P.S.B. this includes Art, Music and Social Studies. Each questionnaire item was endorsed by the respective subject supervisors with the board. Of the eight items included in this section of the survey, three were very strongly endorsed by both groups of teachers. These were: 1) to become

visually sensitive to the nature of line, shape, tone, colour, and the organic structures which characterize design in nature and man-made objects (item 46); 2) to develop tactile awareness of texture, form and shape (item 47); and 3) to develop the student's insight into his environment (item 48). Items 41 and 42 had low chi-square values in the Kolmogorov test, showing a level of significance of .5 and .25 respectively.

### Summary

Generally speaking, teachers who have participated in outdoor education activities had a more positive attitude towards outdoor education than non-participants (see Table 3). The confidence with which this relationship could be predicted, however, is not outstanding (ie., within the limits of the teacher questionnaire designed for this study).

Attitude item number 5 was the best indicator of teacher involvement in outdoor learning activities. The correlation coefficient of 0.75 obtained with this item indicated that in seventy-five per cent of the cases a high score (indicated by a negative response to the statement) correlated with participation.

Item number 14 stated: "Outdoor education activities can complement and enhance the subject matter I teach." (see Appendix B). A correlation coefficient of 0.58 was obtained for this item indicating that a positive response to this item was fifty-eight per cent predictive of participation. Similarly, item number 15

stated: "I would like to participate a lot more in this whole area of education.) (see Appendix B). This item attained a correlation coefficient of 0.59 making its predictive powers about the same as for item 14. All other correlation coefficients were below the 0.50 level, thus making these other items unsuitable for predicting participation or non-participation in outdoor education.

Tables 3 and 6 illustrated the positive attitude orientation of both participant and non-participant groups. Only on items number 5 and 37 did the non-participants demonstrate a decidedly negative attitude. The reason for this lack of discrepancy between the two groups was probably due to the nature of outdoor education, which was used as the attitude subject in this project.

In recent years outdoor education has gained wider acceptance among both teachers and administrators alike. Once associated almost entirely with "camping" and outdoor "recreation" activities, outdoor education has shrugged the "fun and games" connotation to become recognized as an educationally valid method of teaching. The fact that this new implication has not yet become widespread, does not detract from its place of growing popularity; for the "environment" and "ecology" are fresh terms within the public consciousness, and in such a situation, outdoor education has probably become a "motherhood" issue. Consequently, even though ninety-five of the 247 responding teachers indicated that they had not participated in outdoor education, their attitude towards this method of teaching in most cases remained positive.



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## CHAPTER VI

### SUMMARY, CONCLUSIONS, RECOMMENDATIONS

#### Summary

The purpose of this study was to examine the relationship which exists between teachers' attitudes towards outdoor education and their actual participation in this method of teaching. To achieve this objective it was necessary to develop a teacher attitude scale and to administer it to a random sample of teachers from the Edmonton Public School Board.

In order to give more meaning to the concept of attitude and its relationship with behaviour, which was the central subject of this investigation, a summary of relevant theory and research was undertaken. The concept of attitude used for this review was that expounded by the functional approach, a theoretical position which relies heavily upon cognitive attitude theory.

The most comprehensive school of behaviour theory which is consonant with this attitude theory orientation is that found in perceptive psychology. Consequently, man's behaviour was explained in terms of this perceptual orientation. The main assumptions of this phenomenological approach were outlined so that the attitude theory and the treatment of the attitude-behaviour relationship had theoretical substance.

A review of the literature revealed that little had been

done in assessing teacher attitudes towards outdoor education. Most of the research which alluded to the attitude-behaviour relationship in teaching made the implication that this association should be a positive and direct one.

In order to develop attitude scales with a high degree of reliability, the Likert scale model was chosen. This required the development of a series of statements which would elicit a gradation of feeling from "strongly agree" to "strongly disagree." By a series of presentations to the subject supervisors at the Edmonton Public School Board (E.P.S.B.), the Outdoor Education Consultant with the E.P.S.B., the Environmental and Outdoor Education Committee of the E.P.S.B., and the thesis committee, items for the final draft of the questionnaire were pared down to forty-eight.

The questionnaire was then administered to a group of thirty-six randomly selected teachers from James Gibbons Elementary School, Hillcrest Junior High School, and Jasper Place High School for the purposes of a pilot study. An odd-even split half technique of interval consistency was used to determine the reliability of the two responding groups separately (ie., participants and non-participants), as well as both groups together. The responses of the two groups were compared using the Kolmogorov maximum deviation test. This procedure was administered to every item in the questionnaire to test the ability of each to discriminate between the two groups. The Mann-Whitney U test was also applied in order to evaluate the significance of difference between the mean scores of the two groups

on each item. Wilcoxon's Coefficient of Differentiation was performed to ascertain the degree of association between each attitude item and the nominal variable (ie., teacher participation or non-participation in outdoor education activities). Although a high reliability was obtained for the scale from this study, the test items failed to significantly discriminate between participants and non-participants in outdoor education.

It was decided that the reason for this could be accounted for in the fact that the pilot study was administered to only a small population, thus not allowing for a bell-shaped frequency distribution of scores or a difference in polarization of scores between groups. The existing questionnaire was, therefore, maintained for the purposes of a major study. In addition to this, a supplementary subjective question sheet was also administered to the major study sample so that teachers would have an opportunity to express the reasons why they had become involved, or why they had decided not to participate in outdoor activities with their students. It was thought that the inclusion of this supplementary measure would allow for a wider cross-section of opinion and permit a wider scope of attitude response than was included in the formal questionnaire. Results from the subjective question sheet would help in any follow-up revisions that might be attempted.

A total sample of 333 randomly sampled Edmonton Public School teachers were used for the major study. Of this number, 247 questionnaires were returned, 155 of them with the supplementary

question sheets. The same statistical procedures were used in interpreting the results of the major study as were used in the pilot program. Interpretation of the results from the attitude scale was assessed in terms of the significance of correlation between a particular attitude orientation towards outdoor education and actual involvement in this method. Correlation coefficients below 0.50 were considered insignificant. As a result, only items 5, 14, and 15 showed a significant correlation. Since the coefficients were positive, this meant that a high score (indicating a positive attitude orientation) on these three items signified a direct and positive relationship between these attitude variables and involvement in outdoor education activities.

Statistical treatment of the data revealed that most teachers in the Edmonton Public School system have a favourable attitude towards outdoor education. On each attitude item those who have been involved in providing outdoor education opportunities for their students have shown a more positive attitude towards this activity than non-participants. Nevertheless, the results of the questionnaire indicated that even the non-participants had a favourable attitude towards outdoor education.

A strong factor influencing this positive attitude orientation of both participants and non-participants on most items was related to the nature of the attitude subject: outdoor education. This method of teaching has gained a wider sphere of acceptance as being educationally valid among both teachers and administrators

in the past five years. One reason for this shift in outlook has probably been the greater importance that society is now placing on the environment and the fact that outdoor education is just starting to slip from the bonds of the "camping" and strictly "fun and games" connotations which it once had in the minds of many people.

### Conclusions

The following conclusions are based on the results of this investigation.

1. The consideration of time is the most significant factor separating participant and non-participant teachers. Teachers who do not participate in outdoor activities indicate that too much time is involved in planning a project of this nature, and that time has to be taken away from the regular curriculum. These teachers feel that the time could be better spent in the classroom.
2. There is a significantly positive relationship between teachers recognizing how outdoor education can complement their curricular subject and their active involvement in outdoor education.
3. A significantly positive relationship exists between the teacher attitude of wanting to participate more in outdoor education and actually attempting to do so.
4. Both participants in outdoor education and non-participant teachers strongly endorse most of the educational objectives which specifically pertain to Environmental Studies, especially for Science and Physical Education. Teachers consider that these objectives

(items 16, 17, 23, 27, 29, 30, 32, and 33) can be greatly enhanced through outdoor education.

5. Edmonton Public School teachers do not feel that the objectives which pertain to Communications can be enhanced through outdoor education.

6. The objectives of Art, as expressed in items 46, 47, and 48 are very strongly reinforced by teachers with reference to the possibility of their being enhanced through outdoor education.

7. Problems encountered in timetabling and consent forms, problems encountered with the administration in providing substitutes, and other administrative "red tape" are factors influencing many teachers not to utilize outdoor education activities.

8. The prohibitive cost of transportation is also a factor in dissuading non-participant teachers from becoming involved in outdoor activities with their students.

9. Many non-participant teachers remain uninvolved with outdoor education because of the lack of structure encountered in the out-of-doors. This tends to make measureable outcomes difficult to determine. Furthermore, most students still regard this type of activity as a holiday.

10. Teachers tend to become involved in outdoor education activities because of the following reasons:

a) it permits the student to learn through direct experience;

b) outdoor education motivates pupil interest, especially when they are included in the planning;

- c) this method of teaching increases awareness and sensitivity towards the natural environment;
- d) outdoor education enhances the opportunity for student-teacher cooperation.

11. Generally speaking, there is a direct and positive relationship between the degree of favourable attitude toward outdoor education and a teacher's willingness to become actively involved in this method.

### Recommendations

1. A revision of this attitude questionnaire should be undertaken to discard the items which do not significantly discriminate between the attitudes of participants and non-participants in outdoor education. A few of the most frequently reiterated responses from the subjective question sheets could be used to broaden the scope of the questionnaire.

2. The number of items in the questionnaire should be considerably reduced. An ideal number of variables to include in an instrument whose function it is to significantly discriminate between groups for the purpose of behaviour prediction is five or six with a maximum of ten. This would allow the survey to be hand scored. High scores would indicate positive attitude and low scores would signify negative attitude towards outdoor education.

3. A modification of the five point Likert scale would increase the power of the questionnaire. The "undecided" category should be deleted so that respondents are forced to make either a



positive or negative response. The number of response categories should be increased to six: very strongly disagree, strongly disagree, disagree, agree, strongly agree, and very strongly agree. Values on these responses would range from one to six respectively.

4. Part A of the existing questionnaire could be presently used to detect attitude change towards outdoor education as the result of an in-service program by deleting items 4, 7, 8, 10, 11, and 12. This would leave a short questionnaire of nine variables which could be quickly administered, would be clerically easy to score, and would be composed of the most discriminatory items from the present study.

5. Specific sections of Part B could be isolated from the rest of the questionnaire and used in an in-service situation which is stressing outdoor education methods in a particular subject area. Pre-session and post-in-service tests could be administered in order to ascertain the degree of attitude change which resulted from the in-service program.

6. If school boards wish to encourage their teachers to become involved in outdoor education they should:

- a) make sure that the new teachers who are hired with the board have some teacher education courses in outdoor education or at least have a personal interest in outdoor activities;
- b) take measures which are necessary to develop and maintain a positive attitude orientation in teachers towards the natural environment so that this belief will be translated into favourable and responsible environmental behaviour;

- c) take an active part in providing resource assistance to teachers, especially by way of supplying limited funds for transportation expenses;
- d) provide several resource persons or consultants whose job it is to assist teachers to logistically plan and carry through with outdoor education experiences.

#### Recommendations for Future Study

1. A more descriptive survey should be undertaken by the E.P.S.B. in order to determine: a) what school division (ie., elementary, junior high, or senior high) is presently using outdoor education most extensively; b) what curricular area (ie., history, biology) is most involved in this method; c) what types of outdoor experiences (ie., short field trips, overnight trips, resident outdoor schools) are being undertaken by E.P.S.B. teachers; d) the extent of student preparation for their outdoor experiences; e) the types of follow-up activities which are being used by teachers after the students' experience outdoors; f) the methods teachers are using to raise the funds necessary to carry out the outdoor program; g) what natural areas teachers are utilizing in the Edmonton vicinity to organize their outdoor activities.

2. The same survey questionnaire used in this study, or its suggested modification should be administered using the same sampling technique in 1977 in order to ascertain the trend of outdoor education utilization by teachers.

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APPENDICES

APPENDIX A

ORIGINAL QUESTIONNAIRE



EDMONTON PUBLIC SCHOOLS  
TEACHER QUESTIONNAIRE ON OUTDOOR EDUCATION

You are being asked to take part in a city-wide survey. The questionnaire which follows is a FACT-FINDING survey only. All information will remain completely confidential as you are not asked to identify yourself. This questionnaire has been kept as short and simple as possible considering the scope of the information required. Estimated time for completion is approximately 10 minutes.

Purpose of the Study:

1. To determine teachers' attitudes towards outdoor education.
2. To find out if teachers believe that the Alberta Department of Education curriculum objectives can be enhanced through outdoor education.

Education for the purpose of this survey is defined as :

**LEARNING IN AND FOR THE OUT-OF-DOORS**

Please tell us the following information about yourself by checking (✓) the appropriate response:

Have YOU PARTICIPATED in OUTDOOR LEARNING ACTIVITIES with students as part of the formal SCHOOL PROGRAM during the LAST YEAR? (i.e. January 1971 - December 1971)

- a). YES \_\_\_\_\_ b). NO \_\_\_\_\_

IMPORTANT!

Upon completing this questionnaire, please return the form in the stamped, SELF-ADDRESSED ENVELOPE PROVIDED.

THANK YOU FOR YOUR COOPERATION

PART A

The following items ask you to indicate your attitudes towards outdoor education.

Directions:

READ EACH ITEM CAREFULLY AND CHECK (✓) THE ONE MOST APPROPRIATE PHRASE WHICH BEST EXPRESSES YOUR FEELING ABOUT THE STATEMENT ACCORDING TO THE FOLLOWING CRITERIA.

Strongly Agree..... S.A.  
Agree ..... A.  
Undecided..... U.N.  
Disagree..... D.  
Strongly Disagree..... S.D.

PLEASE ANSWER ALL QUESTIONS.

1. Outdoor education enriches and complements many course content areas of the school curriculum.

S.A.      A.      U.N.      D.      S.D.

2. Outdoor education stresses the involvement of the learner.

S.A.      A.      U.N.      D.      S.D.

3. Outdoor education activities reduce opportunities children have to assume real responsibilities.

S.A.      A.      U.N.      D.      S.D.

4. Outdoor education is applicable to all grade levels.

S.A.      A.      U.N.      D.      S.D.

5. I feel that I do not have time to participate in out-of-door activities.

S.A.      A.      U.N.      D.      S.D.

6. Every professional teacher education program ought to include a practical experience in outdoor education.

S.A.      A.      U.N.      D.      S.D.

7. Outdoor education diminishes the importance of the "joy of discovery".

S.A.      A.      U.N.      D.      S.D.

8. Outdoor education enhances student-teacher relations.

S.A.      A.      U.N.      D.      S.D.

9. Outdoor education is more destructive than constructive.

S.A.      A.      U.N.      D.      S.D.

10. Outdoor education activities have a valid place in formal education.

S.A.      A.      U.N.      D.      S.D.

11. Teacher in-service training in outdoor education is of little use.

S.A.      A.      U.N.      D.      S.D.

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12. Outdoor education is beneficial to the physical health of a youngster.

                                    
S.A.      A.      U.N.      D.      S.D.

13. Outdoor education stresses multi-sensory learning.

                                    
S.A.      A.      U.N.      D.      S.D.

14. Outdoor education activities can complement and enhance the subject matter I teach.

                                    
S.A.      A.      U.N.      D.      S.D.

15. Special knowledge is necessary to effectively teach students in the out-of-doors.

                                    
S.A.      A.      U.N.      D.      S.D.

16. Special teacher skills are necessary to effectively teach students in the out-of-doors.

                                    
S.A.      A.      U.N.      D.      S.D.

17. I would like to participate a lot more in this whole area of education:

                                    
S.A.      A.      U.N.      D.      S.D.

#### PART B

The following objectives are presently included in respective curriculum guides of the Department of Education, Province of Alberta. In each question, signify your opinion as to whether the objective can be enhanced through outdoor education.

#### A. General

18. To recognize the significance of the interdependence of all forms of life.

                                    
S.A.      A.      U.N.      D.      S.D.

19. To appreciate the significance of the effects of environment on human life.

                                    
S.A.      A.      U.N.      D.      S.D.

20. To understand the significance of democracy as a way of life and the responsibilities involved.

                                    
S.A.      A.      U.N.      D.      S.D.

21. To solve problems of a social and scientific nature.

                                    
S.A.      A.      U.N.      D.      S.D.

- 4 -

22. To develop cooperation marked by consideration for the rights and feelings of others and willingness to share.

S.A.      A.      U.N.      D.      S.D.

23. To develop student responsibility marked by readiness to carry tasks to completion, to behave honestly with himself and others, and to accept the consequences of his own actions.

S.A.      A.      U.N.      D.      S.D.

24. To develop social concern marked by earnest effort to implement whatever desirable ends his group may seek.

S.A.      A.      U.N.      D.      S.D.

25. To acquire an appreciation of the manifestations and beauties of nature - both in the natural state and as revealed through science.

S.A.      A.      U.N.      D.      S.D.

B. Environmental Studies  
(Mathematics, Science, Physical Education)

26. To use applications from various areas such as measurement, science, and the real world, for the purpose of reinforcing concepts.

S.A.      A.      U.N.      D.      S.D.

27. To develop the process of discovery: encouraging students to discover mathematical truths and patterns for themselves.

S.A.      A.      U.N.      D.      S.D.

28. To develop the process of problem solving, identifying, hypothesizing, interpreting, relating, evaluating and concluding.

S.A.      A.      U.N.      D.      S.D.

29. To develop in students an awareness and understanding of environmental problems and of possible solutions to these problems.

S.A.      A.      U.N.      D.      S.D.

30. To learn the basic principles of the classification of organisms and the application of these principles in the construction of keys.

S.A.      A.      U.N.      D.      S.D.

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31. To learn the reasons for, and the techniques of, collecting and maintaining appropriate biological specimens and to develop an appreciation of the importance of these activities.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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32. To develop an understanding of the principles of ecology.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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33. To show the development and relationship of form and function by the comparative study of representatives of the biological kingdoms.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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34. To develop recreational and utilitarian skills.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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35. To develop a wholesome interest in physical activities for wise and constructive use of leisure time.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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36. To develop desirable standards of behaviour and the ability to get along well with other people.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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37. To develop health and physical fitness.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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C. Communications  
(Language Arts, Drama, Modern Languages)

38. To effectively communicate with others both orally and in writing.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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39. To develop the efficient recognition, interpretation, and explanation of ideas in reading and listening.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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40. To develop sensory distinction.

S.A.    A.    U.N.    D.    S.D.

41. To obtain freedom and control in physical movement.

S.A.    A.    U.N.    D.    S.D.

42. To develop concentration.

S.A.    A.    U.N.    D.    S.D.

D. Humanities  
(Art, Music, Social Studies)

43. To reveal the social significance of music by indicating how it often reflects the time and place of its composition.

S.A.    A.    U.N.    D.    S.D.

44. To develop in students the necessary competence to participate in group living in such ways as to make changes in the direction of desired values and ideals.

S.A.    A.    U.N.    D.    S.D.

45. To be able to interpret the feelings and ideas of others.

S.A.    A.    U.N.    D.    S.D.

46. To be capable of responding to the feelings and ideas of others in a manner appropriate to the occasion.

S.A.    A.    U.N.    D.    S.D.

47. To develop the ability to express one's own feelings and ideas to others.

S.A.    A.    U.N.    D.    S.D.

48. To become visually sensitive to the nature of line, shape, tone, colour, and the organic structures which characterize design in nature and man-made objects.

S.A.    A.    U.N.    D.    S.D.

49. To develop tactile awareness of texture, form and shape.

S.A.    A.    U.N.    D.    S.D.

50. To develop the student's insight into his environment.

S.A.    A.    U.N.    D.    S.D.

/mfv  
Feb.22/72

APPENDIX B

QUESTIONNAIRE AS ADMINISTERED  
IN THE PILOT STUDY AND IN THE MAJOR STUDY

## TEACHER QUESTIONNAIRE ON OUTDOOR EDUCATION

You are being asked to take part in a city-wide survey. The questionnaire which follows is a FACT-FINDING survey only. All information will remain completely confidential as you are not asked to identify yourself. This questionnaire has been kept as short and simple as possible considering the scope of the information required. Estimated time for completion is approximately 10 minutes.

Purpose of the Study:

1. To determine teachers' attitudes towards outdoor education.
2. To find out if teachers believe that the Alberta Department of Education curriculum objectives can be enhanced through outdoor education.

Outdoor Education for the purpose of this survey is defined as:

A method of teaching emphasizing learning in the outdoors by directly experiencing those principles in each subject which can best be taught there.

Outdoor Learning Activities may take many forms. Carrying out a small, 10 minute study within the confines of the schoolyard, taking a short excursion to study plant communities in a local ravine, undertaking a day-long expedition to paint landscapes in a municipal park, and following an historical canoe route of the voyageurs on a week-long interdisciplinary canoe trip, are all equally valid examples of outdoor learning activities.

Please tell us the following information about yourself by checking (✓) the appropriate response:

Have YOU PARTICIPATED in OUTDOOR LEARNING ACTIVITIES with your students as part of the formal curricular SCHOOL PROGRAM during the LAST YEAR? (i.e. January 1971 - December 1971)

a). YES \_\_\_\_\_ b). NO \_\_\_\_\_

IMPORTANT!

Upon completing this questionnaire, please return the form in the stamped, SELF-ADDRESSED ENVELOPE PROVIDED.

THANK YOU FOR YOUR COOPERATION

PART A

The following items ask you to indicate your attitudes towards outdoor education.

Directions:

READ EACH ITEM CAREFULLY AND CHECK (✓) THE ONE MOST APPROPRIATE PHRASE WHICH BEST EXPRESSES YOUR FEELING ABOUT THE STATEMENT ACCORDING TO THE FOLLOWING CRITERIA.

Strongly Agree.....S.A.  
 Agree.....A.  
 Undecided.....U.N.  
 Disagree.....D.  
 Strongly Disagree.....S.D.

PLEASE ANSWER ALL QUESTIONS



## TEACHER QUESTIONNAIRE ON OUTDOOR EDUCATION

You are being asked to take part in a city-wide survey. The questionnaire which follows is a FACT-FINDING survey only. All information will remain completely confidential as you are not asked to identify yourself. This questionnaire has been kept as short and simple as possible considering the scope of the information required. Estimated time for completion is approximately 10 minutes.

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THANK YOU FOR YOUR COOPERATION

PART A

The following items ask you to indicate your attitudes towards outdoor education.

Directions:

READ EACH ITEM CAREFULLY AND CHECK (✓) THE ONE MOST APPROPRIATE PHRASE WHICH BEST EXPRESSES YOUR FEELING ABOUT THE STATEMENT ACCORDING TO THE FOLLOWING CRITERIA.

Strongly Agree.....	S.A.	
Agree.....	A.	
Undecided.....	U.N.	PLEASE ANSWER <u>ALL</u> QUESTIONS
Disagree.....	D.	
Strongly Disagree.....	S.D.	

1. Outdoor education enriches and complements many course content areas of the school curriculum.

                                                                            
S.A.            A.            U.N.            D.            S.D.

2. Outdoor education stresses the involvement of the learner.

                                                                            
S.A.            A.            U.N.            D.            S.D.

3. Outdoor education activities reduce opportunities children have to assume real responsibilities.

                                                                            
S.A.            A.            U.N.            D.            S.D.

4. Outdoor education is applicable to all grade levels.

                                                                            
S.A.            A.            U.N.            D.            S.D.

5. I feel that I do not have time to participate in out-of-door activities.

                                                                            
S.A.            A.            U.N.            D.            S.D.

6. Every professional teacher education program ought to include a practical experience in outdoor education.

                                                                            
S.A.            A.            U.N.            D.            S.D.

7. Outdoor education diminishes the importance of the "joy of discovery".

                                                                            
S.A.            A.            U.N.            D.            S.D.

8. Outdoor education enhances student-teacher relations.

                                                                            
S.A.            A.            U.N.            D.            S.D.

9. Outdoor education is more destructive than constructive.

                                                                            
S.A.            A.            U.N.            D.            S.D.

10. Outdoor education activities have a valid place in formal education.

                                                                            
S.A.            A.            U.N.            D.            S.D.

11. Teacher in-service training in outdoor education is of little use.

                                                                            
S.A.            A.            U.N.            D.            S.D.

12. Outdoor Education is beneficial to the physical health of a youngster.

                                                                            
S.A.      A.      U.N.      D.      S.D.

13. Outdoor education stresses multi-sensory learning.

                                                                            
S.A.      A.      U.N.      D.      S.D.

14. Outdoor education activities can complement and enhance the subject matter I teach.

                                                                            
S.A.      A.      U.N.      D.      S.D.

15. I would like to participate a lot more in this whole area of education.

                                                                            
S.A.      A.      U.N.      D.      S.D.

#### PART B

The following objectives are presently included in respective curriculum guides of the Department of Education, Province of Alberta. In each question, signify your opinion as to whether the objective can be enhanced through outdoor education.

#### A. General

16. To recognize the significance of the interdependence of all forms of life.

                                                                            
S.A.      A.      U.N.      D.      S.D.

17. To appreciate the significance of the effects of environment on human life.

                                                                            
S.A.      A.      U.N.      D.      S.D.

18. To understand the significance of democracy as a way of life and the responsibilities involved.

                                                                            
S.A.      A.      U.N.      D.      S.D.

19. To solve problems of a social and scientific nature.

                                                                            
S.A.      A.      U.N.      D.      S.D.

20. To develop cooperation marked by consideration for the rights and feelings of others and willingness to share.

S.A.      A.      U.N.      D.      S.D.

21. To develop student responsibility marked by readiness to carry tasks to completion, to behave honestly with himself and others, and to accept the consequences of his own actions.

S.A.      A.      U.N.      D.      S.D.

22. To develop social concern marked by earnest effort to implement whatever desirable ends his group may seek.

S.A.      A.      U.N.      D.      S.D.

23. To acquire an appreciation of the manifestations and beauties of nature - both in the natural state and as revealed through science.

S.A.      A.      U.N.      D.      S.D.

- B. Environmental Studies (Mathematics, Science, Physical Education). Signify your opinion as to whether the following objectives can be enhanced through outdoor education.

24. To use applications from various areas such as measurement, science, and the real world, for the purpose of reinforcing concepts.

S.A.      A.      U.N.      D.      S.D.

25. To develop the process of discovery: encouraging students to discover mathematical truths and patterns for themselves.

S.A.      A.      U.N.      D.      S.D.

26. To develop the process of problem solving, identifying, hypothesizing, interpreting, relating, evaluating and concluding.

S.A.      A.      U.N.      D.      S.D.

27. To develop in students an awareness and understanding of environmental problems and of possible solutions to these problems.

S.A.      A.      U.N.      D.      S.D.

28. To learn the basic principles of the classification of organisms and the application of these principles in the construction of keys.

S.A.      A.      U.N.      D.      S.D.

- 5 -

29. To learn the reasons for, and the techniques of, collecting and maintaining appropriate biological specimens and to develop an appreciation of the importance of these activities.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
-------------	-----------	-------------	-----------	-------------

30. To develop an understanding of the principles of ecology.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
-------------	-----------	-------------	-----------	-------------

31. To show the development and relationship of form and function by the comparative study of representatives of the biological kingdoms.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
-------------	-----------	-------------	-----------	-------------

32. To develop recreational and utilitarian skills.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
-------------	-----------	-------------	-----------	-------------

33. To develop a wholesome interest in physical activities for wise and constructive use of leisure time.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
-------------	-----------	-------------	-----------	-------------

34. To develop desirable standards of behaviour and the ability to get along well with other people.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
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35. To develop health and physical fitness.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
-------------	-----------	-------------	-----------	-------------

- C. Communications (Language Arts, Drama, Modern Languages). Signify your opinion as to whether the following objectives can be enhanced through outdoor education.

36. To effectively communicate with others both orally and in writing.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
-------------	-----------	-------------	-----------	-------------

37. To develop the efficient recognition, interpretation, and explanation of ideas in reading and listening.

<u>S.A.</u>	<u>A.</u>	<u>U.N.</u>	<u>D.</u>	<u>S.D.</u>
-------------	-----------	-------------	-----------	-------------

38. To develop sensory distinction.

S.A.      A.      U.N.      D.      S.D.

39. To obtain freedom and control in physical movement.

S.A.      A.      U.N.      D.      S.D.

40. To develop concentration.

S.A.      A.      U.N.      D.      S.D.

- D. Humanities (Art, Music, Social Studies). Signify your opinion as to whether each objective can be enhanced through outdoor education.

41. To reveal the social significance of music by indicating how it often reflects the time and place of its composition.

S.A.      A.      U.N.      D.      S.D.

42. To develop in students the necessary competence to participate in group living in such ways as to make changes in the direction of desired values and ideals.

S.A.      A.      U.N.      D.      S.D.

43. To be able to interpret the feelings and ideas of others.

S.A.      A.      U.N.      D.      S.D.

44. To be capable of responding to the feelings and ideas of others in a manner appropriate to the occasion.

S.A.      A.      U.N.      D.      S.D.

45. To develop the ability to express one's own feelings and ideas to others.

S.A.      A.      U.N.      D.      S.D.

46. To become visually sensitive to the nature of line, shape, tone, colour, and the organic structures which characterize design in nature and man-made objects.

S.A.      A.      U.N.      D.      S.D.

47. To develop tactile awareness of texture, form and shape.

S.A.      A.      U.N.      D.      S.D.

48. To develop the student's insight into his environment.

S.A.      A.      U.N.      D.      S.D.

APPENDIX C

PILOT STUDY:

COVER LETTER TO THE PRINCIPALS

APPENDIX D

PILOT STUDY:

COVER LETTER TO THE TEACHERS



APPENDIX E

MAJOR STUDY:

SUPPLEMENTARY SUBJECTIVE QUESTION SHEET

IMPORTANT!

It would be of great assistance to future program development if you could take a few minutes to answer one more question.

What factor(s) have influenced you to utilize (circle the  
not to utilize

appropriate choice) outdoor activities in teaching your curricular subject.

THANK YOU FOR YOUR KIND COOPERATION

APPENDIX F

MAJOR STUDY:

COVER LETTER TO THE PRINCIPALS

APPENDIX G

MAJOR STUDY:

COVER LETTER TO THE TEACHERS

APPENDIX H

MAJOR STUDY:

FOLLOW-UP LETTER TO THE TEACHERS