Nuclear Armament/Disarmament as a Topic in Decision-Making Models in Secondary Social Studies Classrooms

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NUCLEAR ARMAMENT/DISARMAMENT AS A TOPIC IN
DECISION-MAKING MODELS IN SECONDARY
SOCIAL STUDIES CLASSROOMS

by

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ABSTRACT

This study sought to determine the current status of the nuclear armament/disarmament issue as a topic for the moral decision-making model in secondary social studies curriculums and to establish guidelines for its inclusion in future lessons. A review of the relevant literature provided the basis for a questionnaire mailed to four hundred, randomly selected social studies department chairpersons. Their attitudes regarding the legitimacy of the topic and methods employed in instructional lessons were addressed. Survey results were categorized according to respondents' incorporation of the topic into their curriculum and whether they taught in public or private institutions. A majority of the respondents indicated they taught lessons regarding nuclear disarmament and employed at least a portion of the commonly accepted steps of the decision-making model. The related literature and questionnaire results suggested certain recommendations for the development of effective units of instruction in this area.
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Chapter I

Introduction

The growing threat of nuclear extinction has changed, forever, the lives of the post-World War II generation and all those following it. Tactical and strategic nuclear weapons have increased rapidly in numbers and devastation potential. From the few nuclear weapons existing in 1945, the world's arsenal has risen to approximately 50,000 weapons, with the United States and the Soviet Union, alone, adding three to five new bombs per day (Sivard, 1981). In 1979, President Carter revealed that a single Poseidon submarine was capable of carrying the number of nuclear warheads needed to destroy every large and medium-sized city in the Soviet Union (Sloan, 1982). Christopher Johnson (1983) cites Carl Sagan's equation of the combined United States-Soviet Union destructive potential with a World War II every second for the length of a lazy afternoon, as evidence of the urgency of this problem.

Yet, although this is the first generation in history with the capacity to destroy life on this planet, there is little evidence that students have been taught how to live in this nuclear age. Activists operating outside the classroom setting have been responsible for most of the educational
activity concerning the nuclear armament/disarmament issue, while formal instructional effort seems to have been rare (Totten, 1982). Frances Fitzgerald, who reviewed American public school textbooks in America Revised (1979), reported a few references to the atomic bomb as having contributed to the end of World War II, but almost no acknowledgement of the potential power or effects of modern nuclear weapons. A similar study by Daniel B. Fleming (1983) of 19 recently published secondary-level world and U.S. history textbooks revealed that the majority of space provided for the presentation of nuclear warfare dealt with the scientific and political aspects of the creation and development of the first nuclear bomb. Very little information was provided regarding either the medical and social effects of the use of such a weapon at Hiroshima and Nagasaki or the current arms race and efforts to limit arms production. Seymour Melman's 1980 review of college course outlines dealing with various aspects of war and conflict showed that only seven major American universities offered course studies in which the term disarmament was even mentioned. Equally enlightening was Stanley M. Elam's (1983) survey of 118 high school students in three states. Of those who responded, 43% stated that the threat of nuclear war had never been a topic in any of
their classes. Among those who had studied this issue, only 25 students considered the school an important source of information regarding the threat of nuclear war. Elam's study revealed a significant lack of knowledge on the part of at least most of these 118 students in reference to the more widely known facts about nuclear war and its effects.

It would appear that the public school system, in the past, failed to address this important topic. One obstacle educators may have faced in addressing the nuclear armament/disarmament issue is embodied in the terminology. Disarmament education is often associated exclusively with that political movement which seeks to place a permanent freeze on the development, as well as the deployment, of nuclear weaponry. But the term disarmament may also be used with a much broader application. Everyone supports disarmament to the extent that few would choose global nuclear conflict; the differences lie in whether one believes deterrence may be best achieved by increasing the existing arsenal of weapons or by reducing it.

Social studies teachers have often avoided controversial topics, that is topics subject to strong public debate and personal opinion, particularly disarmament, because the facts are disturbing and require that the student and teacher
alter their assumptions, presuppositions, and conceptual apparatus while changing their way of viewing things as professionals (Lifton, 1982). The study of controversial issues, of necessity, has influenced a public that may be resistant to change. Teachers have reported the increasing pressure from both liberal and conservative groups to present either that group's viewpoint or not to address the issue at all. Most teachers feel their communities expect them to pass on knowledge accumulated by others, rather than encouraging students to raise creative challenges or think critically (Shillenn & Vincenti, 1981). More often than not, if a social studies teacher chooses to encourage his/her students to pursue critical thinking, he/she will introduce a less controversial, and therefore, less topical, subject than nuclear armament/disarmament. In fact, Lifton (1982) speculates that the more important a subject is, the less likely it is to be studied.

Even those teachers who decide to address the issue of nuclear armament/disarmament face problems. Although the American public school system has set several precedents in its response to critical social and political crises, such as training students to survive throughout the emergencies of World War II and refocusing educational goals entirely to
meet the challenges of the Sputnik crisis, mobilizing inter­
est in the armament/disarmament issue is difficult. Society-at-large is often distracted from the problems associated with nuclear warfare by the more immediate concerns of poverty, inflation, social issues, and violence. Additionally, most people know very little about the weapons and doctrines of nuclear war. What information they do know is likely to be contradictory, fragmented, and misleading (Markusen, Dunham, & Bee, 1981). The highly technical nature of this subject often deters even those teachers who have acquired a certain level of expertise from introducing the topic in their classrooms (Reardon, 1981b).

The threat of nuclear warfare is such an intangible en­emy, it can produce two different reactions with similar pro­blems (Cappelluzzo, 1979). The magnitude of the prospect of nuclear war may spawn a kind of paralytic fear in some stu­dents creating a panic and refusal to face the issue (Sloan, 1982). Others, exposed to nuclear-speak, when officials talk of megaton weapons almost as if they were bows and arrows, may become numbed. Repeated references to the issue and term­inology seemingly desensitize people to its dangers (Barnet, 1982; Cappelluzzo, 1979; Lifton, 1982). Both responses may result in decreased efforts by students to affect changes in
those institutions most capable of dealing with the problem. Many students are experiencing some degree of cynicism regarding their ability to participate in the democratic process, and their feelings of hopelessness about nuclear issues are particularly acute (Musil, 1982).

The modern public school system, in general, and the secondary studies teacher, in particular, are in the critical position of being responsible for the education of a generation destined to face problems unique to this period in history. If they choose to face the complex challenge of this nuclear world, their task will involve teaching not only the specific concepts associated with nuclear armament/disarmament, but also the components of the decision-making process and an appreciation for the highly emotional factors inherent in any controversial issue.

Purpose

The purpose of this study was to examine the current status of the nuclear armament/disarmament issue in the secondary social studies classroom and to develop guidelines for the inclusion of this topic in the moral decision-making model. No attempt was made to present a particular side of the nuclear disarmament issue. The term disarmament, though
often used to represent exclusively the view of those groups supporting arms reduction, in this paper, referred to the broader spectrum of the armament/disarmament issue. For those desiring to become more involved in this issue outside of the classroom, there are adequate resources and resource groups to meet their special needs. Rather, this study sought to establish the appropriateness of the nuclear armament/disarmament issue in secondary social studies curriculums and the importance of developing the critical thinking skills necessary to deal with this type of controversial topic. In light of recent reductions in federal funding for education and the concurrent movement toward curriculum innovations designed to upgrade educational standards, it was both interesting and helpful to discover how social studies instructors are currently addressing this issue.

Rationale

There are essentially three components of the study of the nuclear armament/disarmament issue: the development of critical decision-making skills, the recognition of the emotive aspects of this issue, and the acceptance of nuclear disarmament as a crucial element of modern society. Social studies are centrally concerned with the education of citizens. The mark of a good citizen is the quality of the
decisions he/she reaches on public and private matters of social concern (Engle, 1960). The ability of secondary students to think critically and make responsible decisions has long been a concern of those who write about the goals of a social studies education (Engle, 1960; Shaver, 1980). If public schools accept the premise that critical thinking skills are fundamental to effective citizenship, a position supported by the 1979 "Revision of the NCSS (National Council for the Social Studies) Social Studies Curriculum Guidelines" (Osborn), then they must also assume to some degree the responsibility for teaching these skills. For, by the time students reach the secondary school, they have been inundated with a variety of informational input ranging from simple visual images to explicit propaganda, and they are too often abandoned by society to sort through this information unskilled and untrained. The process of disciplined inquiry is appropriate for young people at any educational level, and teachers who assume this educational priority are showing their students how to assimilate properly all types of information (Wilson, 1969).

The lack of decision-making skills is especially evident in the manner in which students, and most of society, deal with the armament/disarmament issue. Research revealed that
an appeal to authority, an unconscious reliance on experts for one's own opinions, has intensified during the past few decades as people feel more and more isolated from, and unable to understand, a rapidly changing technological society. Students, in particular, tend to assume that experts are free of the same internal conflicts between values and social pressures that students face, and this assumption gives authority figures a type of influence not always desirable (Shaver, 1980). The ongoing debate over arms proliferation is an effective example of an issue in which dichotomous opinions have emerged from basically the same set of facts. Students unskilled in the process of critical thinking are likely to choose a side rather than examine the issues and alternatives. As a result, they are far less likely to feel responsible for the consequences of such a choice, and in turn, will become, according to Engle's definition, poor citizens.

The conflict between opposing opinions in any issue presents additional problems for adolescents. People have a general need for orderliness that affects their understanding and consideration of public issues (Shaver & Larkin, 1973). This means that most people are selective about those stimuli to which they pay attention and interpret this stimuli according to their existing beliefs. Problems arise when
students are confronted with inconsistencies in their beliefs, values, and decisions. Stereotyping results when people sort through conflicting data and select those data consistent with their established concept of what is right or real. Wilson (1969) calls this selective inattention. Educators cannot eliminate these inconsistencies, but they can reduce the adolescent's natural tendency to avoid complicated issues by pointing out that most individuals: (1) react to the threatening aspects of controversial issues by refusing to consider or by misinterpreting relevant information, and (2) perceive issues from a particular frame of reference, or that person's view of what the world is like, what is possible, and what is desirable (Shaver & Larkin, 1973). Decision-making skills are essential to students' ability to interpret their life experiences and to formulate a pattern of rational thought based on those interpretations.

It is essential that the non-intellectual aspects of making decisions be considered as a central part of the social studies curriculum (Shaver & Larkin, 1973). Addressing the issue of nuclear armament/disarmament would be virtually impossible without identifying the emotive, as well as the rational, elements of the issue. While there is little consensus as to which values should be stressed in the secondary
In the classroom, few educators deny the need for teaching at least some values (Barth, 1970; Fraenkel, 1980). All too often, the values presented in the public school visible curriculum, those ideas educators consciously seek to transmit to students, contrast dramatically with values implicit in the hidden curriculum, with little or no attempt by educators to address the difference (Fraenkel, 1980). It appears that students are asked by society to accept such contrasting values as the desire for peace and nuclear proliferation, often without question, when the public school social studies classroom might provide a forum for the thoughtful consideration and possible resolution of conflicting values.

If social studies has been identified as perhaps the closest thing to values education which exists in the regular curriculum of the public schools today, then the role and responsibility of the educator in presenting the nuclear power information in an objective manner is paramount (Shillenn & Vincenti, 1981). The nuclear armament/disarmament issue is relevant to the secondary social studies model for decision-making and values education because it affects so many aspects of students' lives and futures. The development of nuclear weapons is perceived by some to be reflective of an increasingly violent society, and, as the perceived
violence increases, students may feel less confident in their ability to deal with the problem. As a result, they may be reluctant to participate at all in any political or social process which may relieve the severity of this violence (Musil, 1982; Nagler, 1982). In fact, nuclear weapons are a product of modern culture and, as such, form at least part of the basis for the manner in which students view their relationship with society in general. The enormity of the issue has created an increasingly defensive attitude on the part of those who are involved either in the proliferation or freeze of nuclear weapons. The subsequent secrecy and suspicion surrounding the controversy have permeated students' perceptions of government and public participation (Musil, 1982).

Robert Jay Lifton (1982) described the more basic influence that the mere existence of nuclear weapons may have on children's concepts of the future. All humans have a conscious or subconscious desire to be connected with their cultural history as well as their future. Lifton described this symbolization of immortality in five modes: the biological connection of living through one's descendents, the theological transcending of death, the creative sense of living forever through one's work, the feeling of being a
part of nature, and the psychic or mystic experience. The possibility of nuclear conflict causes most people to experience a feeling of futurelessness, the inability to conceptualize one's long-range future, and may be responsible for much of the seeming inability of the present generation of adolescents to cope with personal as well as social problems.

Michael Carey's (1982) study of that generation of students who experienced the air raid drills in schools during the 1950's confirmed Lifton's (1982) theory of the pattern of terror followed by suppression or numbing. Reactions were often not evident until there was some associated trauma, such as threats of nuclear deployment between nations or a loss in one's personal life; but the key factor in later reaction patterns was that students, aware that simplistic defense measures (such as hiding under desks to avoid radiation) were ineffective, became confused, many overcome by anxiety.

Lifton (1982) concluded that certain themes have become apparent in the society living in the modern nuclear era. The first theme is the confusion, even equation, of ordinary death with grotesque massive annihilation. At the same time children are learning about the finality of death, they are exposed to images of meaningless death, when large numbers
of people die together. This compounds the imagery of extinction in which people lose that connection with their future. Effects of the second theme, that nothing can be depended upon, and the third theme, a general feeling that the world is crazy, manifested themselves during the social movements of the 1960's and 1970's. The inability to trust that anything will last or that one's perceptions of reality are accurate, may have been responsible for much of the attitude of meaninglessness by the hippie movement during this period. Lifton interprets the present shift toward students becoming doctors and lawyers as a desire for security in society and as part of the social response to the uncertainties of the nuclear age.

Disciplined inquiry into and the exploration of values associated with the issue of nuclear armament/disarmament are not only appropriate in the secondary social studies curriculum, but their absence may have a significantly detrimental effect on students' ability to cope with a wide range of societal problems. Many educational theorists feel even young children are capable of grasping the concepts of conflict resolution, and, as society becomes increasingly more complex, students at the secondary level still need more thorough and sophisticated coping mechanisms (Barth, 1970). Addressing
the issue of nuclear armament/disarmament as part of decision-making and values education in the secondary social studies classroom may provide students with a better understanding of many aspects of their lives. Teachers' ideas about nuclear weapons and the entire constellation of physical, psychological, and social experience around them can teach students a great deal about everyday life, about psychology, history, and humanistic endeavor in this contemporary moment (Lifton, 1982).

Limitations

Several restrictions were imposed by the selection of this topic and the type of study which followed. Very little educational literature existed concerning the specific aspect of nuclear education addressed in this study, the application of nuclear armament/disarmament to the moral decision-making model. This necessitated the synthesis of relevant information from literature dealing with three separate issues within the field of education: the development of inquiry skills, the examination of implicit values, and the specific problems involved in nuclear disarmament education. What information did exist, originated overwhelmingly from literature sympathetic to the nuclear freeze movement. Again, this required the extraction and reapplication of
pertinent references to the three areas of nuclear disarmament education. Additional information, provided by educators sympathetic to the opposing viewpoint, might have compensated, to some extent, for the lack of balanced presentation.

The list of secondary social studies department chairpersons, furnished by the National Council for the Social Studies, posed limitations as well. Lack of control over the list made it impossible to determine how recently the list had been revised and, therefore, how many currently employed instructors would actually be targeted. Also the relatively narrow selection sample prohibited a balanced regional sampling. Several factors inhibited a larger percentage of return responses. Limited time and financial resources prevented a greater percentage of sampling from the total list of names, as well as preventing the issuance of a follow-up letter to encourage respondents who had not yet answered. Additionally, it was necessary to set a time limitation of four weeks for the return of responses included in the final tabulation.

The design of the questionnaire also influenced the resulting responses and their application. In order to increase the probability of response, the questionnaire was constructed to facilitate answering. This prohibited the
development of an essay-type questionnaire which might have produced more in-depth responses. Lastly, because this survey was limited to randomly selected social studies instructors, generalizations regarding the population at large cannot be drawn from the results.

Definition of Terms

acceptable losses: loss of life, property, and authority deemed tolerable for the survival of military or political influence or the survival of the culture.

conflict: a discord of action, feeling, or effect; a controversy or prolonged quarrel (American College Dictionary, 1948).

conflict management: to control conflict in action or use; implies the use of conflict creatively or constructively (American College Dictionary, 1948; Barth, 1970).

demilitarization: to free from militarization by placing under civil rather than military control, and developing considerations for nonviolent security systems (American College Dictionary, 1948; Reardon, 1982).

disarmament education: lessons and units of instruction which address any or all of the issues inherent in the nuclear armament/disarmament controversy.
future orientation: the development of the skill of analyzing present problems and conflicts within their structural contexts so that one may better consider and act upon problems in the future (Wehr & Washburn, 1976).

global citizenship: a universal identity emphasizing common cultures amongst any socio-economic units; as it relates to disarmament, emphasizes the nature of and problems intrinsic in cultural diversity as well as the value of the survival of the human species (Reardon, 1982).

militarization: to imbue with the military spirit or policy; may range in degree from the principle of maintaining a large military establishment to the tendency to regard military efficiency as the supreme ideal of the state while subordinating other interests to it (American College Dictionary, 1948).

model: a prescriptive teaching strategy designed to accomplish a particular instructional goal (Eggen, Kauchak, & Harder, 1979).

nuclear disarmament: in this study, the broad issue addressing the controversy over whether an increase or a reduction in nuclear arms production best serves the national security of a nation and its people.

nuclear freeze: the halt in additions to present nuclear
arsenals often including a restriction in production and development of new weaponry as well.

**nuclear proliferation:** the increase of numbers and types of nuclear weapons, often associated with the concept of a build-up of existing nuclear arsenals.

**nuclear warfare:** refers in this study to a wide range of conflicts involving the use of nuclear weapons from single applications, such as at Hiroshima, to massive preemptive and retaliatory strikes.

**positive peace:** a set of social, economic, and political conditions and institutions which ensure nonviolent, nonexploitive, equitable, and just relationships among individuals, groups, nations, and the global environment (Wehr & Washburn, 1976).

**preemptive strike:** attack designed to disable the enemy's retaliatory force without intolerable danger to the attacker (Weigley, 1973).

**secondary schools:** in this study, refers to those schools, usually junior and senior high schools, which most often contain grades 7-12.

**social studies department:** in this study, refers to that group of disciplines within one school which are generally associated with the social studies or social sciences
(e.g., history, economics, civics, sociology).

**Strategic nuclear weapons**: large-scale nuclear weapons designed for massive preemptive or retaliatory strikes, and requiring intercontinental delivery systems (Weigley, 1973).

**Systems thinking**: the consideration of the interdependence and interconnections of whole sets of problems which lead one to distinguish, define, and relate various constructs such as the international political system, the war system, regional systems, and deterrence systems (Wehr & Washburn, 1976).

**Tactical nuclear weapons**: small-scale nuclear weapons of various types designed for use in limited conflicts and originally intended as compensation for unequal troop strength (Weigley, 1973).
Chapter II

REVIEW OF THE RELATED LITERATURE

Students addressing any complex social issue, such as nuclear armament/disarmament, require an advanced set of decision-making skills in order to master the cognitive and emotive aspects of the issue (Wilen & Patton, 1979). Yet there is very little literature which deals specifically with the issue of nuclear armament/disarmament as it applies to the moral decision-making model in secondary social studies classrooms. In a review of the related literature, reference to only one curriculum guide, Decision-Making in a Nuclear Age, by Roberta Snow and Elizabeth Lewis, was mentioned, and only one article dealt exclusively with the issue of disarmament as a topic for the decision-making model. Because the literature did not address this issue directly, it became necessary to examine the related literature for pertinent references to the crucial elements of this problem: the development of critical decision-making skills, the recognition and reconciliation of conflicting value decisions, and the solution of specific problems concerned with the nuclear armament/disarmament issue as a topic in the secondary social studies classroom.
Development of Critical Decision-Making Skills

Good citizenship is based upon the rational processes of perceiving, analyzing, evaluating, and eventually utilizing information so that decisions might be made. The good citizen is one who acts upon these rational decisions, not because of tradition or expectation, but because he/she has considered the issues and then made a decision promoting that which is good, beneficial, or needful (Hansen, 1981). The National Council for the Social Studies cited democratic decision-making as a fundamental goal of the social studies in creating youth who are humane, rational, participating citizens (Osborn, 1979). Responsible decision-making was assumed by most authors to include the ability to identify, define, and solve personal, local, and social problems (Engle, 1960; Hansen, 1981; Shaver, 1980; Weiss, Kinney, & Hurst, 1980; Wilen & Patton, 1979). The ability to analyze and synthesize was stressed as critical to translating the unknown into understandable terms. Analysis, breaking a problem into its component parts, demonstrates the relationship between elements of a whole. Synthesis requires the restructuring of various pieces of information into an acceptable pattern (Marty, 1983). A careful analysis of the facts, concepts, and generalizations of an issue as well as
a synthesis of all available information with the values implicit in the issue are essential in producing rational decisions. The assessment of facts through a value system was particularly emphasized (Engle, 1960; Wilen & Patton, 1979). When addressing an issue of social concern, facts rarely indicate that one side is clearly a more responsible choice, and values must be considered. Therefore, it is synthesis, rather than analysis, that is the predominate skill in decision-making. Engle (1960) described this process as one of testing one's own beliefs and convictions against the available facts and values, a step which, in turn, increases the amount of factual information available and produces a more highly skilled decision-maker.

The NCSS, in its 1979 "Revision of the NCSS Social Studies Curriculum Guidelines," stressed the importance of knowledge, intellectual skills, and values in designing goals for the social studies in general and rational decision-making in particular. Because most social issues involve information from a variety of academic disciplines, the scientific study of a subject in its pure form is inappropriate for the synthesizing process of decision-making. Without a solid foundation of facts, concepts, generalizations, and theories from many sources, participation in the affairs
of society would be ineffectual and irresponsible (Osborn, 1979).

The intellectual skills involved in processing data, analyzing, synthesizing, and evaluating, are essential to responsible decision-making. One goal of the social studies teacher should be to lead students toward these higher cognitive processes, for knowledge of the facts does not insure a student's ability to discern the relationships between the diverse components of a problem which is part of analysis (Patton, 1980). The NCSS guidelines devoted special attention to divergent (or flexible, creative) thinking and valuing. Divergent thought requires an extensive knowledge of the facts as well as the ability to restructure or synthesize those facts into a logical base for inquiry; but it also demands the skill and courage necessary to risk error and explore what may be unpopular points of view (Osborn, 1979).

There were a variety of decision-making models described in the related literature, most of which emphasized basically the same process but with different types and numbers of stages. The decision-making process consists essentially of identifying a problem, developing alternatives, evaluating the alternatives, and making a decision (Hanna, 1979). An expanded version of the basic decision-making models was
developed by the Orange County Area Social Science Association Workshop to include eight steps:

1. **Definition.** Define the situation, conflict, question, opportunity, or problem. What two or more issues are involved?

2. **Facts.** Identify the facts. In this situation, what can be proven to be true, based on reliable sources of information?

3. **Feelings.** Describe personal feelings and what others may be feeling. How do I feel? How do others feel? How are these feelings different from the facts related to the decision?

4. **Alternatives.** Identify as many alternative choices as possible. Considering the facts and feelings, what alternatives are possible in this situation?

5. **Outcomes.** Describe the possible outcomes of each choice. For each choice what are the positive and negative outcomes, the costs and benefits?

6. **Decision.** Choose the best alternative. Given choices, outcomes, and personal priorities, which alternative is best?

7. **Plan.** Outline a definite plan to act on the decision. Now that the decision has been made, what specific steps should be taken to put it into action?

8. **Evaluation.** Identify the criteria to evaluate the effectiveness of the decision or the process of deciding. Was the decision a good one? (Biles, 1979)
Wilen and Patton (1979) described another decision-making model called mixed scanning, developed by Amitai Etzioni, which emphasizes the transition from inquiry to social action while dealing with facts and values. Etzioni's model consists of five stages, all similar to the Orange County model but focusing on the psychological process through which students move to make decisions. The first stage, identification of the problem, centers around the need for students to reconcile the realities of a particular issue with the desire for that situation to exist in an ideal state. As students attempt to reconcile this discrepancy in the second stage, they gather information on which rational alternatives can be based. Once alternatives are reduced to those most conducive to attaining the ideal state, students may select the most desirable alternatives. This third stage involves a systematic analysis of the alternatives based on inconsistencies of values as well as facts. The fourth stage is a synthesis of one's decision with a plan of implementation and the development of alternative plans. The reconciliation of the original situation in its existing state with the ideal state characterizes the fifth stage in which one assumes a plan of social action to be implemented (Etzioni, 1968).
Another model presented in the literature, this one developed by Janis and Mann (1977), resembles the other models in its basic form but focuses on research skills and has as its objective a process which is likely to result in an outcome consistent with the personal objectives of the decision-maker. This model is concerned with the participant's continued attention to implementation over a period of time. According to Shaver (1980), Janis and Mann neglect, to some extent, the possibilities of conflicting values and tend to interpret most standards as good or bad. In this model, the decision-maker:

1. thoroughly canvasses a wide range of alternative courses of action.

2. surveys the full range of objectives to be fulfilled and the values implicated by the choice.

3. carefully weighs whatever he knows about the costs and risks of negative consequences, as well as the positive consequences, that could flow from each alternative.

4. intensively searches for new information relevant to further evaluation of the alternatives.

5. correctly assimilates and takes account of any new information or expert judgment to which he is exposed, even when the information or judgment does not support the course of action he initially prefers.
6. reexamines the positive and negative consequences of all known alternatives, including those originally regarded as unacceptable, before making a final choice.

7. makes detailed provisions for implementing or executing the chosen course of action, with special attention to contingency plans that might be required if various known risks were to materialize. (Janis & Mann, 1977)

Many classroom teachers have had problems in implementing curriculum exercises which correlate factual information with critical thinking processes. This simple procedural outline of a decision-making exercise offers teachers a model that can be adapted to their existing curriculum and skills. Step I is the selection of a critical issue based on the following criteria:

(a) Is it a topic that will engage your students' interests and emotions?

(b) Are there clear cut choices to be made?

(c) Can divergent interpretations of the incident be obtained?

(d) Are there substantive moral issues involved? (Victory, 1979)

Step II involves the preparation of a research exercise that employs real life situations as a basis and provides each student with a chance to participate. In Step III, a
set of questions should be developed to determine:

(a) What the student's decision was,

(b) the factual basis for the decision,

(c) the extent of awareness of possible prejudices that might influence the data or perception of the data, and

(d) the basic moral assumption on which the decision was based. (Victory, 1979)

One part of the decision-making model that received special attention by authors was the selection of a topic. This step is crucial if teachers want to demonstrate the appropriateness of nuclear armament/disarmament as a classroom topic and if the primary objective of the decision-making exercise is the development of a willingness to carry out one's choices. Students should confront four key questions in order to initiate the first step in decision-making:

1. Are there serious risks involved if change does not occur?

2. Are the risks serious if change does occur?

3. Is it realistic to hope that a more viable alternative than the present course of action can be found?

4. Is there sufficient time in which to search for alternative solutions and assess their acceptability? (Janis & Mann, 1977)
Patton (1980) provided other criteria for the same purpose. He suggested that teachers encourage their students to consider whether the issue is: (1) of historical importance, (2) of contemporary interest, (3) of local priority, (4) newsworthy, (5) of political importance, and (6) humanitarian. The selection of content and the formulation of pertinent questions are the most important part of any decision-making exercise. Because the purpose of inquiry strategy is to develop important questioning skills, it is crucial to organize any exercise so that these skills will be developed sequentially (Victory, 1979).

Also suggested in the literature was a "Problem-Defining Worksheet" that illustrates this developmental inquiry process:

1. What are the important goals or values involved?....
2. What information is needed and where do we find it?....
3. What choices are to be made?....
4. What conflicts are involved?....
(Weiss, Kinney, & Hurst, 1980)

This initial phase of decision-making is important because it is at this point that students develop their own view of the problem to be solved. As students work through these
phases of problem-solving, they are continually clarifying their perspectives of the question at hand and learning to adjust their viewpoints as new information is discovered. Other problem-solving techniques such as systematic decision-making, the Organizational Problem Solving Scheme, the Group Nominal Technique, problem solving with regard to personal needs, require essentially the same skills but are designed for use under varying circumstances (Weiss et al., 1980).

The literature dealing with decision-making models addressed other issues as well. Several teaching techniques which adversely affect how students are taught to reason were denounced. One harmful technique is ground-covering, the enforced drill of large amounts of seemingly unrelated material. While it is true that effective decision-making requires far greater quantities of factual information than is usually available in one textbook or teacher lecture, this information should come from a wide variety of sources and will, of necessity, provide more data than students may be expected to memorize. It is a common assumption that to memorize is to be capable of effective reasoning, but the teaching of isolated facts most often leads to hasty generalizations which do not reflect accurate relationships between these sets of facts. Such knowledge is meaningless, its mere
accumulation a waste of time. The belief that students must be exposed to and commit to memory a great deal of information before being allowed to draw inferences from it was also refuted. This approach ignores the established precepts of scientific investigation in which hypothesis regarding possible relationships are tested with observable facts. As most students will not be able to memorize large quantities of information, requiring that they do so actually reduces the data base for the individual student. The decision-making process which demands a constant re-assessment of one's knowledge and attitudes is far more likely to result in long-term cognitive skills development than rote memory (Engle, 1960).

Semantics were cited as a hinderance to students' understanding of issues as well as an aid. Teachers should clarify hazy references by organizing functional definitions for the terminology of the topic as well as demonstrate to students the capacity for certain words and phrases to elicit emotional or stereotypical responses. In addition, students should learn to view words as psychological symbols which may influence the way one synthesizes the information at hand (Shaver, 1980). Sloan (1982), disturbed by political leaders' sanatized use of such phrases as preemptive deterence, surgically clean strikes, and a wider menu of nuclear options,
emphasized a renewed respect for language. Human language is designed to reflect a wide range of intrinsic meanings rather than serving as purely utilitarian symbols to be manipulated at will. Therefore, students should be exposed to the full range of nuances of meanings of those terms needed to examine the nuclear issue.

According to the literature, students must also learn to evaluate information carefully with regard to the particular prejudices of its source. In addition, they should be aware that informational sources are components of the overview, not the overview itself. Experts should serve only to provide information to, not serve as, the student's own model. Social participation must come from personal commitment and not from one's reliance on the opinions of experts (Shaver, 1980).

The quality of decisions in social studies classrooms was of particular concern to Shirley Engle (1960) who reported fewer errors in logic in math, science, and even English classrooms than in the social studies classroom. The most common errors seemed to be the acceptance of assertions as facts, confusing facts with opinions, the validation of the truth of something on authority, the acceptance of a merely plausible explanation as sufficient explanation,
failure to establish functional definitions before engaging in discussions in which a particular term was the key component. Persistent practice in critical thought is the only solution and should be pursued as systematically in the social studies classroom as it is in the scientific laboratory.

The reality of achieving the goals of the decision-making process was another consideration among authors. Not only was it deemed important that models and activities be designed to meet the cognitive achievements and needs of the students, but it was also deemed necessary to consider the possibilities of implementation by teachers. While secondary teachers tended to teach knowledge less for its own sake than college professors, evidence showed teachers were more likely to teach the textbook. The dilemma of whether to promote existing ideas and values or to promote new, creative methods of reasoning should not require an acceptance or rejection of either. Both critical thinking and the passing along of traditional information are important in secondary social studies education; it is the correct balance of the two that one must consider in setting curriculum goals and guidelines. (Shaver, 1980).

Resolving Conflicting Value Decisions

Any discussion of controversial issues such as nuclear
armament/disarmament inevitably reveals varying, often conflicting, values. But humane and rational decision-making are not polar constructs, and, in the relevant literature, the role of valuing in social studies education received a great deal of attention, particularly as it related to rational decision-making (Shaver, 1980). Several authors pinpointed social participation as a desirable objective for secondary social students; thus the products of inquiry require a willingness on the participant's part to consider social issues. It is important that decision-making goals include affective, as well as cognitive, goals and some type of values education (Hansen, 1981; Osborn, 1979; Shaver, 1980).

Both Fraenkel (1980) and Lockwood (1978) have studied the effects of values education on students' development of moral decision-making. Fraenkel's study revealed that the prevailing mode of values education, inculcation (an attempt to instill or change a student's value system to conform with what is widely accepted), seemed to have produced little change in student attitudes or behavior. The NCSS guidelines warn against the use of indoctrination or inculcation as it inhibits students' ability to think constructively about social problems by encouraging them to recognize and accept a single set of standards. Not only does this hinder rational
processing, it is clearly contrary to the goals of a pluralistic, democratic society; more often than not it discourages teachers from addressing controversial issues which may involve conflicting values (Osborn, 1979).

Lockwood (1978) reported no significant evidence that values clarification programs, designed to provide students with a more positive awareness of their values and decisions, influenced the types of values students were likely to hold. Neither the values clarification model, nor the moral reasoning model (which most often entails student discussions requiring a justification of reasoning), appeared to have significant affect on the development of moral reasoning past stage four in Kohlberg's cognitive-developmental model of morality (Fraenkel, 1980; Kohlberg, 1972; Raths, Harmin & Simon, 1978). However, both studies showed that, while direct discussions of moral dilemmas did not change student behavior, students tended to act in a more moral manner when capable of reasoning at higher (Kohlberg) levels (Fraenkel, 1980; Kohlberg, 1972; Lockwood, 1978).

Most authors agreed that the primary objectives in resolving value conflicts must be to help students recognize the role of valuing in reaching effective decisions and analyzing the affective results of those decisions (Fraenkel,
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1980; McCormick & Love, 1982; Newton, 1978; Smith et al., 1967 & 1970; Tymchuk, 1982). Toward this goal, Fraenkel (1980) proposed a restructuring of objectives for values education around four areas: (1) knowledge objectives (determining what influences the way people behave), (2) cognitive skill objectives (the predicting, inference, analysis, and evaluation of people's behavior), (3) affective skill objectives (increasing awareness and willingness to recognize and participate in interpersonal relationships), and (4) motivational objectives (encouraging the desire to use these skills and information in the appropriate situation).

Tymchuk (1982) suggested that the first step toward moral decision-making is the recognition of value dilemmas, initially through the use of specially designed vignettes, then later with actual case studies. Once the value dilemma has been identified, there are several models through which students may gather information pertinent to the assessment of their value decisions.

John L. Newton (1978) described a process similar to most decision-making models but with a particular emphasis on the values inherent in each phase of rational inquiry. Step I is the definition of the problem in such a way that it is meaningful to the student. Step II requires that values
implicit in the problem situation be identified and that students relate how these values may be important in their own lives. In Step III, teachers encourage the consideration of alternatives or divergent points of view with a focus on having students imagine themselves involved in each alternative situation, express their feelings, and state the reason for such feelings. Any solutions which evolve from such a discussion may be stated briefly and clearly.

Step IV of Newton's (1978) model consists of a statement of both positive and negative consequences of each alternative. Again, students should express their feelings as if they were involved in each consequence and should re-examine the values previously identified in the problem situation. Deciding upon the most favorable course of action occurs in Step V, as students are encouraged to explain their decision and whether or not their feelings about the problem situation have changed during the inquiry process. Finally, in Step VI, students should be able to draw generalizations about human behavior and feelings during similar problem situations. Newton's (1978) model was designed to help students break complex value dilemmas into more manageable components and to encourage them to integrate affective reasoning with rational decision-making by expressing their personal feelings during each stage of
Tymchuk (1982) described several process factors which represent society's ground rules for reaching moral decisions. While these factors will not tell students whether a decision is right or wrong, they may help define what needs and interests must be balanced when gathering information. Though Tymchuk's factors were originally developed for professional social scientists (two factors specifically addressed professional concerns and are not mentioned here) and graduate students, they may be modified for use in the secondary classroom. These factors include:

1. Right of individual versus the public interest.
2. Avoidance of illegal or unjustified acts without adhering to "bad laws."
3. Using humanitarian and scientific knowledge in novel cases.
5. Multilateral decision processes. Those who will be affected by a decision should participate in the decision. (Tymchuk, 1982)

Judging the quality or rightness/wrongness of a decision requires the specification of those criteria by which a moral decision will be assessed (McCormick & Love, 1982; Smith et al., 1967 & 1970; Tymchuk, 1982). Tymchuk (1982) offered the
following criteria which, he suggested, be employed in an integrated method:

(1) **Cost.** Rightness is often measured in terms of the economic, psychological, or social cost of one course of action, as compared with the cost of an alternative course of action.

(2) **Time and effort.** The amount of time and effort required to solve a given problem needs to be considered.

(3) **Benefits and risks.** The most commonly used criteria for judging the goodness of an ethical decision are the comparative risks and benefits of the alternatives. Cost, time, and effort can be viewed as part of the risk/benefit decision.

(4) **Other aspects.** There are other criteria for making ethical decisions that are just as important as those already mentioned. First, risks and benefits must be considered both for the short-term and the long-term future. Second, the probabilities of the occurrence of the various risks and benefits must be considered. Third, the evidence on which this information is based must be established and scrutinized. (Tymchuk, 1982)

A pattern of performance that teachers of English, history, and social studies exhibit, sometimes unconsciously or only partially, when addressing value questions was identified in the related literature. The first step required in valuing is the identification of the value object, or that person, event, belief, action, policy that has been selected for
evaluation. Anything may be an object of evaluation, but usually a value object will be in some way associated with people and their actions (Smith et al., 1967 & 1970).

The next step is an explanation of the value term and establishment of the criteria to be applied in reaching a judgment of value. Value, in Smith's model, is the worth one attributes to something, rather than an expression of attitude. The rejection of an object of value requires an explanation; there must be a valid reason for rejecting objects of value. To establish the criteria for determining whether an object is good, true, or right, one must describe those properties of the value object that are relevant to evaluation. The final step in Smith's model of evaluation is the determination of a justified rating by comparing the established criteria with the actual properties of the value object and the subsequent assignment of the value term to the object if it does indeed possess those criteria (Smith et al., 1967 & 1970).

McCormick and Love (1982) also provided a process for analyzing students' value decisions which offers a few variations on the typical decision-making model. They suggested the use of brain-storming to provide not only alternative actions, but also the criteria upon which value judgments
will be made. The criteria should then be categorized as either practical considerations, relating to pragmatic concerns such as cost, feasibility, or ideal considerations, relating to values such as individual rights or social benefit. These may be listed visibly near the alternative they represent. Students are then provided with a recording sheet (Appendix B) on which are listed alternatives, practical considerations, and ideal considerations. Each alternative is then rated subjectively on a one to five scale (e.g., very practical--1, very impractical--5) according to its pragmatic and ideal criterion. One rating score is placed in the upper-left diagonal, the other in the lower-right diagonal. Individual scores may be calculated for all pragmatic considerations, then ideal considerations for each alternative providing the student with a decision as to the alternative's value. Group scores may also be tallied for group decisions.

Students may wish to pursue the exploration of the role of values in decision-making by examining correlations between practical and ideal considerations. Table XIV demonstrates a method for representing sets of data pairs for each alternative. Data pairs may then be plotted on a scattergram to determine whether there is a positive, negative, or no correlation between the practical and ideal considerations in each
set. (Tables XV & XVI) A correlation may be represented during individual decision-making between any one practical and any one ideal consideration by plotting the rating number for each. Similarly, correlations between an individual's overall practical and ideal considerations may be plotted using the totals of the practical and ideal ratings. The correlation thus obtained may be used as a rough measure of the effectiveness of the group or the method in making a decision on a problem (McCormick & Love, 1982).

This model, while not practical in every values or decision-making lesson, has several advantages. First, it explores the decision-making process in considerably more depth than most exercises. Second, it provides the integration of the affective components of inquiry with the cognitive and skills content. Finally, it provides valuable insight into the methodology used in formal decision-making and the process of simple statistical analysis (McCormick & Love, 1982).

Addressing Nuclear Armament/Disarmament

Most references in articles to nuclear armament/disarmament as a critical issue in the secondary social studies classroom were found in the so-called peace literature which defines as its objective the promotion of any form of action aimed at limiting, controlling, or reducing arms and ultimately
general and complete disarmament (Thee, 1981). Specific references to the issue of nuclear disarmament as a subject for the development of critical inquiry skills were written from the perspective of the above definition of disarmament, and few references could be found which were designed to direct students through a purely objective treatment of the topic. Rather, as is pointed out in an extract from the "Final Document of the World Congress on Disarmament Education," disarmament education should aim at teaching how to think about disarmament rather than what to think about it. It should therefore be problem-centered so as to develop the analytical and critical capacity to examine and evaluate practical steps toward the reduction of arms and the elimination of war as an acceptable international practice (Thee, 1981). Because peace educators have examined the issue of disarmament as it is presented in the classroom so thoroughly, there are many elements of their teaching strategies, as well as those of other authors, which may contribute to the development of a decision-making model addressing the nuclear disarmament/disarmament issue.

One of the principles in disarmament education considered most important in the literature was the introduction of nuclear war and disarmament with awareness of student sensitivity to the subject. Several authors decried the apparent
separation of feeling and emotionalism from the study of the implications of living in a nuclear society. According to Musil (1982), moral schizophrenia is the essence of deterrence theory. It is the primary contradiction in postmodern thought that gives it its characteristic mode—amoral absurdity.

When students are confronted with either conflicting information and emotions concerning nuclear war or a lack of either, the prospect of nuclear destruction can render them cynical and fearful, and subject to political or social impotence as they become overwhelmed by the subject (Johnson, 1982-1983; Musil, 1982). Therefore it is critical that classroom teachers approach the subject with sensitivity to their students' level of maturity and awareness of the issue. As evidence that a heavy-handed approach does not work, Johnson cited a report from Roberta Snow, who serves as coordinator of the Nuclear Program in the Facing History and Ourselves Project in Brookline, Massachusetts. In this project, students in grades 7-12 in a suburban school system were shown War Games, a film which simulates a nuclear attack on the city of London. Having had little or no preparation for this graphic representation, students were incapable of synthesizing the information provided by the film into a productive tool for developing decision-making skills. Snow recognized the potential usefulness
of films like War Games, but maintained that students need a context for understanding the facts and time to talk about their concerns and questions (Johnson, 1982).

The adaptation of familiar consciousness-raising techniques to the classroom may be one method of both introducing the topic and alleviating some of the numbness that students have probably developed out of fear of the topic. There are several other benefits which may come from allowing students to share nuclear stories and fears. Sharing feelings with students in a classroom discussion demonstrates the universality of fear regarding nuclear war and confirms the dilemma of the issue which makes it appropriate as a subject of inquiry. It also establishes the need for change in society and individuals—in the manner in which this issue is addressed and, thereby, also provides an impetus for social participation (Musil, 1982).

Open discussions of nuclear disarmament may also help students relate this issue to their personal experiences. The nuclear disarmament issue involves conflict resolution on a grand scale, but, according to the literature, conflict resolution is appropriate to the curriculum of any grade level. Secondary students with no background in the principles of conflict resolution may be introduced to discussions
or exercises in which conflict is highly personalized and obviously relevant to those students' experiences. However, one objective of the secondary teacher should be to familiarize students with social issues in such a way that students recognize the relevancy of issues which do not visibly touch their everyday lives. This goal is more easily achieved if the community displays some interest in the topic. The promotion of a global perspective, that is, seeing the world's problems in a larger sense than one's self or one's nation, is one key to establishing the relevancy of the nuclear arms race (Barth, 1970; Markusen et al., 1981).

One critical hinderance to creating reflective, committed citizens is a modern tendency toward the compartmentalization of actions and their consequences. Instead of encouraging decisions based on an awareness of their relationship to the common good, society appears to be moving toward an increasingly self-serving isolationism. The result may be the disassociation of technical developments (in this case, the development of nuclear weapons capability) with their effect on humanity at large (Greene, 1982). Teachers should point out that social action consists of the decisions of many individual decision-makers who share common concerns. Curriculums for nuclear armament/disarmament should be designed
in such a way that students are able to overcome hopelessness in dealing with an issue of such magnitude, and learn to direct their energies toward making rational choices based on personal commitment, moral responsibility, and compassion (Markusen et al., 1981).

Students require a firm foundation of empirical data upon which to base their discussions and decisions (Markusen et al., 1981). Although, as curriculum writers were aware, teachers must make difficult decisions concerning which facts and concepts are to be addressed during the treatment of any topic, four generally accepted sets of facts were considered necessary to any enlightening discussion of nuclear disarmament (Johnson, 1982). The first set of facts focuses on an understanding of the medical, economic, and social effects of nuclear weapons and of their delivery systems. This includes information about weapons of varying destructive power, from small-scale street weapons used by terrorists to sophisticated space weaponry (Reardon, 1981a). Yet Johnson (1982) warned against introducing data and terms that are too technical. Students are likely to be overwhelmed and lose interest, so teachers must determine what level of information their students can absorb.

The second set of facts concerns the history of the arms
race. Students are better able to comprehend the direction and force of future nuclear proliferation if they first are aware of the decisions and objectives of the project to design the first atomic bomb, the Manhattan Project. An overview of the effects of the development of nuclear weapons on international relations should promote a keener appreciation for the role of nuclear weapons in such international crises as the Cuban Missile Crisis and the Cold War confrontations, and provide an understanding of the emergence of groups opposed to nuclear proliferation from the early ban-the-bomb movements to the present SALT talks (Johnson, 1982).

There are many resources available which may provide information regarding the third important set of facts, the current status of the nuclear weapons race. While figures vary depending on the source of information, it is not as important for students to know exactly the number of weapons in each country's arsenal, as it is for them to be aware of new weapons development and delivery strategies. An even more essential element of the arms race is its political, social, economic, and scientific context. Students should learn more about the increasing mistrust in international politics and its effects on the foreign and domestic policies of the countries involved (Johnson, 1982). Teaching about
the nature and volume of weapons production and the resulting quality of life promotes a scientific view which is necessary if students are to grasp the full destructive potential of nuclear weapons as they affect humans, property, and the environment (Reardon, 1981a).

The fourth set of facts, the moral and ethical implications of possessing nuclear weapons, should also be examined. It is important for students to be allowed to imagine creatively how they would want these weapons to be deployed. Issues such as acceptable loss, first strike capabilities, the role of the military in a democratic society, and the right of one nation to threaten the survival of the entire human race, harbor moral and ethical questions which form an integral part of students' fears and misunderstandings about nuclear warfare. The discussion and development of an ideal policy of deployment also might give students more confidence in deciding what type of nation they have and wish to create (Johnson, 1982).

Some of the concepts suggested by the related literature for a curriculum of nuclear armament/disarmament included war and peace, conflict and conflict management, positive peace, militarization, demilitarization, global citizenship, systems thinking, and future orientation (Reardon, 1981a &
1982; Wehr & Washburn, 1981; Wiberg, 1981). Paul Wehr and Michael Washburn (1981) suggested a conceptual framework based upon a synthesis of abstract theory with concrete research and structured so that key concepts and ideas serve as a focus for discussion. This process recognizes a body of knowledge existent in the disarmament issue, serves as a framework for research, discussion and teaching activities, and aids teachers in an analysis of the results of learning and in determining what information is necessary for future discussion.

Successful armament/disarmament education should also include the objective presentation of all sides of the issue. Some peace education literature reflects a wariness of balanced presentation because of what they feel is the predominate acceptance in modern culture of violent resolution to conflict. But Eric Markusen et al. (1981) stated specifically that objectivity is essential, information should come from a variety of sources and viewpoints, and no attempt should be made to advocate either disarmament or proliferation. This objectivity is supported by Shillenn and Vincenti (1981) who felt that correlating the cognitive and affective skills of learning necessitates the varied input available from team-teaching and the re-orientation of most classroom teachers toward this goal. Students should engage in extensive primary source
research including oral interviews, government documents, the business press, and corporate reports to compensate for the lack of balanced information found in Fitzgerald's study of American history textbooks (Musil, 1982). Johnson (1982-1983) described a models approach in which students are provided with an overview of various models for dealing with nuclear disarmament, each representing a different view or approach, then encouraged to discuss and analyze the advantages and disadvantages of each.

Wiberg (1981) recommended an interesting rationale for presenting several theories of the armament/disarmament issue. The highly controversial nature of the topic is likely to hinder seriously its adoption into the curriculum of any nation participating in the arms race. Yet stripping the issue of its controversial characteristics would require a refusal of the scientific realities of disarmament and would result in little more than a watered-down version of government policy. Wiberg's solution is to address the two, or more, sides objectively and scientifically, without giving priority to either, thus earning the political acceptance required for the topic's introduction into the curriculum.

This argument is especially pertinent as any research into the facts of disarmament is likely to result to some
extent in what is referred to as the unmasking of officialdom. Students' questioning and critical analysis of the facts will in all likelihood uncover contradictions in national policy and public information which must be addressed to decrease the growing cynicism and mistrust of youth for the federal government (Sloan, 1982). This research should not be confined to the United States' policy; the role of the Soviet Union in arms proliferation should be examined as well without the sentimentality that so often occurs in analyses of Soviet intentions. Inconsistencies in information provided by either government should be exposed objectively and rationally. Shillelln and Vincenti (1981) devoted a considerable portion of their writing to the assimilation and analysis of conflicting information. Accuracy is especially important when the topic of discussion is as controversial as nuclear power, and information should be viewed from two perspectives. The correctness of information is relatively easy to verify through a careful examination of facts from a variety of sources.

More difficult to assess is the intellectual honesty of the content and assumptions which may be prejudiced, incomplete, or based on unproven information. Students should learn to examine informational sources carefully, then
evaluate conflicting information according to the precepts of logical thought, paying particular attention to the possibilities of hasty generalizations, begging the question, and faulty emphasis. Once students have developed a solid foundation of empirical data, they may proceed to the critical analysis and synthesis of these data (Shillenn & Vincenti, 1981).

This next step in the analysis of the nuclear disarmament issue involves a comprehensive, synthesized, and multi-disciplinary approach (Markusen et al., 1981). An analysis of the component parts of the issue is implied in several authors' suggestion to examine the semantics, symbols, and logic of the issue as well as the factors that affect how conflict erupts into violence and the various methods of conflict management available to individuals and nations (Musil, 1982; Richert, 1979).

Wiberg (1981), who displayed special interest in transnational educational cooperation, suggested that the presentation of a variety of analytical models is desirable when addressing the disarmament issue. No one theory enjoys the consensus of educators, and each may differ in such aspects of the issue as the scope of application, complexity, empirical support, theoretical status, social standing or acceptance,
and degree of precision. A varied presentation may also aid the analysis of the many controversies surrounding this issue, and the exposure of those theories which have achieved almost official status with their acceptance by participating government.

Three models for analyzing the dynamics of the armament/disarmament issue were described by Wiberg (1981). The first, the action/interaction model, assumes that nations develop nuclear weapons policies in direct relationship to the policies other nations develop. This type of action may be purely defensive in nature, or it may be an attempt by nations to maintain security through parity of weapons potential. Whatever the motives involved, neither side is assumed to be motivated by illegitimate or immoral designs, nor is either side assumed to be devoid of such intention.

Wiberg's (1981) second model is often referred to as the military-industrial complex model and is based on the assumption that one side develops a nuclear policy reflective of internal problems and considerations, while the opposing side simply reacts to that position in determining its own policy. Here again, motives may vary widely including a perceived need for military expansion, national economic interests in the armament industry, bureaucratic decisions affecting
military preparation, interests in employment of specialized sectors of the population, and varying ideological commitments to military defense as a means of national security.

The third model, referred to as bilateral autism, maintains that both sides are motivated by internal forces and as these forces may differ widely, depending on the structure of that side's government, they act independently of one another, not in reaction. These theories are highly formalized, and many other proposals utilize a combination of these models to explain the nature of armament/disarmament policy (Wiberg, 1981).

Most authors agreed that any comprehensive analysis of disarmament issues must contain information and inquiry processes from a variety of disciplines. Economics, history, political science, psychology, science (physics and medicine), and sociology are some of the disciplines mentioned which provide information that gives students a more complete data base and a wider perspective of the issues involved (Musil, 1982; Nastase, 1982; Reardon, 1982).

Another point of widespread agreement was that a curriculum for armament/disarmament education should be value-centered. These values were defined as international understanding, tolerance of ideological and cultural diversity,
and commitment to social justice and human solidarity (Thee, 1981). Some authors were not specific about the desirable values to be emphasized, rather they stressed the importance of analyzing this issue from a perspective that addresses the human feelings and emotions inherent in the issue. Musil (1982), in particular, opposed the type of consideration that is almost cavalierly devoid of any moral concern and exhibits features of mechanization and depersonalization. An examination of the personal prejudices and perceptions of nuclear disarmament is essential to the development of creative alternatives to present policy (Nastase, 1982).

The failure to develop futuristic exercises in secondary social studies curricula prevents students from forming skills or models designed to solve seemingly irresolvable problems. What little emphasis on developing creative alternatives does exist, rarely relates to arms and security issues. Consequently, students may have a great deal of difficulty imagining the creation of new institutions and systems for dealing with the nuclear question (Reardon, 1982).

One interesting approach to the development of creative alternatives is the future studies model proposed by Fischer (1981). The goal of this model is quite similar to Reardon's objectives in that it provides a cognitive understanding of
contemporary issues through the consideration of future possibilities being shaped already by current decisions. A systematic examination of future consequences helps students recognize future trends and aids them in the development of alternatives that will produce desirable future consequences. An initial exercise asks students to identify present possibilities not available in the past and desired possibilities not now available. This establishes a correlation between present decisions and future consequences on a personal level. From this exercise, students may be guided through a more advanced process of future studies which includes four steps: (1) trend identification (students list issues related to war and peace and identify any trends which emerge), (2) future projections (based on the trends developed in step one), (3) future models (development of models based on research and brain-storming sessions in which information is shared), and (4) policy creation (students develop policy by working back in time from the ideal model to the present). Once students have developed these policies they may be ranked according to the policy's ease of implementation and degree of positive feedback.

Resources for information and suggested teaching aids concerning the nuclear armament/disarmament issue varied
widely, but, again, most came from the peace education movement. An examination of modern literature and film was suggested as particularly useful in demonstrating the degree to which modern culture is preoccupied with violence and nuclear conflict. Some suggested titles included Kurt Vonnegut's *Cat's Cradle*, Nevil Shute's *On the Beach*, and films such as *Dr. Strangelove; Or How I Learned to Stop Worrying and Love the Bomb*, *Fail-Safe*, *Panic in Year Zero*, and *The Planet of the Apes*. Musil (1982) felt Vonnegut's work was representative of the trend toward black humor in nuclear age literature. *Cat's Cradle* expresses much of the same voidness of sensitivity and creative solutions as one finds humorously expressed in the movie *Dr. Strangelove*. In fact, the satirical absurdity of *Dr. Strangelove* may be more beneficial as an aid to those struggling to comprehend nuclear destruction than more serious attempts at the same subject:

The film allows viewers to absorb and contemplate what is otherwise a chilling, unfathomable, almost unbelievable scenario—the end of the earth. Just as important, it discredits the well-meaning liberal, deterrent motions, the rationalistic poses that underlie and actually maintain the nuclear arms race. (Musil, 1982)

*Panic in Year Zero*, a somewhat camp rendition of one family's struggle to cope with the aftermath of nuclear destruction, was considered to be based in social reality. It
may serve two purposes. First, the absurd assumptions and actions taken by the previously mild-mannered Ray Milland allow students the same opportunity to laugh and engage in discussions as the black humor of Dr. Strangelove. Second, as a product of the early 1960's, this film reflects much of the feeling, both official and popular, about limited nuclear conflict and survival techniques. Particularly effective is the theme that one must destroy in order to save, represented by Milland's total disregard for the safety of others as he tries to save his own family (Musil, 1982).

Educational films directed specifically toward the issue of nuclear armament/disarmament provide a dramatically visual impact missing in lectures and readings (Wehr & Washburn, 1976). Here again, many of the films available are produced by proponents of nuclear freeze, but most may be effectively introduced into a decision-making lesson. Films, tapes, slides, and records (Appendix D) may be used in a variety of methods (Dowling, 1980; Melman, 1982; Musil, 1981; Reardon, 1981a).

Simulations, small group experiments, lab games, modeling, and role-playing were suggested techniques for teaching this issue, techniques which help free students' imaginations and develop their evaluation and planning skills (Patton, 1980; Sorenson, 1981; Wehr & Washburn, 1981; Wiberg, 1981).
Simulations are experimental models of reality which allow students to participate in simplified versions of complex situations, providing the type of concrete experiences lectures and reading can not. They also encourage students to construct, simulate, and criticize their own models of society, decision-making, and conflict resolution. Small group experiments and lab games may illustrate the fact that how a situation is constructed and the natural process of interaction more often determine the outcome of social interaction than the motives and personalities of those involved. It may also demonstrate that the representatives of particular groups may be more influenced by the group's expectations than by their own intentions (Wiberg, 1981).

Students need both verbal and visual models to simplify existing systems and for imagining future alternatives. A good model may help students to clarify their own preferences for the future and restructure their own models according to these preferences. Simulations and role-playing exercises allow students to participate vicariously in controlled settings before participating directly in real-life situations in one's school or community (Patton, 1980; Wiberg, 1981).

Periodic essays encourage students to initiate synthesis of information, though this exercise must be carefully designed
to take into consideration the intellectual development of the given age group. Since most students will not become professional scholars, authors warned against bibliographical overkill and urged selectivity in materials, which may require assigning limited sections rather than entire books and edited, duplicated materials (Wehr & Washburn, 1981). Additionally, students should be trained to analyze and interpret public information media such as newspapers and the broadcast media (Reardon, 1981a).

Some of the beneficial effects of a comprehensive nuclear education curriculum were delineated in the related literature:

- Citizens will be provided with information necessary to recognize the threat of nuclear war and to evaluate policies and proposals of the nuclear elite. They will also be able to judge political candidates on the basis of facts, rather than rhetoric...

- Educators and scientists will demonstrate their conviction that the threat of nuclear war is the ultimate problem...

- The challenge of explaining complex and controversial issues to non-experts will stimulate instructors to clarify their own thinking and assumptions. Exposure to contributions from many disciplines will enhance the experts' own comprehension of nuclear war...

- The focus on psychological issues will encourage people to confront their own denial and numbing. Awareness of avenues
for constructive action will counteract feelings of helplessness and futility....

The synthetic, multi-disciplinary approach will suggest new directions for research. (Markusen et al., 1981)
Chapter III

RESEARCH, DESIGN, AND PROCEDURES

Introduction

This study was designed to determine the current status of the nuclear armament/disarmament issue in secondary social studies classrooms. In particular, it sought to establish the legitimacy of this topic in the secondary curriculum and to provide guidelines for its use in the decision-making model.

Population

The preparation of this survey was based on the recommendations and guidelines provided in a review of the related literature. An attempt was made to sample social studies instructors of long standing in both public and private institutions. Therefore, it was decided that a random selection of department chairpersons would provide the most enlightening responses. A list of 787 social studies department chairpersons from both public and private schools was obtained from the National Council for the Social Studies (NCSS), headquartered in Washington, D.C.
Instrument Selection

In that no questionnaire was available to test the data, an original instrument was developed to determine the nature and extent of the use of the nuclear armament/disarmament topic in secondary social studies classrooms. To ascertain the validity of questions and responses in the regular sample, a field test of 72 randomly selected department chairpersons from the NCSS list was conducted. The response rate was 49%, and the instrument was revised based upon the data received.

Activities and Procedures

The NCSS list of names was divided into representatives from both public and private institutions, then 100 private and 300 public school representatives were randomly selected from the list. Mailing labels were provided by the NCSS, so surveys were mailed to individuals at their homes or respective institutions as indicated. Each survey (Appendix A) was accompanied by a cover letter and a self-addressed, stamped envelope for responses. Respondents were notified that their responses would remain anonymous and that a summarized copy of the survey results would be available to those indicating an interest.
Responses were requested within three weeks, but an additional week was provided for possible postal problems. Within that time period, 180 responses were received, a return rate of 45%. Ten additional responses were received after tabulation was completed, but, because the results were not significantly altered, no further revisions were made. The data was categorized and charted in tables that lent themselves to a discussion of the results and subsequent conclusions, implications and recommendations.
Chapter IV

RESULTS OF THE STUDY

Survey packets were sent to 400 social studies department chairpersons across the United States. The response rate was 45%; of that 45%, 71.6% of the respondents stated that they did address the nuclear armament/disarmament issue as part of their secondary social studies curriculum, while 28.3% stated that they did not. Of those respondents who stated that they did address this issue, 98.4% felt that nuclear armament/disarmament was an appropriate topic for the secondary social studies classroom. Units of instruction in the decision-making model were employed by 69.7% of those responding.

Of those respondents who stated that they did not address the nuclear armament/disarmament issue, 94.1% felt that this was an appropriate topic for the secondary social studies classroom. 68.6% did not employ units of instruction in the decision-making model.
Table I

Disciplines in which Nuclear Disarmament was Addressed

<table>
<thead>
<tr>
<th>A. History</th>
<th>81.3%</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Political science</td>
<td>41.0%</td>
</tr>
<tr>
<td>C. Others (within the social studies department)</td>
<td>32.5%</td>
</tr>
<tr>
<td>D. Others (outside the social studies department)</td>
<td>31.0%</td>
</tr>
<tr>
<td>E. Sociology</td>
<td>18.6%</td>
</tr>
<tr>
<td>F. Economics</td>
<td>11.6%</td>
</tr>
<tr>
<td>G. Civics</td>
<td>10.8%</td>
</tr>
<tr>
<td>H. Psychology</td>
<td>7.0%</td>
</tr>
</tbody>
</table>

Table I clearly showed that the subject of history was the focal point for the delivery of information regarding nuclear armament/disarmament. Some of the courses not listed but indicated in the category of others within the social studies department in which teachers addressed this topic included international relations, contemporary issues, and global education. Science, English, and religion classes were some of those courses outside the social studies department in which this topic was studied.
According to the data in Table II, students were most often introduced to the subject of nuclear armament/disarmament through participation in class discussions. Resource readings and teacher lecture were also used by a majority of the respondents. The suggestion indicated in the category others was the use of VCR recordings.
Table III
Facts Taught about Nuclear Disarmament

<table>
<thead>
<tr>
<th>A. History of the arms race</th>
<th>82.1%</th>
</tr>
</thead>
<tbody>
<tr>
<td>B. Current status of weapons development and delivery systems</td>
<td>79.0%</td>
</tr>
<tr>
<td>C. Medical, economic, and social effects of nuclear warfare</td>
<td>78.2%</td>
</tr>
<tr>
<td>D. Moral and ethical implications of possessing nuclear weapons</td>
<td>74.4%</td>
</tr>
</tbody>
</table>

Instructors' responses as represented in Table III indicated that the facts concerning the history of the nuclear arms race received slightly more attention than the other facts listed. However, at least 74.0% of those responding addressed all four important sets of facts.
Global citizenship was indicated by Table IV to be the concept most often addressed by instructors in a unit concerning nuclear armament/disarmament. Conflict/conflict management, militarization, and demilitarization were also addressed by significant numbers of instructors.
Table V

Decision-Making Procedures Employed

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Presentation of the facts</td>
<td>90.6%</td>
</tr>
<tr>
<td>B. Development of alternatives</td>
<td>76.7%</td>
</tr>
<tr>
<td>C. Examination of the consequences of those alternatives</td>
<td>75.9%</td>
</tr>
<tr>
<td>D. Attempt to reach a consensus of opinion</td>
<td>31.0%</td>
</tr>
<tr>
<td>E. Development of a plan of action in response to that choice</td>
<td>24.8%</td>
</tr>
</tbody>
</table>

According to the data in Table V, the decision-making procedure encouraged most often by instructors was the presentation of the facts. Development of alternatives and an examination of the resulting consequences were also encouraged by a majority of these classroom teachers.
### Table VI

<table>
<thead>
<tr>
<th>Resources Used in Presentation of Nuclear Disarmament</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Magazines</td>
<td>81.3%</td>
</tr>
<tr>
<td>B. Films</td>
<td>73.6%</td>
</tr>
<tr>
<td>C. Newspapers</td>
<td>71.3%</td>
</tr>
<tr>
<td>D. Books</td>
<td>52.7%</td>
</tr>
<tr>
<td>E. Pamphlets</td>
<td>41.8%</td>
</tr>
<tr>
<td>F. Resource person(s)</td>
<td>34.8%</td>
</tr>
<tr>
<td>G. Tapes</td>
<td>26.3%</td>
</tr>
<tr>
<td>H. Simulations</td>
<td>27.9%</td>
</tr>
<tr>
<td>I. Slides</td>
<td>17.8%</td>
</tr>
<tr>
<td>J. Other</td>
<td>8.5%</td>
</tr>
<tr>
<td>K. Records</td>
<td>5.4%</td>
</tr>
<tr>
<td>L. Lab games</td>
<td>5.4%</td>
</tr>
</tbody>
</table>

Magazines were the most frequently used resources in the presentation of the nuclear armament/disarmament issue. Films, then newspapers were used by a substantial majority of teachers. Some of the resources listed in the other category included government reports, seminars, and VCR recordings.
Table VII

Techniques Used in Presentation of Nuclear Disarmament

<table>
<thead>
<tr>
<th>Technique</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Lecture</td>
<td>84.4%</td>
</tr>
<tr>
<td>B. Group discussions</td>
<td>84.4%</td>
</tr>
<tr>
<td>C. Student research</td>
<td>65.8%</td>
</tr>
<tr>
<td>D. Values clarification/discovery lessons</td>
<td>38.7%</td>
</tr>
<tr>
<td>E. Models/role-playing</td>
<td>20.1%</td>
</tr>
<tr>
<td>F. Other</td>
<td>9.3%</td>
</tr>
</tbody>
</table>

Table VII indicated that lectures and group discussions were the primary techniques employed by social studies teachers when presenting the nuclear disarmament issue. A significant percentage of teachers also encouraged student research as a method of presentation. Some techniques suggested in the other category included student debates and surveys, position papers by public officials, and world congress simulations.
Table VIII

Reasons Why Other Resources not Employed

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Unavailable because resources were unknown to your department</td>
<td>30.2%</td>
</tr>
<tr>
<td>B. Available but not useful as part of your curriculum</td>
<td>24.8%</td>
</tr>
<tr>
<td>C. Unavailable because resources were expensive</td>
<td>24.0%</td>
</tr>
<tr>
<td>D. Other</td>
<td>23.2%</td>
</tr>
<tr>
<td>E. Unavailable because resources were not made available</td>
<td>16.2%</td>
</tr>
<tr>
<td>F. Available but too controversial or incompatible with the viewpoint presented in the classroom</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

When asked why other resources were not used in the presentation of the disarmament issue, respondents in Table VIII indicated that the most frequent reason was the unavailability because resources were unknown to department members. Respondents also found other resources were either not useful as part of their curriculum or too expensive. Other reasons listed in the other category included a lack of time to gather additional information, resources were too difficult for their students, and teachers refused to use materials provided.
Table IX
Are Students Encouraged to Examine Various Points of View?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Yes</td>
<td>98.4%</td>
</tr>
<tr>
<td>B. No</td>
<td>.7%</td>
</tr>
</tbody>
</table>

The data represented in Table IX clearly demonstrates that the vast majority of social studies teachers encouraged their students to examine the various viewpoints inherent in the nuclear armament/disarmament issue.

Table X
Does School District have Policy Regarding Nuclear Disarmament?

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A. No</td>
<td>77.5%</td>
</tr>
<tr>
<td>B. Yes</td>
<td>16.2%</td>
</tr>
</tbody>
</table>

Most school districts did not have a specific policy regarding the teaching of the nuclear armament/disarmament issue. Those respondents who indicated they must follow a particular policy were usually teaching in parochial schools with policies set by that denomination or were encouraged by district policy to present an unbiased lesson.
Table XI
Source of Curriculum Guides and Lesson Plans

<table>
<thead>
<tr>
<th>Source</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Faculty</td>
<td>89.1%</td>
</tr>
<tr>
<td>B. Pre-packaged</td>
<td>17.0%</td>
</tr>
</tbody>
</table>

According to the data provided in Table XI, the majority of respondents developed their own curriculum guides and lesson plans either in conjunction with other faculty members or on their own. Pre-packaged units specified included units provided by such groups as Educators for Social Responsibility, Ground Zero, and Project Peace.

Table XII
Reasons why Nuclear Disarmament was not Addressed

<table>
<thead>
<tr>
<th>Reason</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Not enough time to include in curriculum</td>
<td>66.6%</td>
</tr>
<tr>
<td>B. Other</td>
<td>45.0%</td>
</tr>
<tr>
<td>C. Lack of resources</td>
<td>35.2%</td>
</tr>
<tr>
<td>D. You personally do not consider it an appropriate topic</td>
<td>3.9%</td>
</tr>
<tr>
<td>E. Pressure from the community</td>
<td>1.9%</td>
</tr>
<tr>
<td>F. You consider it too controversial</td>
<td>1.9%</td>
</tr>
</tbody>
</table>
It was evident from the data in Table XII that the majority of instructors who did not address nuclear armament/disarmament did not feel they had enough time to include it in their curriculums. Reasons listed in the other category included curriculum restrictions, staff problems, and the use of this topic only as a current event.
Chapter V

SUMMARY, CONCLUSIONS, IMPLICATIONS
AND RECOMMENDATIONS

Summary

The purpose of this study was to determine the current status of the nuclear armament/disarmament issue as a topic for the decision-making model in the secondary social studies classroom. Four hundred randomly selected social studies department chairpersons were sampled concerning their attitudes toward the topic's inclusion in their curriculum and the resources and methods employed in the instruction of this subject. The 180 responses were categorized and charted according to respondents' employment of lessons addressing nuclear disarmament and whether they taught in private or public institutions.

Conclusions

The data provided by those responding to this survey established a basis for conclusions regarding the introduction of the nuclear armament/disarmament issue into the secondary social studies classroom. It would appear from the responses to Questions 1 and 2 that the vast majority of the
total respondents felt the topic of nuclear disarmament was appropriate for these grade levels. However, the data suggests that the decision-making model was less likely to be implemented as part of the curriculum in those classrooms where the nuclear disarmament issue was not addressed. Some correlation was evident between the use of inquiry techniques and the introduction of, at least, this controversial topic. There may be several reasons for this relationship.

A number of teachers may have felt the nuclear disarmament issue could not properly be addressed without inquiry techniques. Their reasons for not addressing the nuclear issue may help illuminate the problems involved. 66.6% responded that there was not enough time to include the issue in their curriculum. Many indicated that the issue was addressed, but played a minor role in such lessons as current events. Lack of resources also ranked as an important factor in the failure to approach the subject. The predominate influences on teachers who did not teach units on nuclear disarmament appeared to be problems inherent in the modern educational community. Those influences associated with pressure from extraclassroom factors (e.g., community and administration) accounted for a total of only 7.7% of the responses. These responses may not have indicated a lack of interest in the
topic, merely insufficient time and resources for teachers to address the topic thoroughly.

Those teachers who did address the nuclear armament/disarmament issue, apparently, dealt in some depth with the issues involved. Table I indicated that the subject of history dominated the field of social studies as the focal point for studying nuclear disarmament. Many of those courses represented as others were essentially taught from an historical perspective. This is a natural tendency given the placement of the atomic bomb in modern chronology, but the attention on a predominately historical perspective may have detracted from other equally important perspectives. One of the problems authors in the literature found was the inclination among writers of history texts to exclude the long-range social and moral ramifications of possessing and deploying nuclear weapons. Instead they tended to dwell on the chronology of the development of atomic weapons and the technical stockpile of arms during the so-called Cold War period. Those courses which might have provided more insight into other aspects of the nuclear issue, sociology, economics, psychology, science were conspicuously under-represented in this table.

Each discipline in the social studies field, as well as science outside of the field, addresses issues of concern to
humane relationships with other people and the environment, while placing emphasis on different aspects of those relationships. Even when the social, economic, and psychological components of an issue are addressed within a history course, the focus, of necessity, must be on the influence of these factors on future events and developments. Any in-depth study of such an issue is best served by an inter-disciplinary approach which may lend credibility to both the seriousness of the nuclear issue and the far-reaching effects it has on many different aspects of modern culture. There is also a more practical argument for teaching nuclear disarmament/disarmament as an inter-disciplinary lesson. Two overriding themes of the responses to this survey were the lack of time and the lack of appropriate resources. Diversifying the presentation of this issue among the disciplines might provide all instructors, but especially the history teacher, with more time in which to cover each aspect and resources from each field most suitable to the presentation of that aspect of the issue. It is true that initially this type of approach would require a great deal of pre-planning and coordination on the part of both faculty and administration and that some final summarizing lesson in one of the disciplines might be needed to coordinate information from the various disciplines.
However, the result should be the creation of a curriculum better designed to produce well-informed, more sensitive decision-makers.

To some extent, Table III supported the findings represented in Table I. Initially these responses were encouraging because they indicated that all four of the facts suggested by the review of the literature were being addressed by at least 74% of the respondents. However, the facts most often addressed, the history of the arms race and the current status of weapons development and delivery systems, could be labeled as objective or technical information. The two facts less often addressed, admittedly by a small percentage, the medical, economic, and social effects of nuclear warfare and the moral and ethical implications of possessing nuclear weapons, included the more subjective, moral and social issues embodied in the study of nuclear disarmament. There was no indication of the weight of emphasis given to each set of facts so one can not determine how much time was spent on each or to what extent each was addressed. But this table may suggest a reluctance on the part of many social studies teachers to address the conflicting values historically present in this topic. Ideally, all four facts should be included in any thorough treatment of this subject. The overwhelming
majority of authors in the literature agreed that any curriculum for nuclear disarmament lacking an attempt to confront the moral implications and conflicting values is a dangerously distorted approach which certainly does not develop students' critical thinking skills and coping mechanisms and may desensitize them further to the overriding importance of the issue.

Global citizenship and conflict/conflict management were concepts which authors in the literature indicated should be taught beginning with the elementary grades and used as a unifying thread for the transition toward more complicated concepts in advanced grades. According to Table IV, these concepts were introduced into lessons by at least 63% of the respondents. Militarization and demilitarization, concepts addressed by approximately one-half the respondents, may have connoted a particular political viewpoint or association that teachers wished to avoid. Table IV also suggested that the concepts of positive peace and systems thinking were not addressed to any substantial degree. Because these two concepts are somewhat more sophisticated than the others and more exclusively linked to disarmament as a political or technical issue, teachers may have been reluctant to introduce them into a secondary curriculum. What these figures may also suggest is a discrepancy between how instructors addressed the
essentially facts involved in disarmament to the degree indicated in Table III without establishing a foundation with such basic concepts as militarization, demilitarization, positive peace, and systems thinking. All of these concepts, or similar ones, were considered essential by most authors to understanding the full range of implications nuclear policy has on modern life. At the very least, this table suggested that instructors may not have established functional definitions necessary for effective class discussions.

Social studies instructors appear to have used a variety of techniques and resources in addressing nuclear armament/disarmament. The survey results illustrated in Table II indicated at least one factor consistent with the related literature in the manner most instructors chose to introduce this topic to their students. The 89.1% of teachers who used class discussions to begin units of instruction were probably encouraging students to examine their own feelings toward the subject and were facilitating students' acceptance of the issue as an important part of their culture. It may also be an indication that teachers are sensitive of students' reactions and possible fears. Knowing these attitudes and feelings should enable developers to design more effective lessons for units of instruction in this area. Table II also clearly
indicated that the preliminary groundwork for units on nuclear disarmament was derived from informational resources outside the classroom, resource readings and teacher lecture as opposed to the textbook. Teachers must compensate for the insufficient coverage of this issue in most secondary social studies texts, but there may be a benefit in having to do so. Students may regard a topic initiated through resource books, magazines, and newspapers as being more topical than an issue raised in their social studies text. Also, the reality of textbook publication is that changes in the approach to many controversial topics may be slow in adaptation, may vary widely in treatment, and are often subject to the degree to which a publisher may find a text marketable in a particular area of the country. Instructors must be careful when relying on lecture as a technique for introduction. A variety of sources is desirable and subsequent lessons must include some type of participatory activity. But, according to the related literature, teacher lecture alone is not an acceptable method of introduction for any controversial topic.

The implementation of the first three steps of the decision-making model, as was indicated in Table V, may suggest that at least 75% of respondents encouraged students in the active development of alternatives and consequences after
considering the pertinent facts and concepts. While these figures were consistent with the literature, they revealed certain problems. Almost 15% of these respondents presented information without drawing alternatives and consequences from it. This might have suggested an attempt at indoctrination on the part of respondents had they not indicated in Table IX strong support of the presentation of various sides of the issue. This method of presentation is the easiest approach to employ with limited time and resources. But, because the facts pertinent to this topic may be especially disturbing, not only does this approach prohibit effective decision-making development, it may also defeat the more critical purpose of sensitizing students to the issue.

The sharp drop in percentages of those who continued on to pursue a consensus of opinion and to create a plan of action reflected a possible reluctance, once again, to address the more controversial moral and value-centered conflicts that may arise. Several respondents felt strongly that these two responses were strictly prohibited by their policy of maintaining an unbiased view. While it is possible to begin the inquiry process using only the first three steps listed, it is evident from the literature that doing so only reveals a wide range of conflicting ideas, attitudes, and values with
little attempt by teachers to assist students in learning to resolve such conflicts when they occur. Respondents may have interpreted reaching a consensus of opinion as forcing all students to accept one viewpoint. But doing so would only defeat the long-range goal of creative decision-making, that is training more rational and responsible individual decision-makers. In this type of exercise, a consensus of opinion will emerge by finding some point of general agreement, after attempts are made to re-examine individual viewpoints and decisions. This need not, indeed should not, be interpreted as an attempt to reject certain values; rather it is an exercise which forms the basis for some plan of social action. Points of agreement will vary from class to class and, therefore, all plans for action may not be the same. What is important is not so much what action takes place, but that exercises such as these demonstrate to students the need to assume accountability for individual decisions and the desirability of applying those decisions effectively toward social participation.

Table VI roughly confirmed the responses in Table II in that respondents again indicated a reliance on outside resource material, magazines, films, newspapers, books, and pamphlets, in presenting the nuclear armament/disarmament
issue. These types of resources are beneficial in that they offer very up-to-date information on an issue undergoing rapid changes, and they may stimulate thoughtful student discussion. However, lessons which depend upon these resources to such an extent require preceding lessons in appropriate methods of interpretation and discrimination between facts and opinions. Without these skills, students fall prey to the fallacy that whatever is in print is true. The discrepancy between the low percentage of teachers who used films to introduce the nuclear disarmament issue and its frequent use in the presentation of the topic may have been due to the time involved in previewing films and directing discussions before providing the visual impact films dealing with the nuclear problem usually display. This same visual impact may prove useful later in the lesson when students have examined their feelings and have become more familiar with the basic facts and issues. What was inconsistent with the literature in both tables was the probable lack of simulations and lab games designed for this topic. It is difficult for teachers to duplicate the benefits of student participation in controlled situations by using other activities. The problem here may reflect the recurrent theme of too little time and money. If pre-packaged resources are not widely available, as many
respondents indicated, then teachers may be forced to design their own participatory activities.

The responses in Table VII supported most of the data collected from the remainder of the survey. The high percentage of lecture used in presenting the nuclear disarmament topic might have been inconsistent with the literature had it not been balanced by the use of class discussion and student research. The last two activities allow students to be actively involved in the development of generalizations and skills, and student research, in particular, encourages the synthesis of accumulated information into a coherent theory or position. The percentages of instructors who employed models/role-playing activities correlated with those of similar activities such as simulations and lab games in Table VI. What is evident in Table VII is the relatively infrequent use of values clarification/discovery lessons in nuclear disarmament units. This figure may verify a possible timidity on the part of most instructors to address the moral issue involved to a substantial degree.

Table VIII addressed the recurring problem of the lack of resources available for units of instruction in this area of study. There appeared to be a wide variety of reasons why resources other than those used in the classroom were not part
of teachers' curricula. The responses seemed to be divided between unavailability and inappropriateness. Two factors may be present. The large percentage of respondents who designated that they were unaware of additional resources and the number of those who responded in the category of others that there was not enough time to explore new resource material may have indicated a need for greater diligence in seeking out new resources and pre-planning of curriculum materials designed to meet the specific objectives of disarmament education. Table VIII also revealed the desirability of concerned organizations to provide more useful and less costly materials. Several respondents indicated in the category of other that outside materials were either too easy, too difficult, or too biased to be useful as part of their curriculum. Because attention to this field is relatively new, it may take time for curriculum materials to be developed. That teachers who addressed the issue relied substantially on units developed by faculty members was confirmed by the responses in Table XI. Some of these teachers were evidently able to supplement their units with pre-packaged materials, but there appears to be a critical need for more suitable outside resources.

While no question specifically inquired as to what aspect of nuclear armament/disarmament instruction most concerned
those who responded, one might conclude from the responses in Table IX, in particular, that teachers endeavored to present an unbiased view of the issue in their classrooms. This finding was substantiated by those respondents who claimed, in Table X, to teach for districts imposing a policy regarding instruction of this topic. The vast majority insisted that all points of view must be presented, even in parochial schools where church policy may dictate a particular attitude or viewpoint. Table X also revealed that most teachers had substantial latitude in how they taught nuclear disarmament, if they chose to do so. Over 77% were not restricted by specific policy in methods of instruction. This places the responsibility for deciding how and when to treat the topic of nuclear armament/disarmament on the school faculty.

Implications and Recommendations

The results obtained from this study suggest certain implications and recommendations which are as follows:

1. Instructors should make every attempt to introduce critical inquiry exercises into lessons dealing with the nuclear armament/disarmament issue.

2. All five generally accepted steps of the decision-making model are essential to the crucial development of decision-making skills. This includes the more
complex task of reaching a consensus of opinion and developing possible plans of social action.

3. An inter-disciplinary approach may help stress the various aspects of the issue, draw attention to the significance of the problem, and assist teachers in the management of time and resources.

4. Facts presented to students should include those which require attention to intrinsic moral issues as well as those which deal with the more technical or historical aspects of the topic.

5. A full range of concepts, from the simple to more sophisticated ones, should be presented to establish a foundation for effective class discussion and the presentation of related facts.

6. The use of class discussions or similar exercises to introduce the topic of nuclear disarmament allows students to express their feelings about the topic and probably increases their reception and understanding of future lessons.

7. Extra-classroom resource material may prove to be an invaluable aid, but students must be taught to use these materials in a critical and discriminating manner.
8. Simulations, lab games, role-modeling and other participatory exercises should be encouraged. If pre-packaged lessons are not available, then teachers should develop these exercises for their own use.

9. Audio-visual materials provide excellent visual information for advanced lessons, but should be carefully screened for graphic effects when used as an introductory lesson.

10. Values clarification and discovery lessons are essential to a thorough examination of the moral and value-centered issues present in nuclear disarmament education.

11. Classroom teachers should encourage more practical and less costly pre-packaged units from groups furnishing such materials. They should also encourage those responsible for curriculum development to provide more specific guidelines for the inclusion of new lessons and materials.
REFERENCES


Cappelluzzo, E. M. Nuclear power and educational responsibilities. *Phi Delta Kappan*, 1979, 61, 47-49.


Lifton, R. J. Beyond nuclear numbing. *Teachers College Record,* 1982, 84, 15-29.


Reardon, B. Disarmament education as world order inquiry. *Teachers College Record*, 1982, 84, 137-151.


Totten, S. Activist educators. Teachers College Record, 1982, 84, 199-209.


Appendix A

Nuclear Armament/Disarmament as a Topic in Decision-Making Models in Secondary Social Studies Classrooms

Personal:

A. Location of school

B. Public or private school

C. Approximate number of students in your school

D. Advanced degrees of department chairperson

E. Year department chairperson's undergrad. degree awarded

F. Grade levels included in your school

(1) Do you feel the armament/disarmament issue as part of a decision-making exercise is an appropriate subject for secondary social studies classrooms? (Check one)

YES

NO

(2) Do you employ units of instruction in the decision-making model? (Check one)

YES

NO

(3) Are the concepts of armament/disarmament a part of the curriculum of your social studies department? (Check one)

YES

NO

(4) If nuclear armament/disarmament is not addressed as part of your curriculum, why not? (Circle one or more)

A. pressure from your administration

B. pressure from your community

C. you personally do not consider it an appropriate topic

D. not enough time to include it in the curriculum

E. you consider the topic too controversial

F. lack of resources

G. Other:

H. NOT APPLICABLE
IF YOU ANSWERED "NO" TO QUESTION 3, PLEASE STOP HERE AND RETURN THIS SURVEY.

(5) In which discipline(s) is this topic usually addressed? (Circle one or more)
A. history  F. sociology
B. civics    G. Others (within the social studies department)
C. political science                      H. Others (outside the social studies department)
D. economics
E. psychology

(6) How are students introduced to the topic? (Circle one or more)
A. class discussions    D. films
B. readings (text)      E. teacher lecture
C. readings (resource books, newspapers, magazines)     F. resource person

(7) Which of the following facts are addressed? (Circle one or more)
A. medical, economic, and social effects of nuclear warfare
B. history of the arms race
C. current status of weapons development and delivery systems
D. moral and ethical implications of possessing nuclear weapons

(8) Which of the following concepts are part of the curriculum? (Circle one or more)
A. conflict, conflict management  D. demilitarization
B. positive peace                 E. systems thinking
C. militarization                 F. global citizenship

PLEASE NOTE ADDITIONAL QUESTIONS ON THE BACK OF THIS PAGE (end page 1)

(9) Which of the following decision-making procedures are employed in teaching the disarmament issue? (Circle one or more)
A. presentation of the facts
B. development of alternatives
C. examination of the consequences of those alternatives
D. attempt to reach a consensus of opinion
E. development of a plan of action in response to choice
Nuclear Disarmament

103

(10) Which of the following resources have been used in the presentation of this issue? (Circle one or more)
A. films
B. tapes
C. records
D. simulations
E. lab games
F. books
G. pamphlets
H. magazines
I. newspapers
J. slides
K. resource person(s)
L. Other

(11) Which of the following techniques have been used in presenting this issue? (Circle one or more)
A. lecture
B. student research
C. group discussions
D. values clarification/discovery lessons
E. models/role-playing
F. Other

(12) Why were other resources not used? (Circle one or more)
A. unavailable because resources were unknown to your department
B. unavailable because resources were too expensive
C. unavailable because resources were not made available
D. available but not useful as part of your curriculum
E. available but too controversial or incompatible with the viewpoint presented in the classroom
F. Other

(13) Are students encouraged to examine the various points of view of the armament/disarmament issue? (Check one)
YES
NO

(14) Does your school district have a policy regarding the teaching of the armament/disarmament issue? (Check one)
YES
NO

If YES, describe the policy briefly.

(15) Curriculum guides and lesson plans are: (Check one)
prepared by the faculty
pre-packaged

If pre-packaged, who provides your unit?

PLEASE FEEL FREE TO MAKE ADDITIONAL COMMENTS ON THE BACK OF THE COVER LETTER. THANK YOU FOR YOUR TIME AND COOPERATION.
Appendix B

Table XIII

STUDENT RECORD SHEET

<table>
<thead>
<tr>
<th>CRITERIA</th>
<th>ALTERNATIVES</th>
<th>CRITERIA</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRACTICAL CONSIDERATIONS</td>
<td></td>
<td>IDEAL CONSIDERATIONS</td>
</tr>
<tr>
<td>TOTALS</td>
<td></td>
<td>TOTALS</td>
</tr>
</tbody>
</table>

Table XIV

<table>
<thead>
<tr>
<th>Column</th>
<th>Practical Ratings</th>
<th>Ideal Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alternative A</td>
<td>$P_1$</td>
<td>$I_1$</td>
</tr>
<tr>
<td></td>
<td>$\cdots$</td>
<td>$\cdots$</td>
</tr>
<tr>
<td>Alternative N</td>
<td>$P_n$</td>
<td>$I_n$</td>
</tr>
</tbody>
</table>

Table XV

<table>
<thead>
<tr>
<th>Practical Ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
</tr>
<tr>
<td>4</td>
</tr>
<tr>
<td>3</td>
</tr>
<tr>
<td>2</td>
</tr>
<tr>
<td>1</td>
</tr>
<tr>
<td>0</td>
</tr>
</tbody>
</table>

| 1 2 3 4 5 |
Table XVI

SCATTERGRAM RESULTS

a. positive correlation

b. negative correlation

c. no correlation
Appendix C

Chart of Results:
Nuclear Armament/Disarmament as a Topic in Decision-Making Models in Secondary Social Studies Classrooms

The following statistics represent the number of responses received and examples of all responses listed in categories entitled other.

<table>
<thead>
<tr>
<th>A. Location of school:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast:</td>
<td>28</td>
<td>26</td>
<td>54</td>
</tr>
<tr>
<td>Southeast:</td>
<td>17</td>
<td>10</td>
<td>27</td>
</tr>
<tr>
<td>Midwest:</td>
<td>16</td>
<td>11</td>
<td>27</td>
</tr>
<tr>
<td>Southwest: a</td>
<td>11</td>
<td>4</td>
<td>15</td>
</tr>
<tr>
<td>Northwest: b</td>
<td>3</td>
<td>2</td>
<td>5</td>
</tr>
</tbody>
</table>

a Includes Hawaii.

b Includes Alaska.
### A. Location of school—continued.

<table>
<thead>
<tr>
<th>Location</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>18</td>
<td>12</td>
<td>30</td>
</tr>
<tr>
<td>Southeast</td>
<td>6</td>
<td>1</td>
<td>7</td>
</tr>
<tr>
<td>Midwest</td>
<td>6</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>Southwest</td>
<td>3</td>
<td>-</td>
<td>3</td>
</tr>
<tr>
<td>Northwest</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

### B. Public or private school:

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did address disarmament:</td>
<td>76</td>
<td>53</td>
<td>129</td>
</tr>
<tr>
<td>Did not address disarmament:</td>
<td>33</td>
<td>18</td>
<td>51</td>
</tr>
</tbody>
</table>

### C. Approximate number of students in your school: (figures represented are averages)

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did address disarmament:</td>
<td>1335</td>
<td>673</td>
<td>1004</td>
</tr>
<tr>
<td>Did not address disarmament:</td>
<td>1115</td>
<td>616</td>
<td>866</td>
</tr>
</tbody>
</table>

### D. Advanced degrees of department chairperson: (figures represented are numbers with Masters degrees or above)

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did address disarmament:</td>
<td>66</td>
<td>45</td>
<td>111</td>
</tr>
<tr>
<td>Did not address disarmament:</td>
<td>30</td>
<td>16</td>
<td>46</td>
</tr>
</tbody>
</table>
### Nuclear Disarmament

#### E. Year department chairperson's undergraduate degree awarded:
(figures represented are averages)

<table>
<thead>
<tr>
<th>Did address disarmament:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did address disarmament:</td>
<td>1960</td>
<td>1966</td>
<td>1963</td>
</tr>
<tr>
<td>Did not address disarmament:</td>
<td>1961</td>
<td>1967</td>
<td>1964</td>
</tr>
</tbody>
</table>

#### F. Grade levels included in your school:

<table>
<thead>
<tr>
<th>Did address disarmament:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades K-12:</td>
<td>2</td>
<td>7</td>
<td>9</td>
</tr>
<tr>
<td>Grades 6-9:</td>
<td>12</td>
<td>-</td>
<td>12</td>
</tr>
<tr>
<td>Grades 7-12:</td>
<td>7</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td>Grades 9-12:</td>
<td>41</td>
<td>45</td>
<td>86</td>
</tr>
<tr>
<td>Grades 10-12:</td>
<td>12</td>
<td>-</td>
<td>12</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Did not address disarmament:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grades K-12:</td>
<td>1</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Grades 6-9:</td>
<td>10</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>Grades 7-12:</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Grades 9-12:</td>
<td>16</td>
<td>14</td>
<td>30</td>
</tr>
<tr>
<td>Grades 10-12:</td>
<td>3</td>
<td>-</td>
<td>3</td>
</tr>
</tbody>
</table>

(1) Do you feel the armament/disarmament issue as part of a decision-making exercise is an appropriate subject for secondary social studies classrooms?

<table>
<thead>
<tr>
<th>Did address disarmament:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes:</td>
<td>75</td>
<td>52</td>
<td>127</td>
</tr>
<tr>
<td>No:</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Nuclear Disarmament

<table>
<thead>
<tr>
<th>Did not address disarmament:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes:</td>
<td>31</td>
<td>17</td>
<td>48</td>
</tr>
<tr>
<td>No:</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

(2) Do you employ units of instruction in the decision-making model?

<table>
<thead>
<tr>
<th>Did address disarmament:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes:</td>
<td>56</td>
<td>34</td>
<td>90</td>
</tr>
<tr>
<td>No:</td>
<td>17</td>
<td>16</td>
<td>33</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Did not address disarmament:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes:</td>
<td>9</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>No:</td>
<td>23</td>
<td>12</td>
<td>35</td>
</tr>
</tbody>
</table>

(3) Are the concepts of armament/disarmament a part of the curriculum of your social science department?

<table>
<thead>
<tr>
<th>Yes:</th>
<th>76</th>
<th>53</th>
<th>129</th>
</tr>
</thead>
<tbody>
<tr>
<td>No:</td>
<td>33</td>
<td>18</td>
<td>51</td>
</tr>
</tbody>
</table>

(4) If nuclear armament/disarmament is not addressed as part of your curriculum, why not?

<table>
<thead>
<tr>
<th>A. pressure from your administration:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. pressure from your community:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. you personally do not consider it an appropriate topic:</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
</tbody>
</table>
### Nuclear Disarmament

#### 111

<table>
<thead>
<tr>
<th>Reason</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>D. not enough time to include in curriculum:</td>
<td>17</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>E. you consider topic too controversial:</td>
<td>1</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>F. lack of resources:</td>
<td>11</td>
<td>7</td>
<td>18</td>
</tr>
<tr>
<td>G. Other:</td>
<td>19</td>
<td>4</td>
<td>23</td>
</tr>
</tbody>
</table>

(Responses in the other category included: Informal part of some classes (7), Included in current events (4), To be included in future lessons (3), Curriculum restrictions (2), Not appropriate at school's grade levels (2), Discussed (1), Lack of interest (1), Lack of time and money to develop curriculum (1), and Staff problems (1).)

(5) In which discipline(s) is this topic usually addressed?

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. history:</td>
<td>58</td>
<td>47</td>
<td>105</td>
</tr>
<tr>
<td>B. civics:</td>
<td>9</td>
<td>5</td>
<td>14</td>
</tr>
<tr>
<td>C. political science:</td>
<td>31</td>
<td>22</td>
<td>53</td>
</tr>
<tr>
<td>D. economics:</td>
<td>10</td>
<td>5</td>
<td>15</td>
</tr>
<tr>
<td>E. psychology:</td>
<td>5</td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td>F. sociology:</td>
<td>15</td>
<td>9</td>
<td>24</td>
</tr>
<tr>
<td>G. Others (within the social studies department):</td>
<td>30</td>
<td>12</td>
<td>42</td>
</tr>
<tr>
<td>H. Others (outside the social studies department):</td>
<td>4</td>
<td>36</td>
<td>40</td>
</tr>
</tbody>
</table>

(Responses in the others within the social studies department category included: Contemporary issues (7),...
International relations/politics (7), Current events (4), Foreign policy (3), Global issues (3), American studies (2), Electives (2), Civil defense preparedness (1), Futuristics (1), Gifted program (1), Opposing viewpoints (1), Philosophy (1), Social justice (1), World cultures (1).)

(Responses in the others outside the social studies department category included: Religion (26), Science (7), Extracurricular activities (6), English (2), About life program (1), Math (1), Senior studies (1), Speech (1).

(6) How are students introduced to the topic?

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. class discussions:</td>
<td>66</td>
<td>50</td>
<td>115</td>
</tr>
<tr>
<td>B. readings (text):</td>
<td>27</td>
<td>20</td>
<td>47</td>
</tr>
<tr>
<td>C. readings (resource books newspapers, magazines):</td>
<td>57</td>
<td>43</td>
<td>100</td>
</tr>
<tr>
<td>D. films:</td>
<td>40</td>
<td>35</td>
<td>75</td>
</tr>
<tr>
<td>E. teacher lecture:</td>
<td>45</td>
<td>44</td>
<td>89</td>
</tr>
<tr>
<td>F. resource person:</td>
<td>16</td>
<td>21</td>
<td>37</td>
</tr>
</tbody>
</table>

(7) Which of the following facts are addressed?

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. medical, economic, and social effects of nuclear warfare:</td>
<td>60</td>
<td>41</td>
<td>101</td>
</tr>
<tr>
<td>B. history of arms race:</td>
<td>61</td>
<td>45</td>
<td>106</td>
</tr>
<tr>
<td>C. current status of weapons development and delivery systems:</td>
<td>58</td>
<td>44</td>
<td>102</td>
</tr>
</tbody>
</table>
D. moral and ethical implications of possessing nuclear weapons: 47

(8) Which of the following concepts are a part of the curriculum?

<table>
<thead>
<tr>
<th>Concept</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. conflict, conflict management:</td>
<td>53</td>
<td>29</td>
<td>82</td>
</tr>
<tr>
<td>B. positive peace:</td>
<td>13</td>
<td>23</td>
<td>36</td>
</tr>
<tr>
<td>C. militarization:</td>
<td>41</td>
<td>29</td>
<td>70</td>
</tr>
<tr>
<td>D. demilitarization:</td>
<td>32</td>
<td>32</td>
<td>64</td>
</tr>
<tr>
<td>E. systems thinking:</td>
<td>7</td>
<td>8</td>
<td>15</td>
</tr>
<tr>
<td>F. global citizenship:</td>
<td>58</td>
<td>34</td>
<td>92</td>
</tr>
</tbody>
</table>

(9) Which of the following decision-making procedures are employed in teaching the armament/disarmament issue?

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. presentation of facts:</td>
<td>69</td>
<td>48</td>
<td>117</td>
</tr>
<tr>
<td>B. development of alternatives:</td>
<td>62</td>
<td>37</td>
<td>99</td>
</tr>
<tr>
<td>C. examination of the consequences of alternatives:</td>
<td>57</td>
<td>41</td>
<td>98</td>
</tr>
<tr>
<td>D. attempt to reach a consensus of opinion:</td>
<td>22</td>
<td>18</td>
<td>40</td>
</tr>
<tr>
<td>E. development of a plan of action in response to that choice:</td>
<td>13</td>
<td>19</td>
<td>32</td>
</tr>
</tbody>
</table>
(10) Which of the following resources have been used in the presentation of this issue?

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. films:</td>
<td>56</td>
<td>39</td>
<td>95</td>
</tr>
<tr>
<td>B. tapes:</td>
<td>22</td>
<td>12</td>
<td>34</td>
</tr>
<tr>
<td>C. records:</td>
<td>4</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td>D. simulations:</td>
<td>22</td>
<td>14</td>
<td>36</td>
</tr>
<tr>
<td>E. lab games:</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>F. books:</td>
<td>41</td>
<td>27</td>
<td>68</td>
</tr>
<tr>
<td>G. pamphlets:</td>
<td>29</td>
<td>25</td>
<td>54</td>
</tr>
<tr>
<td>H. magazines</td>
<td>61</td>
<td>44</td>
<td>105</td>
</tr>
<tr>
<td>I. newspapers</td>
<td>63</td>
<td>29</td>
<td>92</td>
</tr>
<tr>
<td>J. slides:</td>
<td>13</td>
<td>10</td>
<td>23</td>
</tr>
<tr>
<td>K. resource person(s):</td>
<td>19</td>
<td>26</td>
<td>45</td>
</tr>
<tr>
<td>L. Other:</td>
<td>3</td>
<td>8</td>
<td>11</td>
</tr>
</tbody>
</table>

(Responses in the other category included: filmstrips/cassettes (2), government reports (1), political letter writing (1), position papers by political figures (1), religious scripture (1), resource readings (1), teacher workshops (1), VCR (1).)

(11) Which of the following techniques have been used in presenting this issue?

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. lecture:</td>
<td>62</td>
<td>47</td>
<td>109</td>
</tr>
<tr>
<td>B. student research:</td>
<td>49</td>
<td>36</td>
<td>85</td>
</tr>
</tbody>
</table>
### Nuclear Disarmament

#### 115

<table>
<thead>
<tr>
<th>Type</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. group discussion</td>
<td>66</td>
<td>43</td>
<td>109</td>
</tr>
<tr>
<td>D. values clarification/discovery lessons</td>
<td>25</td>
<td>25</td>
<td>50</td>
</tr>
<tr>
<td>E. models/role-playing</td>
<td>19</td>
<td>7</td>
<td>26</td>
</tr>
<tr>
<td>F. other</td>
<td>6</td>
<td>6</td>
<td>12</td>
</tr>
</tbody>
</table>

(Responses in the other category included: simulated world congress (2), assemblies (1), films (1), gifted debates (1), organized S.T.O.P. group (1), readings (1), resource groups (1), students opinion polls (1), VCR (1).)

(12) Why were other resources not used?

<table>
<thead>
<tr>
<th>Reason</th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. unavailable because resources were unknown to department</td>
<td>22</td>
<td>17</td>
<td>39</td>
</tr>
<tr>
<td>B. unavailable because resources were too expensive</td>
<td>18</td>
<td>13</td>
<td>31</td>
</tr>
<tr>
<td>C. unavailable because resources were not made available</td>
<td>17</td>
<td>4</td>
<td>21</td>
</tr>
<tr>
<td>D. available but not useful as part of your curriculum</td>
<td>15</td>
<td>17</td>
<td>32</td>
</tr>
<tr>
<td>E. available but too controversial or incompatible with the viewpoint in the classroom</td>
<td>6</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>F. Other</td>
<td>16</td>
<td>14</td>
<td>30</td>
</tr>
</tbody>
</table>
(Responses in the other category included: lack of time (17), used all that were needed (3), department members refused to use (1), inertia (1), lack of student interest (1), not purchased (1), program still developing (1), resources too childish (1), resources too biased (1), student information too limited to use (1), teacher choice (1), too difficult for students (1).)

(13) Are students encouraged to examine the various points of view of the armament/disarmament issue?

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes:</td>
<td>75</td>
<td>52</td>
<td>127</td>
</tr>
<tr>
<td>No:</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

(14) Does your school district have a policy regarding the teaching of the armament/disarmament issue?

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes:</td>
<td>8</td>
<td>13</td>
<td>21</td>
</tr>
<tr>
<td>No:</td>
<td>67</td>
<td>33</td>
<td>100</td>
</tr>
</tbody>
</table>

(If YES, describe the policy briefly: follow the Peace Pastoral of U.S. Bishops (9), must examine both sides of the issue (6), encourages a peace philosophy (5), best possible teaching (1), committee reviews all material in controversial topic lessons (1), encourages study through religious context (1), protested by parents so lessons altered (1), required in curriculum (1).)

(15) Curriculum guides and lesson plans are:

<table>
<thead>
<tr>
<th></th>
<th>Public</th>
<th>Private</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared by the faculty:</td>
<td>67</td>
<td>48</td>
<td>115</td>
</tr>
<tr>
<td>Pre-packaged:</td>
<td>10</td>
<td>12</td>
<td>22</td>
</tr>
</tbody>
</table>
Appendix D

Resource List

Groups/Organizations

American Friends Service Committee
1501 Cherry Street
Philadelphia, PA. 19102
(215) 241-7000
(offers materials on arms race: audio-visual, booklets, maps, fact sheets)

American Security Council Education Foundation
Box 8
Boston, VA. 22713
(703) 547-1776
(opposes nuclear freeze--offers pamphlets, booklets)

Center for Defense Information
Capital Gallery, West Wing #303
600 Maryland Ave., S.W.
Washington, D.C. 20024
(202) 484-9490
(opposes newsletter, written for layperson, dealing with one aspect of defense per issue)

Center for Peace and Conflict Studies
Wayne State University
5229 Cass Ave.
Detroit, MI. 48202

Clergy and Laity Concerned
198 Broadway
New York, N.Y. 10038
(212) 964-6730
(brochures and slide shows on arms race and nuclear freeze)

Coalition for a New Foreign and Military Policy
120 Maryland Ave., N.E.
Washington, D.C. 20002
(202) 346-8400
(action guide, materials on arms race)
Committee on the Present Danger
1800 Massachusetts Ave., N.W.
Suite #601
Washington, D.C. 20036
(202) 466-7444
(favors increased military spending, offers pamphlets, booklets, and resource information)

Consortium on Peace Research, Education, and Development (CORPRED)
Center for Peaceful Change
Kent State University
Kent, OH. 44242
(216) 672-3143
(offers reference services, newsletter and journal, sponsors conferences and workshops--NEA is CORPRED institutional member)

Division for Economic and Social Information
Room #A-1061-C, United Nations
New York, N.Y. 10017

Educators for Social Responsibility
23 Garden Street
Cambridge, MA. 02138
(617) 492-1764
(offers bibliographies of audio-visual information and concerned organizations, primer on arms race, pilot curriculum and units, various materials for secondary instructors)

Friends of the Earth
530 7th St., S.E.
Washington, D.C. 20003
(202) 543-4312
(materials on arms race including fact sheets)

Fund for Peace
345 East 46th Street
New York, N.Y. 10017
(212) 661-5900
(issues research studies and sponsors seminars and public information projects)
Ground Zero
806 15th Street, N.W.
Washington, D.C. 20002
(202) 638-7402
(curriculum guide, audio-visual materials, simulation "Firebreaks," bibliography, film guide)

High Frontier
1010 Vermont Ave., N.W.
Suite 1000
Washington, D.C. 20005
(202) 737-4979
(newsletter, resource persons)

Institute for Defense and Disarmament Studies
251 Harvard St.
Brookline, MA. 02146
(617) 734-4216
(supports nuclear freeze--issues disarmament newsletter, research studies, pamphlets and reference materials)

Nuclear Information and Research Service
1536 16th St., N.W.
Washington, D.C. 20036
(202) 483-0045
(teacher resource packet, weapons resource guide and information packet)

Nuclear Information and Research Service
1346 Connecticut Ave., N.W.
Washington, D.C. 20036
(202) 296-7552
(slide shows, complete resource packet, resource guide for secondary teachers)

Physicians for Social Responsibility
639 Massachusetts Ave.
Cambridge, MA. 02139
(pamphlets, videotapes, films, audio cassettes, books, booklets on medical consequences of nuclear war)

Public Correspondence Branch, Office of the Assistant Secretary of Defense
Room #23777, Pentagon
Washington, D.C. 20310
(202) 679-5737
(pamphlets, booklets and referral service)
SANE
711 G. Street, S.E.
Washington, D.C. 20003
(202) 546-7100
(materials on military spending and disarmament, includes a slide show for teachers)

Student-Teacher Organization to Prevent Nuclear War (S.T.O.P. Nuclear War)
Box 232
Northfield, NA. 01360
(413) 498-5311
(NEA sponsored group offers materials for secondary teachers, publishes newsletter)

United Ministries in Education
c/o Betty Reardon
Box 171
Teachers College, Columbia University
New York, N.Y. 19027
(212) 678-3972
(offers programs for secondary teachers, organizational materials for peace efforts, seminars)

Union of Concerned Scientists
26 Church St.
Cambridge, MA. 02238
(617) 547-5552
(report studies, brochures, a book, and slide show, informational packet and curriculum unit)

Women Strike for Peace
201 Massachusetts Ave., N.E., #102-A
Washington, D.C. 20002
(202) 543-2660

Films

Chief, Film Library, Audio-Visual Division
Defense Nuclear Agency
Washington, D.C. 20305
(202) 325-7120
(films of various types and qualities, including:
Atomic Weapons Orientation, Part 5: PAVI/F-0004
Medical Effects of the Atomic Bomb: PMF/5148
History of the Atomic Bomb: PAVI/F-0330

The Day after Trinity: J. Robert Oppenheimer and the Atomic Bomb. (traces the history of the development of the bomb and nuclear proliferation. 1980, 88 mins.)


Dowling, John. War/Peace Film Guide. ($5.00; World Without War Council, 67 E. Madison, Suite 1417, Chicago, ILL, 60603) Describes over 300 films dealing with various aspects of war and peace.

No-First-Use: Preventing Nuclear War. (½ hour; emphasizes need for changing U.S. defense policy and shows ways to lessen threat of nuclear war, improve national security; 16mm, $335, rental: $30.00, video, $240)
University of California Extension Media Center 2223 Fulton St.
Berkeley, CA. 94720
(415) 642-0460

Nuclear war films from Ground Zero, 1983. (Includes films on the historical perspective, arms, civil defense, and the medical effects of nuclear war)

Shaheen, Jack. Nuclear War Films. (Describes over two dozen films including Dr. Strangelove, Fail Safe, and On the Beach.)
Southern Illinois Press
P. O. Box 3696
Carbondale, ILL. 62901
(618) 453-2281

The War Game. (Describes effects of a nuclear attack on Great Britain, based on information provided by experts in nuclear strategy, economics, and medicine. 1966, 49 mins.)

Wars Without Winners. (Includes interview with U.S. and Soviet experts and physicians, ordinary people. 1982, 28 mins.)
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Slides/Tapes

Acceptable Risk? The Nuclear Age in the United States. (Overview of production of nuclear weapons and power. 1980, 35 mins.; slideshow or filmstrip with cassette tape, script, documentation, study/action guide: Slideshow, $60.00; Filmstrip, $50.00.)

M.A.D. (Mutual Assured Destruction): The Psychology of Nuclear Armament. (Addresses the perpetuation of the arms race and the psychological effects on average citizens. 1982, 17 mins., 87 slides, $50.00.)

The Threat of Nuclear War. (Depicts the history of nuclear arms build-up, shows U.S. and Soviet weaponry and the effects of nuclear explosion. 60 color slides, script, and cassette tape, $25.00.)

Videocassettes

The Last Epidemic: The Medical Consequences of Nuclear Weapons and Nuclear War. (Features discussion between physicians and scientists on the medical effects of nuclear weapons and war. 1980 Physicians for Social Responsibility symposium. 1981, 36 mins., 3/4", $75.00; ½" VHS or ½" Betamax II, $45.00.)

There's a Nuclear War Going on Inside Me. (Explores reactions and feelings of third, fifth, seventh, and ninth graders concerning nuclear war and weapons. Color videotape, 3/4" or ½" VHS format, rental: $25.00, 21 mins.)

Pamphlets and Publications

Briefing Manual on Solutions to the Nuclear Arms Race. (Compilation of reprints presenting contrasting views on a variety of nuclear arms issues. Provides detailed information on arms race, various arms control options, verification, history of arms control. 1982, 141 pp., $6.00.)

No-First-Use Study. (Report from study group led by Vice Admiral John Marshall Lee, USN Ret. on No-First-Use doctrine. 1982, 69 pp., $3.00.)

Nuclear Weapons Resource Guide. (4 p. Nuclear Information Research Service--NIRS--publication with factual information on nuclear weapons issue, list of interested groups, and bibliography. $.50)

NIRS
1346 Connecticut Ave., N.W.
4th Floor
Washington, D.C. 20036
(202) 296-7552

Bibliographies

Alexander, Susan. (ed.) Educators for Social Responsibility bibliography. (Includes resources, books for children and adults on various aspects of nuclear war and its psycho-social effects.)

Dougall, Lucy. War and Peace in Literature. (1982, 171 pp., paper, $5.00/$.75 postage.)

World Without War Publications
67 East Madison, Suite 1417
Chicago, ILL. 60603

Educators for Social Responsibility. Audio-Visual Resources. (Includes audio-visual materials, feature length films, records and bibliographies. 12 pp.)

Ground Zero. Bibliography on Arms Control.

Ground Zero. Bibliography on Effects of Nuclear War.

Physicians for Social Responsibility. (Offers bibliography of books, government publications and articles, and journal articles concerning nuclear war and armament/disarmament.)
Curriculum Guides

Choices: A Unit on Conflict and Nuclear War. (160 pp., instructional unit with 40 worksheets, $9.95.)
NEA Professional Library
P. O. Box 509
West Haven, CT. 06516

Ground Zero. The Nuclear Age. (Curriculum guide for secondary schools.)


Nuclear Information and Resource Service. Teaching Nuclear Issues: A Kit for Secondary School Teachers. 1983. (Includes resource guide, information sheets, maps, posters, and charts. 1-9 @ $10.00 + $1.25 postage; 10 or more @ $8.00 + 5% postage.)