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THE EFFECT OF SEX EDUCATION ON SOCIAL RESPONSIBILITY AND LOCUS OF CONTROL

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THE EFFECT OF SEX EDUCATION ON SOCIAL RESPONSIBILITY AND LOCUS OF CONTROL

by

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The purpose of this study was to determine differences in social responsibility, locus of control, and knowledge in sexuality for early adolescents after participation in a short sex education unit. Social Responsibility, operationalized as prescriptive judgment statements representative of Stages 2, 3, and 4 of Kohlberg's moral reasoning stage theory, was measured by a scale developed for the study. The abbreviated Nowicki-Strickland Scale was used to measure Locus of Control, and Knowledge in Sexuality was measured by a short multiple-choice/true-false test.

A Solomon four-group design was used in the study and participants consisted of 150 seventh and 138 eighth grade public school students. The sex education curriculum was developed and presented by public health educators to boys and girls randomly assigned to treatment groups in four 50-minute sessions.

The hypotheses that (a) level of social responsibility is increased through participation in a sex education unit, (b) locus of control is more internal after participation in a sex education unit, and (c) knowledge in sexuality is increased by exposure to sex education were tested with three 2 x 2 ANOVAs for treatment by pretest. No pretest

effects were found for Social Responsibility or Locus of Control. The sex education unit significantly affected Knowledge but not Social Responsibility or Locus of Control.

Additional ANOVAs were used to test the assumption that differences found were due to the sex education unit rather than age, gender, race, or IQ. A multiple regression analysis was computed for each dependent measure to study proportional effects of the independent variables. Although there were significant differences for Social Responsibillity attributed to race and IQ, in the regression analysis only IQ was significant, and the explained variance was small. IQ alone was significant for Locus of Control differences, again accounting for little of the variability in the regression analysis. Treatment, race, gender, and IQ had significant effects on Knowledge. Treatment, IQ, and gender were significantly predictive of Knowledge and accounted for 29% of the variability. Tests given 1 month later to 34 subjects showed no enduring effects of the sex education unit.

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TABLE OF CONTENTS

TABLE OF CONTENTS (continued)

LIST OF TABLES

LIST OF TABLES (continued)

CHAPTER I

INTRODUCTION

Sexual behavior has been a social concern for centuries because of the far-reaching consequences. Population growth needs are the basis for the various controls imposed. Such controls are both direct and indirect. In the United States, population growth is not needed, yet direct controls, as in Communist China today, are not acceptable to the general American belief in individualism. This very individualism has recently been interpreted by some as freedom to act solely on one's desire. The end result of this interpretation appears to have allowed individuals to participate in sexual behavior to the detriment of self and others.

The current movement to counter this egocentric approach is to attempt to educate people to the notion that individualism as a societal goal must be concerned with preservation of each person's individualism. Social responsibility based on concern for self and others is being emphasized in new sex education programs instigated by the apparent increase in sexual abuse of children, sexually transmitted diseases, and children born to unmarried adolescents (Byrne, 1977; Thornburg, 1975).

Adolescent sexuality is a primary area of adolescent development and of central importance in personal growth

and development. Investigators have noted that for a large majority of adolescents the primary sources of information regarding sex are the peer group and printed material (Juhasz & Sonnenshein-Schneider, 1980; Kirkendall, 1972). Limitations of information acquired from these sources include potential for inaccurate and incomplete information and little attention to moral reasoning inherent in sexuality.

Moral education has seldom been systematically included as part of the regular school curriculum in keeping with the doctrine of separation of church and state, although it is acknowledged by many as one of the school's oldest missions (Purpel & Ryan, 1976). Kohlberg (1971) maintained that the school, by its very nature, is involved in the process of moral education. The term used by Kohlberg, the "hidden-curriculum,"

> refers to the fact that teachers and schools are engaged in moral education without explicitly and philosophically discussing or formulating its goals and methods. (Kohlberg, 1971, in Sullivan, 1975, p. 7)

Contemporary writers (Kohlberg, 1978; Mattox, 1975; Selman, 1980; Sharp, 1984) defend moral education in the public schools as essential to the development of an understanding of the relationships between people and their environment, values, and behavior. The adolescent years between the ages of 10 and 13 represent a period of transition in cognitive, emotional, physical, and moral development. Cognitively adolescents have the capacity for abstract thinking

which allows them to think about themselves, their values, and their future, and to engage in reciprocal role-taking. Emotionally adolescents are resolving issues of self-identity. Physically they are experiencing rapid development toward sexual maturity. Adolescence is recognized as a critical period of transition in moral thinking from preconventional to conventional. According to Kohlberg, moral maturity at adulthood is predictable at 13 but not at 10.

Kohlberg and Gilligan (1971) described three stock themes of adolescent psychology:

> the discovery of the body and its sexual drive, and self conscious uncertainty about that body; the romantic concerns and hopes for the self's future; the need for independence, for self determination and choice, as opposed to acceptance of adult direction and control. (p. 1060)

For adolescents the most pressing issues are centered around their sexual identity and interpersonal relationships. Sex education for social responsibility is broader than its biological and informational content and is concerned with moral reasoning in relationships and sexual behavior.

Rotter (1966) posited that all behavior is learned through social interaction. His social learning theory stresses the meaningful environment as perceived and interpreted by the individual as opposed to the objective environment. Changes in human behavior are attributed to a gradual adaptation brought about through a mediational process between stimulus and response. Rotter defined internal-external

locus of control (I-E) as the extent to which responsibility for reinforcement is ascribed to self and others. Internal locus of control is characterized by a belief that events are a consequence of one's own actions and to some extent under one's control. Persons having external control believe events are unrelated to their behavior and beyond personal control.

Perceptions of the relationships between people, their environment, values and behaviors, then, would differ for adolescents based on I-E orientation. This becomes particularly important in regard to sex education for social responsibility when personality variables associated with I-E control are considered. Externals generally have been found to be less trustful, more suspicious of others, lacking in self-confidence and insight, and having a high need for approval of others (Joe, 1971). Internals have better impulse control, may be more resistant to manipulation and are more cautious in risk-taking. Adams-Webber (1969) found that subjects with internal control had a more developed sense of right and wrong than externals. Midlarsky (1971) found a positive relationship between internal orientation and helping others.

Locus of control is considered to be developmental, becoming more internal with age. Reports of attempts to modify I-E suggest that while a generalized expectancy may be established at an early age, I-E orientation is not fixed at

a particular point in development. Lifshitz (1973) concluded from a study of socialization influences on I-E orientation that internal I-E is associated with reinforcement for autonomous behavior and relative freedom of self-organization. Exploration of the relationship between personal autonomy and feelings or needs of others within a sex education program based on concern for self and others could conceivably change an adolescent's perception of the meaningful environment. Personality variables associated with internal I-E control would appear to be significant factors in sexual decision-making with regard to self and others.

Purpose of the Study

The purpose of this study was to determine the effects of a sex education program based on concern for self and others on social responsibility, locus of control orientation and knowledge in sexuality of early adolescents. Although many factors affect the level of social responsibility, I-E orientation, and knowledge of sexuality, especially with respect to sexual behavior, there was scholarly concern about the influence of this particular approach to sex education. Results from this study could contribute to understanding of adolescent sex education needs.

Assumptions and Limitations

Several assumptions were made in the study. The first assumption was that a 4-day curriculum (50 minutes daily)

was adequate to influence social responsibility, locus of control orientation, and knowledge in sexuality. In a review of moral education interventions reported by Higgins (1980), the duration of intervention reported ranged from 15 hours to one academic year. Berkowitz, Gibbs, and Broughton (1980), however, reported using a treatment which consisted of five 1-hour discussions in a study of the relationship of stage disparity to developmental effects.

Another major assumption was that change could occur immediately and was measurable. A final assumption was that changes in social responsibility could be measured by an instrument designed for this study based on moral judgment statements associated with Kohlberg's levels of moral reasoning.

A limitation of the study is directly related to the final assumption. Caution must be exercised when conducting research on controversial issues within a public school setting. For this reason, questions of interest related to sexual behavior which might have been more pertinent to the research questions were not asked.

Statement of the Hypotheses

The overall purpose of this study was to examine the social responsibility, locus of control, and knowledge in sexuality of early adolescents after participation in a sex education program based on concern for self and others. The hypotheses tested in the study were:

H_1: Level of social responsibility, measured by a social responsibility questionnaire based on Kohlberg's moral judgment statements, will increase after participation in a sex education program based on concern for self and others.

H_2: Locus of control orientation measured by the Nowicki-Strickland Locus of Control Scale will be influenced in an internal direction by participation in a sex education program based on concern for self and others.

H_3: Knowledge in sexuality measured by scores on a knowledge test will be increased by participation in a sex education program based on concern for self and others.

Definition of Terms

Social responsibility was defined as concern for self and others as the basis for decision-making in regard to social behavior. Decision-making on the basis of self only or others only denies the validity of the concept of respect for individual rights which must include rights of self and others (Gilligan, 1977, 1982; Kohlberg, 1981). Social responsibility was operationalized as prescriptive judgment statements associated with Stages 2, 3, and 4 of Kohlberg's moral reasoning stage theory.

Locus of control was defined by Rotter (1966) as the extent to which responsibility for reinforcements is ascribed to self (internal) and others (external). Internal locus of control is characterized by a belief that events are a consequence of one's own actions and to some extent under one's control. Persons having external control orientation

believe events are unrelated to their behavior and beyond personal control.

Knowledge in sexuality deals with the informational, affective, and attitudinal dimensions of sexuality. Included in the informational dimension are anatomy, physiology, and sexually transmitted diseases. The affective dimension is concerned with emotions and feelings. Consequences of early sexual behavior are associated with the informational, affective, and attitudinal dimensions.

Cognitive-developmental moral education is a philosophical and psychological approach to moral education and is based on the premise that moral development passes through a natural invariant hierarchical sequence of stages. Moral education occurs as stimulation of the next step in the natural development of the child rather than through indoctrination and is fostered by experience of cognitive conflict due to current level of thought in resolving moral issues (Sullivan, 1975).

CHAPTER II

REVIEW OF THE LITERATURE

Moral education from a developmental point of view differs from traditional moral education in that the principal objective is attainment of higher levels of moral development rather than teaching right answers or particular values. The focus in a cognitive developmental approach is on process rather than on content (Gilligan, 1980; Jantz & Fulda, 1975). The controversy which has surrounded the role of moral education has to a large extent centered on concerns about indoctrination versus moral relativism. Teaching a particular set of values or "bag of virtues" constitutes indoctrination; teaching that all values are relative and all perspectives equally valid is teaching relativism. Neither approach has been acceptable to all, and neither has provided an answer for public education.

In his early writings Kohlberg (1968) claimed that his approach to moral education avoided both pitfalls. Later Kohlberg (1981) acknowledged that emphasis on the principle of justice as the ultimate goal of morality could be interpreted as indoctrination. Galbraith (1979) cautioned that, while valuable as a theoretical construct, Kohlberg's approach should not be considered as the only approach to

moral education. This theoretical approach has, however, provided new directions for educational curricula to stimulate moral development.

Two major theories provided the basis for this study, Kohlberg's (1966) cognitive-developmental theory of moral education and Rotter's (1966) social learning theory regarding belief in causal relationship between one's own behavior and its consequences. Kohlberg, like John Dewey, defined the aims of education as development, both intellectual and moral. Kohlberg's moral education theory represents, in a sense, a response to Dewey's "appeal to psychology for knowledge of the process of development which would then serve to define educational goals" (Gilligan, 1980, p. 508). The process of moral development is fostered by experiences which stimulate the child to seek more adequate ways of resolving moral conflicts. During adolescence moral conflicts are often related to a search for sexual identity and conflicts between self interest and rights of others in interpersonal relationships. It is through social experiences that moral growth is stimulated according to both cognitive-developmental and social learning theories. Therefore, from a theoretical perspective, this study was concerned with social responsibility as a moral construct and belief in personal control of reinforcement as a social learning concept.

A review of the theoretical framework for the study is presented in the first section of this chapter, followed by an overview of reports in the literature of research efforts to influence moral reasoning development and locus of control orientation. In the final section, early adolescent developmental needs in regard to knowledge in sexuality are discussed.

Theoretical Framework

Kohlberg's Cognitive-Developmental Theory

A distinctive feature of Kohlberg's approach to moral education is the notion that moral education is stimulation of moral development rather than direct teaching of fixed values or moral rules. Kohlberg's philosophy is founded on the belief that moral principles are not necessarily rooted in cultural tradition and that certain values or principles are universalizable, distinct from the rules of a given culture (Kohlberg, 1981). The central principle to the development of moral judgment is justice, described as "primary regard for the value and equality of all human beings, and for reciprocity in human relations" (Kohlberg, 1972, p. 14).

Morality, then, represents a set of rational principles of judgment and decision, valid for every culture, which develop within the individual through rational organization of moral experiences. In relating this philosophy to educational goals, Kohlberg (1981) concluded that

> the proper content of moral education is the value of justice that itself prohibits the imposition of beliefs of one group on another. Public education is committed not only to the rights of individuals but also to the transmission of the values of respect for individual rights. (p. 37)

Kohlberg thus justifies emphasis on the principle of justice as the ultimate goal of moral education. The cognitive-developmental approach to moral development conceptualized by Kohlberg was an extension of the work of Piaget (1932). Kohlberg conducted a 20-year longitudinal study which provided the foundation for the basic assumptions of his stage theory of moral development (Colby, Kohlberg, Gibbs, & Liberman, 1983). Moral development is defined in terms of qualitative changes in patterns of thinking about self, interpersonal relationships, and judgments about right and wrong. The developmental process moves forward in response to conflict or disequilibrium generated by the interaction between the person and the environment. At each stage cognitive conflict is resolved by insights into new ways of thinking which reflect a broader perspective. Each stage is considered to be a more adequate way of thinking and represents a cognitive structural change.

The stage concept implies that the direction of moral development will be upward and that individuals pass through each stage with no stage skipping. In addition, an individual's thinking will be at a single dominant stage across varying content, with some use of adjacent stages at a given point in time.

The longitudinal study which provided the support for Kohlberg's theory involved 58 male subjects who were interviewed using hypothetical moral dilemmas at 3- to 4-year intervals over a 20-year period. Age, sociometric and socioeconomic status were included in the design as indicators of age developmental characteristics and sense of participation in society. IQ was equalized within social class and sociometric groups and the range included in the sample limited. A detailed account of the study including reliability and validity of measures used to determine stages in the developmental sequence can be found in Colby et al. (1983) along with a discussion of methodological issues.

From the data collected in the study Kohlberg defined three levels of moral development with two stages at each level. Each stage is characterized by a particular sociomoral perspective. Level 1, Stage 1 perspective is an egocentric point of view with little understanding of psychological interest of others. Level 1, Stage 2 is characterized by a concrete individualistic perspective with "right" being relative in a concrete individualistic sense. The perspective of Level 2, Stage 3 is the perspective of individuals in relationships with other individuals but without a generalized system perspective; however, at Stage 4, the societal point of view is differentiated from interpersonal agreement or motives. Level 3, Stage 5 represents a prior-to-society perspective with an awareness of values and rights

prior to social attachments and contracts. Ultimately, the perspective is that persons are ends in themselves and must be treated as such (Kohlberg, 1976). At one time, Kohlberg called this Stage 6, but he has since conceded that this probably is not a distinct stage (Kohlberg, 1982).

The relationship between chronological age and moral judgment stage becomes less precise as individuals leave Stages 1 and 2. Adolescents may be found at any one of Kohlberg's five stages although most early adolescents (13-14) in Kohlberg's sample were in transition between Stages 2 and 3. Almost half of the late adolescents were at Stage 3 (Colby et al., 1983). The basic shift from childhood to adolescence in cognitive thought is reflected in a shift from concrete to abstract thought processes (Piaget, 1932). This shift is thought to be a necessary but not sufficient precondition for the attainment of a corresponding shift in moral thought in adolescence (Muuss, 1976; Walker, 1980).

Kohlberg's theory has been challenged from many directions in regard to invariance of stage sequence (Bandura, 1969), functional unity approach to structure change (Krebs & Gillmore, 1982), and failure to account for the role of friendship and intimate relationships (Gilligan, 1980; Wallwork, 1985). Gilligan noted that Kohlberg's stage theory was based exclusively on the study of moral development in males and questioned the applicability of his stage characteristics for moral development in females. Through research

on women's moral development, Gilligan (1977, 1982) defined an ethic of care focused on responsibility in relationships. Gilligan suggested that moral development for males and females is contrasted by different perspectives associated with sexual identity and sex-role orientation. Differences between Kohlberg's ethic of justice and Gilligan's ethic of care appear to be resolved in moral maturity with the realization that inequality and incidence of violence are both destructive for everyone involved. Others, in addition to Gilligan, have suggested the need for revisions or expansions of Kohlberg's theory. Wallwork (1985) called for an expansion of Kohlberg's theory to include judgments and actions prompted by direct benevolence, compassion, care and concern, thus directing attention, as suggested by Gilligan, to varying social contexts.

Recent research has been focused on possible distinctions between social reasoning and moral reasoning (Nucci, 1984; Nucci & Turiel, 1978; Selman, 1980; Smetana, 1983). There is some evidence to suggest that judgments regarding social conventions and moral issues involve ways of reasoning which are different and may be governed by different thought processes. Kohlberg's position has been that children develop parallel but independent cognitive structures for dealing with physical, social, and moral issues; however, all thought is interrelated and development in different domains is linked. Muuss (1976) supported Kohlberg's notion

that there are links between moral development and ego development based on observations of trends toward parallels in development, particularly during transitional periods.

The relationship among cognitive stage development, role-taking abilities, and moral development was the focus of a study by Krebs and Gillmore (1982) who found support for Kohlberg's claim that cognitive development is a necessary but not sufficient condition for role-taking but concluded that children may reach a particular stage of moral development without having reached the equivalent stage of role-taking or cognitive development. The construct of horizontal decalage was offered as a possible explanation for the failure to find parallel development among cognitive structures. Krebs and Gillmore cited the need for studies to provide a clearer understanding of the cognitive structures underlying social and moral development. Hoffman (1979) added to the call for more research in the patterns of thinking about social and moral issues when he described morality as the part of the personality which links the individual to society.

Clearly many new and innovative approaches to moral development research and moral education have had their beginnings in Kohlberg's theoretical approach to moral development. In this study it was assumed that the sociomoral perspective of early adolescents in regard to sexual reasoning, an area in which individual and societal needs are

often in conflict, would be less egocentric as a result of educational experiences designed to stimulate movement to a higher level of thinking. This higher level of thinking should reflect a sociomoral perspective of individuals in relationships with other individuals as a more adequate way of resolving conflict between self-interest and rights of others in keeping with a cognitive developmental approach to moral education.

Social Learning and Locus of Control

Social learning theory provides a general theoretical background for understanding how a variety of behavioral choices in social situations might be affected relative to belief in the causal relationship between one's own behavior and its consequences. Individuals are likely to differ in the degree to which they attribute reinforcement in a situation to their own actions according to their history of reinforcement (Rotter, 1966). Perceptions of the relationship between reinforcement and a preceding behavior determine aspects of behavior that are strengthened or repeated. If reinforcement is viewed as outside personal control, a preceding behavior is likely to be weakened. Learning then is different when a person, regardless of behavior, receives reinforcement and attributes the reinforcement to self or considers it beyond personal control. Less learning occurs when a person perceives that a task is controlled by random conditions or chance.

Instruments have been developed to measure the extent to which an individual believes or has a generalized expectancy in regard to personal control of reinforcement. Responses on these measures generally correlate with the value placed by the individual on internal control. Related to the feeling that one can control the environment is also a feeling that one has self-control. Rotter (1966) reported findings from studies conducted on behavioral characteristics and locus of control orientation. In summarizing these studies he concluded that

> the person who perceives that he does have control over what happens to him may conform or may go along with suggestions when he chooses to and when he is given a conscious alternative. However, if such suggestion or attempts at manipulation are not to his benefit or if he perceives them as subtle attempts to influence him without his awareness, he reacts resistively. (Rotter, 1966, p. 20)

Other studies have provided evidence that individuals with a strong belief in personal control over the outcome of events are likely to be more alert to aspects of the environment which provide useful information for future behavior.

Locus of control is considered to be developmental, becoming more internal with age. When locus of control is considered on a continuum with internal and external control at opposite ends, it is likely that individuals at either end of the continuum may be maladjusted (Joe, 1971). Generally, high external locus of control orientation has been associated with negative behaviors and high internal control with more positive outcomes. Researchers agree that a

generalized expectancy of internal-external control is established by third grade (Crandall, Katkovsky, & Crandall, 1965).

Locus of control was treated as a unidimensional trait in most early studies. Later analyses have indicated that it may be multidimensional. Kaemmerer and Schwebel (1976), using factor analyses procedures, identified five factors within two locus of control measures: belief in a nonrational world, belief in a politically unresponsive world, belief in a predictable world, belief in a just world, and belief in the meaningfulness of personal effort. These last three factors would appear to be particularly relevant to issues involving personal autonomy within interpersonal relationships.

The assumption was made in this study that social responsibility represents a higher level of moral reasoning and a higher internal locus of control since personality attributes associated with internal orientation are related to a more developed sense of right and wrong. Participation in a sex education program based on principles of concern for each individual in relationships was expected not only to increase the level of social responsibility of early adolescents but also was expected to influence perception of personal control in regard to decisions to participate in sexual behavior. Developmental issues in early adolescence center around sexual identity and interpersonal relations; therefore, it is

conceivable that an educational intervention concerned with informational, attitudinal and affective dimensions of sexuality could influence both social and moral development. It was anticipated in this study that changes in social and moral development would be parallel, consistent with Kohlberg's view that areas of cognitive development are linked.

Educational Influences on Moral Reasoning

In a review of curriculum effectiveness of two approaches to moral education, Leming (1983) concluded that little confidence was warranted concerning the effectiveness of values clarification, a controversial approach claimed by proponents to be nonindoctrinative and by opponents to be relativistic, which was used widely during the last two decades. Leming suggested that the Kohlbergian approach offers distinct advantages to researchers and educators alike and has greater potential for acceptance in education. Advantages offered by a cognitive-developmental approach include well defined intervention strategies for both researcher and practitioner and specific developmental outcomes.

The use of philosophical discussions of moral dilemmas for moral growth has been advocated by Kohlberg and others. Higgins (1980) reviewed the effects of several curricular interventions on moral reasoning development. Moral education interventions were categorized into three types: direct moral discussion of real-life dilemmas within natural groups; direct moral discussion and deliberate psychological

education; and direct moral discussion in social studies curricula. Higgins concluded that interventions in the first two categories were more effective than those in the third; however, she noted that only two studies were included which involved discussions of moral dilemmas defined by academic content. Higgins speculated that it may be confusing to study the same subject areas both as knowledge and as content for "Socratic dialogue about moral issues." Both Higgins and Leming (1983) concluded that the cognitive-developmental approach has provided a useful framework for studying the effects of different types of educational interventions on the process of moral reasoning development.

Types of Interventions

The theoretical bases for Krogh's (1985) study of the effects of two educational interventions on levels of social/moral reasoning in primary school children were Damon's (1977) positive justice and Selman's (1980) social perspective-taking theories. The moral reasoning growth reported in the study therefore does not necessarily reflect stage change as defined by Kohlberg. Both Damon's and Selman's theories, however, are cognitive-developmental theories and the educational interventions used by Krogh were based directly on the work of Blatt and Kohlberg (1975). Role-playing was used with one group of children and the Socratic dialogue, modified to be developmentally appropriate, used with a second

group. Basic to both interventions were stories which contained conflicts between social issues such as sharing or respect for property, friendship, truth or obedience to authority. The main difference in the two techniques was amount of physical action involved in role-playing, which was expected to be more effective with the younger students. Both intervention techniques were equally effective in raising levels of moral reasoning.

Hayden and Pickar (1981) also used discussions of moral conflicts to increase moral reasoning of seventh-grade girls. Their study differed from Krogh's (1985) study in that moral conflicts were discussed in only one group; the second group discussed ideas but did not include issues involving moral dilemmas. Moral reasoning scores on Kohlberg's Moral Judgment Interviews increased significantly for the moral dilemma discussion group after the 6½-hour moral education intervention but not for the group exposed to discussion of non-moral issues. Discussion of ideas per se did not seem to be the critical condition. Hayden and Pickar concluded that the qualitative impact and content of experience were essential in developing moral judgments.

Teachers were present during discussions in the studies conducted by Krogh (1985) and Hayden and Pickar (1981) to guide the discussions and stimulate cognitive conflict by introducing controversial questions and issues. Spontaneous disagreement due to different levels of moral judgment among

students involved in the discussions usually occurred without being prompted by the teacher. Thus, higher levels of moral reasoning may have been advanced by teachers and/or peers. Berkowitz, Gibbs, and Broughton (1980) studied the effects of peer discussions without teachers present and found that within a heterogeneous group, natural discussions of moral issues led to an increase in moral reasoning. Subjects in Berkowitz et al.'s study were undergraduate psychology students who were paired according to degree of disparity between moral judgment pretest scores on Kohlberg's Moral Judgment Interviews. Treatment consisted of five 1-hour discussions of preselected moral dilemmas.

Berkowitz et al. (1980) found that the +1 stage disparity claimed in earlier studies (Blatt & Kohlberg, 1975) as necessary in promoting moral growth was not necessarily the optimal stage disparity. As long as there was at least one-third stage difference between peers engaged in discussion of moral issues, moral reasoning was advanced. The reader was cautioned against contrasting findings in the Berkowitz et al. study directly with previous investigations of stage disparity, since the study differed in significant ways, one of which was age of subjects. This research did, however, raise some important questions in regard to conditions under which moral growth occurs and the role of spontaneous interactions between adolescent and young adult peers in moral development. In the Berkowitz et al. (1980)

study, as in the Hayden and Pickar (1985) study, a brief intervention proved to be effective in raising levels of moral reasoning.

Discussion of moral dilemmas was combined with training in counseling and teaching skills in a curriculum developed by Mosher and Sullivan (1976) for high school students. After completing the curriculum, students became moral educators and led moral dilemma discussions with younger children. Mosher and Sullivan found that students who participated in the curriculum showed significant gains in moral reasoning and were effective as leaders of moral discussions with younger children. According to Mosher and Sullivan, the "combined experience of learning about dilemmas and teaching others formed an active curriculum" for the students (1976, p. 170).

In a different approach to moral education with high school students, Evans (1982) measured changes in moral reasoning after students were taught Kohlberg's theory. Of primary concern to Evans was the possibility that knowledge of the theory could predict stage development, thus raising a question about the ability of Kohlberg's Moral Judgment Interview to distinguish actual development. Knowledge of the theory without discussion of real or hypothetical dilemmas did not reveal significant differences in moral reasoning levels. This is consistent with findings in other studies that moral development was not increased when ideas discussed did not include moral conflict.

Ojemann and Campbell (1974) analyzed factors that differentiate responsible and irresponsible behavior and designed a comprehensive learning program for developing the process of making moral judgments based on their analysis. Components included in the program were: instruction in the nature of human motivations and problems of working them out; learning to think of alternatives; learning to examine short- and long-term consequences of alternative choices for self and others; and learning to make a decision which accounts for long-range and immediate effects of behavior on self and others. Two investigations of the results of the learning program were conducted, one for fifth-grade students and one for sixth-grade students. Results of both studies indicated that the curriculum was effective in influencing the process of making moral judgments. The effects of the curriculum were measured by the number of times a student chose methods of making a decision about moral issues emphasizing "effects on me" and "long-run effects."

A key factor in moral growth involves learning to take the perspective of another person. Ojemann and Campbell (1974) included in their curriculum for moral development learning experiences to develop the ability to understand the effects of behavior on self and others. Oliver (1975) stressed the importance of learning to know and understand the feelings of others in moral education. Age, IQ, socioeconomic status, awareness of consequences, empathy and

stage of moral reasoning were used as predictor variables by Leming (1976) in multiple regression analyses to study the effects of multiple factors in moral behavior. Subjects included in the study were middle school age children. Age and empathy, defined as the ability to know the feelings of others, were found to be primary predictors for stage of moral reasoning.

Age, Gender, Race, and IQ

A basic tenet of Kohlberg's developmental stage theory is the relationship between age and moral development. Colby, Kohlberg, Gibbs, and Liberman (1983) reported that 60% of the total variance in Moral Maturity Scores (MMS) on Kohlberg's Moral Judgment Interview could be attributed to age. The frequency of usage of Kohlberg's moral development Stages 1 and 2 decreases from age 10 with Stage 3 increasing up to ages 16-18. As reported earlier, it is within the 13 to 14 age group, ages of subjects in this study, that the most subjects in transition between Stages 2 and 3 are found. Leming (1976) found age to be a primary predictor for stage of moral reasoning, and age, IQ, and SES to be primary predictors for choice on moral dilemmas in his investigation of the effects of multiple factors on moral behavior. The amount of total variance accounted for by these predictors combined, however, was very small.

Age, gender, SES and academic ability were included as possible contributing factors in Evans' (1982) study of

the effects of knowledge of Kohlberg's theory on stage development in moral reasoning. Contrary to findings of Leming and others (Harris, Mussen, & Rutherford, 1977; Hoffman, 1977), none of these variables were found by Evans to be significant at the .05 level. Generally, however, a moderately high correlation between age and moral stage development has been reported even when other theoretical explanations for the relationship have been offered.

According to social learning theory, moral behavior is learned through imitating observable behavior and values of others rather than through structural changes caused by cognitive conflict due to attempts to resolve moral dilemmas. Bandura (1969) found that exposing children to adult models who expressed moral judgments that ran counter to the children's dominant evaluative orientations was effective in modifying their judgmental behavior in the direction of the social influence. Cowan, Langer, Heavenrich, and Nathanson (1969) speculated that changes reported by Bandura which appeared to be lower levels of judgment might represent a temporary response to social coercion rather than a stage change in judgment. The possibility that developmental level of the child might be the modifier was offered as an alternative explanation. Subjects in Bandura's study were between the ages of 5 and 12, an age span which would normally include considerable variation in cognitive developmental level or social maturity; therefore, a cognitive developmental explanation seems plausible.

Edwards (1979) was interested in determining whether aspects of moral judgment such as collective responsibility, intention-consequences, immanent justice, and responsibility develop differentially. Edwards found that adolescents between the ages of 11 and 15 developed differentially on the aspects of judgment studied. The context of the situation appeared to be a crucial factor along with the presence or absence of reasonable alternatives in selection of responses considered mature at a given age. There were no clear age-group differences for subjects between 11 and 15 on collective responsibility and immanent justice. In this study, the concern was more with understanding development in regard to a particular concept or issue rather than with "charting the general knowledge structures that may cause moral cognition," which has been Kohlberg's approach (Lapsley & Quintana, 1985, p. 251).

In addition to differential development at different ages on various aspects of judgment, Edwards (1979) reported gender differences in moral judgment development. Girls were found to choose responses showing less collective responsibility and less severe punishment. In Kohlberg's study, based exclusively on moral development in males, gender differences in moral reasoning were not of concern, although when females are assessed using his Moral Judgment Interviews, more males than females progress to levels of moral maturity beyond Stage 3. Gilligan (1982) suggested

that Kohlberg's theory is relevant for male development only since the perspectives of males and females differ in significant ways. Males interviewed at age 11 in her study of moral development appeared to resolve dilemmas through logic and law; females resolved dilemmas through communication in relationships. Gilligan contends that these ways of thinking about choice and conflict are different, but one way is not necessarily superior to the other. Edwards' (1979) findings lend support to Gilligan's claims that there may be gender differences in aspects of moral judgment.

In a study conducted by Saltzstein, Diamond, and Belenky (1972) gender differences were determined for conformity behavior. The moral judgment level of seventh grade boys and girls was assessed using Kohlberg's Moral Judgment Interviews in a study of the relationship between moral judgment level and conformity behavior under conditions of interdependence and independence. The assumption was made that moral reasoning may enter into decision-making to conform or remain independent in social influence situations. The prediction of higher conformity behavior at Kohlberg's Stage 3 was supported by the study. Students who were at Stages 1-2 and 4-5 were less likely to conform. Additionally, there was a disparity in the distribution of boys and girls at various moral judgment levels, with girls disproportionately high in the Stage 3, most frequently conforming, group. These findings were reported as consistent with previous

studies which have found that subjects with a high need for approval conform more than those with low needs in this area (Joe, 1971). Students, regardless of gender or moral judgment level, did not conform more under conditions of interdependence as had been predicted. Saltzstein et al. (1972) said that conformity may be interpreted as overt compliance, identification, internalization, immorality, moral obligation, or duty depending on situational factors. Rationale for conforming would be redefined by individuals at each stage of Kohlberg's theory, but this would be attributed to cognitive change rather than situational factors.

Kohlberg rejects the notion of cultural relativism in his theory of moral reasoning; principles of justice, in his stage theory, are culture free. Based on this assumption, there are no differences directly attributable to race in relation to moral development. Kohlberg did find a moderate correlation between SES and moral development, however, at every age (Colby, Kohlberg, Gibbs, & Liberman, 1983). A difference was also determined for moral development in social isolates prior to the age of 13. More subjects identified as integrates, those chosen more often using sociometric techniques, than isolates were at Stage 3 in moral development and fewer at Stage 1. Differences beyond age 13 were minimal.

The relationship of IQ and moral development reported by Colby, Kohlberg, Gibbs, and Liberman (1983) showed a

somewhat different pattern of development. The rate of moral development was only slightly related to IQ in childhood and adolescence. The final level of correlation between IQ and moral development was significantly related to the educational level attained which was thought to reflect IQ and SES. By age 28 the correlation between moral maturity scores for subjects in Kohlberg's study and IQ only was no longer significant. Thus a simplistic relationship between IQ and moral development cannot be assumed.

From the research reviewed it appears that moral reasoning can be enhanced through deliberate planned programs for students at all grade levels. In most studies which included the use of moral dilemma discussions, moral reasoning was advanced. Other techniques such as role-playing were equally effective. The length of the intervention did not seem to be the critical factor, although most interventions lasted over an extended period of time such as a semester. It appears that +1 stage disparity may not be essential in promoting moral reasoning development and there are indications that situational factors may influence differential aspects of moral development during adolescence.

Moral development is correlated with age and for adolescents may be influenced by the extent to which the individual is an integrate or isolate within a group. Rate of moral development is related to IQ more clearly in the early years than in adult development when differential educational

experiences, a reflection of IQ and opportunity, may be more closely related to stage level attained. While Kohlberg did not specifically address the issue of gender differences in moral development in formulating his stage theory, there are indications of some gender differences in the ways in which males and females think about choice and conflict and perspective in regard to collective responsibility and notions about punishment.

Influences on Locus of Control

Personality attributes associated with internal control are also thought to be associated with a more developed sense of right and wrong. There are indications that a person's locus of control orientation can be modified by certain types of experiences. Most interventions have been aimed toward increasing internal control based on the belief that this represents a better adjusted perception of the relationships between people and their environment and personal responsibility and control over self and others. Goal setting and other behavioral techniques have been used to modify locus of control orientation in various situations.

Modification of Locus of Control Orientation

The major emphasis of an experimental camp program for seventh, eighth, and ninth grade students, conducted by Nowicki and Barnes (1973), was on structured working together to accomplish goals. The results of the study suggested that

the camping experience had a definite effect on the students toward a more internal perception of control.

Bradley and Gaa (1977) investigated using goal setting with tenth grade students to modify locus of control orientation. Subscale scores were used in addition to overall scores in the analysis of the results. Bradley and Gaa found that goal setting was significant as a locus of control modifier in an internal direction in academic situations but not significantly related to social-interpersonal achievement situations or to physical achievement situations. The authors concluded that internal locus of control may not be adaptive in all contexts.

Behavior modification techniques were used by Pawlicki (1976) and Blazek and McClellan (1983) in attempts to modify locus of control. Pawlicki introduced a group of college students in a psychology class to self-directed modification techniques with the result that students in the group increased in internal control. The effects of cognitive persuasion as a possible contributing factor was not ruled out, although Rotter (1966) contended that internals resist attempts at manipulation. Subjects in Blazek and McClellan's study were fifth grade students who received instruction in ways to manage their own health care. The essence of the self-care program was emphasis on control, responsibility, freedom, and an improved quality of life. Students who participated were more internal in locus of control at the

conclusion of the program. The instrument used to measure change was specifically designed to measure the extent to which children perceived health outcomes as due to their own action or chance.

De Charms (1972) designed a study to determine the effects of situational elements relative to amount of freedom versus compulsion on attribution of causality. Teachers were trained to help students determine realistic goals and evaluate progress toward reaching their goals. Sixth and seventh grade students of teachers who had received the training attributed more personal responsibility for actions to characters in stories they wrote than did students in other classes on a similar assignment. The belief that events are a consequence of one's own actions and therefore to some extent under personal control is characteristic of internal locus of control.

While goal setting and self-evaluation have been shown to increase internal locus of control, White (1972) concluded that peer evaluation conditions had a negative effect on belief in internal control. The influence of the environment under conditions of peer versus adult evaluations and self-evaluation on 12-year-old boys was studied by White. Peer evaluation conditions lowered belief in internal control. Self-evaluation and adult evaluation conditions with adult evaluators who were positive and self-assuring produced a positive change in belief in internal control. White

speculated that the destructive consequences of peer evaluation may result because the child has little to do with setting the standards used to judge behavior under conditions of peer evaluation. Another possible explanation could be related to the transition occurring during early adolescence in dealing with sexual identity and interpersonal relationships while attempting to establish personal autonomy.

Age, Gender, Race, and IQ

Five levels of increasingly internal causation were presented by Harris (1977) to students in Grades 1, 3, 6, and 8. Harris was interested in determining the relationship between age and attribution of intentionality. Older children used intentionality information in their attributions to stimulus persons more frequently than younger children. Harris concluded that ability to differentiate between intentional and unintentional acts and to look beyond superficial aspects of interpersonal events develops with age.

While research findings with regard to the developmental nature of locus of control orientation have consistently demonstrated a positive relationship between age and internal orientation, there has been less agreement concerning other attributes and locus of control. Rotter (1966) stated that gender differences on measures of locus of control were minimal. Johnson and Gormley (1972), who studied the personality attributes of fifth grade students characterizing academic

cheaters, found significant gender differences on locus of control orientation. Low achievement motivation and belief in external control were found to predict academic cheating among girls but not among boys. Johnson and Gormley concluded that females were more influenced by variables pertaining to persistent self-devaluation, such as inability to delay reward, low need for achievement, and external control, than males. Other researchers (Barnett & Kaiser, 1978; Joe, 1971; Lifshitz, 1973) have attributed gender differences to conflicting sex-role demands or cultural socialization processes.

Guttman, Bar-Zohar, and Slatter (1981) discovered gender differences within the Asian-African group in locus of control orientation with females being more internally oriented than males when Anglo-American and Asian-African adolescents were compared. Sex-role socialization practices specific to the cultural groups were suggested as a possible explanation for gender differences in locus of control orientation for adolescents of Eastern descent.

Lifshitz (1973) found additional evidence that cultural background contributes to differences among young students in locus of control orientation; however, these differences diminish with age. In a study of differential socialization influences on acquisition of locus of control orientation, Lifshitz determined that during the age period between 10 and 12, attempts to influence locus of control

orientation resulted in internals becoming more internal and externals, more external. He also reported differences based on cultural socialization practices. By age 14, with increasing ability to make realistic judgments in regard to attribution of responsibility for both success and failure, these differences disappeared. Lifshitz suggested that group support for young children not viewed as strong enough to cope with failure may interfere with learning to accept personal causality for failure or success.

Differential socialization influences have been strongly identified with belonging to a particular ethnic group or social class. According to reports of ethnic differences, blacks and lower-class individuals generally have higher external scores than whites and middle-class individuals (Joe, 1971). Guttentag and Klein (1976) investigated the relationship between race and locus of control for students in Grades 5 through 8. Noting that black children were not included in the standardization of instruments to measure locus of control, Guttentag and Klein added items which were race-related to determine whether race was a salient category in relationship to feelings of personal efficacy in academics. In addition to generalized and specialized factors of control, Guttentag and Klein were interested in studying the relationship of group pride in racial membership and the success and achievement expectancies of children. Race-related items did not elicit consistent reactions from children suggesting that

such differentiation was not a salient category for the age group included in the study. Joe (1971) concluded that

> differences in beliefs regarding locus of control among ethnic groups and social classes tend to support the idea that individuals from lower socio-economic classes and minority groups have higher expectancy of external control because they perceive limited environmental and material opportunities. (p. 635)

While socioeconomic status has been found to be related to external orientation, internal orientation has been associated with achievement and higher IQ (Barnett & Kaiser, 1978; Joe, 1971). Most studies which have included IQ have been concerned with achievement and locus of control. Harris (1977), in studying the relationship between age and the ability to differentiate between intentional and unintentional acts, found no relationship between high IQ and reduced motivation to cheat.

Many attributes associated with internal locus of control orientation would seem to be related to responsible choices in sexual decision-making. Locus of control orientation can be modified through interventions such as goal setting, self-evaluation, and supportive teacher evaluation within an academic setting. Behavioral techniques of self-training have also been effective in modifying locus of control. Generally, internal control is thought to be more adaptive and has been the direction sought through modification techniques. Hoffman (1979) suggested that

> the human capacity for empathy may combine with the cognitive awareness of others and how others are affected by one's behavior, resulting in an internal motive to consider others. Reciprocal role taking may heighten the individual's sensitivity to the inner state aroused in others by one's behavior. People may cognitively process information at variance with pre-existing moral cognition and construct a new view. They may feel a commitment and internalize these concepts. (p. 964)

Regardless of theoretical perspective, maturity, both moral and social, is marked by increased autonomy and relations based upon mutual reciprocity.

Relationship Between Moral Reasoning and Locus of Control

Several attempts have been made to explore the relationship between moral development and locus of control. Johnson (1978) studied the relationship between moral judgment, instructional patterns, locus of control, and religious attitude. A significant relationship was found between instructional pattern and moral judgment, but no significant relationships between locus of control and moral judgment or religious attitudes and moral judgment. Students involved in role playing perceived class activity differently than students who participated in student-led small discussion groups.

Adolescents of Anglo-American and adolescents of Asian-African descent were compared by Guttman, Bar-Zohar, and Slatter (1981) to determine the effects of differential patterns of socialization on locus of control and moral reasoning.

As predicted, more internal locus of control orientation and more relativistic moral judgment were associated with adolescents of Western descent. Guttman et al. attributed the differences to differences in parenting. Parents with Asian-African backgrounds were described as more authoritarian and less flexible. When cultural origin was disregarded, there was a relationship between relativistic moral judgments, characterized by concern for individual circumstances, and internal orientation. There was no relationship, however, between locus of control and moral judgment within each group.

Maqsud (1980) hypothesized that individuals at Stage 3 of Kohlberg's stage theory of moral development would be more internally oriented than those at Stages 1, 2, and 4. Results of his study provided support for his hypothesis and he concluded that the judgment of utility in interpersonal relationships (Stage 3 morality) tends to promote the development of initiative and self-reliance.

A theoretical explanation of the ways in which locus of control and moral reasoning may be interrelated was offered by Gibbs and Widaman (1982) who suggested that internal control may represent a cognitive set which is more than simply an alternative style of looking at things since thinking for oneself is a valued ability. When Kohlberg revised his stage definitions in the early 1970's to accommodate what had appeared to be regression during

adolescence, he proposed substages which included formerly "principled idealizations." These were referred to as "B" substages. A "B" orientation would consider a justification in relation to deeper considerations than a contextual given thus extending or transforming the immediate context of the problem. According to Gibbs and Widaman (1982), "the 'B' tendency to initiate a transformation rather than to simply accommodate to a problematic situation would seem to presuppose a belief that the locus of control for events can be internal or personally caused" (p. 39). Following this line of reasoning internally oriented individuals would be expected to approach sexual-decision making with greater concern for self and others than externally oriented individuals. Additionally, participation in a program which increases internal orientation should also increase social responsibility.

Sex Education in Adolescence

Human sexuality is a complex subject and has been influenced by technological, cultural, legal, ethical, and religious changes (Kirkendall, 1984). Adolescent sex education delivery agents include parents, mass media, peers, health departments, churches, and public schools. Sexual information is being acquired at earlier ages from various sources with little assurance that psychological and social aspects are being addressed. Considering the importance of sexuality in adolescent growth and development, it would

appear that research is needed to determine the potential influence of sex education in public schools on sense of responsibility to self and others in sexual matters in early adolescence.

Sex education as academic content was used by Bower (1980) and DiStefano (1977) in attempts to influence moral reasoning of high school students. A sex education course was offered to senior high school students to provide accurate sexual information and allow for discussion of the moral implications of sexual behavior (Bower, 1980). It was hypothesized that the sex education course would significantly increase moral reasoning and ego development. There were no significant changes in moral reasoning level at the end of the course and ego development decreased. Bower concluded that the curriculum did not meet the specific needs of the experimental groups. Decreased ego development was attributed to "ego regression that often precedes development."

DiStefano (1977) developed a curriculum intended to offer high school students the opportunity to discuss interpersonal relationships and sexual dilemmas. It was not offered as a substitute for sex education but as a separate related class. Students at the conclusion of the study ranked discussion issues according to importance; interpersonal issues, defined as obligations to other people and to self, and honesty in relationships received the highest ranks. There were no significant differences in moral reasoning for students who participated in the curriculum.

Most literature reports on sex education appear to involve older adolescents. Juhasz (1983), in discussing the need for sex education, emphasized the fact that children are becoming sexually active at an age when, cognitively, only the brightest are capable of mastering the skills needed in responsible decision-making. Juhasz suggested that sex educators during the adolescent years might focus on the development of a strong sense of the sexual self and teaching process skills in decision-making rather than specific values. A scholarly approach to sex education based on sound theoretical frameworks extending through K-12 was advocated by Juhasz as one way to gain support from parents and community leaders for sex education within the schools.

According to Juhasz (1983),

> children who have basic information and correct terminology about sexuality and sexual functioning and who feel free to communicate about it will be much less vulnerable to peer pressure and more capable of making responsible sexual decisions as they enter adolescence and move into young adulthood. (p. 17)

Gebhard (1977) used previously unpublished data from the Kinsey sample concerning the acquisition of basic sex information and contrasted the data with more current responses. Ten basic items were selected and respondents were asked at what age they first learned of each item and how they acquired the information. Gebhard found that basic facts about sex were being learned at considerably younger ages. He saw this as a result of increased maternal efforts to provide information, increased sex education in the schools, and more

explicit treatment of sex in the media. The sources of sex information for children had also shifted in relative importance. Same-sex peers, although still ranked first, had lost some of their importance and subjects were likely to report not one major source, but two or more major sources of equal importance. Schools were still inconsequential as sources of information and mass media had diminished in relative importance. Gebhard speculated that if trends continue,

> we will have a generation of prepubescents who have a rather comprehensive knowledge of human sexuality including coital techniques and practices which we now regard as deviant or exotic. . . . Children burdened with copious information of varying degrees of validity will necessarily be unaware of the psychological and social aspects of sex which determine the meaning of any sexual act. (p. 169)

Monge, Susek, and Lawless (1977) implemented a sex education class for ninth grade students. The curriculum included information about child, adolescent, and adult development in relationship to family, peers, and society. Monge et al. concluded that sex education can provide important information not generally gained from peers. Females showed greater gains on posttest measures of knowledge gained than males; however, both scored significantly higher than students in a control group not exposed to the curriculum.

The influence of source of sex information on premarital sexual behavior among college students was explored by Spanier (1977). Spanier posited that in sexual socialization

only some of the sources usually thought of as significant others in the socialization process influence the individual. Thus, levels of premarital socio-sexual involvement are likely to be different for those who rely on sources likely to encourage sexual experimentation and those who rely on sources likely to discourage premarital involvement. Spanier found most consistent source of sex information to be independent reading. Same-sex peers were next in importance, and 62% of the females in the study named their mothers as a major source. Sources of information were found to be significant influences on premarital sex, with sexual behavior among females influenced in a negative direction (less active) by mothers and sexual behavior among males influenced in a negative direction by clergymen. While teachers were reported as a source of information by 22% of those sampled, levels of premarital activity were not influenced by teachers.

Monge et al. (1977) pointed to four issues which must be considered in implementing sex education programs. These included need, content, age, and sex composition of classes and qualifications of teachers. A report was prepared by Chap (1980) on services available in a Southeastern state for sexually active and pregnant teens and teenage parents. According to the report, sexual activity among young people between the ages of 10 and 19 increased dramatically between 1971 and 1976. One-fifth of all 13- and 14-year-olds and

more than half of all 18-year-olds had had intercourse. Veneral disease, pregnancies, and births, especially for younger teens, also increased during this time, leading to a need to redefine teenager when thinking about adolescent sexuality to include those in the 10 to 12 age group. Pregnancy was found to be the major reason for females to drop out of school. One-third of all mothers who had a child when they were 13 to 15 were below the poverty level. Health risks for teenage parent and infant were a source of concern.

At a national level teenage pregnancy has been termed an "epidemic." The United States has one of the highest rates of teenage child-bearing in the world (Chap, 1980, p. 6). About 10% of all teenagers get pregnant and in 1977 teenagers accounted for almost one in five children born in the nation.

In spite of the enormity of the problem, the United States Department of Education has made almost no effort to develop sex education or family life education courses. A survey conducted in 1978 revealed that only one state required sex education, others recommended it, and one did not allow it. Major responsibility in some states for sex education has been assigned to public health departments. The state which was the site of the study by Chap (1980) had no state policy on sex education other than "a warning in a State Department of Public Instruction policy statement that

it should not be introduced to the entire school curriculum without community support" (p. 11). No record of local educational agency involvement was maintained at a state level. There was, however, evidence that some counties within the state offered programs through public agencies and health educators were making strong efforts to work with schools in some areas to coordinate sex education programs outside the health department.

Within school systems educational efforts related to human sexuality were reported to be fragmented. In a few systems sex education programs were being developed and were scheduled to be implemented in the near future Chap reported that generally:

> 1) there was no ongoing sex-education nor family life education curricula;
> 2) sex education/family life education-related courses were largely available only at the senior high level;
> 3) these courses were usually available as electives and all students did not enroll in these courses;
> 4) even when courses were available, all topics were not covered for both young men and women. (1980, p. 29)

A recommendation from the report was that age-appropriate family life education programs should be implemented and that emphasis should be on developing a positive self-concept and sense of responsibility for one's own sexuality.

Statement of the Problem

The teaching of moral values and moral behavior in the schools is a controversial issue. Obstfeld and Meyers (1984) suggested that past efforts to determine appropriate subject matter and the most effective delivery agents for sex education have generally failed. Thus, it would appear that little progress has been made in this area since Neumann wrote in 1923:

> That the task of helping to reach a sounder sex morality is delicate and difficult does not mean it should be evaded. Sex morality is a larger and more important consideration than sex hygiene. The ultimate safeguard lies less in fear than in positive ideals of self-control as a means to true self-expression. (p. 284).

Due to dissenting views about the propriety of teaching sex education in the public schools, this area has largely been ignored. When sex education has been taught it has been for the most part limited to factual information with little attention given to the reality of social and emotional consequences of early sexual involvement. It was for this reason that the present research on the effect of a sex education unit based on social responsibility was proposed. The following research questions based on this review were addressed in this study:

1. Could early adolescents' social responsibility be increased by a sex education unit emphasizing concern for self and others?

2. Could early adolescents' locus of control orientation become more internal by a sex education unit based on concern for self and others?
3. Is knowledge in sexuality increased for seventh and eighth grade students by participation in a sex education unit based on concern for self and others?

CHAPTER III

METHOD

This study investigated the Social Responsibility, Locus of Control, and Knowledge in Sexuality of early adolescent males and females. A major developmental task during adolescence concerns learning to reason in sexual situations in ways which are responsible to self and others. To make thoughtful, responsible decisions, adolescents need complete and accurate factual information about sexuality and an awareness of personal and social consequences of sexual behavior. Although many factors may affect reasoning, especially with respect to sexual relationships, sex education programs in public schools have the potential to educate adolescents to the notion that decisions at high levels of social responsibility are made with regard for the preservation of each person's individualism, thus countering an egocentric approach to reasoning in sexual decision-making. Scholarly concern about the influence of new approaches to sex education on adolescent attitudes in regard to rights and responsibility to self and others provided the impetus for this study.

A 4-day Sex Education Unit designed by public health educators for middle school students in a Southeastern state

includes direct instruction in sexuality and in social consequences of choices made in sexual situations. This curriculum was developed at the request of local school administrators concerned about sexual acting out and adolescent pregnancies. No plans for formal assessment of the effects of the program on student attitudes or behavior were included in the program design. Obstfeld and Meyers (1984) were highly critical of sex education efforts without empirical justification for program goals or assessment of program effects. An experimental design was proposed to determine the effects of the Sex Education Unit on student levels of Social Responsibility, Locus of Control, and Knowledge in Sexuality. Higher social responsibility necessitates taking care of self as well as others; therefore, sex education which includes social responsibility may be effective in raising levels of moral reasoning. Belief concerning personal control in a sexual situation may also be influenced by the acquisition of accurate factual sexual information and an awareness of consequences of sexual behavior.

Subjects

The initial sample for this study consisted of all seventh and eighth grade students enrolled in a public middle school (Grades 4-8) in a Southeastern state. Students identified as mentally handicapped and requiring special education services were excluded from the study since their educational

and social experiences were likely to have differed from experiences of students assigned to regular classes. Students more than 14 months above the mean age for each grade level were statistically eliminated from the data analysis for similar reasons. The age range chosen for inclusion was intended to control for the number of repeaters while allowing for age variation due to differences in state laws regarding age at school entry. The final sample consisted of 150 seventh grade and 138 eighth grade students or a total of 288 subjects. Mean age for seventh grade students was 13.2 years and for eighth grade, 14.2 years. Mean age for the total sample was 13.7 years (see Table 1).

Racial composition of the sample was 74.5% white and 25.5% black. Since the school attendance area encompassed a suburban area near a city of 35,000 residents, middle and upper middle income families may have been overrepresented in the sample population. According to a 1984 school survey, over half of the families with students in the school reported an annual income above $21,000 and less than 20% of the students qualified for free or reduced lunch under Federal eligibility guidelines. There were slightly more females (51.9%) than males (48.1%) in the sample and mean IQ was 104.81.

Table 1

Frequency Distributions by Race, Gender, and IQ in the Sample

	Number of Subjects	% of Sample
Race		
Grade 7		
White	113	75.4
Black	37	24.6
Grade 8		
White	101	73.2
Black	37	26.8
Gender		
Grade 7		
Male	79	52.7
Female	71	47.3
Grade 8		
Male	63	45.7
Female	75	54.3
IQ		
Grade 7		
Low	32	21.3
Normal	82	54.7
High	36	24.0
Grade 8		
Low	23	16.7
Normal	90	65.2
High	25	18.1

Note. Low = 70-89; Normal = 90-114; High = 115-139.
Mean IQ for Grade 7: 104.939
Mean IQ for Grade 8: 104.682

Experimental Design

The Solomon four-group design described in Campbell and Stanley (1963) as pretest/no pretest crossed with treatment/no treatment in a 2 x 2 analysis of variance design with posttest scores as the dependent measure was the basic design. This design has potent controls and is considered ideal for use in social science research, although Kerlinger (1964) recommended its use only after preliminary testing with simpler designs. Considering the nature of the research subject and the difficulties inherent in measuring the three dependent variables, the advantages gained in control were seen as important support for any significant findings.

Seventh and eighth grade health classes were randomly assigned to four groups. Group 1 (N = 93) received pretest/treatment/posttest; Group 2 (N = 107) received treatment/posttest; Group 3 (N = 88) received pretest/posttest but no treatment; and Group 4 (N = 86) received posttest only (a statistical manipulation of Group 3) (see Table 2). All students had initially been assigned to health classes in alphabetical order by race and sex, resulting in heterogeneous grouping representative of the school population.

Independent Variables

The major independent variable, or treatment, was a Sex Education Unit taught by experienced sex educators from a public health department. The subject matter, teaching methods, and materials included were determined by sex

Table 2

Solomon Four-Group Experimental Design to Test the Effect of a Sex Education Unit for Seventh and Eighth Grade Students

Group	Pretests	Treatment	Posttests
1 N = 93	1. Locus of Control 2. Social Responsibility 3. Knowledge Test	Sex Education Unit	1. Locus of Control 2. Social Responsibility 3. Knowledge Test
2 N = 107		Sex Education Unit	1. Locus of Control 2. Social Responsibility 3. Knowledge Test
3 N = 88	1. Locus of Control 2. Social Responsibility 3. Knowledge Test	(No Unit Taught)	1. Locus of Control 2. Social Responsibility 3. Knowledge Test
4 N = 86*		(No Unit Taught)	1. Locus of Control 2. Social Responsibility 3. Knowledge Test

*Group 4 is a statistical manipulation. The pretest scores of Group 3 were used as if they were posttest scores for Group 4.

educators who had taught the curriculum several times in other middle schools within the same school system. A full outline of the Sex Education Unit and program objectives developed by the health educators can be found in Appendix A. This particular sex education program was selected as the treatment because of emphasis placed on taking responsibility for self and others in a social setting, which is one of the higher levels of moral reasoning.

The Sex Education Unit was taught in four 50-minute sessions. In Session 1, the focus was on physiology and anatomy. Session 2 was concerned with sexually transmitted diseases. Session 3 emphasized consequences of early sexual behavior for self and others. The final session was spent on recognizing sources of pressure and learning ways to respond without compromising self or others. Teachers who monitored the Sex Education Unit presentations were asked by the health educators to respond to questions on a survey form concerning the program format. Responses indicated that teachers considered the material presented appropriate for the developmental level of the students and teaching techniques used, effective. These included lectures, charts and illustrations, handouts, role-playing and discussion. It should be noted that the experimenter had no control over the content of the Sex Education Unit or the methods used in teaching.

Since other antecedent variables could affect the learning from the Sex Education Unit, as many as possible were controlled for. Age, gender, race, and IQ were randomly distributed by having all students assigned to classes alphabetically. These four variables were also controlled statistically by using them as predictors in the regression analysis and as factors in several ANOVAS. Age was controlled by teaching seventh and eighth graders separately and through statistical elimination of students more than 14 months above or below the normative age in each grade.

Dependent Variables

The three dependent variables were Social Responsibility, Locus of Control, and Knowledge in Sexuality. The dependent variable of greatest interest was Social Responsibility. Higher levels of social responsibility were expected to occur with an increase in internal locus of control and increased knowledge in sexuality.

Research Instruments

Social Responsibility

The assumption was made that students exposed to a sex education curriculum on adolescent physiology and consequences of sexual behavior would move toward higher levels of social responsibility with increased concern for rights of self and others. At each level of Kohlberg's stage theory of moral development, rights are redefined to become

more inclusive--from individual to societal to universal (Kohlberg, 1981). Gilligan (1982) emphasized that responsibility and caring evolve around insight that self and others are interdependent. Thus it would seem to follow that increased awareness of the consequences of sexual behavior for self and others would result in higher levels of social responsibility.

Criteria for measuring the effects of sex education generally fall into three categories: (a) cognitive change; (b) attitudinal/affective change; and (c) behavioral change (Obstfeld & Meyers, 1984). Self-concept scales and values inventories have been used in studying attitudinal/affective effects of sex education. Self-concept instruments described by Purkey (1968) were reviewed for possible use in this study. From a theoretical perspective, however, these instruments did not appear to be adequate measures of social responsibility as defined in this study. Values inventories were ruled out due to difficulty in determining values which could discriminate higher levels of social responsibility.

Attempts to measure the effects of sex education on high school students using Kohlberg's Moral Judgment Interview (MJI) technique have resulted in no statistically significant differences between students who participated in the curriculum and those who did not (Bower, 1980; DiStefano, 1977). The number of students included in the sample for these studies was of necessity small. Kohlberg's MJI technique offers

advantages in standardization, reliability, and validity; however, disadvantages in administration, scoring, and time required for conducting individual interviews make it impractical for use with a large sample without substantial funding support.

Therefore, for the purposes of this study, an objective measure which required little time for completion and scoring and could be group administered was needed. Rest's Defining Issues Test (DIT) was eliminated as a possible measure due to the amount of time required for administration. Since no instrument was found which could be used within the limitations of the study and higher social responsibility was conceptualized as a higher level of moral reasoning, a paper and pencil test based on norm-response scoring criteria for affiliation, conscience, contract, law and property, legal justice, and family affiliation was developed for this study. In reflecting on decisions made in sexual situations it seemed reasonable to think that norm criteria used to represent higher stages of moral reasoning might be applicable to thinking about rights and responsibilities in sexual relationships. Although it would have been preferable to deal more directly in the study with sexual questions, the possibility that this would be regarded by parents as intrusive was reason for caution. It is only recently that sex education for middle school students has received support from public school administrators and parents in some areas.

The Social Responsibility Scale contains statements representative of moral reasoning at Kohlberg's Stages 2, 3, and 4 for the six norms listed previously. Early adolescents are generally operating within these stages according to cognitive-developmental moral development theory. Rest, Cooper, Coder, Masanz, and Anderson (1974) argued for using recurrent response types in moral development measurement.

> After recurrent response types have been identified and a scoring system has been devised, then the researcher has claimed that he knows what characteristics of thinking are markers of development. When the purpose of data collection is not to experiment with the scoring characteristics but to provide assessments of moral judgment development, then there are decided disadvantages to the free-response (Kohlberg's) method. (p. 500)

Sentence stems on the Social Responsibility Scale are followed by justificatory statements or responses based on Kohlberg's norm-response criteria. For example, "I would help a friend because . . ." followed by four possible responses. Each response is assigned a weighted score according to the extent to which it appears to be more inclusive of concern for rights of self and others. Students are asked to select the statement which best represents the reason they would use to justify a particular action implied by the sentence stem. Weighted scores are averaged to compute a social responsibility score which can range from 0 to 4 (see Appendix B).

Five students known to the researcher assisted in the development of the Social Responsibility Scale. These

students were asked to complete several versions of the scale and provided suggestions for clarification of statements. Scores on the final form administered to these students were consistent with expectations based on the researcher's knowledge of the students. This procedure was based on the known groups method reported in Kerlinger (1964) as a method of construct validation.

The assumption was made in the study that higher levels of social responsibility, considered to be a higher level of moral reasoning, would occur with an increase in internal locus of control and increased knowledge in sexuality after exposure to the Sex Education Unit. Although the Social Responsibility instrument had face validity, in order to gain some construct validity for the Social Responsibility Scale and Locus of Control Scale, five students from Group 1 (treatment) and five from Group 3 (no treatment) were measured for moral reasoning using the Kohlberg Moral Judgment Interview Technique. Taped interviews were scored independently by two persons trained in scoring according to Kohlberg's Standard Scoring Manual. Interjudgment agreement on computed moral maturity scores (MMS) was established at .78. For convenience in comparing the results, MMS scores were ranked from highest to lowest, with social responsibility and locus of control scores for the same subject recorded in corresponding columns (see Appendix B, Table B-1). The validity coefficient, Pearson r computed for MMS and

Social Responsibility (r = .43), was considered a low positive correlation. Interpretation of the correlation coefficient was based on "rule of thumb" recommendations of Hinkle, Wiersma, and Geers (1979). It appears that the scale does not provide a strong measure of moral reasoning. When the range of scores on the two measures for the subjects was considered, the scores on the Social Responsibility Scale failed to distinguish between levels of social responsibility according to the weights assigned to represent different levels in the way that MMS scores appear to distinguish between levels of moral reasoning.

Locus of Control

The theoretical base that a person's belief in control over the outcome of an event influences behavior provided support for the assumptions made in this study. Participation in a curriculum designed to increase awareness of alternatives to acquiescing to external pressures should increase a person's internal control orientation. The Nowicki-Strickland Scale (see Appendix B) was used to measure locus of control with all students. This 21-item paper and pencil test, answered either yes or no beside each item, provides a measure of generalized locus of control orientation and was developed for use with students in Grades 7 through 12. This scale was constructed on the basis of Rotter's definition of the internal-external control of reinforcement dimension and

items included describe "reinforcement situations across interpersonal and motivational areas such as affiliation, achievement, and dependency" (Nowicki & Strickland, 1974, p. 149).

Estimates of internal consistency of the Nowicki-Strickland Scale by the split-half method corrected by the Spearman-Brown formula for Grades 6, 7, and 8 were reported to be r = .68. Test-retest reliabilities for seventh grade were r = .66. The relation of the Nowicki-Strickland Scale to the Intellectual Achievement Responsibility Scale was .01 for internal responsibility for success scores, and .05 with the Bealer-Cromwell score. An adult version of the Nowicki-Strickland was significantly related to Rotter's I-E scale at the .01 level.

The validity coefficient computed between the MMS and Locus of Control (r = .69) was considered a moderate positive correlation (see Appendix B, Table B-1). However, a higher score on the Locus of Control Scale represented an increase in external control and the prediction was that the score would be more internal. Therefore, the Locus of Control Scale does not appear to measure higher levels of moral reasoning. Maqsud (1980) found subjects at Stage 3 were significantly more internally oriented than those at Stages 1, 2, and 4. Stage 3 subjects in this study were more externally oriented than those at Stages 1 and 2. Gibbs

and Widaman (1982) have suggested that locus of control may represent a cognitive set which is more than an alternative way of looking at things or reasoning. In this study each dependent measure was looked at separately and changes were expected to be parallel. It would appear that the measures used may not have been sensitive to any variance in locus of control, social responsibility, and moral reasoning that could be attributed to increased concern for the rights of self and others as a common factor.

Knowledge Test

A paper and pencil objective subject matter test was developed by the health educators who designed the curriculum (see Appendix B). This test consisted of 20 items and was used to measure the level of subject knowledge of students in the study. Both true/false and multiple choice items were included on the test. This test had face and content validity.

Procedures for Data Collection

Permission was obtained from the School Superintendent to present an outline of the proposed Sex Education Unit to the local School Parent Advisory Council. The unit was reviewed and approved by the Advisory Council for use in seventh and eighth grade health classes. Prior to the program presentation, letters were sent by students informing the parents that the program would be offered and that students could be excused by parental request. Arrangements

were made for students excused from the Sex Education Unit to be assigned to study hall while the program was in progress. Before students were allowed to participate, they were asked to sign a statement indicating that their parents had received communication concerning the sex education program and were aware that they were attending the classes. Parents were informed that a study on the effects of the curriculum was being conducted by the school counselor and that results would be shared with those who were interested when the study was completed. Copies of letters and forms used in the study are included in Appendix C.

Students in seventh and eighth grades were divided into three groups each with group assignment determined by class schedule (see Table 3). Group 1 (N = 93) consisted of two classes of seventh graders and two classes of eighth graders. Seventh and eighth graders, while constituting one group, were taught at different class periods. Procedures used with Group 1 were as follows:

Day 1. Pretests were administered by regular health teachers during regular 50-minute health class periods according to procedures established in training conducted by the experimenter prior to implementation of the study. Three measures were used: the Social Responsibility Scale, Nowicki-Strickland Locus of Control Scale (NS-IE) and Knowledge in Sexuality Test. All pretest questions were read orally verbatim since differences in reading levels and

Table 3

Schedule for Treatment and Data Collection

	M	T	W	Th	F
Week 1					Pretest Group 1 (7th) Group 1 (8th)
Week 2	Lesson 1 Group 1 Group 1	Lesson 2 Group 1 Group 1	Lesson 3 Group 1 Group 1	Lesson 4 Group 1 Group 1	Pretest Group 3 (7th) Group 3 (8th) Posttest Group 1 (7th) Group 1 (8th)
Week 3	Lesson 1 Group 2 Group 2	Lesson 2 Group 2 Group 2	Lesson 3 Group 2 Group 2	Lesson 4 Group 2 Group 2	Posttest Group 2 (7th) Group 2 (8th) Group 3 (7th) Group 3 (8th)

learning styles are less likely to interfere with response when students can both read and hear questions.

Days 2, 3, 4, 5. Seventh graders in Group 1 were reassigned by sex to Section A or B; the same was done for eighth graders in Group 1. Health educators presented the Sex Education Unit during class periods when seventh and eighth grade health classes were regularly scheduled, with boys and girls taught separately during the four days. Both health educators were female; however; a regular health teacher was present during each class session and at least one male health teacher was present in the boy's class for each presentation.

Day 6. All students in Group 1 returned to their regular health classes and health teachers readministered the tests given on Day 1 following the same procedures.

Group 2 (N = 107) consisted of two other seventh and two other eighth grade classes. The same procedures described for Group 1 were followed except for Day 1. No pretest was administered to this group. The remaining seventh and eighth grade health classes (two at each grade level) were designated as Group 3 (N = 88), which received pre and posttests but Sex Education Unit was delayed until after all data were collected. Group 4 (N = 86) was a statistically designed group (pretest scores from Group 3) assumed to have had only the posttest. The final N given for each group represents the total number of usable responses which were actually included in the data analysis.

One month after the Sex Education Unit was taught to Group 1, the Social Responsibility Scale, Locus of Control Scale, and Knowledge Test were readministered to one class of seventh graders and one class of eighth graders. Due to absences and schedule conflicts on the day these tests were given, the number who completed the follow-up tests was smaller than anticipated (N = 33). Responses on these tests were compared with responses on the pretest and posttest for the same students to determine enduring effects.

Information obtained from the school records included IQ scores measured by standardized group IQ tests within the past two years. Test scores from the Short Form Test of Academic Aptitude (SFTAA), Test of Cognitive Skills (TCS) and Otis-Lennon were used. Age was computed from birthdate recorded on student's cumulative record.

Data Analysis

The direct effect of the Sex Education Unit and pretest effects were determined by a series of two-way analyses of variance using posttest scores on each dependent variable. The data were computer analyzed to test the hypotheses stated in Chapter I using SPSS: Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975). The two-way analyses provided a test for the Solomon four-group design model as well as the hypotheses.

The variables which might affect learning, in addition to the Sex Education Unit, were tested through three, 3-way analyses. This procedure was used to test treatment by grade by gender, treatment by grade by race, and treatment by grade by IQ for each dependent variable. The F test was used to test for significance and the .05 was set as the level accepted as statistically significant.

Multiple regression analyses were used to determine the proportional effects of the Sex Education Unit, grade level, gender, race, and IQ on each dependent variable: Social Responsibility, Locus of Control, and Knowledge in Sexuality. The standard regression method was employed which involved "decomposition of the explained sum of squares into components attributable to each independent variable in the equation" (Nie et al., 1975, p. 336). The R^2 change computed for each variable and included in the summary output was used to determine the proportion of the variance in the dependent variable which is explained by each independent variable.

Mean scores on pretests, posttests, and post posttests administered to subjects in Group 1 were compared by t tests to explore lasting effects of the Sex Education Unit.

CHAPTER IV

RESULTS AND DISCUSSION

Social responsibility and locus of control were not directly affected by a short sex education unit which stressed concern for self and others. Although there were some significant interaction effects, the explained variance was very small. Posttest scores on knowledge in sexuality were significantly higher after the sex education unit; however, little of the variance was attributed to participation in the sex education classes.

A two-way analysis of variance (ANOVA) statistical procedure was used to test the hypotheses of the main effect of the experimental treatment, Sex Education Unit, for each of the dependent variables: Social Responsibility, Locus of Control, and Knowledge in Sexuality. Since a Solomon four-group experimental design was used in this research, pretesting was used as a treatment coordinate with the Sex Education Unit. The main effects of treatment/no treatment and pretested/not pretested and interaction effects were therefore determined by these two-way ANOVAs, eliminating the need for t tests between group means to study pretest effects (Campbell & Stanley, 1963; Kerlinger, 1964). The alpha level for acceptance or rejection of the hypotheses was set at .05. No treatment or pretest effects were found

for Social Responsibility or Locus of Control. It was anticipated that students pretested in Knowledge in Sexuality would be sensitized to the kind of information contained in the sex education unit and would make greater gains than those who were not pretested. Knowledge in Sexuality was significantly affected by the sex education unit and pretesting. Pretest performance of the experimental and control groups was compared by a t-test to assess comparability of the two groups before treatment. Mean scores for the experimental group of 71.96 and 71.49 for the control group were not significantly different ($t = 0.764$). See Appendix Tables D1-D3 for summaries of the ANOVAs and mean scores for pretests and posttests.

The effects of the sex education unit by grade level were tested for each dependent variable through three 3-way ANOVAs, first with gender, next with race, and last with IQ. The expectation was that students who participated in the sex education program would have higher posttest scores on social responsibility, locus of control, and knowledge in sexuality regardless of grade level, gender, race, or IQ.

A multiple regression analysis was computed for each of the three criterion variables to study proportional effects among the independent predictor variables. It was predicted that the sex education unit would account for more of the variance in the dependent variables than grade level, gender, race, or IQ.

Measures for each dependent variable were administered immediately following treatment and readministered 1 month later to test for enduring effects. The mean differences between pretest scores, the immediate posttest scores, and the scores from the same tests given 1 month later were compared by the t test.

Findings

Results of the analysis of the data will be reported separately for each dependent variable except for findings concerning endurance effects. The results of the t tests used to compare responses on social responsibility, locus of control, and knowledge in sexuality a month after the sex education class will be discussed together.

Social Responsibility

Hypothesis 1 predicted that participation in a sex education unit based on concern for self and others would result in higher levels of social responsibility. There were no statistically significant main effects or interaction effects due to participation in the sex education unit. As a result, Hypothesis 1 was rejected (see Appendix Table D-1).

Sex education by grade by gender. There were no statistically significant main effects or interaction effects for the sex education unit by grade level, used as an indicator of age, or gender. See Table 4 for a summary

Table 4

Analysis of Variance of Social Responsibility on Posttest: Treatment by Grade by Gender

Source	SS	df	MS	F	Sig
Main effects					
Treatment (A)	0.650	3	0.217	1.338	0.262
Grade (B)	0.251	1	0.251	1.551	0.214
Gender (C)	0.068	1	0.068	0.419	0.518
Interactions					
A x B	0.258	3	0.086	0.530	0.662
A x C	0.173	3	0.058	0.356	0.785
B x C	0.004	1	0.004	0.027	0.870
A x B x C	0.517	3	0.172	1.063	0.365
Residual	57.187	353	0.162		
Total	59.163	368	0.161		

Mean Scores on Social Responsibility Posttest

	Grade		Gender		
Group	7	8	M	F	Total
Treatment					
Group 1	3.12	3.12	3.13	3.12	3.13
Group 2	2.96	3.04	2.99	3.00	3.00
No treatment					
Group 3	3.00	3.11	3.02	3.08	3.06
Group 4	3.06	3.07	3.01	3.11	3.07

Note. Scores could range from 0 to 4.

of this analysis. Colby, Kohlberg, Gibbs, and Liberman (1983) described increase in moral reasoning development as steady and gradual with no noticeable differences within the 13 to 14 age group, the mean ages of seventh (13.2) and eighth (14.2) grade subjects included in this study. Thus the finding of no significant differences by age is consistent with expectations based on Kohlberg's explanation of moral reasoning development during early adolescence.

While gender differences have been reported in some studies of moral development (Gilligan, 1977), findings have not always been in agreement (Evans, 1982). In one study, gender differences were found on some aspects of moral judgment but not on others. Edwards (1979) found no gender differences in moral judgment development on intention-consequences and responsibility, but differential development between males and females on collective responsibility. Differential development attributed to sex-role orientation (Gilligan, 1977, 1982), horizontal decalage (Kohlberg, 1978; Piaget, 1932), or domain specific issues (Nucci, 1985; Selman, 1980) was not found in this study. Responses of males and females on social responsibility, defined as concern for self and others in decision-making, were not significantly different whether exposed to the sex education unit or not.

Sex education by grade by race. An analysis of variance resulted in a statistically significant main

effect for race at .026 level ($F = 4.978$; $df = 1, 353$) but no interaction (see Table 5). From a review of group mean scores on social responsibility, it was determined that mean scores were higher for white subjects than for blacks, regardless of group treatment. Although it appears that the sex education program did not influence moral development, racial differences on the Social Responsibility Scale warrant some exploration. Black subjects in both treatment and control groups chose statements representative of Kohlberg's lower stages of moral reasoning more frequently than did white subjects. Kohlberg (1981) attributed differences in moral development found among cultural groups to socioeconomic issues. A moderate correlation was reported by Colby et al. (1983) between SES and moral development at every age. While SES was not included as an independent variable in this research, there is some evidence to support the notion that SES could be a contributing factor in racial differences found on social responsibility. In the school population included in the study, blacks were disproportionately represented among students receiving free or reduced lunches which is based on eligibility for financial assistance.

Another explanation which is somewhat related also seems plausible. Kohlberg found differences in levels of moral development between social integrates and social isolates (Colby et al., 1983). While his conclusions were

Table 5

Analysis of Variance of Social Responsibility on Posttest: Treatment by Grade by Race

Source		SS	df	MS	F	Sig
Main effects						
Treatment	(A)	0.646	3	0.215	1.350	0.258
Grade	(B)	0.313	1	0.313	1.962	0.162
Race	(C)	0.795	1	0.795	4.978	0.026*
Interactions						
A x B		0.219	3	0.073	0.457	0.712
A x C		0.070	3	0.023	0.146	0.932
B x C		0.333	1	0.333	2.088	0.149
A x B x C		0.444	3	0.148	0.928	0.427
Residual		56.345	353	0.160		
Total		59.163	368	0.161		

Mean Scores on Social Responsibility Posttest

	Grade		Race		
Group	7	8	W	B	Total
Treatment					
Group 1	3.12	3.12	3.15	3.05	3.13
Group 2	2.96	3.04	3.03	2.91	3.00
No treatment					
Group 3	3.00	3.11	3.07	3.01	3.06
Group 4	3.06	3.07	3.10	2.93	3.07

Note. Scores could range from 0 to 4.

* $p < .05$

based on sociometric techniques involving individuals rather than groups, there may be some parallels in moral development relative to group identity and personal development. Jackson, McCullough, and Gurin (1981) suggested that in research concerned with racial differences, issues in the relationship between group identity and personal functioning have been largely ignored.

The racial composition in this sample was 74.5% white and 25.5% black. Classes within the school with the exception of health and physical education were homogeneously grouped based on standardized achievement test scores in compliance with a system-wide plan approved by the U.S. Office of Civil Rights to assure equal opportunities for all students. Ironically, the system has resulted in racially segregated classes with few opportunities for interaction between blacks and whites. Furthermore, almost all students in remedial classes are black. Thus school group identity for blacks is that of belonging to a minority group of low achievers. It is conceivable that such a group identity contributes to personal feelings of isolation and a lack of sense of participation in society. This could account for lower scores on social responsibility for blacks. Obviously, further investigation of the extent to which blacks feel alienated would be needed to support this line of reasoning. Additionally, it should be pointed out that the contribution of all of the independent variables combined was

expected to be small due to the probable relationship of numerous antecedents.

Sex education by grade by IQ. The effects of the sex education by grade by IQ are shown in Table 6. The main effect of IQ was significant at the $p < .00$ level ($F = 8.587$; $df = 2, 345$). Group mean scores on IQ within each treatment group were highest for the high IQ (115+) category. Within treatment groups, mean score differences for social responsibility were greater between high IQ and normal IQ categories than between normal and low IQ categories. A post hoc Scheffe indicated that the high IQ group was significantly different at the .05 level.

Again educational experiences may provide an explanation for IQ differences on social responsibility although further evidence is needed to determine the extent to which IQ alone was the significant factor. Colby et al. (1983) concluded that educational experiences rather than actual IQ differences were responsible for differences on moral development by IQ. When homogeneous grouping is practiced, educational experiences are likely to be different due to different student characteristics, differences in instructional curriculum, and different teacher expectations. Therefore it is possible that differences on social responsibility attributed to IQ may be at least partially attributable to differential educational experiences as suggested by Colby et al.

Table 6

Analysis of Variance of Social Responsibility on Posttest: Treatment by Grade by IQ

Source		SS	df	MS	F	Sig
Main effects						
Treatment	(A)	0.521	3	0.174	1.137	0.334
Grade	(B)	0.434	1	0.434	2.837	0.093
IQ	(C)	2.625	2	1.312	8.587	0.000*
Interactions						
A x B		0.284	3	0.095	0.620	0.602
A x C		0.910	6	0.152	0.993	0.430
B x C		0.150	2	0.075	0.490	0.613
A x B x C		1.497	6	0.249	1.632	0.137
Residual		52.727	345	0.153		
Total		59.163	368	0.161		

Mean Scores on Social Responsibility Posttest

	Grade		IQ			
Group	7	8	70-89	90-114	115+	Total
Treatment						
Group 1	3.12	3.12	3.14	3.00	3.40	3.13
Group 2	2.96	3.04	2.96	2.99	3.05	3.00
No treatment						
Group 3	3.00	3.11	3.02	3.01	3.21	3.06
Group 4	3.06	3.07	3.01	3.04	3.19	3.07

Note. Scores could range from 0 to 4.

* $p < .05$

Multiple regression analysis. Social responsibility was regressed on sex education, grade, gender, race, and IQ to evaluate their impact. It was predicted that a low amount of variance would be accounted for by all the independent variables combined due to the probable relationship of numerous antecedents with social responsibility. The results of regression of social responsibility on the predictor variables are summarized in Table 7.

Race was not a statistically significant predictor variable for social responsibility in the multiple regression analysis of the variability in social responsibility. Only IQ was a significant predictor of scores on social responsibility.

Less than 5% ($R^2 = 0.4859$) of the variability in social responsibility scores was explained by the predictor variables combined. While IQ explained a significantly larger proportion ($R^2 = 0.03618$) of the variability than any other variable in the regression with $p < .01$ ($F = 8.02$; $df = 1, 336$), the overall dependence of social responsibility on IQ alone was quite limited. Proportional contributions of other variables in order based on R^2 change were grade level (0.00678); race (0.00327); treatment (0.00163); and gender (0.00074).

It was assumed that the Social Responsibility scale designed for use in this study would discriminate higher levels of social responsibility which would also be

Table 7

Multiple Regression Analysis of Social Responsibility Posttest on Treatment, Grade, Gender, Race, and IQ

Predictor Variables	Standardized Betas	Cumulative R^2	R^2 Change	F	Sig
IQ	0.16545	0.03618	0.03618	8.020	.01*
Treatment	-0.04062	0.03780	0.00163	0.589	NS
Grade	0.08021	0.04458	0.00678	2.285	NS
Gender	0.03024	0.04532	0.00074	0.323	NS
Race	-0.06328	0.04859	0.00327	1.173	NS

* $p < .05$

indicative of higher levels of moral development. The instrument did not, however, measure any changes due to participation in the sex education unit, and only a low positive correlation (r = .43) was established between scores on the Social Responsibility Scale and Kohlberg's Moral Judgment Interviews. Thus a question is raised concerning the construct validity of the instrument used to measure the effects of the sex education unit on social responsibility (see Appendix B, Table B-1).

On the other hand, neither Bower (1980) nor DiStefano (1977) found significant differences in moral reasoning development using Kohlberg's standardized Moral Judgment Interviews to measure the effects of sex education curricula on high school students. This leads to speculation concerning the use of Kohlberg's moral judgment criteria, the basis for the Social Responsibility Scale, as a measure of the effects of sex education in adolescence. Bower (1980) suggested that the curriculum used in his study may not have met the needs of the particular group of students. DiStefano (1977) attributed the lack of statistically significant differences between control and experimental groups to environmental factors affecting both groups. However, moral dilemma discussions, which have been shown to be effective in increasing moral reasoning, were used in both studies (Higgins, 1980; Leming, 1983). Role-playing, also found to be effective in raising levels of moral

reasoning (Krogh, 1983), was included in this study. Although sex education clearly involves moral issues, Kohlberg's approach to moral development may not be useful in judging reasoning in sexual situations due to his failure to account for responsibility in relationships, which would seem to be a critical aspect of sexual reasoning.

While it is possible that the lack of significant differences was due to problems in measurement and theoretical basis, it is also possible that the sex education unit was not effective in influencing higher levels of reasoning due to curriculum content or design. Reports of other educational efforts to influence adolescent decision-making concerning sexual behavior have shown that most programs have failed to promote responsible sexual behavior (Kirby, 1983). Strouse and Fabes (1985) suggested that formal sex education programs may be overshadowed by informal souces of sex education, such as television, which may be far more influential in the sexual socialization process of adolescents than generally recognized. Sex on television is presented as occurring primarily outside of marriage and often outside the context of a caring, responsible relationship. This presents sex as a "distorted, recreation-oriented, exploitive, casual activity, without dealing with the consequences" (Strouse & Fabes, 1985, p. 255). For the young adolescent whose level of moral reasoning does not include a generalized societal perspective, television modeling

of egocentric adult sexual behavior provides little stimulation to move beyond an egocentric approach to sexuality. Considering the amount of time most young adolescents are exposed to television compared with time spent in any sex education program, it is easy to see how formal programs might have little impact. Nonetheless, in view of the high rates of adolescent pregnancies, abortion, sexually transmitted disease, and sexual abuse (Chap, 1980), sex education for responsible sexual behavior continues to be a legitimate educational concern. Despite the fact that the educational model used in this study was not effective, a cognitive-developmental approach seems to offer the least controversial approach to sex education for responsible behavior within the schools. Without significant efforts to balance the influence of informal sources of sex education on adolescents with knowledge of the social aspects of sexuality from a broader base than the schools alone, however, it is unlikely that the problems associated with early sexual behavior will be diminished.

Locus of Control

Hypothesis 2 predicted that locus of control would be influenced in an internal direction by participation in a sex education program based on concern for self and others. The sex education unit did not have a significant effect on locus of control orientation, therefore Hypothesis 2 was not supported (see Appendix Table D-2).

Participation in the sex education unit was expected to result in a stronger sense of self-control and better understanding of personal responsibility for the consequences of choices made in sexual situations which should correspond with increased internal orientation. Other attempts to influence locus of control have successfully resulted in higher internal control (Blazek & McClellan, 1983; Lifshitz, 1973; Nowicki & Barnes, 1973). Role-playing, used as an instructional technique in this study, has been effective in modifying locus of control (Johnson, 1978). The sex education unit did not, however, result in significant changes in locus of control. A possible explanation may be due to the emphasis on interpersonal issues in the sex education unit. Bradley and Gaa (1977) determined that goal-setting was effective in modifying locus of control for academic situations, but not for personal/social situations. This conclusion was based on an analysis of subscale scores on factors of the locus of control scale used in Bradley and Gaa's study. Locus of control was treated as a unidimensional construct in the present study and no attempt was made to differentiate between control beliefs in different areas. It would appear that control beliefs in sexual situations were not modified by participation in the sex education classes.

Lifshitz's (1973) findings that, for subjects between the ages of 10 and 12, attempts at modification tend to

result in internals becoming more internal and externals becoming more external may also have some bearing on the results of this study. If Lifshitz's claim of polarization of scores between ages 10 to 12 extends to 13- and 14-year-olds, then statistical procedures other than ANOVA may have been more useful in analyzing the data since this phenomenon is not likely to be detected when group means are used in the data analysis as the measure of change. Additional testing to determine the effects of grade level, gender,and race was conducted.

Sex education by grade by gender. No significant main effects or interaction effects were determined when sex education by grade level by gender were analyzed in a three-way ANOVA (see Table 8). Findings of no difference by gender is consistent with reports that differences attributed to cultural socialization practices seem to disappear with age and increasing ability to make realistic judgments in regard to attribution of responsibility for both success and failure (Lifshitz, 1973). Gender differences were reported for younger students by Johnson and Gormley (1972).

Sex education by grade by race. There were no significant effects of grade by race (see Table 9). Racial differences reported by Joe (1971) identified with belonging to a particular ethnic group and low SES were not found on locus of control in this study. Guttentag and Klein (1976)

Table 8

Analysis of Variance of Locus of Control on Posttest:

Treatment by Grade by Gender

Source		SS	df	MS	F	Sig
Main effects						
Treatment	(A)	36.791	3	12.264	0.988	0.398
Grade	(B)	22.990	1	22.990	1.853	0.174
Gender	(C)	7.804	1	7.804	0.629	0.428
Interactions						
A x B		65.156	3	22.719	1.750	0.156
A x C		13.913	3	4.638	0.374	0.772
B x C		17.656	1	17.656	1.423	0.234
A x B x C		81.793	3	27.264	2.197	0.088
Residual		4380.649	353	12.410		
Total		4627.160	368	12.574		

Mean Scores for Locus of Control Posttest

	Grade		Gender		
Group	7	8	M	F	Total
Treatment					
Group 1	8.41	8.12	7.82	8.79	8.27
Group 2	8.15	8.83	8.38	8.52	8.45
No treatment					
Group 3	8.35	6.88	7.75	7.55	7.64
Group 4	8.70	7.83	8.15	8.39	8.28

Note. Scores could range from 0 to 21; lower scores = more internal.

Table 9

Analysis of Variance of Locus of Control on Posttest:

Treatment by Grade by Race

Source		SS	df	MS	F	Sig
Main effects						
Treatment	(A)	35.966	3	11.989	0.964	0.410
Grade	(B)	21.789	1	21.789	1.752	0.186
Race	(C)	10.244	1	10.244	0.824	0.365
Interactions						
A x B		67.823	3	22.608	1.818	0.144
A x C		32.122	3	10.707	0.861	0.462
B x C		7.732	1	7.732	0.622	0.431
A x B x C		64.091	3	21.364	1.718	0.163
Residual		4390.210	353	12.437		
Total		4627.160	368	12.574		

Mean Scores on Locus of Control Posttest

	Grade		Race		
Group	7	8	W	B	Total
Treatment					
Group 1	8.41	8.12	8.32	8.11	8.27
Group 2	8.15	8.83	8.10	9.46	8.45
No treatment					
Group 3	8.35	6.88	7.69	7.47	7.64
Group 4	8.70	7.83	8.28	8.25	8.28

Note. Scores could range from 0 to 21; lower scores = more internal.

concluded that race was not a salient category in relationship to feelings of personal efficacy leading to questions in regard to whether race and SES were confounded in the studies reported by Joe (1971).

Sex education by grade by IQ. The main effect of IQ was statistically significant with $p < .00$ ($F = 16.817$; $df = 2, 345$). There were no significant interaction effects. Table 10 provides a summary of this analysis. Locus of control mean scores were more internal (lower scores indicate internal orientation) for the high IQ category than for normal IQ or low IQ. A Scheffe post hoc analysis revealed that the high IQ group was significantly different from both other groups at the .05 level, and the normal IQ group was significantly different from the low IQ group.

IQ, internal orientation, and academic achievement have been associated with internal locus of control in several studies (Barnett & Kaiser, 1978; Joe, 1971). While it was somewhat surprising that no racial differences were found in light of significant racial differences on social responsibility, it was not surprising that IQ was significantly related to internal locus of control. Middle and upper middle class families were overrepresented in the sample population included in this study due to characteristics of the school attendance area. A large percentage of the families of the students were professionals and emphasis placed on academics within the school was high. School

Table 10

Analysis of Variance of Locus of Control on Posttest: Treatment by Grade by IQ

Source		SS	df	MS	F	Sig
Main effects						
Treatment	(A)	41.205	3	13.735	1.193	0.312
Grade	(B)	20.346	1	20.346	1.767	0.185
IQ	(C)	387.197	2	193.599	16.817	0.000*
Interactions						
A x B		36.442	3	12.147	1.055	0.368
A x C		34.541	6	5.757	0.500	0.808
B x C		11.592	2	5.796	0.503	0.605
A x B x C		121.384	6	20.231	1.757	0.107
Residual		3971.704	345	11.512		
Total		4627.160	368	12.574		

Mean Scores on Locus of Control Posttest

	Grade		IQ			
Group	7	8	70-89	90-114	115+	Total
Treatment						
Group 1	8.41	8.12	10.11	8.37	6.50	8.27
Group 2	8.15	8.83	10.15	8.77	6.04	8.45
No treatment						
Group 3	8.35	6.88	8.94	7.65	6.23	7.64
Group 4	8.70	7.83	9.66	8.03	7.52	8.28

Note. Scores could range from 0 to 21; lower score = more internal.

* $p < .05$

records indicate that school achievement test scores were well above national and local norms for the past 5 years. Therefore, it is not surprising that high IQ groups, with high achievement records, were found to be internally oriented.

Multiple regression analysis. The effects of each of the five independent variables and the contribution of all combined on locus of control were determined by multiple regression analysis (see Table 11). Sex education unit, grade level, gender, race, and IQ together explained approximately 7% (R^2 = 0.07193) of the variability in locus of control. When contributions of preditor variables were considered separately, IQ was the only statistically significant predictor variable with R^2 change of 0.06375 and $p < .01$ (F = 23.082; df = 1, 335). Gender treatment, grade level, and race accounted for none.

Significant relationships have been reported between locus of control orientation and a more developed sense of right and wrong (Joe, 1971), although there is little research evidence that locus of control and moral reasoning development are related (Guttman et al., 1981; Johnson, 1978). Maqsud (1980) predicted that internal locus of control would be higher at Stage 3 of Kohlberg's moral reasoning than for Stages 1, 2, or 4. He found this to be true for subjects between the age of 16 and 19 in his study. Maqsud concluded that utility in interpersonal relationships

Table 11

Multiple Regression Analysis of Locus of Control Posttest on Treatment, Grade, Gender, Race, and IQ

Predictor Variables	Standardized Betas	Cumulative R^2	R^2 Change	F	Sig
IQ	-0.27792	0.06375	0.06375	23.082	.01*
Treatment	-0.03435	0.06492	0.00117	0.430	NS
Grade	-0.05981	0.06834	0.00342	1.299	NS
Gender	0.02576	0.06884	0.00050	0.240	NS
Race	-0.06152	0.07193	0.00308	1.130	NS

* $p < .05$

promoted development in initiative and self-reliance. It would seem to follow that during early adolescence when individuals are generally in transitional Stage 2/3, attempts to influence moral development would also be likely to result in higher internal locus of control. The sex education unit did not result in significant changes in either social responsibility or locus of control. However, it led to questions about the efficacy of sex education as stimulation for moral reasoning development and the theoretical assumption that internal locus of control represents higher levels of moral reasoning. The validity coefficient computed between scores on Kohlberg's Moral Judgment Interview and Locus of Control ($r = .69$) was considered a moderate positive correlation between external locus of control and moral reasoning, since a lower score indicated higher internal orientation. Thus, this study provided no evidence of a relationship between social responsibility, moral reasoning, and locus of control despite logical reasoning that the three concepts should be linked.

Knowledge in Sexuality

Hypothesis 3, which predicted an increase in knowledge in sexuality for subjects who participated in a sex education unit, was tested by an analysis of variance. The main effect of sex education, or treatment, was statistically significant. Knowledge in sexuality was significantly increased

by the sex eduation unit as predicted and Hypothesis 3 was supported. See Appendix Table D-3 for a summary of this analysis. According to posttest mean scores, the curriculum developed and presented by the health educators was effective in increasing factual information on sexuality. Exposure to the curriculum made a difference in answers to questions on anatomy, consequences of early sexual behavior, sources of pressure and ways to respond to pressure. As suggested by Monge, Susek, and Lawless (1977), sex education classes can be an important source of information not generally gained from peers for young adolescents.

Three-way ANOVAs to study the effects of grade, gender, race, and IQ on knowledge in sexuality resulted in significant main effects and/or interaction effects for each independent variable in addition to the sex education unit.

Sex education by grade by gender. Treatment by grade level by gender yielded significant main effects with $p < .00$ ($F = 18.082$; $df = 3, 353$) for the sex education unit and $p < .00$ ($F = 16.270$; $df = 1, 353$) for gender. Interaction effects for sex education unit by gender were also significant at $p < .05$ ($F = 2.588$; $df = 3, 353$) and for grade by gender at $p < .02$ ($F = 5.360$; $df = 1, 353$). In view of these findings, the posttest mean scores for knowledge in sexuality by treatment, grade, and gender were examined for additional information. See Table 12 for a summary of the analysis and posttest mean scores.

Table 12

Analysis of Variance of Knowledge in Sexuality on Posttest: Treatment by Grade by Gender

Source		SS	df	MS	F	Sig
Main effects						
Treatment	(A)	6307.703	3	2102.568	18.082	0.000*
Grade	(B)	18.920	1	18.920	0.163	0.687
Gender	(C)	1891.930	1	1891.930	16.270	0.000*
Interactions						
A x B		836.240	3	278.747	2.397	0.068
A x C		902.974	3	300.991	2.588	0.053*
B x C		623.288	1	623.288	5.360	0.021*
A x B x C		535.461	3	178.487	1.535	0.205
Residual		41047.342	353	116.281		
Total		51676.976	368	140.427		

Mean Scores on Knowledge in Sexuality Posttest

	Grade		Gender		
Group	7	8	M	F	Total
Treatment					
Group 1	83.30	79.17	76.98	86.13	81.77
Group 2	77.98	77.06	75.80	79.23	77.38
No treatment					
Group 3	71.44	76.30	70.37	76.70	73.79
Group 4	71.81	71.07	69.50	73.15	71.45

Note: Scores could range from 0 to 99.

* $p < .05$

Scores on knowledge in sexuality were higher for females than for males in both treatment and control groups. This is like Monge et al.'s (1977) report that females showed greater gains than males, but that both scored higher than students not exposed to the sex education curriculum. In this study while the same curriculum was used in classes for males and females, the instructors for both classes were female. Even though a male teacher was present during each class, the fact that the instuctor was a female may have inhibited questioning in the boys' classes and contributed to the differences found on scores for females and males. However, since girls' scores were also higher in the control group, it would seem that girls were more knowledgeable about the information included in this curriculum than males prior to the sex education classes. Gebhard (1977) found that females reported acquiring sex information at earlier ages than males and were generally better informed. The extent to which this is related to increased maternal efforts to provide sex information to daughters is not known. Earlier physiological maturation for females than males is also a reasonable explanation for gender differences in knowledge in sexuality.

Sex education by grade by race. Knowledge in sexuality by sex education unit by grade by race resulted in statistically significant main effects for sex education at $p < 0.00$ ($F = 17.450$; $df = 3, 353$) and race at $p < 0.00$ ($F = 16.100$;

df = 1, 353). There were no significant interaction effects (see Table 13) for this analysis. As reported previously, the sex education unit was effective in increasing scores on knowledge in sexuality, and there were racial differences in responses on the posttests. Mean scores on the knowledge posttests were higher for white students than for black students regardless of treatment groups.

Again, as with gender, since scores were lower for blacks in control groups as well as in treatment groups, it is likely that differences are due to antecedent variables not easily determined. Lower SES for blacks than whites in the sample population may be one contributing factor. Researchers have repeatedly reported that poor school performance for blacks is related to lower-class backgrounds (Ogbu, 1981). Also, much has been written about the effects of different cultural socialization practices for blacks and whites, particularly in relation to sex-role identification (McAdoo, 1981). Statistical reports of racial differences in numbers of young children within the home and higher birth rate among black women support the notion that there are basic differences in value systems for black and white families which would likely influence attitudes toward what constitutes responsible sexual behavior.

Sex education by grade by IQ. Effects of the sex education unit by grade level by IQ for knowledge in sexuality were analyzed by ANOVA. Treatment effects and IQ effects

Table 13

Analysis of Variance of Knowledge in Sexuality on Posttest: Treatment by Grade by Race

Source		SS	df	MS	F	Sig
Main effects						
Treatment	(A)	6237.502	3	2079.167	17.450	0.000*
Grade	(B)	99.965	1	99.965	0.839	0.360
Race	(C)	1918.292	1	1918.292	16.100	0.000*
Interactions						
A x B		671.890	3	223.963	1.880	0.133
A x C		225.466	3	75.155	0.631	0.596
B x C		367.664	1	367.664	3.086	0.080
A x B x C		406.608	3	135.536	1.138	0.334
Residual		42058.748	353	119.147		
Total		51676.976	368	140.427		

Mean Scores on Knowledge in Sexuality Posttest

	Grade		Race		
Group	7	8	W	B	Total
Treatment					
Group 1	83.30	79.17	82.82	77.07	81.77
Group 2	77.98	77.06	79.30	72.67	77.38
No treatment					
Group 3	71.44	76.30	75.07	69.76	73.79
Group 4	71.81	71.07	71.89	70.00	71.45

Note. Scores could range from 0 to 99.

* p .05

were both statistically significant at $p < .00$ level (see Table 14). In addition, the interaction effect of treatment and IQ was significant at $p < .00$ ($F = 3.262$; $df = 6, 345$). Comparisons were made of posttest mean scores to explain the effects. The high IQ (115+) category had higher scores for all groups regardless of treatment. Thus, it appears that the brightest students were beter informed about sexual information before the sex education unit and still acquired additional sexual information from the classes.

Multiple regression. When knowledge was regressed on sex education unit, grade level, gender, race, and IQ, the overall contribution of these predictor variables was $R^2 = 0.29702$ or 29.7% of the variability (see Table 15). Predictor variables which were statistically significant were treatment ($p < .00$), IQ ($p < .01$), and gender ($p < .01$).

Through an examination of the R^2 change, the amount of variability explained by each predictor variable was determined. IQ accounted for 12.84% of the variability in knowlege in sexuality, with sex education explaining an additional 13.21%. Gender contributed 3.2%, whereas the contributions of race and grade were small and not significant.

Test of Enduring Effects

Measures for each dependent variable were readministererd to 34 subjects a month after the original posttest. The mean differences between pretest scores, the immediate posttest scores, and the same test given again were compared by the

Table 14

Analysis of Variance of Knowledge in Sexuality on Posttest: Treatment by Grade by IQ

Source		SS	df	MS	F	Sig
Main effects						
Treatment	(A)	5574.584	3	1858.195	17.435	0.000*
Grade	(B)	60.662	1	60.662	0.569	0.451
IQ	(C)	4676.531	2	2338.266	21.939	0.000*
Interaction						
A x B		797.182	3	265.727	2.493	0.060
A x C		2086.159	6	347.693	3.262	0.004*
B x C		477.135	2	238.568	2.238	0.108
A x B x C		906.397	6	151.066	1.417	0.207
Residual		36769.904	345	106.579		
Total		51676.976	368	140.427		

Mean Scores on Knowledge in Sexuality Posttest

	Grade		IQ			
Group	7	8	70-89	90-114	115+	Total
Treatment						
Group 1	83.30	79.17	72.22	82.49	85.50	81.77
Group 2	77.98	77.06	65.52	79.43	82.36	77.38
No treatment						
Group 3	71.44	76.30	71.11	73.07	78.82	73.79
Group 4	71.81	71.07	72.22	70.19	74.41	71.45

Note. Scores could range from 0 to 99.

* $p < .05$

Table 15

Multiple Regression Analysis of Knowledge in Sexuality Posttest on Treatment, Grade, Gender, Race, and IQ

Predictor Variables	Standardized Betas	Cumulative R^2	R^2 Change	F	Sig
IQ	0.34857	0.12843	0.12843	48.161	.05*
Treatment	-0.37037	0.26053	0.13210	65.885	.05*
Grade	0.02063	0.26204	0.00151	0.203	NS
Gender	0.18345	0.29422	0.03219	15.981	.05*
Race	-0.05833	0.29702	0.00280	1.348	NS

* $p < .05$

t tests. These analyses are reported in Table 16. There were no significant differences in scores on social responsibility or locus of control a month after the sex education unit. The scores on the follow-up test of knowledge on sexuality were significantly different from the immediate posttest scores but not from the pretest scores. The mean scores were lower on the post posttest than on the immediate posttest. Thus it appears that knowledge gained from the sex education unit was short-term, with no lasting effects.

Table 16

Post Posttest Mean Scores and Standard Deviation on Dependent Variables for Treatment Group 1

Variable	Grade 7 Mean	Grade 7 SD	Grade 7 N	Grade 8 Mean	Grade 8 SD	Grade 8 N	Total Mean	Total SD	Total N
Social Responsibility	3.20	0.35	17	3.23	0.32	16	3.21	0.33	33
Locus of Control	8.12	4.66	17	7.71	3.89	17	7.91	4.23	34
Knowledge in Sexuality	77.06	16.96	17	73.82	18.33	17	75.44	17.47	34

Comparison of Pretest, Posttest, and Follow-up Posttest Mean Scores by t test

Dependent Variable	Pretest	Posttest	Follow-up Posttest	2-Tail Prob.
Social Responsibility	2.987	3.202	3.119	NS
Locus of Control	8.794	8.206	7.912	NS
Knowleldge in Sexuality	72.206	80.352*	75.441	.001

*$p < .05$

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to determine the differences in scores on social responsibility, locus of control, and knowledge in sexuality for early adolescents after participation in a short sex education unit. The analysis of the data demonstrated that the sex education unit had no influence on social responsibility or locus of control. Only knowledge in sexuality was directly affected by exposure to the curriculum. In this chapter the results of the study are summarized and problems with instrumentation, theoretical assumptions, and experimental design are discussed in terms of their possible impact upon the results. The need for a comprehensive broad-based approach to sex education in K-12 as well as a re-examination of the propriety of teaching values is addressed. Finally, recommendations for further research are made.

Summary

Adolescent sexuality is a primary area of adolescent development and of central importance in growth and development. Learning to reason in ways which reflect an awareness of each person's individualism, respect for individual

rights, and personal responsibility for the consequences of sexual behavior is an important developmental task during adolescence. The sex education unit used in this study was selected because it appeared to have the potential to influence moral reasoning about sexual situations and the extent to which responsibility for sexual behavior is ascribed to self or others. It was reasoned that higher levels of social responsibility and more internal locus of control represented higher levels of moral reasoning. The major emphasis in the sex education unit was on responsibility to self and others in sexual decision-making. The curriculum, developed by public health educators, included direct instruction in physiology and anatomy, the potential consequences of early sexual behavior, and ways to respond to pressure for early sexual involvement.

A Solomon four-group design was used in the study and participants consisted of 150 seventh-grade and 138 eighth-grade students in a middle school in a Southeastern state. Early adolescents were included in the study because of the cognitive, emotional, physical, and moral developmental changes that are associated with the years between 10 and 13. Reports of attempts to influence moral reasoning development in high school students through sex education curriculum have resulted in no significant differences for this age group. Since early adolescents are less likely to be

sexually active than older adolescents, it was thought that they would be more open to examining issues concerning personal responsibility in sexual behavior than would individuals possibly already sexually involved.

The sex education curriculum was presented by health educators to boys and girls assigned to separate treatment groups in four 50-minute sessions on successive days. Posttest scores on social responsibility, locus of control, and knowledge in sexuality were used in the data analysis to test the hypotheses that (a) level of social responsibility is increased through participation in a sex education unit, (b) locus of control is more internal after participation in a sex education unit, and (c) knowledge in sexuality is increased by exposure to a sex education unit. Social responsibility was measured by a scale developed for use in this study. The Nowicki-Strickland Scale was used to measure locus of control and a knowledge test developed by the health educators was used as a measure of knowledge in sexuality.

A 2 x 2 analysis of variance was used to test the effect of the pretest and the sex education unit on the postest scores for each dependent measure. In addition, a series of three-way ANOVAs were used to test the assumption that differences in the dependent measures were due to sex education rather than other variables as age, gender, race, or IQ. Finally, a multiple regression analysis was

computed for each of the dependent measures to study proportional effects among the independent variables.

Social responsibility and locus of control were not directly affected by the sex education unit. Although there were some significant differences attributed to race and IQ for social responsibility, in the regression analysis only IQ was a significant predictor and the explained variance was very small. For locus of control, IQ was the only statistically significant factor, again accounting for a small percentage of the variability in the dependent measure. Posttest scores on knowledge in sexuality were significantly higher after the sex education unit for higher IQ, white race, and females. In the regression analysis of the predictor variables and knowledge in sexuality, all of the variables combined accounted for 29.7% of the variability. IQ contributed 12.8% of the explanation of the variance in knowledge. Only 13.2% more of the explained variance in knowledge was attributed to participation in the sex education classes.

Conclusion

Differences attributed to IQ on social responsibility, locus of control, and knowledge may reflect differential educational experiences as well as differences in aptitude. Homogeneous grouping, used extensively in the school included in this research, tends to accentuate differences in school

experiences for students. This is due in part to differences in student characteristics, differences in instructional curriculum, and differences in teacher expectations. Although there may be distinct educational advantages to homogeneous grouping, the psychological and social implications are less clearly understood. It is entirely possible, of course, that differences in responses were due primarily to differences in aptitude since high IQ has been associated with higher levels of moral reasoning, internal locus of control, and academic achievement.

It is possible that racial differences found in this research on social responsibility and knowledge in sexuality can be attributed in part to SES since blacks within the sample population were overrepresented among those receiving free and reduced lunch in the school. Differences on social responsibility may also be related to personal feelings of isolation and a lack of sense of participation in society since school group identity for blacks in this particular setting is that of belonging to a minority group of low achievers. Statistical reports of racial differences in birth rates, numbers of black single parent families, and numbers of young children in the home point to basic differences in cultural expectations and socialization practice which may explain differences in responses on knowledge in sexuality.

Gender differences were found on knowledge in sexuality but not on social responsibility or locus of control. Girls' posttest scores were higher on knowledge than were boys' scores, regardless of group assignment. Thus it appears that girls acquire sex information earlier than do boys. Physiological maturation may account for gender differences found on sexual knowledge due to the particular age of students in the sample. Physiological changes during early adolescence often occur earlier for females than for males.

The failure of the sex education unit to influence social reasoning is addressed by focusing on several factors which may have affected the results of this study. From the outset there was concern about ways to assess moral reasoning in sexual matters. Instruments reviewed for possible use were extensive interviews and scoring which did not meet time and financial constraints; therefore, an instrument was developed, using the known groups procedure. Questions directly related to reasoning in sexual situations were omitted because the research was conducted in a public school, where such questions might be considered inappropriate. It was assumed that higher levels of social responsibility represented higher stages of moral reasoning; therefore, the instrument developed was based on prescriptive judgment statements associated with Kohlberg's moral reasning stage theory. Only a low positive correlation ($r = .43$) was

determined between scores on the Social Responsibility Scale and Kohlberg's Moral Judgment Interviews (MJI) for a selected subsample of the sample population. This raises a question about the construct validity of the instrument used to measure social responsibility.

Additionally, the fact that in other studies in which Kohlberg's MJI technique was used to measure the effects of sex education on moral reasoning, no differences were found leads to a further question concerning the applicability of Kohlberg's moral reasoning stage criteria as a basis for measuring the effects of sex education for adolescents. Perhaps a theoretical approach which does not account for the role of friendship and intimate relationships is not an effective basis for measuring moral reasoning in sexual matters. Theoretical approaches such as Gilligan's (1980) which emphasizes responsibility and caring, or Selman's (1980) which distinguishes between moral and social reasoning might provide a better basis for understanding moral reasoning in sexual decision-making. Indeed, there may be a need to re-examine the concept that sex education is moral education. While no doubt moral issues are involved in sexual reasoning, it may be that social conventions dictate much of the content of sex education.

Other issues which may have limited the influence of the sex education unit are related to the curriculum itself and the research design. These include possible differences

in instructor effectiveness, the use of a female instructor to teach male students, the fact that boys and girls were taught separately about an issue which is directly concerned with interaction between both sexes and the brevity of the sex education unit. For the most part there were no alternatives to these limitations simply because a public school setting was used for the study and the topic was controversial. The basic issue involved may be whether an effective sex education program can be offered within the public schools due to the need to be sensitive to concerns about intrusion into family and religious prerogatives.

Reports of educational efforts to influence sexual behavior have been similar to the results shown in this research. Most sex education programs have failed to promote responsible sexual behavior. Although any of the issues discussed may account for the failure to find significant differences in social responsibility due to the sex education unit, it may be that formal programs are simply unable to compete with the influence of informal sex education as suggested by Strause and Faber (1985). Sex viewed on television, for example, a major source of sexual information for adolescents, does not reflect high levels of social responsibility characterized by concern for self and others in sexual behavior. Sex is usually presented outside a caring, responsible relationship as an exploitive activity with little concern for consequences.

Locus of control, like social responsibility, was expected to be influenced by sex education. As with social responsibility, the correlation determined for scores on the Nowicki-Strickland Scale used to measure locus of control and scores on Kohlberg's MJIs did not support the assumption that a more internal locus of control represented higher moral reasoning for early adolescents. In fact, higher scores on the MJI were moderately correlated with external rather than internal locus of control. It is possible that a curriculum which emphasizes interpersonal issues is not effective in reinforcing belief in either personal control or external control since the focus is on interaction rather than cause and effect. It is also possible that no differences were found because as suggested by Lifshitz (1973) in early adolescence internals became more internal and externals more external in response to attempts to modify locus of control orientation. If this occurred, statistical procedures other than ANOVA would be more effective in showing differences due to the sex education unit.

Only knowledge in sexuality was significantly affected by the sex education unit. Students did gain additional information about physiology and anatomy, consequences of sexual behavior, and sources of pressure for early sexual involvement. The extent to which this information was internalized and influenced decision-making and sexual

behavior was not determined in the study. The only evidence beyond higher scores on the posttest measure was that obtained from the follow-up test given a month later which showed that the knowledge gained was of short duration.

Recommendations

In view of the high rates of adolescent pregnancies, sexually transmitted disease, and sexual abuse of children, sex education for responsible sexual behavior continues to be a legitimate educational concern. While there is no research evidence to support the notion that moral reasoning is enhanced through sex education curricula, it is difficult to believe that moral reasoning and responsible sexual behavior are unrelated. One difficulty, it would seem, is in measuring the influence of sex education on moral reasoning. At the present time there are no instruments available which deal directly with moral issues in sexual decision-making. A more fruitful approach may be to look at behavioral changes as indicators of changes in moral reasoning. Changes such as increased use of contraception among sexually active, limiting sexual partners, decreases in public display of affection through familiar touching and increased verbal communication in regard to feelings about sexual involvement would seem to be indicative of increased concern for self and others or higher moral reasoning.

Not only are better ways of assessing influences on sexual behavior needed in order to increase our understanding of moral reasoning in sexual matters, but sex education curricula should be reassessed in terms of content and amount of exposure time. Ideally, sex education should be offered as an ongoing part of a theoretically based developmental curriculum in Grades K-12 designed to teach students about physical, psychological, and social aspects of human development. It is doubtful that short courses or even semester courses will result in significant changes as long as students are exposed to informal sex education with no opportunities to examine social and psychological aspects of sexual behavior. For this reason it is suggested that further research should address issues related to the influence of both formal and informal sex education on sexual reasoning. Until there is a better understanding of the influences of various sources of sex education, it is unlikely that formal sex education programs will make a significant contribution in the sexual socialization process of young adolescents.

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APPENDIX A

SEX EDUCATION UNIT OUTLINE

LETTER TO HEALTH EDUCATOR

Sex Education Unit Outline

Part One: Anatomy and Physiology

A. Introduction--Puberty--Male/Female Changes

1. Emotional--Feelings of independence and freedom lead to conflict
2. Social--Desire to establish relationships with same and opposite sex (Peer Pressure)
3. Physical--Rapid growth; specific body changes

B. Reproductive Physiology and Anatomy

1. Male
2. Female

C. Menstrual Cycle

1. Process
2. Hygiene (Females only)

D. Conception

1. Explanation of process
2. Fertile Period (Conception can occur any time)

Part Two: Sexually Transmitted Diseases

A. Introduction--What are STD's

B. Gonorrhea

1. Signs and Symptoms
2. Complications
3. Treatment

C. Syphilis

1. Signs and Symptoms
2. Complications
3. Treatment

D. Genital Herpes

1. Signs and Symptoms
2. Complications
3. Treatment

E. Prevention of STD's

Part Three: Consequences of Sexual Behavior

A. Goal Setting (What do you want to do with your life)

B. Consequences of early sexual involvement

1. Education
2. Economic
3. Limited social growth
4. Medical
   a. Mother
   b. Baby
5. Legal

C. Acceptable and Unacceptable Behaviors--Results

1. Damage of reputation due to inappropriate sexual expression
2. Infringing on rights of others
3. Loss when something private becomes public
4. Group identification of acceptable and unacceptable expressions of affection in public
   a. Who sets the rules
   b. Why people act out sexually
   c. What the public gains
   d. What those who act out gain

Part Four: Pressures

A. Social Pressures

1. Media (soaps, advertisements, magazines)
2. Society as a whole (personal rights, adult behaviors, curiosity)

B. Peer Pressures

C. Assertiveness Techniques

1. Say "no" and keep repeating it.
2. Let the person know how it is making you feel.
3. Say "no"--no further discussion.

OBJECTIVES

1. The student will be able to discuss the changes taking place physically, socially, and emotionally during puberty.

2. The student will be able to recognize both the male and female reproductive organs and explain conception as it relates to menstruation and pregnancy.

3. The student will be able to name at least one symptom and one complication associated with each of the three major sexually transmitted diseases.

4. The student will be able to describe the appropriate response to warning signals of an STD.

5. The student will be able to identify at least two preventive measures for avoiding sexually transmitted diseases.

6. The student will be able to name three consequences of early sexual involvement.

7. The student will be able to identify the immediate and long-term results of overt sexual expression in school and other public places.

8. The student will be able to identify two social pressures that may encourage sexual expression during adolescence.

9. The student will be able to name at least one technique for resisting pressure.

A. G. Cox Grammar School

P. O. BOX 550
WINTERVILLE, NORTH CAROLINA 28590 - 0550
Telephone 756-3105

April 4, 1985

Jo Rogerson, Health Educator
Pitt County Health Department
West 5th Street
Greenville, N.C. 27834

Dear Jo,

This is to confirm the time and dates for the Sex Education program at A. G. Cox School. We are excited about having the program presented and appreciate your willingness to work with our students. Let me know if you will need audio-visual equipment for your presentations.

Sincerely,

Sandra Houston
Counselor

cw
Attachment

APPENDIX B

INSTRUMENTS

Social Responsibility Scale

Below you will find six beginning statements with four possible endings for each statement. There are no right or wrong answers; each person may have different ideas. Circle one ending for each statement according to your thinking. It is important for you to give your own honest answers. Remember, circle only one ending for each statement.

1. I would keep my promises because

   a. I might need my friend to do something for me.
   b. my friends have trust in me.
   c. I wouldn't want someone to break a promise to me.
   d. you would expect your friend to keep a promise to you.

2. I would help a friend because

   a. of my responsibilities to a friend.
   b. my friend would probably help me.
   c. that's what friends are for.
   d. a friendship requires cooperation.

3. I would go easy on people who broke a law while doing what they believed was right because

   a. anyone can make a mistake.
   b. one's emotions can get in the way of one's conscience.
   c. laws can't take into account every circumstance.
   d. if the person confesses, he or she should be forgiven.

4. Obeying the law is important because

   a. you don't want your things stolen.
   b. if you get caught you will get in trouble.
   c. of the hardship stealing causes.
   d. you shouldn't take advantage of others.

5. Sending lawbreakers to jail is important because

   a. lawbreakers must be punished.
   b. otherwise, people would lose respect for the law.
   c. otherwise, people will figure they can get off easy.
   d. laws are needed to protect society.

6. Helping one's parents is important because

   a. children should want to help their parents.
   b. children should take responsibility toward the family needs.
   c. that is what a family is all about.
   d. children should respect their parents.

Locus of Control

Instructions: This is a questionnaire. It is not a test. This is a measure of personal belief: obviously there are no right or wrong answers. It is important that you give your honest opinions in answering the questions. For each question, check either yes or no in the box beside the question. Answer according to what you believe to be true, rather than what you would like to be true.

Yes	No	
		1. Do you believe that most problems will solve themselves if you just don't fool with them?
		2. Are you often blamed for things that just aren't your fault?
		3. Do you feel that most of the time it doesn't pay to try hard because things never turn out right anyway?
		4. Do you feel that most of the time parents listen to what their children have to say?
		5. When you get punished does it usually seem it's for no good reason at all?
		6. Most of the time do you find it hard to change a friend's (mind) opinion?
		7. Do you feel that it's nearly impossible to change your parent's mind about anything?
		8. Do you feel that when you do something wrong there's very little you can do to make it right?
		9. Do you believe that most kids are just born good at sports?
		10. Do you feel that one of the best ways to handle most problems is just not to think about them?
		11. Do you feel that when a kid your age decides to hit you, there's little you can do to stop him or her?

Yes	No		
		12.	Have you felt that when people were mean to you it was usually for no reason at all?
		13.	Most of the time, do you feel that you can change what might happen tomorrow by what you do today?
		14.	Do you believe that when bad things are going to happen they just are going to happen no matter what you try to do to stop them?
		15.	Most of the time do you find it useless to try to get your own way at home?
		16.	Do you feel that when somebody your age wants to be your enemy there's little you can do to change matters?
		17.	Do you usually feel that you have little to say about what you get to eat at home?
		18.	Do you feel that when someone doesn't like you there's little you can do about it?
		19.	Do you usually feel that it's almost useless to try in school because most other children are just plain smarter than you are?
		20.	Are you the kind of person who believes that planning ahead makes things turn out better?
		21.	Most of the time, do you feel that you have little to say about what your family decides to do?

Knowledge in Sexuality

The following questions are to determine your present knowledge about the subject matter. Circle the correct answer for each statement.

1. As a result of wanting to be more independent and to make more decisions for themselves, young people may experience conflict with friends, teachers, and parents.

   a. true
   b. false

2. Today's movies, magazines, t.v. ads, and soap operas really do not influence teenage behaviors.

   a. true
   b. false

3. There are only 2-3 days from one monthly period to the next that a girl can get pregnant.

   a. true
   b. false

4. Unmarried teenage fathers, by law, have no financial responsibility to any children they may father.

   a. true
   b. false

5. Babies of teenage mothers may be born too small, too soon for healthy life.

   a. true
   b. false

6. Seeing others kiss and fondle each other is embarrassing to many people.

   a. true
   b. false

7. One technique for saying no is to let the other person know that pressure makes you feel uncomfortable.

   a. true
   b. false

8. STDs are always caused by close sexual contact.

   a. true
   b. false

9. A painful sore called a chancre is the first sign of syphilis.

    a. true
    b. false

10. Girls may not know that they have gonorrhea until the disease has infected most of their reproductive organs.

    a. true
    b. false

11. Heart disease, kidney failure, arthritis and brain damage are the long-term results of untreated syphilis.

    a. true
    b. false

12. Herpes can be completely cured with early treatment of antibiotics.

    a. true
    b. false

13. If a person notices any signs of a STD, he or she should seek medical attention immediately.

    a. true
    b. false

14. The bsst way to prevent STD is to

    a. limit sex partners
    b. urinate before and after sex
    c. wash carefully before and after sex
    d. abstain from intimate sexual contact

15. Early sexual involvement can result in

    a. pregnancy
    b. STD
    c. inadequate or insufficient education to obtain a job
    d. loss of social life
    e. all of the above

16. Your reputation depends <u>most</u> on

    a. how many friends you have
    b. what people hear you say and see you do in public
    c. what you do in private
    d. how fashionable you are

17. Saying no when you do not want to be pressured into sex is

    a. a sign of self-respect
    b. immature and foolish
    c. a good way to lose a valuable relationship

18. Physical changes that boys experience during puberty include

    a. appearance of hair around the genitals
    b. muscular development
    c. deepening of the voice
    d. increased perspiration
    e. all of the above

19. Physical changes that girls experience during puberty include

    a. breast development
    b. onset of menstruation
    c. skin problems due to increase in facial oils
    d. growth spurt in height
    e. all of the above

20. If you choose to say no to pressures

    a. do not list your reasons
    b. do not give in to threats
    c. do not feel guilt
    d. all of the above

Table B-1

A Comparison of Student Scores on Kohlberg's Moral Judgment Interview, Social Responsibility, and Locus of Control

Student (Group)	MMS	Social Responsibility*	Locus of Control**
1 (1)	320	3.66	12
2 (3)	300	3.50	10
3 (3)	300	3.50	10
4 (1)	300	3.16	05
5 (3)	300	2.66	08
6 (1)	260	3.33	08
7 (1)	260	3.50	09
8 (3)	250	3.33	02
9 (3)	220	3.16	06
10 (1)	160	3.16	05

Note. MMS = Kohlberg's Moral Maturity Score

*Pearson's r = .42 for MMS and Social Responsibility
**Pearson's r = .69 for MMS and Locus of Control

APPENDIX C

LETTERS TO PARENTS AND PERMISSION FORMS

A. G. Cox Grammar School

P. O. BOX 550
WINTERVILLE, NORTH CAROLINA 28590 - 0550
Telephone 756-3105

March 29, 1985

Dear Parents:

This letter is to inform you that a program on sexually transmitted diseases will be presented to all seventh and eighth grade students as part of a special sex education program presented by the Pitt County Health Department. This four session program will be presented during 4th and 5th periods when seventh and eighth grade health and physical education are scheduled. The presentations will begin April 14th and will be concluded for all classes by May 11th. Students will be grouped into a girls' group and a boys' group for this special program. The curriculum has been carefully planned, is not controversial, and has been approved by the A. G. Cox Grammar School Advisory Council. The effectiveness of the program will be assessed by the school counselor who will be glad to arrange a meeting to share the results of the assessment with you.

The purpose of this letter is to keep you informed about the many ways our school is working to educate your child. We hope you will be pleased with what we are trying to do; however, if you have any questions and do not wish your child to participate in this program, please call the school, 756-1912.

Sincerely,

Glenn Strickland

Glenn Strickland
Principal

Sandra Houston
Counselor

A. G. Cox Grammar School

P. O. BOX 550
WINTERVILLE, NORTH CAROLINA 28590 - 0550
Telephone 756-3105

Dear Parents,

Thank you for letting us know your preference in regard to your student's participation in the program being presented at A. G. Cox by Health Educators from Pitt County Health Department. Your student, _____(name)_____, will be assigned to a study hall during the class periods the program is being taught in the class(s) he was scheduled to attend and will return to his/her regularly assigned class when the sessions are concluded.

Sincerely,

Sandra Houston, Counselor

Glenn Strickland

Glenn Strickland, Principal

My parents received the letter informing them about the special Health Education Program for 7th and 8th grade students at A. G. Cox and are aware that I am participating in the program.

_____ (date)

_____ (student's signature)

A. G. Cox Grammar School

P. O. BOX 550
WINTERVILLE, NORTH CAROLINA 28590 - 0550
Telephone 756-3105

Dear Parents,

We have concluded our assessment of the special program presented by the Health Educators from the Pitt County Health Department to 7th and 8th grade students and would like to share the results with you. A meeting has been scheduled for _____, at 7:30 in the school multi-purpose room to provide an opportunity for us to present this information.

We hope you will be able to join us for this meeting; however, if you cannot attend and would like to receive a brief written summary of the findings, please let us know by checking in the space provided and returning the bottom section of this letter to the counselor's office.

Thank you for your interest and support of our efforts to provide a good educational experience for your student.

Sincerely,

Sandra Houston
Counselor

Glenn Strickland

Glenn Strickland
Principal

- -

_____ I plan to attend the meeting.

_____ I will be unable to attend the meeting.

_____ I will be unable to attend the meeting, but would like to receive a summary of the findings.

_____
Parent Signature

APPENDIX D

ANALYSIS TABLES

Table D-1

Analysis of Variance of Social Responsibility on Posttest

Pretest/No Pretest by Treatment/No Treatment

Source	SS	df	MS	F	Sig
Main effects					
Pretest/no pretest (A)	1069.477	1	1069.477	0.844	0.359
Treatment/no treatment (B)	451.588	1	451.588	0.356	0.551
2-way interaction					
A x B	1102.032	1	1102.032	0.869	0.352
Residual	469037.075	370	1267.668		
Total	471718.203	373	1264.660		

Mean Scores on Social Responsibility Pretest and Posttest

	Pretest		Posttest	
Group	$\bar{X}$	SD	$\bar{X}$	SD
Pretest (1,3)	3.06	.41	3.06	.35
No pretest (2,4)	-	-	3.03	.05
Treatment (1,2)	3.11	.34	3.04	.37
No treatment (3,4)	3.06	.35	3.06	.34

Table D-2

Analysis of Variance of Locus of Control on Posttest:

Pretest/No Pretest by Treatment/No Treatment

Source	SS	df	MS	F	Sig
Main effects					
Pretest/no pretest (A)	14.032	1	14.032	1.093	0.296
Treatment/no treatment (B)	16.834	1	16.834	1.311	0.253
2-way interaction					
A x B	1.889	1	1.889	0.147	0.701
Residual	4749.580	370	12.837		
Total	4783.615	373	12.825		

Mean Scores on Locus of Control Pretest and Posttest

Group	Pretest		Posttest	
	$\bar{X}$	SD	$\bar{X}$	SD
Pretest (1,3)	8.78	3.46	7.94	3.68
No pretest (2,4)	-	-	8.34	3.49
Treatment (1,2)	9.25	3.50	8.36	3.54
No treatment (3,4)	8.39	3.20	7.91	3.62

Table D-3

Analysis of Variance of Knowledge in Sexuality:

Pretest/No Pretest by Treatment/No Treatment

Source	SS	df	MS	F	Sig
Main effects					
Pretest/no pretest (A)	959.572	1	959.572	6.313	0.012*
Treatment/No treatment (B)	4295.283	1	4295.283	28.263	0.00*
2-way interaction					
A x B	67.594	1	67.594	0.444	0.505
Residual	56231.896	370	151.978		
Total	61400.313	373	164.612		

* $p < .05$

Mean Scores on Knowledge Pretest and Posttest

Group	Pretest $\bar{X}$	Pretest SD	Posttest $\bar{X}$	Posttest SD
Pretest (1,3)	71.96	10.49	77.74	12.36
No pretest (2,4)	-	-	74.80	13.12
Treatment (1,2)	71.98	10.81	79.32	14.19
No treatment (3,4)	71.65	9.70	72.64	9.97