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A paradigm for the thinking process involved in early adolescent's decision making

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A paradigm for the thinking process involved in early adolescent’s decision making

by

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A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of the
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CHAPTER 1. INTRODUCTION

"The early adolescent years are crucial in determining the success or failure of millions of American youth" (Carnegie Council on Adolescent Development, 1989, pg. 10). The transition from childhood to adulthood is part of the natural and predictable life cycle; however, this transformation is unique for each individual. Variations in the time it occurs, the rate at which it occurs, and the way the individual deals with the occurrence are common (Van Hoose & Strahan, 1989). Related to the transition is the vulnerability many early adolescents experience. Changes in home and society sometimes result in lack of support from family, peer group, community, and religious institutions. Early adolescents need support not only for their intellectual and educational development but also for their personal and social development (Van Hoose & Strahan, 1989).

The society into which these early adolescents are entering is one of ambiguity and ambivalence (Carnegie Council of Adolescent Development, 1989). Mixed messages from adults, media, and advertisements affect the way early adolescents make appropriate decisions in this era of transition in their lives. Yet, decisions concerning health and the future that are made by these early adolescents will affect the rest of their lives. On a typical day in America, 7,742 teenagers
become sexually active, 375 teens drop out of high school, 3,288 children run away from home and 2,740 teenage girls get pregnant (Cirone, 1990). The basis of the decisions to be sexually active, drop out of school or run away often is not documented in the literature.

Early adolescents need to know that taking risks can be healthy but that some risky activities cause particular concern because of the undesirable results, for example, using illegal drugs, engaging in sexual intercourse, dropping out of school, smoking cigarettes, and driving under the influence of alcohol. McCandless and Coop (1979) suggest that decision making is one of the hardest skills to learn, takes the longest to master, and is one of the most important skills expected of early adolescents.

In a well-known developmental theory, Piaget (1969) theorized that children pass through four distinct phases of mental development: sensorimotor period, preoperational period, concrete operational period, and formal operational period. The early adolescent is passing from the concrete operational stage into the formal operational stage. According to Piaget, early adolescents can enter the formal operational stage as early as the eleventh year in their life. During the years of 11 to 14, most early adolescents acquire certain abstract thinking capabilities. This abstract
thinking capacity needs to be used and expanded as early adolescents maneuver through the messages society sends them.

Because many early adolescents make decisions related to practical problems that will affect their future lives, it is crucial that these youth combine the use of affective as well as cognitive aspects of the critical thinking process. If early adolescent students' critical thinking skills are expanded at this age it could help them make appropriate decisions for their lives. Decision making is a significant aspect of the critical thinking process related to taking action in real life problems.

Decision making was defined as the process of making choices among competing courses of actions (Raiffa, 1968; von Winterfeldt & Edwards, 1986) and the decision making process was defined as all the processes that people follow in order to have the best chance of maximizing their well-being, given their beliefs and values. From the delineated decision making process of early adolescence, a paradigm for this aspect of thinking was proposed.

The specific objectives of this research were:

1. Delineate the decision making process of early adolescents in relation to immediate personal decisions that involve either healthy or unhealthy choices, or mature or immature home, school, and community behaviors.
2. Propose a paradigm of the decision aspect of the thinking process used by early adolescents in real life problems.

It is hoped that knowledge about early adolescent’s decision making skills will help parents, families, and educators provide activities for early adolescents to build on their current decision making skills and enhance these skills further.
CHAPTER 2. REVIEW OF LITERATURE

The objectives of this study were to delineate the decision making process of early adolescents in relation to immediate personal decisions that involve either healthy or unhealthy choices, or mature or immature home, school, and community behaviors and to propose a paradigm of the decision aspect of the thinking process used by early adolescents in real life problems.

The initial concept to be measured in this research was identified as critical thinking related to real life problems of early adolescents. A review of the literature on critical thinking led the researcher to the identification of the decision making process as one aspect of critical thinking. This seemed a more manageable concept for this work.

Because of the complexity of the critical thinking process and the role that decision maker places in the larger process of critical thinking, it was decided that an open-ended data gathering instrument would be used. Focus groups was the mode selected. The review of literature that follows is divided into three areas: 1) critical thinking, 2) decision making, and 3) qualitative assessment of focus groups.
The term critical thinking can be found in much of the current educational literature (e.g., books, journals, national reports on education, and conference procedures). The term critical thinking dates as far back as 300 B.C. with Socrates (Plato, translated by Church, 1956). The renewed interest in thinking skills stems from evidence that current school students do not use complex thinking skills and that these skills are increasingly important in this information age. In a recent review of writing on critical thinking, Cameron (1987) states that many current authors base their models of thinking on intellectual or cognitive processes. She then suggests that there are actually two approaches to the critical thinking process. One is based on cognitive processes and primarily is focused in the intellect. Writers in this approach, based in psychology, tend to follow the lead of earlier psychologists (e.g., Bloom, Engelhart, Furst, Hill & Krathwohl, 1956; Guilford, 1967; Piaget, 1969) and concentrate on skill development. The second approach, based in philosophy, goes beyond cognitive skills and involves a judgmental aspect (e.g., Coombs, 1986; Paul, 1984; Shor, 1980). The philosophical approach encompasses actions that include making value judgments. According to Cameron (1987, p. 17), the two approaches are:
Cognitive Psychologists  | Philosophers
---|---
use skills (may be step-by-step)  | use process
value expertise  | value self criticism, open-mindedness, and empathy
claim value neutrality  | consider values, morals, and ethics as having a role in thinking
use formal logic  | use informal logic
emphasize individual problem-solving  | emphasize group inquiry
consider teaching a quasi-science  | consider teaching an intellectual art
tend toward "vocational" and "professional" thinking  | tend toward "traditional liberal education" thinking

Dryden-Slocum, Jones and Peterat (1987) also propose a similar division of approaches to critical thinking. Journal articles from literature in the home economics field in the 1950s to the 1990s were reviewed for use of the term "critical thinking". Two bases for the discussion of critical thinking were evident. One related to the Anglo-American philosophy prevalent in the 1950s and 1960s. This Anglo-American philosophy followed the lead of the positivists and placed emphasis on scientific discovery. This approach relates closest to the cognitive psychological approach by Cameron. The second basis for critical thinking in home economics literature related to Continental/European philosophy of the Frankfurt school. Beginning in the 1970s and 1980s this school of thought proposed a communicating and questioning approach, which could be equated to the philosophical approach by Cameron.
The major difference in these two approaches is the assumption that concerns knowledge. The first approach values objective knowledge, formal logic, and views critical thinking as a skill where there is a right or wrong answer. The second approach views knowledge as being socially constructed and one in which knowledge can be questioned. It involves an affective process. The approach in viewing knowledge affects the student/teacher relationship in an educational setting. In the first approach the teacher retains power and authority over knowledge, while in the second approach the student and teacher are co-investigators of knowledge (Eyre & Peterat, 1990; Peterat, 1987).

In summary, Cameron and Dryden-Slocum et al. proposed using more than formal logic in critical thinking exercises. They suggest questioning societal, as well as individual values, as a part of the overall critical thinking process.

Other writers (Ennis, 1989; Norris, 1989; Paul, 1984) speak of a critical thinking disposition which relates to the latter approach above. These researchers view critical thinking as a disposition which enables the individual to use strategies in a non-linear fashion when approaching problems, not as being a procedural step-by-step approach. Paul speaks of distinct differences between types of critical thinking, critical thinking in the weak sense and in the strong sense. An individual who uses critical thinking skills in the weak
sense does not question or reflect on decisions being made. These individuals do not reason from points of view that oppose theirs. Their thinking is egocentric, committed to a personal point of view; and ethnocentric, related only to their group. When thinking in the strong sense, individuals question their own framework of thought, reconstruct and understand opposing points of view by putting themselves into the situation and reasoning dialectically. These individuals are open-minded and can discern when their own points of view are at their weakest and when opposing points of view are at their strongest (Paul, 1987).

Ennis (1985) also says that critical thinkers need to be open-minded. He views critical thinking similarly to Paul. Ennis defines critical thinking as "reasonable reflective thinking that is concerned with what to do or believe" (1985, p. 45). His critical thinker must possess four dispositions. These dispositions include being able to be open-minded, paying attention to the total situation, seeking reasons, and trying to be well-informed.

In further describing critical thinking dispositions, Norris & Ennis (1989) include more specific abilities. Their critical thinking dispositions include: seeking reasons, trying to be well-informed, using credible sources, looking for alternatives, considering points of view other than their own, withholding judgment when the evidence and reasons are
not sufficient, and seeking as much precision as the subject permits.

In trying to document a person's critical thinking dispositions, Norris (1989) examines what existing critical thinking tests can and cannot be expected to do. Norris indicates that at this time multiple-choice tests cannot test all the aspects of critical thinking. He feels these tests probably cannot measure critical thinking dispositions and they cannot evaluate the many aspects of critical thinking abilities an individual would use when facing real life problems. But he describes one multiple-choice test that furnished evidence on the person's ability to make credibility judgments. Making credibility judgments requires knowledge of criteria for judging credibility. Knowledge of how to apply the criteria in context, and of how to weigh and balance conflicts among the criteria when these criteria reflect opposing approaches are needed to make this judgment.

Although no instruments of critical thinking exist that measure all the abilities needed in dealing with real life problems, Norris cites some ways to begin the process. He suggests studying the critical thinkers' empirical beliefs. The critical thinkers' empirical beliefs are the result of earlier experiences and their political and religious ideologies. The study could be done in several different ways. Critical thinkers could write justifications for their
answers; experiments could be conducted to study critical thinkers’ performance by controlling for or manipulating their empirical beliefs, and critical thinkers could be asked to think aloud while working on the items. Each approach yields different information.

Norris has used with some success the approach of asking critical thinkers to think aloud while working on items. He recorded critical thinkers’ verbal reports of thinking by asking them to think aloud while determining answers to the items. He also recorded verbal reports as critical thinkers justified their choices after responding to the item and by asking respondents to tell the role of specific pieces of information in their thinking about the items (Norris, 1989).

Norris (1989) feels this verbal reporting approach still requires considerable exploration. First, it is not clear if these verbal reports of thinking can help with the development of tests of critical thinking dispositions and second, the methodology is not perfected yet in which to measure critical thinking in the context of real life problems.

A spiral-model approach introduced by Murphy, Cavanaugh, Geer, Plihal, Elshernd and Norman (1974) involves elements of the critical thinking disposition as proposed by Norris, Paul and Ennis. The model spins out into four different levels of a process entitled: inquiry, valuing, decision, and action. The outside of the spiral introduces the process with an
inquiry level which begins the critical thinking process. The spiral then moves into the second level, called valuing. The third level in the spiral process is the decision level while the final level of the model is action. This action level includes evaluation of the action taken. The levels are seen as connecting with one another until the individuals show commitment through their behavior. The behaviors within each level have been designed to facilitate growth towards the fourth level. Critical thinking about real life problems would involve all parts of this spiral process (Figure 1).

The inquiry level which begins the critical thinking process involves recognizing the problem, finding out more about it and applying this information. Individuals at this level are unaware of conditions that influence their behavior and usually deal with problems as they have in the past.

One aspect of the thinking process used to make decisions about real life problems is the second level of the spiral process labeled valuing. At the second level of the spiral individuals may disregard the long-range implications of their actions because they are not yet fully aware of all the values involved. Value clarification and value reasoning are processes which are just beginning at this level.

According to the Association for Values Education and Research (1979), value reasoning is reasoning by which a person can justify value judgments. Value reasoning consists
Figure 1. Model for spiral-process (Murphy et al., 1974, p. 9)
of at least one value standard or principle and one factual claim. An individual chooses a value principle and finds a factual claim to support it. Together the value principle and factual claim form a deductive argument from which the value conclusion to be justified can be deduced validly. The acceptability of the value principle of a value argument can be tested by a process called principle testing. The four tests involved in this process are: role exchange, universal consequences, new cases, and subsumption. The role exchange test requires individuals to ask themselves whether or not they would be willing to exchange places with the most disadvantaged individual(s) in a situation. The universal consequences test is often used in everyday discussion about what is right or wrong. An individual would ask "But what would happen if everybody did that?" The third test, new cases, is based on the idea that individuals can accept a principle only if they can accept all the judgments that stem from it. The fourth test, subsumption test is based on the idea that a value principle used to make a value judgment is acceptable if it follows logically from other principles which are acceptable.

The third level in the spiral process involves decision making. Individuals look at alternatives thoroughly and pick an appropriate one as it relates to the criteria in level one.
and two. Individuals integrate their personal values with judgments based upon facts before making their decision.

The action segment (level four) of the spiral process involves the action taken after the decision is made and includes a chance to evaluate the decision and reflect upon it. Action taken at this level works to improve conditions for the well-being of everyone.

This entire spiral process (inquiry, valuing, decision, and action) would be involved in the thinking process of individuals making decisions about real life problems. To further understand the decision making process, research related to decision making will be reviewed in the next section of the literature review.

**Decision Making**

Decision theorists define decision making as the process of making choices among competing courses of actions (Raiffa, 1968; von Winterfeldt & Edwards, 1986). Mann (1985) describes decision making as involving many cognitive processes. Some of these processes are information searching and processing (e.g., to identify the details of different available options), problem-solving (finding a creative solution to a decision situation), judging (evaluating the options and reliability of the source of information), learning (e.g., realizing that commitments cannot be easily broken), and
remembering (recalling information used to make previous decisions).

Schvaneveldt and Adams (1983) describe a competent decision maker as a person who is open to several ideas that enable an individual to make a better decision. Janis and Mann’s (1977) decision maker is a highly competent person who identifies a wide range of alternative courses of action, surveys a full range of objectives and values implicated by the choice, weighs the positive and negative consequences that could flow from each alternative, searches for new information even when it may be unpleasant, and then plans to implement the decision. The more adequately each of these steps are taken, the more satisfactory the decision is likely to be. Janis and Mann describe people who use conformity, procrastination, "passing the buck", or impulsive choice as incompetent decision makers. If a person learns to be a good decision maker early in life, it can make one’s life go more smoothly. Studies conducted relating to the decision making process suggest different approaches and models that are used by adolescents to make decisions.

Decision making models

Several studies emphasizing the process approach to decision making will be reviewed here. Often the process used by these researchers in decision making has been delineated
Ross (1981) conducted research on improving adolescent decision making skills using a decision making model that involved three distinct components: knowledge, affect, and skill. The knowledge component entails the decision context. Knowledge is normally taught to students in units organized around central topics that involve decision making. Topics such as alcohol, drugs, human sexuality, and career choices are often chosen. Ross indicated that schools have been successful in providing students with the knowledge competencies needed for effective decision making related to these topics. The affective component deals with beliefs and attitudes that affect the decision making process. Ross feels schools have dealt with this competency. Good teachers place a high priority in their teaching on beliefs and attitudes that help students understand the needs and rights of others while instilling a sense of personal control and responsibility. Schools have not been as successful in this area as parents would hope, possibly because of the inability of schools to influence the out-of-class experience of students (Ross, 1981). Ross notes that development of the information processing skills component has been neglected. Information processing skills are cognitive strategies that involve the development and application of procedures to organize, select, and interpret information within a decision context. Typically these skills
are taught indirectly, if at all, and evidence suggests that there is little growth in these skills between grades 7 and 10 (Ross, 1981).

Ross (1981) provides a schema for organizing the information processing abilities into five skills that are needed by adolescents to make effective decisions: a) identifying alternative courses of action, b) identifying appropriate criteria, c) assessing alternatives using criteria, d) summarizing information about alternatives, and e) self-evaluation. The visualization of each of these skills are divided into five levels (Figure 2).

Growth of the first skill, identifying alternative courses of action, involves the number of alternatives identified and the method used to develop them. A person at level one considers only one choice, rather than considering a list of alternatives. The second level describes a person who can identify more than one possible choice but only generates a small list of alternatives. A student functioning at the third level can construct a list of alternatives by combining his own ideas with suggestions from others. The student at level four can add alternatives to the brainstormed list, and an individual at level five adds to his list of alternatives by reflecting on the criteria that will be used to make the decision.
1. IDENTIFYING ALTERNATIVE ACTIONS
   Level 1. Single alternative
   Level 2. List of alternatives
   Level 3. Brainstorming alternatives
   Level 4. Classifying alternatives
   Level 5. Alternatives using criteria

2. IDENTIFYING APPROPRIATE CRITERIA
   Level 1. No criteria
   Level 2. Good and bad
   Level 3. Self-referenced
   Level 4. Other people
   Level 5. General principles

3. ASSESSING ALTERNATIVES BY CRITERIA
   Level 1. Justifying single alternative
   Level 2. Advantages and disadvantages
   Level 3. Positive and negative valences
   Level 4. Ordinal values
   Level 5. Interval scale values

4. SUMMARIZING ALTERNATIVES
   Level 1. Eyeball summary
   Level 2. Best alternative for criterion
   Level 3. Additive rule
   Level 4. Elimination of alternatives
   Level 5. Multiplication rule

5. SELF-EVALUATION
   Level 1. Rationalizing of choice
   Level 2. Repeating decision-making process
   Level 3. Introducing time dimension
   Level 4. Using alternative decision rule
   Level 5. Testing a principle

Figure 2. Schema for organizing the information processing abilities (Adapted from Ross, 1981 by Schlautman, 1991)
Growth on the second skill, identifying appropriate criteria, involves several dimensions. First, it is better to have a detailed set of criteria than a set of considerations that is unclear. Second, it is better to use criteria in a particular decision that can be applied to similar types of decisions and third, it is better to be concerned about the welfare of others than to be totally self-centered. These dimensions of growth can be condensed into the following five levels of growth. Level one suggests that a student at this stage has no criteria that he uses to make a decision and simply states what he plans to do. A student at level two considers several alternatives and for each choice he identifies some good things and bad things about it. A student operating at level three has an explicit set of criteria which is applied to all the alternatives. The set of criteria used is completely self-referenced, meaning that it concerns the student’s personal needs, wants, and goals without reference to others. Level four refers to a student who has an explicit set of criteria that are applied to each alternative. This set of criteria refers to self-referenced criteria as well as criteria that refers to others. At level five a student combines self-referenced concerns and consideration for other people into a general set of principles of human action that could have universal validity.
The skill, assessing alternatives by criteria, involves increasing sophistication in the strategies used to assess alternatives by criteria and the power of the statistic that links them. The strategies in these levels of growth are extensions of problem-solving methods proposed by Carkhuff (1973). At level one the student has a single alternative which is justified with some explanation. The student at level two can give different advantages and disadvantages for each option. At level three a student assesses each alternative by assigning it a negative or positive valence. Level four suggests that a student can rank the alternatives with the first alternative being the best, while a student functioning at the fifth level can assign a numerical value (using, for example, a 1-5 scale) to each alternative on each criterion. High numbers indicate good alternatives and low numbers indicate poor alternatives.

The fourth skill, summarizing information about alternatives, relates to the amount of information used in making the choice. A student using level one reads through all the information on alternatives and criteria and then tries to get a general feeling as to which alternative has the most support. The student who picks out the criterion that is most important to him, then chooses the alternative that is the best when only this criterion is considered is operating at level two. Level three depicts an individual who can add
up all information about the alternatives and picks the option with the highest score. A student at level four does not assume that all given criteria are equally important. This person would not even consider the alternative that scored the poorest on the criterion most important to him/her. The student making a decision at level five assigns weight to the importance of each criterion and multiples the value of each alternative by the criterion weight.

The last skill in Ross's information processing skills model is self-evaluation. This skill involves increasing sophistication in the strategy used to verify the outcome of the decision making process. A student at level one can provide some explanation as to why his/her choice is the best, while at level he/she two goes back over the process he used to make the decision and checks his work. An individual at the third level goes through the decision stage of assessing alternatives by criteria a second time considering future events. A student at level four uses a different strategy for summarizing the information and if he comes to the same conclusion as previously then the decision is verified. At level five, a student makes a generalization based on the choice made, then tests this generalization in some way.

This set of five core skills was the basis for the program in Ross's study. Core skills became the basis of
Mann, Harmoni and Power (1989) investigated skill aspects of decision making and discussed nine indicators of competence: 1) choice, willingness to choose (decision control) which is important for mature competent decision making; 2) comprehension, which refers to understanding decision making as a cognitive process; 3) creativity, being able to combine alternatives to produce new alternatives that help to solve a problem; 4) compromise, being willing to modify an unobtainable ideal alternative for a less favored but adequate option; 5) consequentiality, the ability to think about the potential consequences of choosing actions for oneself and others; 6) correctness, requires the ability to process information efficiently and logically; 7) credibility, the ability to look for the credibility of information relating to choice alternatives; 8) consistency, showing some stability in pattern of choices; and 9) commitment, being able to recognize that decisions are binding and entail commitment (Figure 3).

How do adolescents fare on the nine C’s? The results suggested that by the age of 15, many adolescents show a level of competence in understanding decision making (#2), creative problem solving (#3), correctness of choice (#6), and commitment to a course of action (#9). Early adolescents (11-
Figure 3. Nine elements of decision making competence
(Adapted from Mann et al., 1989 by Schlautman, 1991)
14 years) are less able to create options, identify a wide range of risks and benefits, foresee the consequences of alternatives (#5), and gauge the credibility of information from sources with vested interests (#7). No evidence was available for various stages of adolescence on willingness to make choices (#1), devising compromises (#4), and showing consistency of choices (#8). Some barriers to achieving competence in decision making during adolescence include attitudinal constraints, peer group pressures to conformity, breakdown in family structure and functioning, and restricted legal rights to make important personal decisions (e.g., to donate blood) (Mann et al., 1989).

Tiedeman (1961) developed a model that is important to understanding the approaches to adolescent decision making. Tiedeman’s model outlines activities (stations) that one experiences as one makes a decision. These stations include: 1) exploration, a general gathering of background data; 2) crystallization, information about advantages and disadvantages; 3) choice, a specific commitment is made towards a choice; 4) clarification, an attempt to understand the consequences associated with the commitment; 5) induction, a decision is put into effect; 6) reformation, the person is a true believer in the decision made; and 7) integration, the final stage in which the decision maker meets persons in the world and sees their reaction towards the choice recently
made. These seven stations provide an objective, rational, and systematic approach to decision making (Tiedeman, 1961).

The above are examples of models which have been used to gain an understanding of adolescents' decision making processes. Information is also needed on factors that influence adolescents' decision making. Some of the influences are discussed in the next section.

**Influences on adolescents' decisions**

According to Bergmann (1986), adolescents have historically faced decisions involving questions of independence, friendships, peer relations, sexuality, and school, with little help from adults and much assistance from their peers. Schvaneveldt and Adams (1983) feel that many adolescents are not prepared to make decisions on their own because they have had only limited experiences in decision making. They suggest that decision making develops as one matures and is actively involved in society.

Kafka and London (1991) focused on the openness of communication in high school adolescents' relationships with mother, father (or parental figure), and closest friend, and how it correlated with adolescents' use of cigarettes, alcohol, marijuana, and other drugs. Results of the study found that openness of communication with a friend wasn't related to extent of substance use, while open communication
with a parental figure was correlated with all adolescent substance use. The more open the communication with a parental figure, the lower the level of substance use. Results suggest that peer pressure from friends was not correlated with adolescent substance use, and that high school students did not report much pressure from friends. A strong correlation was also found between adolescents' substance use and their beliefs about their friends' substance use. Adolescents seem to associate with other adolescents whose substance use (or nonuse) is similar to their own. When the study compared parents' substance use with their adolescents it was found that only the father's alcohol use correlated significantly with adolescent substance use.

Wilks (1986) investigated the relative importance of parents and friends in older adolescent decision making. When asked who influenced adolescent decisions more, parents were rated as more important than friends overall, but current problems were more likely to be discussed with friends (Mann et al., 1989; Wilks, 1986). Parents were also seen by adolescents as being most important in certain future-oriented areas (money and the choice of a future spouse), while for current decisions (social events, dress, and club memberships) friends' opinions were more valued. Although parents considered themselves important influences for adolescents decisions relating to social events (dating, drinking alcohol,
and sex) adolescents reported that the opinions of their friends would be more important in the social arena. Overall, this study suggests that adolescents will seek their parent’s advice and opinions for longer-term, important, and difficult decisions, while friends’ opinions and feelings will be more important for decisions in short-term, less important, and less difficult areas.

Research shows that adolescents with an established adult support network are less likely to engage in risky behaviors such as smoking and drinking (Brown & Mann, 1990; Wills & Warshawsky, 1983). Brown and Mann (1990) focused on family structures and what influences these structures had on adolescent decision making. Results showed that adolescents whose families were highly cohesive, practiced good communication between adolescent and parents, and resolved conflicts using sound resolution skills were more likely to be better decision makers than those whose home environments were not as cohesive and strong.

These results are reassuring for those adolescents with a strong family structure and support network but not all adolescents come from home environments that are strong and secure. Because early adolescents experience decision-filled years of living (Baughter & Martin, 1981) and because some of these decisions can affect the rest of their lives, it is important to equip early adolescents with decision making
skills while they are still young and before they are faced with life altering decisions. The following section will describe these early adolescents and describe some decisions being made by them at this time in their lives.

**Types of decisions made by early adolescents**

Adolescence is often defined as the stage between childhood and adulthood; early adolescence then is the beginning of this stage. It often covers ages of 11-14. Early adolescence is a crucial stage of development which is marked by rapid changes in physical, intellectual, social, and emotional development. The transformation is unique for each individual in the rate at which it occurs and the way the individual deals with the occurrence. The transition from childhood to adulthood is a time of challenge and change during which adolescents search for self-identity and explore options in life styles.

Related to this transition is the vulnerability many early adolescents experience. Changes in home and society sometimes cause lack of support from family, peer group, community and religious institutions. Early adolescents need support not only for their intellectual and educational development but also for their personal and social development (Van Hoose & Strahan, 1989). Decisions made now, unintended and deliberate, begin to set the course of their lives. Mixed
messages from adults, media, and advertisements affect the abilities of early adolescents to make appropriate decisions in this era of transition in their lives. Yet, decisions made now by these early adolescents may set and/or limit future life possibilities.

Early adolescents are making decisions regarding whether or not to use alcohol, tobacco, and drugs, to engage in sex, belong to a gang, or to date (Grimes & Swisher, 1989; Juhasz & Sonnenshein-Schneider, 1987; Kafka & London, 1991; and Rattay & Lewis, 1990). Other areas early adolescents are making decisions about include areas such as: how to dress, what clubs to join, who to go to for advice and how to spend their money (Wilks, 1986). Schvaneveldt & Adams (1983) suggest that adolescent decisions involve routines such as home chores, school activities, homework and school study, clothing, music, peer interactions, and family life with relatively few adolescents making decisions involving politics, economics, occupational planning, peace issues, marriage and family, or civil rights related issues.

**Improving early adolescents’ decision making abilities**

Equipping early adolescents with decision making skills that provide opportunities for exploration but do not limit future life possibilities is a goal of educational programs. McCandless and Coop (1979) suggest that decision making is one
of the hardest to learn, takes the longest to master, and is one of the most important skills expected of adolescents. One approach to helping students solve real life problems is through the development of decision making skills. Several studies have proposed educational programs that could help adolescents learn this important decision making skill.

Bergmann (1986) suggests eight elements to be included in middle schools if a decision making curriculum is to be incorporated to help early adolescent students become accurate, effective decision makers. The middle school needs to provide the following elements: 1) one caring teacher who allows for a safe environment for each student’s interaction and is competent in decision making, 2) information obtained from students with an insight as to how it feels to be an 11-14 year old today, 3) resources to identify social issues in the community, 4) curriculum and teaching methods that encourage problem solving in all classes, 5) experiences to enhance the positive self concepts of each early adolescent in the middle school, 6) a non-threatening classroom environment that encourages students to ask questions and to be involved, 7) variety of materials showing how adults make or have made decisions, 8) in-service training for teachers to learn and participate in the decision making process (Bergmann & Rudman, 1985). Bergmann knows it is not possible to offer a separate course on decision making in all schools, but individual
teachers can incorporate decision making skills into all subject areas as often as possible.

Duryea (1984) conducted an exploratory study of the health decisions of ninth graders from New York and Montana. Duryea's study made attempts to describe some of the parameters involved in the health decision making of youth. These ninth grade students filled out a questionnaire which had them read a short drinking and driving scenario and then answered questions about what they had done in relation to filling out the questionnaire.

Question one asked students to make a decision about the scenario on a 5-point Likert scale. If students answered "definitely yes" they were given a score of one and a score of five for a "definitely no" response. "Definitely no" and "probably no" responses were defined as "Health-Promoting Decisions", while definitely yes and probably yes responses were defined as "Health-Risky Decisions". By using these categories it was possible to group students as either health-promoting decision makers (HPDM) or health-risky decision makers (HRDM). If students marked the middle category, not sure, they were excluded from the study.

Question two asked students to record what they thought about (i.e. cognitions) in making their decision. These responses were then categorized into four groups: (1) Health-Related Cognitions: Responses which showed a concern for
health status, injury, death, and/or general well-being (i.e., "I might get hurt"). (2) Social-Related Cognitions: Responses that show a concern for social priorities (i.e. "Who will be at the party that I know?"). (3) Internal-Personal Cognitions: Responses that show a concern for inner or personal priorities, philosophical, moral and/or ethical values (i.e., "Do I really want to go to the party?"). (4) Undefined Cognitions: Responses that do not show any definite concern or those responses that were unintelligible, nonlegible or incoherent (i.e., "boredom", "party", "morning problems").

Question three asked students how long it would take them to make their decision. Responses were from one to six, with those deciding instantly assigned a one and on up to those who would take longer than five minutes to decide, assigned a six. Higher mean scores indicated a greater degree of reflection in making the decision.

Question four of Duryea’s study had students discuss the impact that stress would have on their decision. Responses for this question were tabulated on a 3X3 contingency matrix. Responses from question one were compared with responses from this question to see if there was consistency between the two. For example, if a student answered "definitely yes" in question one (i.e., health-risky) and they answered "definitely yes" also for question four (i.e., would make the
same decision under stress), then the response to question four was given a score of one.

Question five asked students about decisions they had already made in their lives (i.e., marijuana and cigarette smoking, drinking and driving, and premarital sexual behavior). "Yes" responses (health-risky) were given a score of one and "no" responses (health-promoting) were given a score of three and those who hadn’t yet made a decision were given a score of two.

Mean scores for each study variable were calculated and then comparisons were made between Health-Promoting Decision Makers and Health-Risky Decision Makers. These mean scores were then assessed for specific variables using a t-test. The outcomes were portrayed without statistical significance figures, so that the findings would be assessed in a descriptive manner.

Comparisons between health-promoting decision-makers (HPDM) and health-risky decision makers (HRDM) showed significant differences between HPDM’s and HRDM’s on three of the study variables. HPDM intended to drink and drive less, and engage in future premarital sexual behavior less than HRDM. Contrastly, HRDM tended to spend greater time reflecting over their initial decision than did HPDM.

By looking at these results, Duryea suggests that curriculum planners conduct an assessment of student social
priorities to help design a program's course content and/or strategy because adolescent decisions are overwhelming social in nature. He also states that future research in this domain needs to focus on developing measurement protocols which portray more precisely student thinking during various health-related choices.

Ross's (1981) adolescent decision making model, reviewed earlier, was used to make an instructional program for teaching decision making skills in the classroom. The instructional program contained ten lessons, with one lesson to be covered each class period for a total of ten class periods. The first lesson consisted of a pretest and a problem in which the student had to identify the five steps (skills) of decision making. Ross' five skills are, identifying alternative courses of action, identifying appropriate criteria, assessing alternatives by criteria, summarizing information about alternatives, and self evaluation. The next five lessons were devoted to these decision making skills. The ninth and tenth lessons consisted of a review and a posttest.

The program was assessed in three different studies with seventh and eighth grade students. The pretest instrument tested the decision making skills in the area of cigarette smoking; the posttest instrument tested these skills in the area of career choice. Comparisons were made between pre and
posttest scores for treatment and control groups using analysis of variance techniques. The results showed that progress has been made by all groups in the four skill areas of identifying alternatives, assessing alternatives, summarizing information, and self-evaluation.

But this did not hold true for the skill of identifying criteria. The pretest scores for the treatment group exceeded the pretest scores of the control group but the posttest scores for the treatment group were below the posttest scores for the control group, showing that on this skill the program had a negative effect. This could be because the growth scheme of this skill is ordered incorrectly, or it may be that the issues addressed in the test instrument (smoking-pretest, career-posttest) also contributed to this unexpected finding. Smoking is a decision area that involves the interests of others, while career choice is a more self-centered decision. It may also be that students need a longer amount of time to improve this skill of decision making.

Ross's study showed that schools can increase the ability of adolescent students to confront their problems by providing them instruction about decision making skills. But Mann et al., (1989) found that early adolescents are less able than older adolescents to create options, identify a wide range of risks and benefits, foresee the consequences of alternatives, and gauge the credibility of information from sources with
vested interests. Because early adolescents are not as equipped as older adolescents to handle real life problems, outside guidance can be helpful.

Results show evidence that early adolescents can improve their decision making abilities. Educators need to continue to provide opportunities for early adolescents to improve these decision making abilities so they are better equipped to deal with real life problems.

Ways to research the decision making process of early adolescents

Social scientists typically have used quantitative methods to research decision making in the past (e.g., Bergmann, 1986; Mann et al., 1989; Ross, 1981). New directions are being taken in this area and qualitative research is making a comeback in the research field of social scientists (Morgan, 1988).

According to Morgan (1988), the goal of quantitative research is to isolate and define categories as precisely as possible before the study is undertaken and then to determine the relationship among the categories. On the other hand, the qualitative goal is to isolate and define categories during the process of research. Another difference between qualitative and quantitative methods is the difference between reporting abilities. If the questions for the data allow the
respondent to respond easily and unambiguously, closed questions and quantitative methods are indicated. If the questions for which data are sought are likely to cause the respondent difficulty and imprecision, the broader flexible approach used by qualitative research is more appropriate. A final difference between the two approaches is the number and kind of respondents that should be recruited for research purposes. The quantitative approach requires investigators to construct a "sample" of necessary size and type to generalize to the larger population, while the qualitative approach is not concerned with the issue of generalizability. Qualitative approach is concerned with the issue of access. In qualitative research, it is better to work longer, and with more intensity, with a few people than with many people and only scratch the surface (Morgan, 1988).

The two approaches (quantitative vs. qualitative) represent two very different sets and frames of mind. The two approaches observe different realities, or different aspects of the same reality, and the two approaches are never substitutes for each other.

**Focus Groups in Qualitative Research**

Focus groups, a form of qualitative research, have been around for a long time and are basically defined as a group interview (Morgan, 1988). Focus groups differ from a regular
interview in that focus groups rely on the interaction within the group instead of the interviewer and respondent talking back and forth to each other. The researcher supplies the topics and takes the role of the moderator. Transcripts of the group discussion are produced as the research data.

Focus groups can be used as a self-contained means of collecting data or as a supplement to quantitative and other qualitative methods. But whether one is using focus groups alone or in combination with another method, the goal in using focus groups is to get closer to participants' understandings of the researcher's topic of interest. Focus groups are useful when researchers are investigating what participants think, but focus groups excel at uncovering why participants think as they do (Morgan, 1988).
The initial goal of this research had been to delineate the critical thinking abilities of early adolescents in relation to life decisions and to develop an assessment device that would measure these critical thinking abilities. The hypothesis for the larger research project for which this study is one part was: "that the greater the critical thinking abilities of early adolescents, the less likely they will be to make decisions placing them at risk".

This research focused on early adolescents because the decisions made during these years are hard to reverse and have an impact on the early adolescent’s future. If a major impact is to be made on an individual’s thinking abilities, the years of 11-14 seem to be "the last best chance to avoid a diminished future" (Carnegie Council of Adolescent Development, 1989, p. 8).

After researching and reviewing literature on critical thinking, it was determined that critical thinking had been delineated in almost as many ways as there were authors writing about it. In order to reach a workable framework for this work, the researcher corresponded with two prominent writers in the critical thinking area. Both indicated that developing an instrument to measure critical thinking, the intent of this research, would be a major task. Measuring
critical thinking as a whole may be too difficult, especially measuring critical thinking related to real life decisions (R. H. Ennis, February 8, 1991; S. P. Norris, March 25, 1991). Measurement demands control, and research design control is difficult in the "real world" of early adolescents. It therefore seemed appropriate to try to dissect critical thinking into manageable parts for possible measurement. The four aspects of the proposed critical thinking models were questioning, valuing, decision making, and acting. This research will focus on decision making.

Although objective knowledge plays a role in the critical thinking model, personal decisions made by early adolescents also contain an affective element. In an attempt to categorize the writings in the area of critical thinking, Cameron (1987) has presented a model that contains both a cognitive and an affective element.

Using Cameron’s model and the critical thinking disposition proposed by Paul (1984, 1987), the researcher attempted to analyze an individual’s critical thinking ability in a real life situation (Figure 4). The model evolved from examination of behaviors exhibited by an individual with a critical thinking disposition (Paul, 1984, 1987). The behaviors result in an Act that follows decisions made in real life situations. In order to understand the thinking that takes place before acting, three segments previous are
Figure 4. Dissecting a person's critical thinking dispositions in real life situations (Adapted from Murphy et al., 1974)
The three segments are questioning, valuing, and decision making. Although the behaviors have been grouped into four parts, the different types of behavior may not be evident to the individual (actor) initiating the action. In the model the behaviors have been arranged in cycles ranging from initiating the act to its completion. It is shown in a cyclical rather than a linear format because all parts work together at one time and one part does not necessarily follow after another.

The more thoroughly the actor identifies the parts of the stages in his own mind, the more likely he/she is to act in his/her as well as others best interest. The model is to be used to delineate parts of a critical thinking disposition in preparation for: a) researching the disposition, and b) ultimately helping learners enhance their own critical thinking disposition. A critical thinking disposition is viewed as having four segments: questioning, valuing, decision making, and acting.

In segment one, questioning or inquiry takes place. The thinker recognizes the problem and finds out more about it. An individual with a critical thinking disposition would spend time asking questions about the situation and gathering information related to the problem.

Valuing is the second segment. Value clarification and value reasoning (Association for Values Education and
Research, 1979) are a key part of this stage. The individual with a critical thinking disposition would know his/her own values and use a consistent value system. The critical thinker considers his/her own value preferences but tests these value preferences in light of the consequences for all.

Decision making, the third segment, sets in motion the information gathering process. Using information from the preceding stage and gathering additional information the person with a critical thinking disposition determines alternative actions possible. He/she evaluates the possibilities using information from credible sources. By integrating his/her value preferences with reasoned judgments based on facts gathered thus far, a critical thinker proceeds to action.

The fourth and final segment involves the Act itself. It is the action. Here the critical thinker has a chance to evaluate the decision by reflecting on the Act itself. Ultimately it is hoped that action taken facilitates improved conditions for the actor and his/her surroundings.

If the questioning and the acting segment are viewed as the beginning and ending of the process, in order to delineate the process of critical thinking the segments of decision making and valuing held the most promise. Consequently the literature on decision making was investigated for its part in the critical thinking process.
In order to determine the thinking processes used by early adolescents as they make real life decisions it seemed valuable to allow informants to use a relatively unstructured format. The researcher was interested in the type of decisions the early adolescents were making and how they determined the actions they would take. A qualitative research method (Lincoln & Guba, 1985) to investigate the decision making abilities of early adolescents was the mode of research best suited to obtain this type of information. This method allows the informants to respond in a broad, flexible way.

The objective of this study was to delineate the decision making process used by early adolescents in relation to immediate personal decisions that involve either healthy or unhealthy choices, or mature or immature home, school, and community behaviors. From the delineated decision making process of early adolescents, a paradigm for that aspect of thinking was proposed.

This section will discuss the method used in the study, including sample selection, data collection, and data analysis.
Sample Selection

If early adolescence includes ages 11 to 14, seventh graders, approximately aged 12 are at the center of the age span. They are also in the midst of the choice of wanting to make their own personal decisions which will affect their future lives, but needing support in making those decisions. Seventh graders were the focus of this study.

Because the researcher worked with another researcher who was developing a scale for measuring the at-risk identifying factor of students, the sample was drawn from a list of schools that had at-risk programs for students. Schools were recommended by Raymond E. Morley, Iowa Department of Education consultant for homeless children and youth and at-risk students. Using this list of schools, five school districts were selected to participate in the study. Using a purposive sampling procedure, schools districts were selected that varied in size (935 to 12,072 students), setting (rural, suburban, and urban), and racial composition. Contact was made through the school administrator. The school administrator then selected the guidance counselor or another individual who would identify the students to participate in the study. The person doing the selection was asked to identify five seventh grade students that were representative of the student body to participate in the study. The sample,
thus far, was comprised of four to five seventh graders in five different school settings in Iowa.

After collecting data from the groups in the five schools districts, it was felt that minorities in a separate group might add addition information. The out-of-school setting also might add another dimension to the data (Morgan, 1988). Contact was made with Billy Stone, coordinator of minority achievement programs for Des Moines Public Schools, who identified two additional special youth groups with minority students.

The final sample consisted of 33 informants from seven different focus groups. Of these, 22 were white Caucasian, eight African-American, two Asian, and one Native American.

**Human Subjects Committee Review**

The Iowa State University Committee on the Use of Human Subjects in research reviewed this study and concluded that there were no risks for the participants; rights and welfare of participants were protected by the confidentiality of data; and informed consent was obtained by appropriate procedures. The Human Subjects Approval Form is in Appendix A.

**Data Collection**

Seven school districts were initially contacted by mail to determine their willingness to participate in this study.
Letters were sent to school administrators explaining the purpose of the research study and identifying questions that would be asked of the seventh graders. Included with the letter was a request for the appropriate school official to formally indicate their school district’s willingness to participate in the research study. Of these seven school districts, five agreed to participate and were sent a letter which described the study, procedures, and the amount of time that would be required of all participants (Appendix B). The two researchers asked that they be able to visit with five seventh graders and one or more guidance counselors. The students would be asked to identify the kinds of behavioral decisions early adolescents make and how they decide on actions to take. The guidance counselors would be asked to ascertain information about the at-risk students and the type of guidance work being done with them. The selection of the particular five students and the guidance counselor to be interviewed was left to the discretion of the school administration. It was requested that the selected seventh graders be representative of the school body and include males, females, and minority students.

Confirmation letters which included arrangements for an hour visit to each school were sent (Appendix C). The confirmation letter of the visit time and place included a sample letter to send home to parents of the students to be
interviewed requesting permission for their seventh grade child to participate in the study (Appendix C).

The five seventh grade informants were interviewed as a group using focus group techniques (Morgan, 1988). Five focus group interviews were conducted in the spring of 1991 and two in spring of 1992. The two additional groups of seventh grade informants had been added at a later date (See Sample Selection). All contact with the sponsor organization of the latter group was done via telephone.

Each focus group responded first in written form; then, approximately one-hour interviews with the total group were conducted. Each focus group interview was audio-taped with the informant’s permission. The verbal conversation with the informants followed the completion of their written responses.

Four educators at Iowa State University were asked to validate the written situations and interview questions presented at a meeting of the group. Prior to actual data collection, trial interviews had been conducted individually with four seventh graders to determine the appropriateness of the interview questions and situations. After analyzing the trial interview transcriptions, the data collection procedure was finalized. The initial interviews led the researcher to pursue ways to stimulate more interaction between group informants.
The data collection in each focus group consisted of both a written and verbal response. The written questionnaire asked informants to respond to three real life situations that might involve seventh graders (Appendix D). The situations were:

- Your good friend tells you about stealing from a store in the mall just for fun. Your friend asks you to go along. What do you do?
- When you walk into the restroom at school, you find several classmates laughing and messing around. They are passing a bottle among themselves. They offer you a drink. What do you do?
- You have an overnight party. After your parents go to bed someone brings out a pack of cigarettes, lights one, and starts to pass it around. What do you do?

Informants were asked what they would do if they were actually in this situation. Three additional questions asked the students to focus on the answer to what they would do. These questions were: What thoughts did you have in your head while you were deciding on your answer?; Why did you answer the way you did?; and, Who influenced your answer? The final question asked the informants to write about some of the decisions they had made recently.

- Now that you have answered these situations would you write other situations seventh graders might face.
Write them below. To help you, you might think of some of the decisions you or your friends have had to make recently. Have fun and be creative!

After completing the written questionnaire, the total group was interviewed by the researcher. Informants sat around a table to encourage group interaction. In an effort to create a comfortable environment in which the group of informants could respond verbally, the informants and the researcher participated in an icebreaker. To begin the focus group interaction, the informants were asked to talk about one situation they had responded to on the written questionnaire. The following four questions were written on a folded card and placed one at a time in the center of the table so the question was visible to all students:

- Pick one situation. How did you decide on the answer you put?
- Who influenced your answer?
- What situations do seventh graders face?
- What situations have happened in your school, or have you read about or heard someone talk about that involve choices that seventh graders have to make?

All group interviews were audio-taped with the informant’s permission. The role of the researcher was to maintain the focus of the group’s conversation on the question as posed, not to guide the responses in any given direction.
Data Analysis

The taped conversation from each focus group and the written responses of each student were transcribed to a word processing program, and then transported to Qualpro, (Blackman, 1987) a data management program. The transcriptions were stored in eight computer files (one file for each focus group and one file for all students' written responses). After entering the transcriptions into the computer, each of the eight transcriptions were printed with line numbers.

The researcher then manually coded the data into smaller units of information. When the seventh graders responded to the situation of a friend smoking at the overnight party at their house, categories of responses were identified. Some example categories were: Asking the smoker to leave and asking the smoker to smoke the cigarette outside. After the initial coding, the codes were reviewed and categories were condensed further. Initially, the responses from the three situations (stealing, drinking and smoking) were coded separately. Later the same responses from different situations were collapsed. For example, when the seventh graders were asked who influenced their answer about stealing and they responded their parents, it was coded as STWHOPAR (Stealing, who influenced your answer, parents). If this response was the same for the drinking and smoking situations,
the code was STWHOPAR (D-SM) (Drinking-Smoking) to indicate that drinking and smoking had elicited the same response to that question. Codes were defined consistently among situations in which they appeared more than once.

Next the codes were electronically attached to the previously stored transcriptions using Qualpro (Blackman, 1987). After all codes had been entered for all files, the computer was able to retrieve all incidents of each code as well as co-occurring codes. These were printed and grouped by the researcher into four main categories: "What do you do?, Why did you answer the way you did?, Who influenced your answer?, and What decisions are seventh graders making?" Code frequencies were counted separately for each of the four situations. The responses from the first three situations were then combined and frequencies were summed over the three situations. The fourth question asked informants to list decisions they had made recently and code frequencies for these responses were counted separately.

Although the focus groups elicited a large amount of data, only distinctive data from the four categories will be presented in the findings. The complete list of coding categories are shown in Appendix E.
CHAPTER 4. FINDINGS AND DISCUSSION

The purpose of this study was to delineate the decision making process used by early adolescents in relation to immediate personal decisions that involve healthy or unhealthy choices or mature or immature home, school, and community behaviors. From the delineated decision making process of early adolescents, a paradigm for decision making as an aspect of critical thinking was proposed.

Transcriptions from the seven focus group interviews and written responses from the participants in the seven focus groups were analyzed. The results from the data analysis are reported in the following section.

Findings Related to Decision Making

Informants' responses to three situations, stealing, drinking, and smoking, were obtained in three main questions, 1) what would you do? 2) why did you answer the way you did? and 3) who influenced your answer? The fourth question, what other decisions do seventh graders make?, was answered only once by the each of the 33 informants. Responses are combined answers to a specific questions. One response could contain several answers. Thirty-three informants in seven focus groups generated 99 responses to question one through three and 33 responses to question four. The responses to the first
three questions involve combined answers from the three situations, whereas the fourth was handled separately.

**What would you do?**

Informants were asked what they would do if they were actually in a particular situation (Appendix D, Questions). Early adolescents responded to the presented situations in many different ways.

The predominant opinion offered by informants was that they would not participate in these activities and would not give in to peer pressure. Following is a sampling of the informants’ responses that fall in this category.

"I would tell her no, and tell her how wrong it is. . . ." (Focus Group, File 2, Stealing)

"I wouldn’t go, I don’t want to get in trouble." (Focus Group, File 5, Stealing)

"I’d say, you’re crazy, I don’t need to steal. . . ." (Student Response, File 8, Stealing)

"I would say no thank-you and walk out of the restroom." (Focus Group, File 6, Drinking)

"I tell them I don’t want any and they shouldn’t drink, . . . ." (Student Response, File 8, Drinking)

"I’d grab it from her and say, "If you want to smoke, you’re not going to do it in my house." (Focus Group, File 7, Smoking)

"I say, guys let’s not do this. . . . If you want to do this go home or outside but not in here." (Student Response, File 8, Smoking)

For other seventh graders it was not as easy to take a direct stand and tell their peers they did not want to
participate. They found that making up an excuse would be more acceptable for them in dealing with the situation.

"I'd probably make an excuse, like my mom doesn't want me to go to the mall." (Student Response, File 8, Stealing)

"I would say I'm pretty busy. I wouldn't have time to go to the mall." (Student Response, File 8, Stealing)

"Say I have to get to class on the other side of the school or it's against my beliefs." (Student Response, File 8, Drinking)

"Say no and say I have some sort of disease in my lungs and if I smoke I'll die, even though it's not true." (Student Response, File 8, Smoking)

Other seventh graders would not deal with the situation by themselves and said they would seek help from someone else.

"I'd say no and tell her that she shouldn't do it anymore and if she kept doing it I would tell her parents." (Focus Group, File 2, Stealing)

"Say no thanks and walk off. I might think about what to do for awhile like who to tell, then I'll probably tell my parents or the principal. Most likely both." (Student Response, File 8, Drinking)

"I would say no and I am not going to get in trouble, and leave and go tell a teacher." (Focus Group, File 4, Drinking)

"I would tell my parents." (Focus Group, File 3, Smoking)

While several seventh graders said they would tell someone else, one informant said he/she would not tell a teacher about the drinking for fear of being beat up.

"I wouldn't tell a teacher, because I don't want to be a narc. . . you would get beat up. Nobody would like you." (Focus Group, File 4, Drinking)

Another group of seventh graders used an active approach in dealing with the situation.
"I would say no and tell him if he wants to steal he can do it himself and walk away." (Focus Group, File 2, Stealing)

"I take it from them and flush it down the toilet then tell them I don’t want my house to smell like smoke." (Student Response, File 8, Smoking)

"I’d make them leave my house." (Focus Group, File 7, Smoking)

A few seventh graders showed sincere concern for their peers’ behavior.

"I would tell her I didn’t want to go and that I didn’t think it was right for her to do. I might ask her to go to a movie or do something with me so she wouldn’t go do that." (Focus Group, File 2, Stealing)

"Tell them absolutely no and ask them where they got the bottle and tell someone so they can be helped with their problem." (Student Response, File 8, Drinking)

"Ask them to put it out. I would ask them why they wanted to smoke since it is bad for you." (Focus Group, File 5, Smoking)

Although a large majority of the early adolescents commented that they would not participate in these activities a few seventh graders were willing to be involved in the situations.

"I would go with him and when he takes something, I would tell." (Focus Group, File 4, Stealing)

"I would go, but I wouldn’t steal nothing." (Focus Group, File 4, Stealing)

"I would say, you go do it first." (Focus Group, File 5, Stealing)

"... I might also tell them to wait until I knew they [parents] were asleep." (Student Response, File 8, Smoking)

The responses for "what would you do?", indicate that the majority of seventh graders would not participate in the
activities addressed. Some seventh graders took a direct stand and would tell their peers they did not want to participate while others provided a reason why they would not participate. Several seventh graders said they would seek help from someone else while one said they would not seek help for fear of reprisal by friends. Other seventh graders indicated they would use an active approach by intervening in the situation, with a few voicing sincere concern about their peers’ behavior. Only four responses from the seventh graders indicated they would involve themselves directly in the activities in some way.

Why did you answer the way you did?

After the seventh graders were asked what they would do in a given situation, they were asked why they responded the way they did. Most early adolescents used reasoning related to their view of possible immediate consequences.

"I wouldn’t go because I wouldn’t want to get in trouble." (Focus Group, File 4, Stealing)

"I was just thinking what would happen if I didn’t say yes." (Focus Group, File 6, Drinking)

"Because I probably would of gotten grounded." (Student Response, File 8, Smoking)

"If they steal, they would probably blame us for doing it or us for putting it in their pocket or something." (Focus Group, File 4, Stealing)

"I would say no thanks and leave the restrooms because even talking to them someone may walk in and think that I was drinking with them." (Student Response, File 8, Drinking)
"They would probably blame it on me, but they would probably deny it or something like that." (Focus Group, File 3, Smoking)

A majority of the seventh graders said they would not participate in the situation because they felt it was wrong to be involved in stealing, drinking or smoking.

"I would tell her that it was against the law, I wouldn’t go and I would ask her not to do it either. (Student Response, File 8, Stealing)

"You say no because you should never drink even when you are older." (Focus Group, File 4, Drinking)

"Because smoking is wrong." (Student Response, File 8, Smoking)

"Because I feel that no one should do that just for fun." (Student Response, File 8, Stealing)

"Because I feel that people of all ages don’t need a bottle to have a good time." (Student Response, File 8, Drinking)

Another major reason that emerged for not participating in these situations had to do with health. Many of the seventh graders would not drink or smoke because they felt it would not be good for their health.

"I was thinking how drinking, especially at a young age, can damage my health." (Student Response, File 8, Drinking)

"Alcohol is a drug and I learned that it can mess you up pretty bad." (Student Response, File 8, Drinking)

"Well I guess it can be an addicting habit and it can damage your heart." (Focus Group, File 5, Smoking)

While many were concerned about their health, many others who responded they would not participate in stealing, drinking
or smoking said they were worried about what others would think of them.

"They [friends] might call me chicken." (Student Response, File 8, Stealing)

"They will probably just make fun of you if you walk up and say no." (Focus Group, File 1, Drinking)

"My friends will come to school and say something like she didn't smoke or something." (Focus Group, File 3, Smoking)

Many seventh graders were worried their parents would find out about their participation in these activities.

"OK, you know what would happen if my parents caught me and with my friends and all." (Focus Group, File 1, Smoking)

"It would ruin the party and my parents would get mad." (Student Response, File 8, Smoking)

"... My parents will get mad. ..." (Student Response, File 8, Smoking)

In summary, the majority of seventh graders used reasoning related to their view of possible immediate consequences for why they would or would not participate in the given activities. Several seventh graders responded by making a judgement about right and wrong. Several used concerns about their health and what others would think of them as reasons for their responses.

Who influenced your answer?

Next the seventh graders were asked, "who influenced your answer?" The seventh graders were asked to reflect back to
incidents or people who had had a major influence on their lives. Influences could be positive and/or negative.

The most influential persons in these seventh graders' lives were their parents or whole family. Most seventh graders responded that their parents had taught them right from wrong.

"I thought about my parents because they have always taught me not to steal." (Student Response, File 8, Stealing)

"My parents and teachers by telling me it's not right to do that stuff." (Student Response, File 8, Drinking)

Others were worried that their parents would find out and they would get in trouble.

"My parents because they would find out. The police would probably tell them." (Focus Group, File 5, Stealing)

Some responses were related to parental influence but were labeled "whole family". The whole family included brothers and sisters.

"Actually my whole family does..." (Focus Group, File 6, Drinking)

"It's something you get taught when you're little. It's your whole family." (Focus Group, File 6, Drinking)

The next major influence was the seventh graders themselves. The seventh graders did not think that others influenced them, but that they were in charge of their own thinking.

"... my conscious and my head told me not to do it." (Student Response, File 8, Stealing)

"Well, myself. Sometimes it isn't other people, it's just you." (Focus Group, File 6, Drinking)
"I put myself because I don’t like the smell." (Focus Group, File 7, Smoking)

After parents and themselves, the school was seen as exerting influence on the seventh graders. This category included both teachers and school programs.

"My sixth grade teacher." (Student Response, File 8, Stealing)

"Probably my teachers and staff members." (Student Response, File 8, Drinking)

"Sometimes school programs like DARE because it is very forthright." (Focus Group, File 5, Smoking)

The fourth area of influence mentioned most often was friends. Some sample comments were:

"... friend’s discussions or talks with me." (Student Response, File 8, Stealing)

"My real friends." (Student Response, File 8, Drinking)

The fifth most mentioned influence was the media. The media included television, news, and magazines. The media was listed as both a positive and negative influence.

"TV sometimes and the news. When you watch the news you always hear about different people who have emphysema and different respiratory infections." (Focus Group, File 5, Smoking)

"... But, whenever I see the beer commercials sometimes that seems to look good. I don’t know why but it seems to look good. I just want to do it." (Focus Group, File 1, Drinking)

"Isn’t there a magazine in the study hall you can get four boxes for free. You just have to have ten proofs of purchase or something like that. You mail it in and you get four boxes free or something like that." (Focus Group, File 1, Smoking)
The responses for "who influenced your answer" indicate that the seventh graders' main influence in making decisions is their parents and their whole family. Their next major influence was themselves (their own thinking) followed by school programs and teachers. Friends and the media also influence these seventh graders.

What other decisions do seventh graders make?

After answering the three questions about the situations, the seventh graders were asked to discuss other decisions that they were making. Many of the responses were discussed or written as decisions friends or persons they knew had to make, not ones they made themselves. Forty-one categories emerged from the data. Ten categories were identified by five or more informants and are reported here. Sample responses are given in each category. The categories are presented from most to least in number of responses in the category.

The decision that appeared most often in the responses was the decision whether or not to take drugs. One seventh grader told about her experience,

"Well, me and my friend was walking down the street and a boy came up and asked if we wanted a joint and we didn't say nothing and walked away." (Student Response, File 8)

Whether or not to take a specific drug, e.g., alcohol, is a decision seventh graders are also making.

"One night my friend's mom went to work and my friend came out with some beer. She asked if I wanted some but I
said no. So she drank it herself. The next morning her mom found out some beer was missing and my friend got in way big trouble."  (Student Response, File 8)

Another decision seventh graders indicated they were facing involved whether or not to engage in sexual activity.

"... [the decision] one of my friends has had to face is sleeping with a guy to keep him from breaking up with her."  (Student Response, File 8)

Some seventh graders are making decisions about whether or not to live. Suicide or killing yourself was mentioned several times as a decision seventh graders are making. Two seventh graders remarked about friends who have approached them with this subject.

"My friend told me that she tried to kill herself by taking like a whole bottle of Tylenol."  (Focus Group, File 1)

"This girl talks to me all the time about killing herself."  (Focus Group, File 3)

Whether or not to smoke cigarettes and/or chew tobacco is another decision seventh graders say they are making.

"... I have been around people that chew tobacco. It just about makes me puke."  (Focus Group, File 2)

"There was girls in our seventh grade, eighth grade and sixth grade bathroom who smoke all the time. A whole bunch of girls I know."  (Focus Group, File 4)

Whether or not to steal and/or shoplift are two more decisions being faced by seventh graders. Two seventh graders commented on situations they had experienced.

"There’s been a whole bunch of letter jackets stolen and Guess jeans out of peoples lockers."  (Focus Group, File 5)
"When I was in Wisconsin, some of my friends and my cousins . . . [said] look at this hat we just ripped it off . . . They thought they were really cool until the security guard started catching up. They turned around running. Yeah, they didn’t notice that right behind is the security guard. Real bright, huh?" (Focus Group, File 2)

Violence also is a part of the lives of these seventh graders. When asked what decisions they were making these informants talked about fighting and gangs.

"Fighting people for no reason." (Focus Group, File 6)

"Yesterday, me and my brother was just walking and talking and then this boy came up and kept asking us what gang we was in. And we kept saying we ain’t in no gang. And then the next thing you know me and him was fighting. And then he was wearing gang colors, he was wearing all kinds of red and everything. And then we was talking and we was wearing blue. And he kept saying, what are you wearing all that blue and junk? [That’s when] we got into a fight and everything just for a color." (Focus Group, File 6)

Many decisions are made by seventh graders at school. These seventh graders talked about cheating and skipping (jipping) school.

"A friend wants me to help her cheat on a test." (Focus Group, File 7)

"Some seventh graders, like your friends ask you if you want to jip next period or so and they try talking you into it . . ." (Focus Group, File 6)

Dating is also a concern for this age group. They are deciding who to date and how to act. One seventh grader commented about a situation that happened to her.

"A boy that is a really good friend of yours comes up to you and says he wants to go out with you but you just like him as a friend and you don’t want to hurt his feelings." (Student Response, File 8)
Other decisions that were mentioned by more than one but less than five seventh graders included:

"Peer pressure from your friends." (Focus Group, File 7)
"Running away." (Focus Group, File 7)
"Lies." (Student Response, File 8)

The responses showed that seventh graders are willing to share information about decisions they or someone they know have experienced by this time in their lives. The decisions they identified included whether or not to: take drugs, drink alcohol, engage in sexual activity, commit suicide, smoke cigarettes and/or chew tobacco, steal and/or shoplift. To a lesser extent seventh graders also indicated being involved in decisions about whether or not to: engage in violence (e.g., fighting and gangs), skip school, date, stand up to peer pressure, run away, and/or tell lies.

Discussion

The predominant opinion offered by the seventh graders was that they would not participate in the activities addressed in the focus groups. Only four of the 99 seventh graders' responses indicated they would involve themselves in the activities in some way. The seventh graders said they would not participate in these particular activities but later said others they know have engaged in these activities. Whether their own non-participation is based on a lack of an
opportunity to do so, or a genuine ability to avoid doing so is not clear from this short interview.

The seventh graders often indicated making decisions based on the immediate consequences of their decisions. They indicated little questioning of the reasons why or why not for engaging in the activity. The decision was made because obedience would mean no punishment. Others felt the action was wrong and decided not to participate for that reason. In most of these incidents no explanations were given. When thinking about the consequences, the seventh graders thought of short-term consequences of their decisions (getting in trouble with parents for smoking; what their parents would do if they were caught drinking) and not as much about long-term consequences (getting addicted to smoking; the health consequences of drinking) (Mann et al., 1989). The second level of the spiral model introduced earlier (Consumer Education Curriculum Modules: A Spiral-Process Approach, 1974) is valuing. Because value clarification and value reasoning are just beginning at this level, an individual may disregard the long-range implications of their actions because they are not yet fully aware of all the values involved.

It was evident through the focus groups that knowledge played a role in decision making of some of these seventh graders (Ross, 1981).

"... it can be an addicting habit and it can damage your heart." (Focus Group, File 5, Smoking)
There was little evidence of information processing skills (Ross, 1981) being used by these seventh graders. For these seventh graders in these situations an "intuitive" response was more evident than the step-by-step process to be used in decision making.

The seventh graders' main influence in making decisions was their parents/families. This support could be the reason many early adolescents said they would not participate in the activities. Kafka and London (1991) found that the more open the communication with a parental figure, the lower the level of substance abuse. Early adolescents may be less likely to be involved in the activities addressed because they are still accepting of their parents'/families' value system.

The findings that parents were more influential to the seventh graders than were their friends was also indicated by Wilks (1986). According to Wilks, parents are seen by adolescents as being most important in certain future-oriented areas (money and the choice of a future spouse), while for current decisions (social events, dress, and club memberships) friends' opinions were more valued.

The findings indicated that early adolescents are making or thinking about crucial decisions at this time in their lives (Grimes & Swisher, 1989; Juhasz & Sonnenshein-Schneider, 1987; Kafka & London, 1991; and Rattay & Lewis, 1990). Most of the decisions mentioned by the seventh graders were ones
involving healthy or unhealthy choices (whether or not to take
drugs or smoke) or mature or immature home, school or
community behaviors (whether or not to cheat or shoplift).

The researcher had proposed decision making as part of a
paradigm of early adolescent critical thinking. As a basis
for the study, the researcher used the decision making section
from the critical thinking model proposed. The decision
making section within this critical thinking model consisted
of four parts: 1) defining the decision, 2) recognizing
outside influences, 3) considering alternatives/credibility of
sources, and 4) identifying reasons for choosing the
alternative.

Figure 5 shows the decision making part of the critical
thinking model in more detail and adds the information from
this study. The four main sections in the new proposed
decision making part of the critical thinking model were
entitled: 1) the decision, 2) influences, 3) alternatives,
and 4) reasons. Within each of these four areas are the
researcher’s additions.

The first section is entitled "The Decision". At this
stage the early adolescent is defining the decision. The
early adolescent is thinking about his/her own definition of
the situation and is also thinking about how others would
define it.
Figure 5. A paradigm of early adolescent decision making as an aspect of critical thinking.
The second section of the paradigm is entitled "Influences". The most important influences to early adolescents are their parents and/or families followed by themselves and the school programs and personnel.

"Alternatives" is the third section of the decision making aspect of the critical thinking model. The findings showed that when faced with an unhealthy choice, early adolescents would usually not participate. Other early adolescents would seek outside help and others would participate in the activity.

The final section of the paradigm is "Reasons". The early adolescents gave reasons for choosing their alternative to the situation. The four main reasons for the early adolescent’s responses had to do with: 1) immediate consequences, 2) whether or not the action was wrong, 3) health, and 4) what others would think.

Making a decision leads to the "Proposed Act" which is shown in the center of the model. By taking "an intuitive approach" a decision could be made by an early adolescent without taking into consideration all or any of the four proposed areas of the decision making paradigm. As the early adolescents mature it is hoped they will include more information from the four parts in their decision making process. Each part may change because of an individual’s maturation. For example, there may be more alternatives
generated in the "Alternatives" section because older adolescents have more experiences from which to generate more alternatives to a situation. This early adolescent decision making paradigm supports the fact that early adolescents need to be equipped with better decision making skills to make better informed decisions.

Providing simulated experiences in a school setting could expedite this process. Many educators (Bergmann, 1986; Mann et al., 1989; Ross, 1981) have indicated the importance of equipping early adolescents with decision making skills. As early adolescents become mature adults and as the world changes, decision making skills seem imperative. The paradigm of decision making where decision makers use primarily family influences, the fear of consequences, and what others think, may not be the most effective in determining how to respond to immediate personal decisions. As they become older and the decisions continue to become more complex and decisions differ from those parents and other influential persons have experienced additional skills are needed.

Few seventh graders indicated making decisions based on cognitive knowledge related to the personal choices involved, although that knowledge seemed available to them. Therefore, helping seventh graders develop decision making skills that can be used in a variety of new situations will need to involve more than cognitive knowledge about the specific
decision. An important element in decision making seems to be the valuing process (what is right/wrong, who influences, and what is important). This is the section prior to decision making on the critical thinking model proposed. Separating valuing from decision making does not seem possible. More research in education is needed.
CHAPTER 5. SUMMARY AND RECOMMENDATIONS

Summary

The initial goal of this research was to delineate the critical thinking abilities of early adolescents in relation to life decisions and to develop an assessment device that would measure these critical thinking abilities. After trying to determine a measurable interpretation and corresponding with two prominent writers in the critical thinking area, it was decided that measuring critical thinking abilities related to real life decisions was a task to be done in stages. It therefore seemed appropriate to examine critical thinking in manageable parts for possible measurement.

Using Cameron’s model (1987) and Paul’s critical thinking disposition (1984, 1987), the researcher developed a model to illustrate an individual’s critical thinking ability in a real life situation. The model was viewed as having four segments: questioning, valuing, decision making, and acting. It was decided that the third segment, decision making, would be further investigated in this research.

To begin the investigation of the decisions made by early adolescents and how, when, and why they make the decisions they do, a qualitative research method (Lincoln & Guba, 1985) was chosen. The purpose of this research was to delineate the decision making process used by early adolescents in relation
to immediate personal decisions that involve healthy or unhealthy choices or mature or immature home, school, and community behaviors. From the delineated decision making process of early adolescents, a paradigm for that aspect of critical thinking was proposed.

Seventh graders were chosen as representative of early adolescents for this study. Using a purposive sampling procedure, five school districts in Iowa were selected to participate in the study. School districts varied in size (935 to 12,072 students), setting (rural, suburban, and urban), and racial composition. From these school districts school administrators either selected the students themselves or selected the guidance counselor as the individual who would identify the students to participate in the study. The person doing the selection identified five seventh graders who were representative of the student body to participate in the study.

After collecting data from the students in the five school districts, it was decided that out-of-school groups might add another dimension to the data. Youth were identified from two special minority youth groups. The final sample consisted of 33 seventh grade students in seven different groups.

Each group of seventh grade students were interviewed using focus group techniques (Morgan, 1988). Each focus group
responded first in written form; then, approximately one-hour interviews with the total group were conducted.

The written situations and the possible interview questions were validated by appropriate educators at Iowa State University. Trial interviews were conducted with four seventh graders to determine the appropriateness of the interview questions and situations. After analyzing the trial interview transcriptions and making revisions, the data collection procedure was finalized.

The data collection consisted of both written and verbal responses. The written questionnaire asked students to respond to three real life situations, (i.e., stealing, drinking, and smoking) that might involve seventh graders. First, the seventh graders were asked what they would do if they were involved in these situations. Then they were asked these three questions: 1) What thoughts did you have in your head while you were deciding on your answer?, 2) Why did you answer the way you did?, and 3) Who influenced your answer? Lastly, the informants were asked to write what decisions they or someone they knew had made recently.

After writing answers to these questions, the total group was interviewed by the researcher. Each of the group interviews was audio-taped with the students' permission.

These taped conversations and the written responses were transcribed into a word processing program, Qualpro,
(Blackman, 1987) a data management program. Data were manually coded and categories identified. The codes were electronically attached to the transcriptions in the Qualpro (Blackman, 1987) program. The responses for the three situations were combined and frequencies counted for the four question categories.

Findings were reported in four question categories: 1) What would you do?, 2) Why did you answer the way you did?, 3) Who influenced your answer, and 4) What other decisions do seventh graders make? Thirty-three informants in seven focus groups generated 99 responses to question one through three and 33 responses to question four. One response could contain several data entries to be coded.

In analyzing the responses for "what would you do?", it was found that the predominant opinion from the seventh graders would not choose to participate in the situations involving stealing, drinking, and smoking. Some seventh graders would tell their peers directly that they did not want to participate and others would provide a reason for not participating. Several seventh graders responded they would seek outside help and still others voiced sincere concern about their peers' participation. Only four of the seventh graders' responses indicated that they would actually engage in the activity presented in the situation.
When the seventh graders were asked "why did you answer the way you did?", the majority cited the possible immediate consequences as the reason. Several seventh graders made a judgement about the rightness and wrongness of the acts proposed. In addition, several were concerned about health and what others would think of them.

Seventh graders cited parents/families as their primary influence in making decisions. Their own thinking (themselves) and school programs and teachers were the next most influential in their decision making, friends and the media followed.

Decisions about whether or not to: take drugs, drink alcohol, engage in sexual activity, commit suicide, smoke cigarettes and/or chew tobacco, steal and/or shoplift were those seventh graders indicated being made by themselves or someone they knew. To a lesser extent seventh graders were involved in decisions about whether or not to: engage in violence (e.g., fighting and gangs), skip school, date, stand up to peer pressure, run away, and tell lies.

The findings are congruent with those of Mann et al., (1989). When thinking about the consequences, seventh graders thought more about short-term than about long-term consequences. Some seventh graders made judgements on their own thinking, but many relied on the thinking of parents/families, school programs/personnel, and peers.
Although knowledge about the issue (e.g., drugs, smoking) played a role in the decision making process of some of seventh graders, there was little evidence of information processing (e.g., questioning, determining alternatives) being used. The seventh graders seemed to use an "intuitive" response rather than a reasoned process when making decisions.

The findings verify others (Kafka & London, 1991; Wilks, 1986) showing that parents/families are the primary influence in early adolescents’ decision making processes. Wilks (1986) found that parents were seen by adolescents as being most important in certain future-oriented areas (money and the choice of a future spouse), while for current decisions (social events, dress, and club memberships) friends opinions were more valued.

Using this data, the researcher then proposed a detailed decision making portion of the critical thinking model. The four sections in the proposed decision making portion of the critical thinking model were entitled: 1) the decision, 2) influences, 3) alternatives, and 4) reasons. The definition of "the decision" was created by the early adolescents’ own definition as well how others definite it. The early adolescents were influenced by parents/families, themselves, and school programs and personnel. The "alternatives" these seventh graders generated included not participating, seeking outside help, or participating in the activity. The "reasons"
for choosing the alternative to the situation they did dealt with: 1) immediate consequences, 2) whether or not the action was wrong, 3) health, and 4) what others would think.

Educators (Bergmann, 1986; Mann et al., 1989; Ross, 1981) have indicated the need for schools to equip early adolescents with decision making skills. Because many early adolescents are influenced by others in their decision making, providing early adolescents with outside guidance such as role models in conjunction with parents/families is an important part of this instruction (Mann et al., 1989). Bergmann suggests a caring teacher as an important part of a decision making curriculum.

A decision making curriculum that evolves around current social issues in the early adolescents' lives can help them transfer the material to their own lives (Bergmann, 1986; Duryea, 1984). Early adolescents do make important decisions that affect their lives. Educators need to continue to find ways to provide opportunities for early adolescents to expand their decision making skills. They need to work with parents/families and other influential persons as they try to expand the school curriculum, including out-of-class activities, to include skills to enable early adolescents to make immediate personal decisions (Ross, 1981).

These skills would help early adolescents handle the variety of future situations they will confront on their own. The skills needed involve more than cognitive knowledge. An
affective component (often involving values) seemed to be an influential element related to the decision making process.

**Recommendations**

The following recommendations are suggested based on the results from the study:

1. Teachers and parents work together to enhance the decision making skills of early adolescents.

2. Decision making skills need to be a part of all curricula for early adolescents. An important portion of these curricula should involve practice in reasoned judgements about personal/societal issues. In order to implement this type of curricula all teachers need to obtain knowledge about these decision making skills in both pre-service and in-service education.

3. Both a cognitive and an affective component need to be part of the decision making process. Simulated experiences (e.g., role-playing) can provide early adolescents with a safe environment for experimentation and can facilitate skill development.
4. Further research which includes the valuing aspect of critical thinking is recommended.
BIBLIOGRAPHY


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There are many who helped make this thesis possible and to whom I would like to express my appreciation for their support and guidance.

To my husband, Neal, for his love and support. Without your encouragement, confidence, and love, I would not have obtained my master's degree. I look forward to getting our lives back to normal and pursuing our dreams together.

To my children, Taylor and Mackenzie, for their love and patience. You two make life fun and rewarding. Hopefully, we'll have more time to relax and play together.

My appreciation is extended especially to Dr. Frances M. Smith, my major professor, who guided me through this project. The time she sacrificed and patience she demonstrated inspired me to do my best and was the driving force behind the successful completion of this research. I shall forever be grateful for her contributions, supervision, and command of this subject matter.

To Dr. Cheryl O. Hausafus and Dr. Donna J. Merkley for serving as my committee members and for their input and support.

To Dr. Judy K. Brun for her support throughout my master's program.

To all the seventh graders and the administrators who participated in this research.
And finally, to my family for their endless support and love they have always given to me.
APPENDIX A. HUMAN SUBJECTS APPROVAL FORM
Information for Review of Research Involving Human Subjects
Iowa State University
(Please type and use the attached instructions for completing this form)

1. Title of Project: Critical Thinking: An Instrument to Assess Early Adolescent's Critical Thinking Abilities.

2. I agree to provide the proper surveillance of this project to insure that the rights and welfare of the human subjects are protected. I will report any adverse reactions to the committee. Additions to or changes in research procedures after the project has been approved will be submitted to the committee for review. I agree to request renewal of approval for any project continuing more than one year.

Nancy Schlautman
Typed Name of Principal Investigator

Date
Signature of Principal Investigator

Family & Consumer Sciences Education
Department

219 MacKay
Campus Address

294-6444
Campus Telephone

3. Signatures of other investigators

Date
Relationship to Principal Investigator

Major Professor

4. Principal Investigator(s) (check all that apply)

☐ Faculty ☐ Staff ☑ Graduate Student ☐ Undergraduate Student

5. Project (check all that apply)

☐ Research ☑ Thesis or dissertation ☐ Class project ☐ Independent Study (490, 590, Honors project)

6. Number of subjects (complete all that apply)

# Adults, non-students 25. # minors under 14 # ISU student # minors 14 - 17

# minors 14 - 17

7. Brief description of proposed research involving human subjects: (See instructions, Item 7. Use an additional page if needed.)

(see attached description)

(Please do not send research, thesis, or dissertation proposals.)

8. Informed Consent: ☐ Signed informed consent will be obtained. (Attach a copy of your form.)

☑ Modified informed consent will be obtained. (See instructions, item 8.)

☐ Not applicable to this project.
Confidentiality of Data: Describe below the methods to be used to ensure the confidentiality of data obtained. (See instructions, item 9.)

The names of the respondents will not be on the written forms used. The tapes of recorded conversations will be of the group and no specific identification of individuals will be made. The researcher will keep data in a secure file while work is being done. When instrument development is completed in the Fall of 1991, data will be destroyed.

What risks or discomfort will be part of the study? Will subjects in the research be placed at risk or incur discomfort? Describe any risks to the subjects and precautions that will be taken to minimize them. (The concept of risk goes beyond physical risk and includes risks to subjects' dignity and self-respect as well as psychological or emotional risk. See instructions, item 10.)

There is no risk to the 7th graders who will be asked to participate. Parents may chose not to have their child participate.

CHECK ALL of the following that apply to your research:

☐ A. Medical clearance necessary before subjects can participate  
☐ B. Samples (Blood, tissue, etc.) from subjects  
☐ C. Administration of substances (foods, drugs, etc.) to subjects  
☐ D. Physical exercise or conditioning for subjects  
☐ E. Deception of subjects  
☐ F. Subjects under 14 years of age and/or □ Subjects 14 - 17 years of age  
☐ G. Subjects in institutions (nursing homes, prisons, etc.)  
☐ H. Research must be approved by another institution or agency (Attach letters of approval)

If you checked any of the items in 11, please complete the following in the space below (include any attachments):

Items A - D  Describe the procedures and note the safety precautions being taken.

Item E  Describe how subjects will be deceived; justify the deception; indicate the debriefing procedure, including the timing and information to be presented to subjects.

Item F  For subjects under the age of 14, indicate how informed consent from parents or legally authorized representatives as well as from subjects will be obtained.

Items G & H  Specify the agency or institution that must approve the project. If subjects in any outside agency or institution are involved, approval must be obtained prior to beginning the research, and the letter of approval should be filed.

Item F: An informal letter to parents for the school official to send to parents is included for schools to use. A copy of the letter is attached.
Checklist for Attachments and Time Schedule

The following are attached (please check):

1. ✔ Letter or written statement to subjects indicating clearly:
   a) purpose of the research
   b) the use of any identifier codes (names, #'s), how they will be used, and when they will be removed (see Item 17)
   c) an estimate of time needed for participation in the research and the place
   d) if applicable, location of the research activity
   e) how you will ensure confidentiality
   f) in a longitudinal study, note when and how you will contact subjects later
   g) participation is voluntary; nonparticipation will not affect evaluations of the subject

2. □ Consent form (if applicable)

3. □ Letter of approval for research from cooperating organizations or institutions (if applicable)

4. ✔ Data-gathering instruments

16. Anticipated dates for contact with subjects:

   First Contact

   May - 1991

   Month / Day / Year

   Last Contact

   December - 1991

   Month / Day / Year

17. If applicable: anticipated date that identifiers will be removed from completed survey instruments and/or audio or visual tapes will be erased:

   December - 1991

   Month / Day / Year

18. Signature of Departmental Executive Officer

   Judy K. Brun

   Date

   4/20/91

   Department or Administrative Unit

   Family & Consumer Sciences Education

19. Decision of the University Human Subjects Review Committee:

   ✔ Project Approved

   □ Project Not Approved

   □ No Action Required

   Patricia M. Keith

   Name of Committee Chairperson

   5/1-91

   Signature of Committee Chairperson

   Approved with the understanding that the letter received from the cooperating school is/are
   for inclusion in the file.
May 8, 1991

Chuck Knight, Principal
North Polk Jr.- Sr. School
P. O. Box 69
Alleman, Iowa 50007

Dear Principal Knight:

The Department of Family and Consumer Sciences Education is initiating a research project to determine the relationship of critical thinking abilities of early adolescents and their potential for participating in behaviors that place them at risk. Two initial goals of the project are to develop a measurement instrument for the kind of critical thinking involved and to develop a scale for determining the at-risk status of early adolescents. The critical thinking abilities are those that help early adolescents make decisions related to school work, home chores, cheating, vandalism, smoking, drinking, drugs, and sexual activity.

It is our desire in this first stage to work in partnership with five school districts in Iowa. We would like your school district and particularly one middle/junior high school to join us on this project. The first stage, to be done yet this spring semester, would involve two graduate students, Nancy Schlautman and Tim Marienau, visiting your school to undertake two activities. First, to interview five 7th grade students, representative of your student body, to identify the kinds of behavioral decisions early adolescents make and how they decide on actions to take. Some sample questions are on the enclosed sheet. The second activity would involve visiting with one or more of your guidance counselors to ascertain information about your at-risk students and the type of guidance work being done with them. A brief overview and description of the entire research thrusts is enclosed.

We would appreciate hearing from you at your earliest convenience to inform us of your interests in this project and the steps we need to take to initiate the project with your school district. Our university requires written consent from you to use your facility for research purposes. A sample letter that could be used for this consent is enclosed. If you have questions or concerns please feel free to call.

Sincerely,

Cherry O. Hausafus
Assistant Professor

Frances M. Smith
Associate Professor

Enclosures
Dr. Frances M. Smith  
Family and Consumer Sciences Education  
219 MacKay Hall  
Ames, IA 50011-1120

Dear Dr. Smith:

We are cooperating with the Department of Family and Consumer Sciences Education at Iowa State University on a research project, Critical Thinking Abilities of At-Risk students. The cooperative effort will be in effect from Spring 1991 to Summer 1992.

Sincerely,

Danielle K. Chappell  
Assistant Principal
APPENDIX C. CONFIRMATION LETTER TO ADMINISTRATORS
May 3, 1991

Dave Gallaher, Principal
Berg Junior High School
1900 North 5th Ave. East
Newton, IA. 50208

Dear Principal Gallaher:

This is to confirm the plans made via telephone on April 30, 1991 for our visit to your school. Tim and I are looking forward to our visit to Berg Junior High on Thursday, May 16th at 1 p.m. In my visit with students we hope to identify the kinds of behavioral decisions early adolescents make and how they decide on actions to take. The objective in visiting with guidance counselors is to ascertain information about your at-risk students and the type of guidance work being done with them.

My interview with students could take an hour and might overlap two class periods. The students’ responses will be both written and oral. A copy of the questions is enclosed. I plan on taping the verbal interviews and need an electrical outlet for the tape recorder. A conference type area with a minimum of noise in the background is preferable for this work, but I am flexible. The five students selected for this project need to be representative of the 7th grade population of your school. You may wish to obtain parental permission for students to participate in these interviews. For your convenience we are enclosing a sample letter for this purpose.

Tim will be available for interviews with counselors at the same time that I am working with students. The plan is to also audio-tape these interviews.

Our university also requires written consent from you to use your facility for research purposes. A sample letter that could be used for this consent is enclosed for your use. If you have questions or concerns please feel free to call us.

Sincerely,

Nancy Schlautman
Research Assistant

Tim Marienau
Research Assistant

Frances Smith
Associate Professor
Dear Parent or Guardian:

Your child has been invited as a representative of the 7th grade class to participate in a critical thinking research study being conducted by a graduate student at Iowa State University who is obtaining a Master of Science degree in Family and Consumer Sciences Education. This research seeks to examine critical thinking abilities of early adolescents. The goal of the project is to develop a measurement instrument for cognitive and affective critical thinking abilities which can be used in making real life decisions. Your child will be asked to respond to real life situations on paper then to discuss the answers with the researcher and four other 7th grade students. The names of participants will not be on the written form and no specific identification of individuals will be made on the recorded taped conversations. If you wish to review the questionnaire, copies are available from your child’s school.

While your child is under no obligation to participate, we hope an indirect benefit will be that the participants will be more aware of the kinds of decisions they make, how they decide on actions to take, and who influences their actions. Please return the consent form below to your school indicating if your child has permission to participate in the study.

Sincerely,

Frances M. Smith
Associate Professor

Nancy Schlautman
Research Assistant

CONSENT FORM: Please detach and return to ____________________________.

__________________________  ____________________________
(name of child)               (date)

____ may
____ may not

be interviewed by Nancy Schlautman, a graduate student in FCSEd at ISU. Nancy is interested in the kinds of behavioral decisions early adolescents make and how they decide on actions to take.

(signature of parent or guardian)
APPENDIX D. FOCUS GROUP SITUATIONS AND QUESTIONS
Directions: Below are three situations in which seventh graders might find themselves. After each situation, write what you would say and do if you were actually in this situation. Then answer the three questions that follow.

Situation 1
Your good friend tells you about stealing from a store in the mall just for fun. Your friend asks you to go along. What do you do?

1. What thoughts did you have in your head while you were deciding on your answer?

2. Why did you answer the way you did?

3. Who influenced your answer?
Situation 2

When you walk into the restroom at school, you find several classmates laughing and messing around. They are passing a bottle among themselves. They offer you a drink. What do you do?

1. What thoughts did you have in your head while you were deciding on your answer?

2. Why did you answer the way you did?

3. Who influenced your answer?
Situation 3

You have an overnight party. After your parents go to bed someone brings out a pack of cigarettes, lights one, and starts to pass it around. What do you do?

1. What thoughts did you have in your head while you were deciding on your answer?

2. Why did you answer the way you did?

3. Who influenced your answer?
Now that you have answered these situations would you write other situations seventh graders might face. Write them below. To help you, you might think of some of the decisions you or your friends have had to make recently. Have fun and be creative!
FOCUS GROUP QUESTIONS

1. Pick one situation. How did you decide on the answer you put?

2. Who influences your answer?

3. What situations do seventh graders face?

4. What situations have happened in your school, or you’ve read about or heard someone talk about that involve choices that seventh graders have to make?
APPENDIX E. FINAL CODE CATEGORIES
## WHAT DO YOU DO?

<table>
<thead>
<tr>
<th>Action</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>STWDEXCUSE</td>
<td>make up an excuse to not go</td>
</tr>
<tr>
<td>STWDGO</td>
<td>go</td>
</tr>
<tr>
<td>STWDGOASKPARENT</td>
<td>go, ask parents what to do</td>
</tr>
<tr>
<td>STWDGONOTSTEAL</td>
<td>go, not steal</td>
</tr>
<tr>
<td>STWDGOTELENOT</td>
<td>go, then tell someone</td>
</tr>
<tr>
<td>STWDNOALONELEAVE</td>
<td>not go, tell him to do it by himself, then walk away</td>
</tr>
<tr>
<td>STWDNOELSE</td>
<td>not go, ask them to do something else instead</td>
</tr>
<tr>
<td>STWDNOTAKEBACK</td>
<td>not go, ask them to take back</td>
</tr>
<tr>
<td>STWDNOTELLPARENT</td>
<td>not go, tell friend not to do it, maybe tell parents</td>
</tr>
<tr>
<td>STWDNOTGO</td>
<td>not go</td>
</tr>
<tr>
<td>STWDLATERLEAVE</td>
<td>say I’ll do it later, if he does it now, leave.</td>
</tr>
<tr>
<td>STWDLEAVE</td>
<td>leave</td>
</tr>
<tr>
<td>STWDTELLNOTGO</td>
<td>tell them not to go</td>
</tr>
<tr>
<td>STWDTRYFIRST</td>
<td>tell them to steal first (try it).</td>
</tr>
<tr>
<td>DWDALCNO</td>
<td>find out what’s in it—if alcohol, say no &amp; leave</td>
</tr>
<tr>
<td>DWDBELIEF</td>
<td>tell them it’s against your beliefs</td>
</tr>
<tr>
<td>DWDEXCUSE</td>
<td>make an excuse to leave</td>
</tr>
<tr>
<td>DWDLLEAVE</td>
<td>leave, go to another bathroom</td>
</tr>
<tr>
<td>DWDLLEAVETELL</td>
<td>leave &amp; tell someone</td>
</tr>
<tr>
<td>DWDNARC</td>
<td>don’t tell, might be beat up or called a narc</td>
</tr>
<tr>
<td>DWDNO</td>
<td>say no &amp; leave</td>
</tr>
<tr>
<td>DWDNOHELP</td>
<td>say no, tell someone to help them with their problem</td>
</tr>
<tr>
<td>DWDNOTELL</td>
<td>say no, go tell someone</td>
</tr>
<tr>
<td>DWSTUPID</td>
<td>tell them they’re stupid</td>
</tr>
<tr>
<td>SMWDASKPUT</td>
<td>ask them to put cigarette out</td>
</tr>
<tr>
<td>SMWDASKPUTWHY</td>
<td>ask them to put out cigarette &amp; find out why they want to smoke</td>
</tr>
<tr>
<td>SMWDHIDE</td>
<td>ask them to put it out, hide cigarettes, give them back later</td>
</tr>
<tr>
<td>SMWDMELEAVE</td>
<td>say no &amp; leave party</td>
</tr>
<tr>
<td>SMWDNO</td>
<td>say no</td>
</tr>
<tr>
<td>SMWDNOEXEC</td>
<td>say no, make up excuse</td>
</tr>
<tr>
<td>SMWDOUSIDE</td>
<td>send them outside</td>
</tr>
<tr>
<td>SMWDPUT</td>
<td>put cigarette out for them, not tell</td>
</tr>
<tr>
<td>SMWDPUTTHEYLEAVE</td>
<td>ask them to put cigarette out—if not, make them leave</td>
</tr>
<tr>
<td>SMWDTELL</td>
<td>tell parents</td>
</tr>
<tr>
<td>SMWDTHEYLEAVE</td>
<td>ask them to leave</td>
</tr>
<tr>
<td>SMWDWAIT</td>
<td>wait till parents are asleep</td>
</tr>
<tr>
<td>SMWDWALK</td>
<td>just walk away</td>
</tr>
</tbody>
</table>
WHY DID YOU ANSWER THE WAY YOU DID?

| STDWHYBELIEF      | -what I believe           |
| STDMSMWHYBLAME    | -getting blamed for something you didn’t do |
| STDMSMWHYCON      | -consequences            |
| DWHYCONTENT       | -don’t know what’s in content of bottle |
| DWHYCUR           | -curiosity, might say yes because I’ve never tried it before |
| STWHYEVERY        | -already have everything I want |
| STSMWHYEXP        | -experience              |
| SMWHYFAMMEM       | -family member smokes & I hate it |
| SMWHYFRI          | -friends that smoke, would they still be my friends? |
| DWHYGERMS         | -don’t know whose germs were on bottle |
| STWHYGUILTY       | -feel guilty if stole    |
| DSMWHYHEALTH      | -health, not good for you |
| SMWHYHURT         | -smoking hurts others as well as self |
| STWHYLICECANTBY   | -like cigarettes but can’t buy them |
| SMWHYMAD          | -mad at friend who brought cigarettes |
| STWHYNOFUN        | -wouldn’t be fun         |
| STDSMWHYOTHER     | -what would others think of me |
| SMWHYPAR          | -parents might find out & get mad |
| STWHYPoor         | -too poor                |
| STWHYSEC          | -too much security      |
| STWHYSHOE         | -wouldn’t want someone to steal from me, put self in others shoe |
| SMWHYSMELL        | -smoke smell             |
| DWHYSPORTS        | -out for sports          |
| STWHYSTUP         | -it’s stupid, crazy     |
| DWHYTASTE         | -tastes awful            |
| STSMWHYTRUST      | -lose parents trust      |
| STDSMWHYWRONG     | -it’s wrong              |
WHO INFLUENCED YOUR ANSWER?

SMWHOADULTS - adults
DWHOAUNTUNCLE - aunt, uncle
STDWHOCHURCH - church
STWHOCOUN - counselors
SMWHODR - surgeon general
SMWHOEXP - someone who has been hurt or sick from smoking
STDSMWHOFAM - other family members
STDSMWHOFRI - friends
SMWHOFRPAR - friend’s parents
STDSMWHOGRAND - grandparents
STWHOGUARD - guardians
STDSMWHOME - myself
STDSMWHOMEDIA - media, TV, news
STSMWHONO - nobody
STDSMWHOPAR - parents
STSMWHOPOL - police
SMWHOPROATH - pro-athletes
STDSMWHOSCH - school programs, teachers
SMWHOSTARS - movie stars
DECISIONS

NEWDECISIONS - decisions and/or situations seventh graders are faced with

DECAIDS - getting aids through sexual intercourse
DECBEAT - beating up younger kids
DECBRANDS - brand name clothing
DECCAR - drive parent’s car without permission, no license
DECCHEAT - cheating
DECCONFORM - conforming to go along with friends
DECDATING - dating
DECDEAL - deal drugs
DECDRINK - drinking
DECDRUGS - drugs
DECFIGHT - fighting
DECFIGHTTEACH - fighting teachers
DECFRIENDS - what friends to hang around with
DECGANGS - gangs
DECGRAB - grab other people's body parts
DECHOME - invited to go out, but have tons of homework to do
DECKILL - committing suicide
DECLEIES - telling lies
DECMAKEFUN - making fun of other people
DECNAME - mouthing off
DECOLDER - older kids pushing you around
DECPARTY - partying
DECPEER - peer pressure
DECRISK - performing dangerous events
DECRUMOR - someone spreading rumors about you
DECRY - running away from home
DECSATAN - satanism, worshipping the devil
DECSEX - sex
DECSHELTER - teen shelter
DECSKIP - skipping school
DECSMOKE - smoking, chewing tobacco
DECSNEAK - sneak out at night
DECSPEND - how to spend money
DECSTEAL - stealing, shoplifting
DECSTICK - parent’s arguing, deciding who to stick up for
DECWEAR - swearing
DECTICKET - getting picked up to driving moped
DECVANDAL - vandalism
DECVODOO - voodooism
DECWEAPONS - bringing weapons to school, buying weapons