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ABSTRACT
            A program for improving adolescents' decision-making skills
to reduce the number of inappropriate behavioral choices related to wellness
is described. The targeted population consisted of seventh and tenth grade
students in a rural, middle class community. Data from local law enforcement
records and school-based program referrals supported interpretation of the
problem as inadequate decision-making skills. Analysis of probable-cause data
revealed that peer and societal pressures as well as developmental issues
contribute to inappropriate decision making among adolescents. Review of
curricula content and instructional strategies revealed a lack of emphasis on
skill development and an overemphasis on delivering information. Analysis of
the problem setting, combined with solution strategies suggested by
knowledgeable others, resulted in the following interventions: formal
instruction in decision-making skills and infusion of the decision-making
model into other health-related curricula. Postintervention data indicated an
increase in knowledge of health facts, improvement in social skills within
the classroom environment, and an increase in the ability to apply a
decision-making model to teacher-constructed situations. Appendixes include
student tests, supporting data, and program materials. (Contains 52
references.) (EMK)

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IMPROVING DECISION-MAKING SKILLS
IN
ADOLESCENTS

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Kaye Pearson

An Action Research Project Submitted to the Graduate Faculty

of the School of Education in Partial Fulfillment of the

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Teaching and Leadership

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ABSTRACT

This report describes a program for improving adolescents' skills in order to reduce the possibility of inappropriate behavioral choices related to their wellness. The targeted population consisted of seventh grade and tenth grade students in a rural, middle class community, located in north central Illinois. The problem of inadequate decision-making skills was documented through data revealing the number of students involved in illegal, unsafe, or inappropriate behaviors by local law enforcement records and school based program referrals.

Analysis of probable cause data revealed that peer and societal pressures as well as developmental issues inherent to adolescents contributed to inappropriate decision making. Review of curricula content and instructional strategies revealed a lack of emphasis on skill development and an over emphasis on delivering information.

A review of solution strategies suggested by knowledgeable others, combined with an analysis of the problem setting, resulted in the following interventions: formal instruction in decision-making skills and infusion of the decision-making model into other health related curricula.

Post intervention data indicated an increase in knowledge of health facts, improvement in social skills within the classroom environment, and an increase in the ability to apply a decision-making model to teacher-constructed situations.

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CHAPTER 1

PROBLEM STATEMENT AND CONTEXT

General Statement of the Problem

The students of the targeted classes exhibit inadequate decision making skills which directly impacts their present and future wellness. Evidence for the existence of the problem includes: student surveys, Substance Abuse Program surveys, local law enforcement arrest records, and Student Assistance Program (SAP) referrals.

Immediate Problem Context

Site A

The targeted school is one of the few remaining charter school districts in the state. It also has the distinction of being the oldest township high school in the state. Due to these facts, the four year high school has remained a separate unit district from the elementary system. The existing three-story brick high school was opened in 1926. Several additions have been made to the original structure to accommodate increasing enrollment and to meet the needs of students and faculty. Traditional architecture has been tastefully blended with modern design to create an appealing and functional facility for the staff and students. The last addition, the science wing, was constructed in 1985 and connected the 1926 building to the 1958 addition. This new wing contains four large science laboratories, two large computer laboratories, a classroom, a large apartment facility and classroom for special education, and storage and office space for the drama program and the auditorium manager. This new facility also houses an elevator and other special features to make the school accessible for the handicapped (Student handbook, 1996-97).

A technology committee, comprised of teachers, administrators, and board members, has devised and begun implementation of a technology plan. In 1996, all classrooms and offices were wired so that students and teachers would not only have access to computers, but also to the Internet. The emphasis on technology is evidenced in many areas. There is an abundance of computers and other resources in the building. Almost every classroom and teachers' offices

have at least one computer. There have been many in-services conducted to train staff members to use various computer software as well as to introduce them to technologies that can be used in the classroom.

The school has an active foundation group which is currently soliciting contributions from the community to renovate the auditorium. The sports booster club is very active and recently recruited volunteers to plan and raise funds for the construction of an all-weather track. The track is scheduled to be finished in the spring of 1997.

The school has a current enrollment of 828 students. The majority of the students live in the town in which the school is located. The other students reside in three surrounding communities. Within the last 10 years, two smaller high school districts have been annexed to site A's district (School improvement plan, 1997).

The students are equally divided between males (50.2%) and females (49.8%). Of these students, 97.1% are White, 1.3% Black, .2% Hispanic and 1.3% Asian/Pacific Islander. The school population does include about 10% to 12% of the students whose families qualify under federal regulations for free or reduced-cost lunches (School report card, 1996).

The school's attendance rate of 93.7% is only .2% above the State's average. Chronic truancy is 1.5% and the student mobility rate is 11.2%. Ninety-two percent of all students graduate from this high school compared to 80.5% at the State level. The 1995-96 ACT scores from students who completed a core high school program were 23.1 compared to the State average of 22.9 (School report card, 1996).

The administrators, teachers, and support staff are all Caucasian. There are three administrators, a director of student activities, three guidance counselors, 64 teachers, and 15 support personnel. The average number of teaching experience is 17.3 years with 58.4% of the teachers having a master's degree or above. The pupil to teacher ratio is 19.7:1. The average salary for teachers is $41,901 and $69,880 for administrators. The operating expenditure per pupil is $6,059 (School report card, 1996).

Divisional reorganization has allowed representatives of the teaching staff to have common planning periods to discuss and act in a proactive manner to recommend changes in the school system. Currently, there are six divisions into which all the departments are categorized: Math/Science, Vocational/Technical, Special Needs, English/Fine Arts/Library, Health/Physical Education/Driver Education, and Social Studies/Foreign Languages.

The school day is operated on a flexible module schedule. There are 31 mods per day with each mod lasting for 14 minutes. Most classes are three mods in length for a total of 42 minute classes, with the laboratory classes meeting for four mods, or 55 minutes. The school offers 111 different courses. All of these courses are not offered every year, as student enrollment determines whether the class will be taught each semester. Usually a minimum of 10-12 students is needed for the course to be offered. The curriculum truly has something for everyone. Enriched and accelerated classes are offered as well as other typical college preparatory classes. A large selection of technical, vocational and fine arts courses complete this comprehensive curriculum.

The school offers 38 extra curricular activities of which 15 are athletic teams. The school is best known for its successful volleyball, cross country, football, basketball and wrestling teams. The school has an active and well-respected fine arts department. The school board is extremely proud and very supportive of their excellent drama, choir, and band groups.

There are two instructors who teach the health education classes. Both teachers received their bachelor of science degrees in physical education with a minor in health education. There are four sections of health education offered each semester. Class size varies from 20 to 25 students.

Health education is a state mandated program and is an academic class needed to fulfill graduation requirements. Students typically enroll in this course during their sophomore year.

Site B

The physical structure of the targeted junior high school is an older two-story building which has been well-maintained and renovated to include handicap accessibility. Three K-4 buildings are located in the same town. Due to recent annexations of two smaller neighboring districts, one K-4 building is housed outside of this town. All of the K-4 buildings feed into one middle school, grades 5 and 6. The middle school, as well as two private K-6 schools, then feed into the targeted junior high school. The middle school and the junior high school (grades 7 and 8) are physically joined by an enclosed walkway. The facilities and staff are used reciprocally to service all of the students in grades 5-8. Overcrowding is a concern as the impact of added students has left classroom space at a premium.

A traditional nine-period schedule is followed at the targeted school. Students move between classrooms every 45 minutes, with approximately three minutes of passing time. All classes are required of each student, with the exception of band and choir. In addition to the traditional core subjects, students receive an exploratory course which rotates the areas of fine arts, foreign language, problem-solving skills, and career exploration. Grade level teachers receive common planning time to facilitate addressing student and curriculum concerns.

Accelerated classes are offered in reading and math. Students are placed in these classes based on test scores and teacher recommendations.

Special education services are also available. All special education students are mainstreamed into physical education and other classes as appropriate. District-wide, approximately 15% of the student population qualifies for special education services (School report card, 1996).

A variety of extra-curricular activities are available for students: library aides, peer tutors, peer mediators, art club, drama club, music club, lifesavers, pom pons, cheerleaders, intramurals, and academic team. Interscholastic sports include girls' and boys' basketball, volleyball, and track.

The faculty and administration of the targeted school are 100% Caucasian. Approximately 70.4% of the staff is female, 29.6% male, with an average 18 years of teaching experience. Only 33% of the 27 faculty members hold a master's degree or above. District-wide, the average salary is $33,429 for teachers and $53,198 for administrators. Pupil to teacher ratio is 14:1 in the school and operating expenditure per pupil in the district is $3,896 (School report card, 1996).

Students at the targeted school are primarily Caucasian (98.2%). Minorities comprise about 1.9% of the total school enrollment. Males and females are divided evenly, at 52% and 48% respectfully. About 11.7% of the student population is considered low-income and none are classified as limited-English-proficient. Attendance rates are slightly above the State average at 95.2%. Student mobility rate is 6.2% and chronic truancy is .8% (School report card, 1996).

Health education is a required class for all students. Average class size is approximately 28 students. Classes are taught in a coeducational setting. Students receive health education daily for one nine-week period. One semester of health education upon completion of eighth grade is required by the State mandates. Students receive nine weeks of health education as seventh-graders and nine weeks as eighth-graders.

Students receive physical education on a daily basis for the first quarter of the school year. During the second quarter, one instructor teaches seventh grade health education in a classroom setting. The third quarter, eighth graders receive health education, while the seventh graders return to physical education. The fourth quarter, all students are again in daily physical education. This rotation of health education is beneficial in scheduling facilities during months of inclement weather. Grades in physical education and health education are included as part of the students' grade point average as well as eligibility for extracurricular activities and honor roll.

The Surrounding Community

The communities that make up the targeted districts are supportive, involved, and interested in what is occurring in their schools. The schools are located in the largest town with a population of 7200. The population, tax base, and assessed valuation are all growing in the

largest town. All indications seem positive. The diversification of the town's industrial base, along with its overall economic growth, seem to be a solid base upon which to continue commercial, industrial and residential growth. Businesses moving into the industrial park receive tax abatements for 10 years, thus the benefits to local schools are indirect. It is felt that the growing tax base and the increasing population are major stabilizing factors in a sound educational system. The smaller towns that make up the school districts are residential communities with some light industry (School improvement plan, 1997).

The targeted schools are in residential areas and in close proximity to the business district. The communities are middle class and of Northern and Western European descent. The economic base was originally agriculture, but has seen light industry added over the years. Approximately 27% of the adult population is employed in professions classified as white collar. Gray and blue collar workers comprise 31% and 43% of the employment base respectively (U.S. Census Report, 1990).

The percentage of middle-class, college trained people (43%) within the area seems high when compared to other communities. The communities are conservative both politically and economically (School improvement plan, 1997).

The communities are populated largely by middle and upper-middle class families with a median income of $28,794. The median property value in the community is $58,506. While unemployment statistics vary for the main town in which the schools are located, the number of unemployed is approximately 4.5%. The local office of the Illinois Department of Public Aid estimates that no more than 1% of the student population could be considered transient, and none are migrants. It also estimates that 20% of the town's population is dependent upon some form of welfare benefits (School improvement plan, 1997).

A good working relationship exists between the school and the communities. The communities are interested in the school's programs and are interested in providing solid educational opportunities. Support and sharing of facilities are enjoyed reciprocally. Coordinating services and improving relations is also a priority of administrators of the high

school and grade school districts. Articulation meetings are held regularly for communication between elementary and secondary levels.

Information on student needs is gathered from a variety of sources. Parents serve on a variety of committees: curriculum, strategic planning, discipline, educational foundation, and booster organizations. Surveys have been done by the boards of education to help in goal setting and to clarify their mission.

Partnerships with area businesses are cultivated to insure adequate student opportunities and preparation for their future workplace (School improvement plan, 1997).

National Context of the Problem

As children reach adolescence, they are increasingly faced with decisions that will impact their present and future wellness. Statistics demonstrating adolescents' involvement in risk behaviors illustrate poor decision making skills and/or a lack of problem solving strategies. It is painfully clear that teenagers fail to consider a variety of options and the possible consequences when making decisions. Adolescent impulsivity along with the belief that they are invincible, compounds the effect of poor decision making-skills (U.S. Department of Education, 1994).

The survey, "Youth Risk Behavior Surveillance, 1995," administered by the Center for Disease Control, clearly demonstrates that our adolescents are engaging in risk behaviors that will harm their health (U.S. News, 1996). The top three killers for young adults, ages 15-24, are accidents, homicide, and suicide (Roberts, Fitzmahan & Associates, 1986). Of all deaths in this age group, the above mentioned account for 72% of total deaths (U.S. News, 1996). Many leading causes of death in older adults, namely heart disease, cancer, and stroke are a result of poor health behaviors developed and practiced early in life. Smoking, alcohol abuse, poor nutritional choices and a lack of exercise, all set the stage for health problems in adulthood.

Society has become increasingly concerned about teen health issues. In recent years, we have witnessed a rise in tobacco and marijuana use by adolescents at the local, state, and national level (Substance Abuse & Mental Health Services Administration on Drug Abuse,

1995). Underage drinking continues to be a major concern as drinking is more prevalent among teens than among other age groups (American Medical Association, 1990).

Sexual activity also puts adolescents at risk of unwanted pregnancy and sexually transmitted diseases. Teenagers ages 15-19 years of age have the highest rate of gonorrhea and syphilis infection in the nation. In addition, approximately one-third of the nation's unintended pregnancies occur in the teen population (American Medical Association, 1990).

Many programs have been created and initiated to reduce risk behaviors in our nation's youth. Goals and objectives were developed by the Institute of Medicine of the National Academy of Sciences in conjunction with the United States Public health Service. As a result, the document *Healthy People 2000: National Health Promotion and Disease Prevention Objectives* was created. Many of the goals and objectives noted were directed at reducing prevalent risk behaviors in today's adolescents. Two additional programs, *The National Education Goals for the Year 2000* and the *Safe Schools Act* reflect the concern being generated in the political arena regarding the health of our nation's youth.

CHAPTER 2

PROBLEM DOCUMENTATION

Problem Evidence

Two groups of students were involved in this study. The first group consisted of a total of 25 seventh grade students. The second group was comprised of 27 tenth grade students. Both groups were participants in a daily health education classroom. The seventh grade students were enrolled in health education for a nine week period, while the tenth grade students were enrolled for a semester.

In order to document the extent of poor decision-making skills in adolescents, the number of Student Assistance Program referrals, surveys conducted by the Substance Abuse Program and local juvenile arrests were noted. In order to substantiate the lack of poor decision-making skills, a pretest requiring the use of a decision-making model was administered to the students.

A pretest measuring aspects of the decision-making process was administered to both groups of students during the first month of school. A copy of the test is included in Appendix A. Questions on the first part of the pretest asked students' opinions regarding teen health issues. In particular, to what degree the student felt each issue was a concern in the local school district. The following bar graph (Figure 1) compares the responses between grade levels. Responses on the graph indicate the percentage of students from each level who ranked the issue as one of "some concern" or "serious concern."

Leading areas of concern for the seventh grade students seem to be smoking, physical violence, the lack of seatbelt use and drinking. Tenth graders also reflected the most concern about smoking and drinking, along with marijuana use. Interestingly, the largest discrepancy in areas of concern was regarding gang activity. The seventh grade students had a fairly high rate of concern (60%), with the older students ranking gangs as a concern only about 25% of the time.

Issues of Concern for Students
Pretest
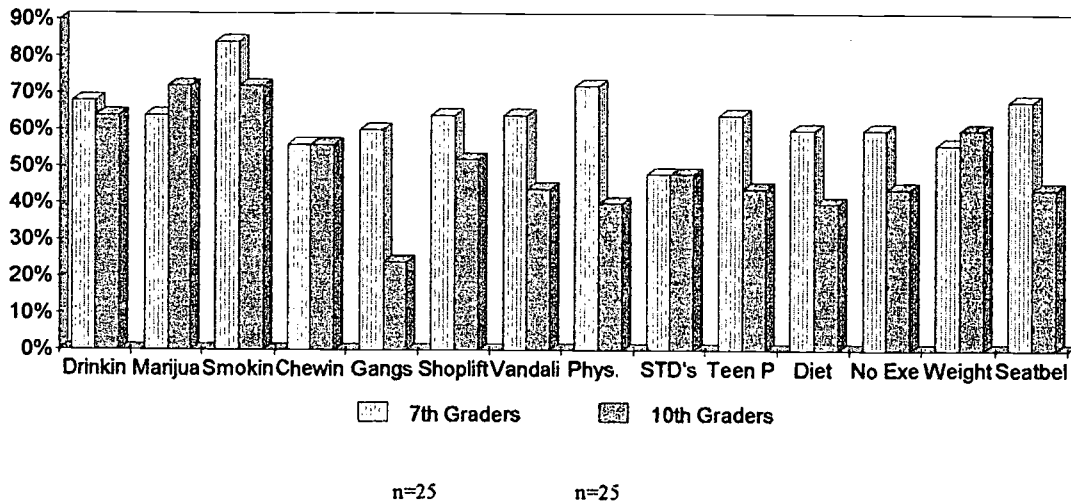
Figure 1. Issues of concern for students.

The second part of the pretest asked students to indicate how often a variety of influences affected their decision making. Results of this part of the pretest are shown by the following bar graph (Figure 2).

Influences Affecting Teen Decisions
Pretest
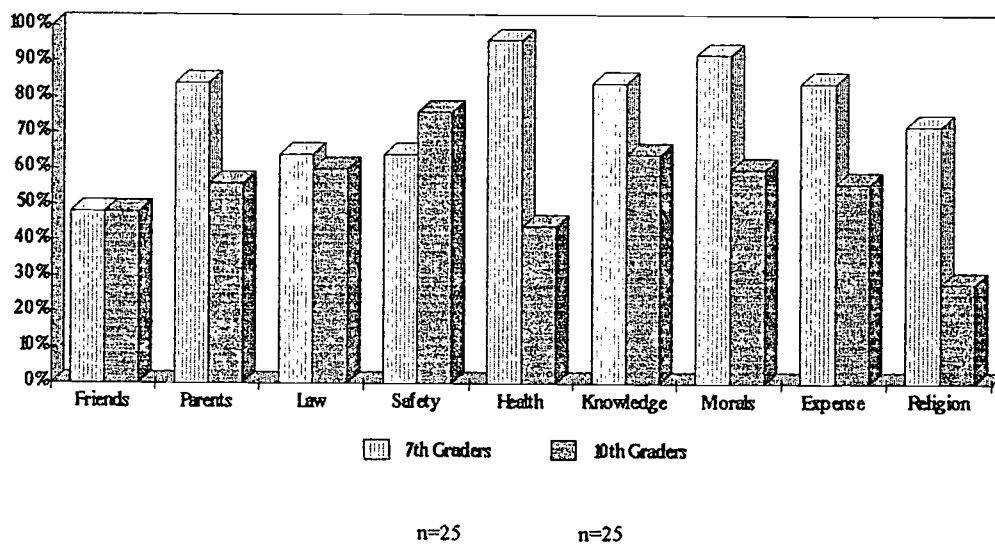
Figure 2. Influences on teen decisions.

Health concerns seemed to impact the decisions of the seventh grade students much more significantly than the tenth grade students. These results appear to affirm the common feeling of immortality that most teens possess. Adolescence is also a time when children are testing family values and experiencing the need for independence from parents. The teen years are a time of self-discovery and experimentation.

The third section of the pretest consisted of 39 true-false questions relating to health facts. Results of this section of the pretest are illustrated in Figure 3. Overall, the tenth grade students scored significantly higher, with 84% correctly answering at least twenty of the 39 questions.

Pretest of Health Facts

n=25   n=25
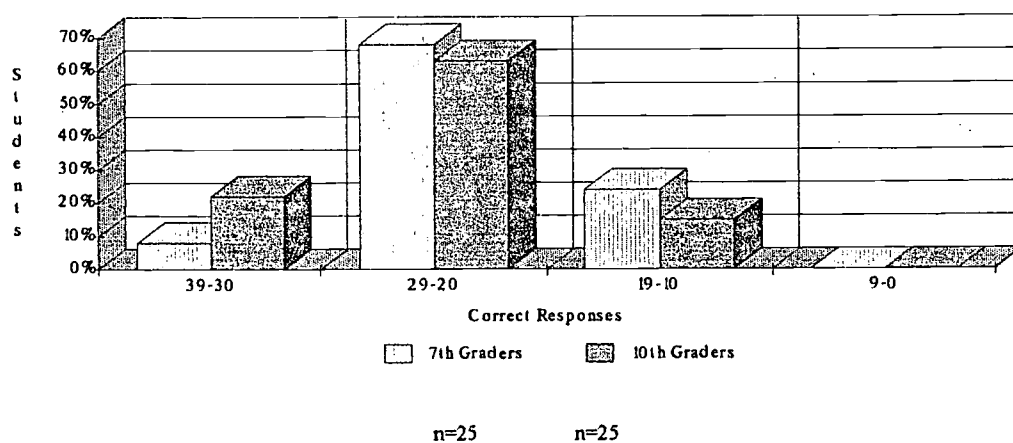
Figure 3. Student scores on pretest regarding health facts.

The fourth section of the pretest required the students to apply decision-making skills. Students were given a choice between two sample situations. They were then asked to reach a decision, explaining each step of the process. A teacher-developed rubric was then used to assess student responses. A copy of the rubric is included in Appendix B. The following bar graph (Figure 4) compares scores between grade levels.

Decision-Making Pretest Rubric Scores
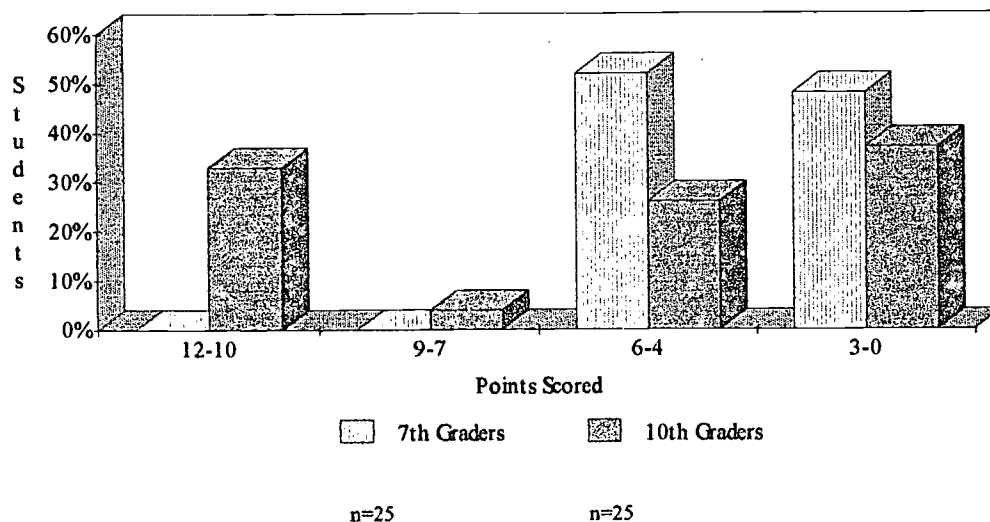
Figure 4. Student scores on pretest regarding decision making.

These scores seem to indicate the lack of formal instruction in decision making. Student responses reflected a lack of processing in reaching a decision. Many students only considered one option and rarely discussed consequences of that option.

Local sources substantiate the lack of decision-making skills in the teen population. An average of 25 referrals have been made to the Student Assistance Program over a period of four years (Appendix C). Surveys conducted by the Substance Abuse Program indicate cigarette, alcohol, and marijuana use prevalent among the local teen population (Appendix D). Local law enforcement records reflect numerous juvenile arrests for illegal consumption, curfew violation, vandalism, criminal damage to property, theft, and possession of drug paraphernalia (Appendix E).

Probable Causes

In analyzing the local sites, probable causes may be inferred. There is a great deal of emphasis on tradition in the school districts as well as in the community. Teachers tend to be very content conscious and are evaluated by students, parents, and administrators to some extent by the amount of material covered in any given course.

Among the experienced staff members, there is an underlying tone of resistance to change. Teaching thinking skills is viewed as a costly deviation from instructional time. The emphasis on local, state, and national standardized testing is a driving force behind this attitude. Schools and teachers are evaluated by right and wrong responses to forced-choice tests that fail to promote higher order thinking skills. This is compounded by a lack of inservice training and funding to provide teachers with new approaches to instructional techniques. Teachers feel out of their comfort zone without the background and training necessary to adopt new strategies.

The literature suggests several underlying factors which affect adolescent decision making. Meeks and Heit (1987) note that many American teenagers lack sufficient knowledge and decision-making skills, which in turn affects their wellness. As a result of this deficiency, many young people fail to develop healthy lifestyles and accordingly have a high risk of dying prematurely.

External influences of peers and society have a major impact on adolescent decisions. Having friends is one of the most important aspects of a young adult's social life; therefore, adolescents will go to great lengths to get and keep friends (Campbell, 1991). Adolescents become more reliant upon peer values as they seek independence and autonomy (Roberts, et al., 1986). As the need for peer approval becomes more important, pressure to participate in group activities increases. During the adolescent years, time spent with friends becomes more significant while time with parents decreases. Quality time that adults spend with children has steadily been on the decline. Over the past 30 years, a 50 percent decrease has occurred in the amount of time parents spend with their children in constructive activities (Garbarino, 1997). Simple conversation that used to take place around the dinner table has virtually disappeared. In a recent study by time-management expert Michael Fortina (as cited by Pogrow, 1990) couples average only four minutes of conversation with their children each day; while the typical working parent averages just 30 seconds. Modeling of thinking processes, which

used to take place around the dinner table, has become a rarity. No longer are families discussing world problems and debating possible solutions. Children who experience limited contact with adults are not being exposed to sophisticated thinking by their parents at home (Pogrow, 1990). This, along with general lack of adult involvement, intensifies the other negative influences present in society.

According to Pruitt, Crumpler, and Prothrow-Stith, (1994 p. 34), self-esteem is a major factor in teen health decisions:

> More than any other factor, self-esteem has a direct effect on all aspects of . . . health - mental, social and physical. Most psychologists agree that low self-esteem can contribute to many of the serious health problems affecting teenagers today. Teens with low self-esteem are more likely to use drugs, drop out of school, become pregnant, and suffer from eating disorders. They are also more likely to engage in violent or self-destructive behaviors.

The self-esteem of adolescents is closely linked to friendship. Often, teens focus on characteristics about themselves that they consider faults and conclude that their friends perceive them similarly. The perception of their peers - real or imagined - often places the adolescent in an unstable emotional state (Campbell, 1991). Low self-esteem makes handling peer pressure more difficult for the adolescent because the opinion of others is more valued than his/her own (Bete, 1996).

Another external factor influencing teenagers' decisions originates from the media. Media such as magazines, movies, and music often portray drugs and sexual activity as popular and acceptable choices for adolescents. Song lyrics and clothing carry pro-marijuana messages (SAMHSA, 1995). The recent legalization of marijuana for medical purposes in California sends a strong message to our youth that marijuana use is not dangerous to their health. Among substance abusers, marijuana is typically identified as a primary gateway drug encountered by adolescents (Roberts, et al., 1986). Our society is selling out our youth's future with these messages. Movies and music targeted

at adolescents have also received international attention with regard to sexual activity. R-rated films and Music Television (MTV) have been linked to sexual permissiveness among youth. Television has also been identified as a source of pressure for teens to become sexually active (Strouse, Buerkel-Rothfuss, & Long, 1995).

In the shocking murder trial of a Canadian 14-year-old, a movie was identified as a major influence in the killer's psychological condition. University of Winnipeg psychologist commented, "There is a cost to having so much exposure to violence. What we have to decide as a society is what to do about it," (Bergman, 1996, p. 22).

A number of internal factors also affect teen decision making. A lack of positive leisure activities may contribute to decisions leading to high risk behavior in teens. Adolescent substance abusers often describe their leisure time as "boring." Teens who lack the ability to generate positive options for leisure time are at a higher risk of substance abuse, dropping out of school, and other negative behaviors (Widmer & Turner, 1996).

Adolescents' perceptions of risk are often unrealistic due to a lack of maturity and experience. Feeling immortal and believing that the world revolves around them makes adolescents feel that nothing bad will ever happen to them. Trying new things and taking risk is perceived as a normal part of everyday life and is often done impulsively (U.S. Dept. of Education, 1994).

Statistics clearly reflect this casual acceptance of risk in the teen population. Many adolescents continue to test the limits by ignoring the messages of personal safety repeatedly placed in front of them. The following statistics compiled by the *Center for Disease Control Youth Risk Behavior Surveillance, 1995* (U.S. News & World Report, 1996, p.14) vividly illustrates the decisions teens are making regarding their wellness (Table 1).

Table 1

At Risk Behaviors in American High School Teenagers

Injury-Causing Behaviors in American High School Teenagers	
Rarely or never use safety belts in a car	21.7%
Rarely or never wore helmet while riding a bicycle	92.8%
Rode during past month with a driver who had been drinking	38.8%
Carried a weapon in past month	20.0%
Involved in a physical fight in past year	38.7%
Attempted suicide in past year	8.7%
Sexual Behaviors	
Had sexual intercourse during their life	53.1%
Had sexual intercourse with four or more partners	17.8%
Had sexual intercourse in past three months	37.9%
Sexually active and used a condom at last intercourse	54.4%
Used birth control pills at last sexual intercourse	17.4%
Tobacco Use	
Smoked cigarettes during the past month	34.8%
Smoked on 20 or more days in past month	16.1%
Used smokeless tobacco in past month	11.4%

Alcohol, Drug Abuse	
Had at least one drink of alcohol during past month	51.6%
Had five or more drinks at least once during past month	32.6%
Used marijuana in past month	25.3%
Used cocaine during past month	3.1%
Used inhalants during their life	20.3%

Compounding the external and internal factors influencing teenagers' decisions, is the lack of formal introduction to decision-making models. Along with utilizing decision making models, the teens must be taught and challenged to use thought processes while making responsible decisions. Many educators. without realizing it, are utilizing the "Bo-Peep Theory" of teaching (Perkins & Salomon, 1992). They teach the subject content and hope the students will transfer the knowledge responsible to everyday life. It is essential that students are also taught steps of thinking so that they can attain effective problem-solving skills (Casey, 1994). Due to our society's lack of cultivating critical thinking, our quality of life and standard of living are suffering (Paul,1991). Ballanca and Fogerty note that upon the examination of student scores requiring complex thinking skills, poor results are identified (Bellanca & Fogerty, 1993). In today's complex society where decisions will impact both mental and physical health, our teenagers lack higher order thinking skills. The inability to apply thinking skills within a decision-making model results in irresponsible, impulsive decisions. "We need a breakthrough in the quality of thinking employed both by decision makers at all levels of society and by each of us in our daily affairs," (Ornstein as quoted by Berman, 1991, p. 10).

CHAPTER 3

THE SOLUTION STRATEGY

Literature Review

Addressing students' decision-making skills is of paramount importance both to the individual and to society as a whole. Everyone's decisions affect all of us in some way. There is a vast amount of literature in the educational field supporting the fact that in order for students to make responsible decisions, they must have sufficient knowledge and be able to think critically. Many teachers only supply their students with course content. They don't take their students to the next level which is to prepare them to think critically, to solve problems and to make responsible decisions. The content and issues discussed in health class lend themselves extremely well to incorporating thinking skills and to practicing problem solving and decision making within the curriculum.

With the assumption that the teacher is knowledgeable regarding the subject matter, it is then necessary for the teacher to incorporate various teaching strategies to instill and wake up the critical thinking abilities of the students. The teacher needs to create a stimulating environment that engages the students in multiple ways to think about what they are learning and to transfer these skills into problems or situations in the future. The focus of the course will go from content/product organization to a content/thinking process emphasis. To better prepare our students for the future, we need to teach them to think, question, wonder, explore, analyze, debate, hypothesize, create, and use wisely the vast information they will come across every day (Bellanca & Fogarty, 1993).

Part of the problem of adolescents making poor decisions is due to the fact that they are poor thinkers. According to Glatthorn and Baron (1991), poor thinkers possess some of the following characteristics: a need for certainty, an avoidance of thinking, a desire to come to closure quickly, impulsivity, and too heavy of a reliance on intuition.

When searching for goals, the poor thinkers are impulsive and therefore select one of the first goals that come to mind. In addition, poor thinkers only consider a few possibilities for solutions to problems. While gathering information, poor thinkers tend to ignore negative evidence. Instead they only search for evidence that favors strong possibilities. It is therefore necessary to concentrate the teacher's efforts on developing students' thinking skills.

When determining how to teach students thinking skills it is important not to teach thinking as a set of isolated skills. The students don't transfer the process to other situations. Thinking is an integrative process (Costa, 1991). According to Brownlee (1992), a strategy for creating a thoughtful classroom is to select content that first of all is worth knowing and secondly that the students can personalize. This enables them to become lifelong learners.

A good strategy for students to personalize course content is to engage them in case studies which mirror the subject material. These complex strategies appear in the form of narratives. The plot needs to be such that it successfully pulls the reader into the narrative and stimulates interest and excitement. While each case has a major focus or problem, there are other issues interlaced within the case that call for detailed examinations by the students. Case studies bring real life situations into the classroom which require students to actively engage in the learning process by utilizing critical thinking skills. The issues within the case study will require the students to debate, reflect, analyze, and question. Case studies encourage students to utilize various problem-solving skills. By going through the process, students grow more aware of their personal values and how they impact their decisions. Case studies help develop habits of thinking that transfer to every life circumstance (Wasserman, 1994). Research by Bransford (as cited in Barell, 1992) supports the fact that the information acquired within a problem-based mode will be more readily available for transfer when wanted or

needed. This is because the information gathered within the problem results in internalizing, not merely taking it in and then repeating it back verbatim.

Dewey (as cited by Fusco & Fountain, 1992) proposed back as early as 1938 that classroom teachers need to move away from just presenting learning as an unconnected, finished product to students. Dewey believed that true education is developed through meaningful interaction between the learner and what is being learned. Therefore, the curriculum must have continuity and relevancy for the student (Fusco & Fountain, 1992). This goes along with Piaget's constructivist theory that when students construct their own knowledge, students are actively engaged in meaningful learning (Fusco & Fountain, 1992). Problem-solving activities lend themselves to constructivist theory because knowledge must be created from the interaction between students' existing knowledge or beliefs and the new ideas or situations they encounter when working through the situation. This learning emphasis is different from the traditional direct instruction in which the teacher conveys his/her knowledge to students (Airasian & Walsh, 1997).

The majority of successful problem solvers use some type of structured model to organize their problem-solving processes. Although there are various problem-solving models, they have similarities such as identifying or diagnosing the problem, organizing information about the problem, brainstorming various solution options, utilizing some overt criteria for selecting among options generated, and monitoring or evaluating the solution chosen (Fusco & Fountain, 1992).

As cited in Beyer, many educational researchers have reported that learning how to think is not an automatic by-product of studying specific subjects or digesting someone else's thinking or by being asked to think about a subject or topic (DeBono 1983; Glaser 1941; McPeak 1981; Oliver & Shaver 1966; Shaver 1962; Taba 1965). Demands for higher order thinking ability are increasing. Employability studies show the need for the future work force to possess more sophisticated thinking than was required in the past. Skills such as independent analysis, flexible thinking, and collaborative problem solving

are now basic requirements for many jobs (McTighe & Schollenberger, 1991). As cited in McTighe and Schollenberger, in *The Future World of Work*, The United Way of America (1988) predicts that "the greatest job growth over the remainder of the century will occur in areas that require high skill levels and demand creative thinking." We are living in a time of rapid expansion of knowledge along with ever increasingly sophisticated technology. It is important for people today to be able to adapt quickly to change and to possess the capability and willingness to learn new skills on the job McTighe & Schollenberger, 1991). Memorization of facts will not be important for job success nor job stability. Rather to compete in today's work force, people will need to know where to find answers, how to tap into prior knowledge that they already possess and how to critically think in order to process information while utilizing problem solving strategies. Reports from both the business world and even our armed forces express dissatisfaction with the current skill level and adaptability of American workers. In addition, these concerns are heightened due to global economic competition (McTighe & Schollenberger, 1991).

As cited in McTighe and Schollenberger, in the report *Educating Americans for the 21st Century*, The National Science Board Commission on Pre-College Education in Mathematics, Science and Technology (1983) declared,

> We must return to basics, but the basics of the 21st century are not only reading, writing, and arithmetic. They include communication and higher problem-solving skills, and scientific and technological literacy -- the thinking tools that allow us to understand the technological world around us.. . Development of students' capacities for problem-solving and critical thinking in all areas of learning is presented as a fundamental goal.

The Association for Supervision and Curriculum Development (1984) has also recognized a need to teach skills of problem solving, reasoning, conceptualization and analysis, which are among the neglected basics needed in tomorrow's society. More

support for this view came from the work of a committee which was formed in 1982 by The Education Commission of the States. The committee was comprised of leaders from various organizations and industries. This committee was given the task of identifying skills that would be considered basic for the future. As reported by the Education Commission of the States 1982, the following basic skills for the future were identified by the committee: analysis skills, critical thinking, problem-solving strategies, organization and reference skills, synthesis, application, creativity, decision making given incomplete information, and communication skills through a variety of modes (McTighe & Schollenberger, 1991).

Teachers commonly fret about the inability to cover all the material in their courses. Compounding this fact is the continually rapid increase of available knowledge. Teachers must come to the realization that covering all the information in their curriculum content is not feasible. For the preparation of our students to compete in the global job force, a new strategy is needed. This strategy is one that emphasizes the development of lifelong learning and thinking skills necessary to gather and process information within the growing field of knowledge (McTighe & Schollenberger, 1991). In 1966, Parker and Rubin, (as cited in Costa & Liebmann, p. 24) stated that

> . . .process is, in fact, the highest form of content and the most appropriate base for curriculum change. It is in the teaching of process that we can best portray learning as a perpetual endeavor and not something which terminates with the end of school.

In order to effectively utilize problem-solving strategies teachers must improve students' ability to think critically. It is the belief of teachers in thoughtful classrooms that, ". . . all students can think, that learning is thinking, that we can all learn to think better, that interaction is fundamental to developing thought and that teaching and learning in thoughtful classrooms is fun!" (Brownlee, 1992, p. 24). Therefore, improvement of thinking skills needs to be a goal of all educators.

Perkins and Swartz list four flaws that plague everyday thinking: hasty, narrow, fuzzy, and sprawling. Hasty thinking means that not enough thought has been considered before reaching conclusions and perhaps taking action. Narrow thinking refers to the fact that all alternatives have not been considered. It is possible that the best decision was not even studied. Fuzzy thinking suggests that the ideas formulated are not clear or well thought out, while sprawling thinking means that it is not organized. When facts are unclear and not in some logical order, the decision made when solving a problem may be a poor one mainly because of poor thinking and processing skills (Perkins & Swartz, 1992).

The literature presents many suggestions for improving thinking. Thinking can be taught by guiding students through thinking activities or thinking can be infused within curricular content. According to Swartz (1991) when a separate program is used to teach thinking, the transfer of what is learned is not as automatic as educators would like it to be. One way to infuse thinking into course content is to construct questions that require more thought by the students (Costa, 1991). These questions cause students to interpret, analyze, translate, hypothesize, predict, apply, synthesize, and evaluate what they learn. Gallagher and Ashner reported in 1963 (as cited by Costa) that teachers who commonly utilize questions that require divergent thinking cause students to think in a wide variety of ways as compared to teachers that utilize simple recall questions (Costa, 1991). Teachers must also learn to utilize wait-time. This allows for all students to better process their thoughts and have a response ready when called upon by the teacher. Many teachers feel uncomfortable when no hands go up in response to the posed question. To avoid the awkward silence, teachers often answer their own question. When teachers get into a routine of quickly answering their own questions, students who think at a slower pace simply give up and withdraw from participation. By utilizing wait-time, and conveying to students that all are expected to be active participants, increased student participation will result. Rowe (as cited by Gridley, 1992) found that when students were

given more wait time, they responded more frequently than before. Their answers were more clearly thought out and more detailed. The students gained confidence in their ability and began to think more divergently. "Thought," John Dewey said, "begins with questions. Certainly, much student thinking and learning begins with teachers asking better classroom questions" (Gridley, 1992, p. 17).

Skillful thinking in the classroom is also dependent upon the teacher's ability to create and manage a positive climate for thinking. Research shows that student achievement improves in a well-structured classroom. In the well-structured classroom, the teacher has conveyed the objective of the lesson, has given precise and clear directions for the activity and is using class time efficiently (Costa, 1991). The students are on task creating a buzzing noise level full of student interaction. The teacher is a facilitator of learning, monitoring and assisting students in their task. This classroom is full of active learning, not passive students "zoning out" during a typical lecture where the teacher is the center focus. Thomas' study, (as cited by Costa, 1991) shows that active learning positively effects students' development of decision-making and problem-solving skills.

In the thinking classroom, the teacher has developed a psychologically safe climate for the students to think openly. The teacher, utilizing accepting responses (actions or words) to students' answers, helps the student feel safe in their thinking and encourages students to take more risks in their thinking. Research by Flanders, (as cited by Costa, 1991) found teacher responses had a great impact on the development of students' self concept, how they felt about their learning, their achievement and their classroom rapport. By demonstrating accepting responses, the teacher provides an atmosphere of freedom to think and of equality in the classroom. The students also need to feel safe to share their ideas with their peers. The DOVE (Bellanca & Fogarty, 1991) guidelines (Appendix E) need to be discussed and adhered to in order to ensure that active participation by all students in the classroom becomes a reality . The interaction

taking place in this classroom is mainly discussion with the teacher being the discussion leader. Students discuss what they know as well as what they don't know. With open discussion among the class, different points of view are examined (Costa, 1991).

Given that a safe environment has been created by the teacher, greater focus can be given to aiding the students in thinking about their thinking. When we think about our thinking, we become more aware of how we do it and therefore can purposely change it (Swartz, 1991). Metacognition can be accomplished by having students reflect their thought processes when they are carrying out a task or assignment. Costa, Beyer, and Swartz, (as cited by Swartz, 1991), found that by having students reflect on their thinking, they can monitor and direct their thinking better, thereby developing their metacognition. Teachers can ask questions that make students utilize critical thinking, which channels the students to focus on specific aspects of their thinking that they often may miss (Swartz, 1991). Metacognitive strategies help students control their cognitive processes, learn and effectively solve problems.

Research done by Roger and David Johnson support using cooperative learning groups to best promote thinking and problem solving in the classroom. In a report by Joyce, (as cited by Bellanca & Fogarty, 1991, p. 4) he stated that "Research on cooperative learning is overwhelmingly positive and the cooperative approaches are appropriate for all curriculum areas. The more complex the outcomes (higher order processing of information, problem solving, social skills and attitudes), the greater are the effects." When using cooperative group strategies the following takes place: higher order thinking is infused into the lesson; social skills are taught, teacher focuses on group interaction, every group member has a role or job; individual contribution to group goal is evaluated; members share responsibility for the group; students rely on each other; students of different abilities and characteristics are mixed; and a group reflection of their work takes place (Bellanca & Fogarty, 1991).

Cooperative learning necessitates student-to-student interaction for the success of the group. The students themselves become responsible for their learning. Through the planned activities, students become turned on to learning. Freedom to think creatively becomes much more abundant as compared to other learning strategies. Students become more willing to take risks and tackle assignments that challenge their current level of knowledge (Broods & Brooks, 1993). Researchers have found that when students work in pairs or groups, tutor each other, and share rewards, greater mastery of the material is attained by all. In addition, cooperative learning results in improving one's emotional intelligence. Students develop better intergroup relationships and students who previously had a history of poor achievement, gain more self confidence (Joyce, 1986).

There has been extensive research showing that cooperative efforts promote greater productivity, more positive relationships, and greater psychological health than do the traditional competitive or individualistic teaching approaches. The incorporation of cooperative learning groups within the learning environment will make schools more effective in their imparting of lifelong knowledge to their students (Johnson & Johnson, 1992).

All of the material in health education is important for each student's future well-being. As stated earlier, in order to make wise decisions, students first must be knowledgeable regarding background information that surrounds a problem or situation. In order for students to quickly gain information on various health issues, the teacher can utilize direct instruction. Direct instruction is regarded as a good teaching strategy for acquisition of basic skills. Since a major goal of direct instruction is the maximization of student learning time, it is the practice of the teacher to explain a new concept or material to the class at large. Direct instruction can be even more effective when the teacher incorporates the following: activates prior knowledge before beginning the day's content material, clearly states the objective of the day's lesson, gives clear directions

about the work to be done by the students, tells students the material they will use and the activities that they will be engaged in for the lesson, and finally, provides an overview of the lesson (Joyce, 1986). Following direct instruction over new material, the teacher can incorporate several of the teaching for thinking strategies in order for students to best internalize the content. The thinking teacher creates a community of learners in the classroom by providing whatever support is necessary for learning to occur, and encouraging risk taking in thinking. It is the developed community of learners that drives the learning experience. "Learning now fits the students, who are no longer force-fitted into a pre-determined system," (Brownlee, 1992, p. 24).

Using a variety of instructional techniques appeals to a wider scope of the intelligences. Research has shown that people learn differently. Seven types of intelligences have been identified to date: verbal/linguistic, logical/mathematical, visual/spatial, body/kinesthetic, musical/rhythmic, interpersonal, and intrapersonal (Chapman, 1993).

The verbal/linguistic intelligence is tuned into the use of language. People who possess a high verbal/linguistic intelligence are adept at communication skills such as reading, writing, speaking and listening. Some people have a musical/rhythmic intelligence. Learning is enhanced by the musical elements. Placing information into musical rhythm or patterns increases the understanding and retention of this learner. Logical/mathematical intelligence characterizes the learner who requires reasoning, sequencing, and patterns. These learners organize learning in a very methodical way and then identify relationships between concepts. The visual/spatial intelligence allows learners to see relationships graphically. They can easily transform information into a visual representation. Learners with bodily/kinesthetic intelligence are skilled at controlling movement or manipulating objects. As students, this group readily learns in an active classroom which utilizes demonstrations, role plays, and other activities which require movement (Chapman, 1993).

Learners who readily comprehend their own feelings have intrapersonal intelligence. These people have insight into their own thoughts and feelings. Interpersonal intelligence deals with the ability to focus on other individuals. These people have the ability to sense the feelings and moods of others and are skilled at interpreting others' motives and intentions (Chapman, 1993).

A single classroom offers a broad spectrum of intelligences. Using a variety of teaching techniques ensures that each learner has a mode to facilitate his/her strengths in the intelligences. Decision making is a skill that is meaningless without transfer to real life experiences. Appealing to a variety of the intelligences increases the likelihood of transferring decision-making skills from the classroom to the everday lives of students.

Assessment techniques can also be used to reinforce the transfer of learning to real life experiences. Assessment techniques traditionally focus on lower levels of thinking Students respond to closed questions, usually content based. There is little room for creativity, problem solving, or decision making. Using assessments as teaching tools can facilitate instruction of thinking skills. Using assessments such as portfolios, performances, exhibitions, student interviews, logs, journals, and projects encourages students to use higher levels of thinking (Burke, 1997).

Assessment that is authentic promotes not only the retention of knowledge, but the ability to apply that knowledge to real life situations. Characteristics of authentic assessment include: using meaningful tasks based on performance, placing an emphasis on metacognition and self-evaluation, achieving learning that transfers, promoting positive interaction between student and teacher, setting clear standards and criteria for excellence, and having as a result quality products and performances (Burke, 1997).

Educators must be willing to approach the teaching profession as students themselves. Teachers must be willing to experiment with innovative techniques to appeal to a wide range of intelligences. Process must be emphasized over content. Encouraging students to use higher order thinking skills is essential if we expect our

students to make responsible decisions and solve the problems that will challenge them in their futures.

Project Objective and Processes

As a result of increased instructional emphasis on decision-making processes, during the period of September 1997 to January 1998, the targeted seventh and tenth grade students will increase their ability to apply decision-making skills, as measured by teacher assessments, student reflections, and teacher journals.

In order to accomplish the project objective the following processes are necessary:

1. Materials that foster decision-making skills will be developed.
2. Learning activities that employ cooperative learning, multiple intelligences, and higher order thinking skills, will be developed for health education.
3. Curriculum adaptation will reflect the integration of applying decision-making skills.

Project Action Plan

I. Material Preparation   (Prior to beginning of school)

A. Research materials related to cooperative learning, multiple intelligences, thinking skills, and direct instruction.
B. Select a decision-making model.
C. Plan introductory unit on decision making.
D. Brainstorm student project topics and journal stems.
E. Create classroom visual displays for use on bulletin boards.
F. Review and revise current units to integrate the decision-making model.
G. Investigate classroom questioning techniques.-
H. Create problem situations for decision making to be integrated into existing units.
I. Construct student journals for research purposes. (journal stems, handouts)
J. Create letter for parental permission regarding research.

II. Learning Activities

    A.   Social Skills
        1. positive classroom environment   (Days 1 & 2)
          a. classroom groundrules
          b. introduce DOVE
        2. task group activity to introduce cooperative
          learning   (Days 1 & 2)
          a. roles
          b. purposes
          c. guidelines
          d. group structure

III. Data Collection to Evidence Problem

    A.   Administer student survey   (Weeks 1-2)
    B.   Administer decision making assessment   (Weeks 1-2)
        to evidence problem
    C.   Initiate student journal entries   (ongoing)
    D.   Administer unit tests   (ongoing)
    E.   Initiate teacher journal entries   (weekly)

IV. Intervention

    A.   Present lesson on decision making model   (September)
        1. direct instruction
        2. guided practice
          a. whole class
          b. small group
          c. individual
    B.   Introduce students to higher order thinking skills   (September)
    C.   Cooperative group activity to practice higher order
        thinking skills   (once per unit)
    D.   Cooperative group activity to provide application
        of decision-making model to unit topics   (once per unit)
    E.   Revise current lessons to incorporate multiple intelligences
        theory   (ongoing)
    F.   Revise current assessments to incorporate
        higher order thinking skills   (ongoing)
    G.   Introduce list of student projects   (September)

V. Collect Intervention Results

A.	Decision-making process post-assessment	(Last week)
B.	Unit tests	(ongoing)
C.	Teacher journal entries	(ongoing)

CHAPTER 4

PROJECT RESULTS

Historical Description of the Intervention

The objective of this project was to improve decision-making skills in adolescents. The implementation of the objectives was developed in several ways. Classroom instructional strategies included multiple intelligences and cooperative learning activities. Materials and activities that fostered decision making, higher order thinking, and metacognition were utilized.

Cooperative learning was used throughout the semester to improve social skills and group decision-making skills. Students were divided into base groups of three to five students. These groups were used approximately once a week for various activities. Introductory cooperative learning activities were used at both levels to stimulate the students' interests and create positive classroom environments. At both grade levels, a kinesthetic lesson which required group interaction to solve a problem was introduced the first week of class. The tenth grade lesson required students to make and unravel a "human knot," using joined hands within their base group. (Appendix F) Seventh-grade students were asked to build bridges using only newspaper and masking tape. (Appendix G) The nature of these lessons was active and talkative, but group dialogue centered around solving the problem at hand. Students seemed to enjoy the lessons and worked well together, even indicating that class was fun! In processing these introductory activities, the DOVE (Bellanca & Fogerty, 1991) guidelines were introduced to the class. (Appendix H) These guidelines were periodically reviewed and discussed throughout the semester. A bulletin board in the classroom also reinforced the guidelines in a visual manner.

Base groups were structured by the teachers to provide a balance of abilities and personalities. Students became more comfortable with other group members and contributed more than in large class discussions.

A decision-making model was introduced during the first week of the semester. This model was demonstrated to the class as a whole and then given to base groups for application to various topics. Finally, individual students selected a relevant situation that they personally had experienced. This DECIDE (Pruitt, et al., 1994) model was used approximately once per unit to reinforce the concepts and provide practice in applying the decision-making steps. A sample copy may be found in Appendix I.

The original action plan was designed to provide a weekly cooperative lesson on higher order thinking. This plan was modified to integrate higher order thinking into the subject material instead of addressing this separately. Lessons were designed to incorporate analysis, evaluation, synthesis, comparison, deduction, and prediction while focusing on the topics of drug education, decision making, safety skills, and nutrition. Higher order thinking was also utilized through written assessments. Students were required to answer more open-ended questions, analyze data, and make decisions about information presented. The DECIDE (Pruitt, et al., 1994) model was integrated into the assessments for various unit tests. A sample of these assessments appears in Appendix J.

Assessment of the intervention was done in a variety of ways. Teacher journals were used weekly for reflection and recording instructor observations. A rubric was used to assess application of the decision-making model. This rubric appears in Appendix B. A pretest and posttest were administered to measure student opinion and knowledge. A sample is included in Appendix A.

Seventh Grade Level

Multiple intelligences were emphasized by using a variety of instructional techniques. At the seventh-grade level, projects were assigned which allowed students to choose which intelligence in which to work. (Appendix K)

Students participated in a kinesthetic lesson to illustrate the fact that drugs affect individuals differently and sometimes unpredictably. A short play was presented by students to reinforce the effects of marijuana use. Some of the projects also incorporated a bodily/kinesthetic intelligence by using video-taped anti-drug commercials or role plays. The bodily/kinesthetic intelligence was also utilized in the CPR unit. Students received hands-on practice time with mannequins when learning new skills for rescue breathing, choking emergencies, and cardiopulmonary resuscitation. Students who normally have difficulty with verbal/linguistic instructional techniques did extremely well with this unit.

The musical/rhythmic intelligence was incorporated by having base groups create a rap, song, or poem about the dangers of drug use. Some very creative products resulted from this activity. Music was also played as background for quiet group work and also during written tests. This made the classroom climate more relaxed and students enjoyed listening to music during testing.

Visual/spatial activities provided an opportunity for a variety of students to receive recognition within their base groups. Groups were asked to illustrate the functions of various nutrients. The group drawings were displayed in the classroom for the remainder of the unit.

The junior high nutrition unit also provided an opportunity to use the logical/mathematical intelligence. Students were asked to categorize a variety of foods which were given to them on cards. The groups created the criteria for the categories.

This "hook" activity was used to introduce the concept of the food pyramid. (Appendix L) A food diary was also journaled for a 24-hour period to help students analyze their own nutritional choices. A pair/share activity then required the higher order thinking skill of evaluation as students were asked to suggest improvements and modifications for themselves and their partners. Graphic organizers such as Venn diagrams, PMI's and gathering grids were used throughout the units. Copies of these organizers may be found in Appendix M.

The logical/mathematical intelligence was also emphasized during a lesson on the nutritional value of fast foods. Base groups were given nutritional information from a variety of local fast food restaurants and asked to analyze one meal for a variety of components. A bar graph was then created by each group to illustrate and compare the nutritional composition of the meal. This exercise was very effective in raising the awareness of the students with regard to their nutritional choices. (Appendix N)

Interpersonal and verbal/linguistic intelligences were used regularly as students worked in groups and dialogued in class. The environment created by cooperative learning and the multiple intelligences approach was safe and comfortable for the majority of the students. Students readily volunteered answers and participated in group discussions. Pair/share activities were used during direct instruction to encourage processing of the material. Questioning techniques which required higher order thinking before responding were utilized to check for understanding.

Students incorporated the intrapersonal intelligence through journal entries which helped process various lessons. These entries consisted of reflections about the activity, as well as various journal stems. A sample of these journal stems appears in Appendix O.

Tenth Grade Level

At the high school level, various lesson plans were designed to actively engage students to think critically and to transfer their learning to real life situations. Getting them to think about their thinking was a major priority at the high school level. The intrapersonal intelligence was tapped with the inclusion of many reflective activities at the conclusion of lessons. PMI's, journal stems, and case studies requiring students to apply the DECIDE (Pruitt, et al., 1994) model were the main activities used in this intelligence. In order to increase students' interest levels and to examine current health behaviors, students did a self assessment for their journal/portfolio at the beginning of each new unit. A sample assessment appears in Appendix P.

Interpersonal intelligence was evident daily. The creation of a safe environment aided in getting all students to contribute freely, whether the lesson required group work or class discussion. The instructor worked diligently to improve her questioning technique and ability to utilize wait time. One of the cooperative group activities that required a lot of sharing of ideas was an activity during the self-esteem/personality unit. During this unit, students in base groups brainstormed values. After brainstorming, each group ranked the group's top five values. The lists were displayed in the classroom and each group explained the ranking of their values. This activity was very successful in engaging students through listening, debating, and ranking values with their peers. By all groups presenting their group's values, the traditional values of society became evident. A few of the rebellious students recognized that not only were they bucking their parents' values, but they were also going against values that the majority of their classmates shared. Students were more open to listening to their classmates regarding this issue than if a teacher or other authority figure had tried to convey this information to them.

Another group activity that required interpersonal as well as verbal/linguistic intelligence was jigsawing information gained from a video. A video was shown on the first day of the steroid unit. Questions composed to correspond with the video were

given to students to answer. Each student was responsible for answering about five questions. The students were given all the questions prior to the video and asked to preview them. The questions that they were responsible for were highlighted. After watching the video, students were grouped to jigsaw answers. This technique was highly successful in keeping the students focused throughout the complete video. Also, by making sure that they were attentive to the video, the information presented in the video did not have to be retaught!

Intrapersonal, interpersonal , and verbal/linguistic intelligences were used daily. Assigned reading, homework assignments, classroom and group work dialogue, journal writing, reflections, and applying the DECIDE (Pruitt, et al., 1994) model are just a few examples.

The use of visual/spatial intelligence was readily enjoyed by this class. The unit on wellness provided an opportunity to use this intelligence. Students worked in their base groups and selected a health concept from a predetermined list compiled by the teacher. Each group was given the task of creating a poster, collage, or mobile to best convey the information about the health concept. Each group then explained their creation and the health concept to the rest of the class. Another activity that required the visual/spatial intelligence was creating a cartoon strip depicting a situation in which a defense mechanism was used as a method of coping.

The use of the gathering grid also fits into the visual/spatial intelligence. The gathering grid (Appendix Q) was used by the students in their base groups to classify illegal drugs and to focus on learning about the negative aspects of drug use not only to an individual, but also to society. Unfortunately, illegal drugs seem to be seen as exciting to today's youth. By the students doing guided research, they were responsible for learning on their own the dangers of these drugs. Once again, this technique was more successful than direct teaching would have been. Students are "turned off" when adults lecture to them about drugs.

The rest of the intelligences were addressed at sometime throughout the semester. These intelligences weren't used as frequently as those previously mentioned, but were well received by the students. Activities in the remaining intelligences will be grouped accordingly.

A unit that has always been a challenge to make interesting, especially for the boys, is nutrition. There were several activities that were instrumental in gaining their interest. In their base groups, students used their verbal/linguistic and interpersonal intelligences while researching selected fast food items and common foods prepared at home. The students recorded the number of calories along with the grams of fat, sodium and sugar for each selection. Upon completion, the teacher appealed to the visual/spatial learner by displaying test tubes with the amount of fat, sodium or sugar for the majority of the foods researched. The number of grams finally meant something to the students when they were able to see the fat, sugar or sodium in test tubes. The students then used their logical/mathematical intelligence to design a menu for one day that had the correct number of calories needed for them to consume in a day to maintain their present weight. When planning the day's menu, they also had to have the correct percentage of their calories derived from fats, carbohydrates and protein. The correct number of servings from each food group also had to be represented in the menu. Students had great difficulty doing this activity. They discovered that it was very difficult to eat properly without doing a great deal of planning.

Another activity in the nutrition unit required using the bodily/kinesthetic intelligence. All students were assigned the task of creating their own food pyramid. Food labels were attractively displayed in the proper food group which was proportionally drawn on the poster board. On the reverse side of the poster, the nutrition facts that corresponded to the food labels were placed in the correct location. Students utilized the nutritional information on various food pyramid projects while designing their "ideal" menu for the day.

The least used intelligence was musical/rhythmic. Nevertheless, this intelligence was used during the drug unit. The base groups were given different "rap" posters about drugs and/or their impact on society. The groups analyzed the messages in the raps. Each group presented their rap for the class and then discussed the main message of the rap.

<div align="center">Presentation and Analysis of Results</div>

Cooperative learning played a major role in classroom instruction. Students enjoyed the opportunity to interact and discuss unit activities. Many commented that class was even fun. More students were regularly engaged in learning on a consistent basis. Class discussion and student questions reflected the use of higher order thinking by students.

The variety of instructional techniques generated by a multiple intelligences approach provided a larger number of students the opportunity to showcase their talents. The positive recognition by peers and the instructors also benefited the self-esteem of several students. Teaching through multiple intelligences also had benefits for the instructors. The classroom became a place to experiment and try new ideas, making teaching exciting and challenging once again.

Active engagement by the students for the majority of the semester was clearly evident. Credit for this was due largely to the cooperative learning activities that were interspersed throughout the semester. The students enjoyed taking on more responsibility for their learning. They discovered that being actively involved in the classroom was more exciting than zoning out during a lecture.

Analysis of post intervention data revealed some interesting shifts in student perception of issues of concern in the community. (Figure 5)

Issues of Concern for Students

Pretest vs. Posttest


```
7th Pretest        7th Posttest
10th Pretest       10th Posttest
```

7th grade n=27   10th grade n=25
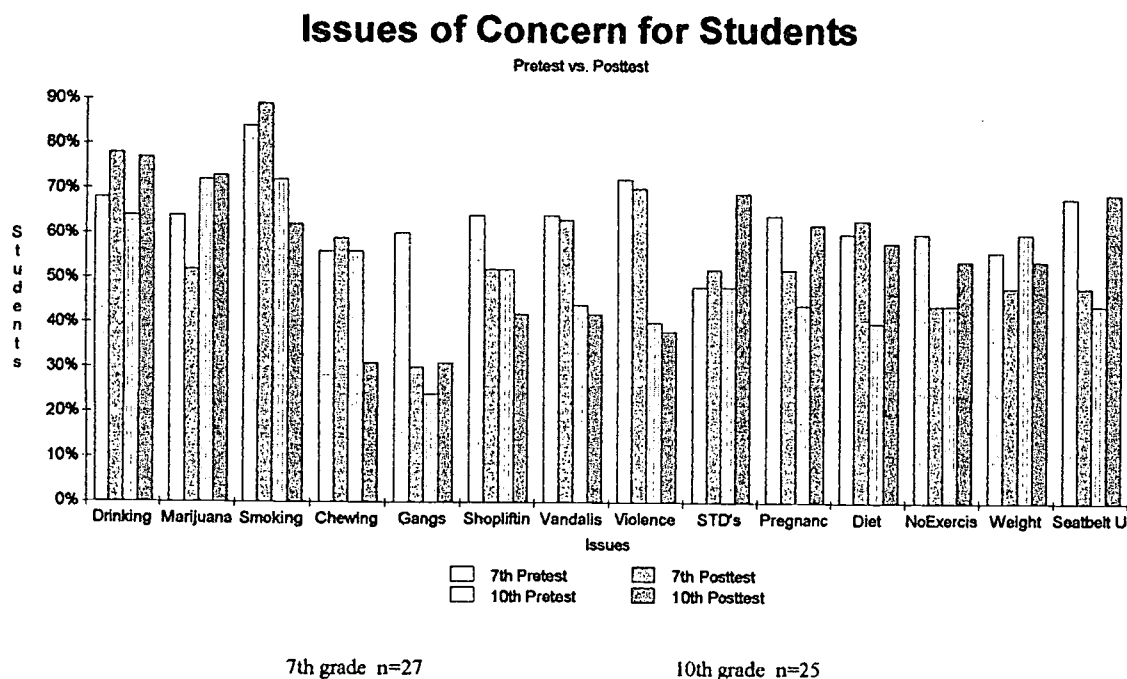
Figure 5. Results of pretest and posttest on issues of concern for students.

There was a general increase in concern toward targeted substances of abuse. Exception to this was noted at the tenth grade level with regard to tobacco. This may be due to the general acceptance of tobacco use at this age level.

The tenth grade students had an increase in the level of concern regarding sexuality issues of teen pregnancy and sexually transmitted diseases. This may be attributed to an increased sensitivity to these issues due to an emphasis on human sexuality in the health curriculum. The marked increase of concern regarding seatbelt use may also be a reflection of the influence of the driver education instruction at this level.

Figure 6 data illustrate influences which affect the student decision-making process. There was an increase in all areas at the tenth grade level. This may indicate an increased awareness of influences by the students. The exposure to a formal decision-making model may account for a more methodical approach and an increase in self-evaluation by students.

The increases noted at the seventh grade level reflected extrinsic influences. This follows a normal developmental pattern of young adolescents. The decrease in parental influence versus the increase in peer influence reflects the importance of friends and acceptance by others so characteristic at this age.

Influences Affecting Teen Decisions
Pretest vs. Posttest

7th n=27   10th n=25
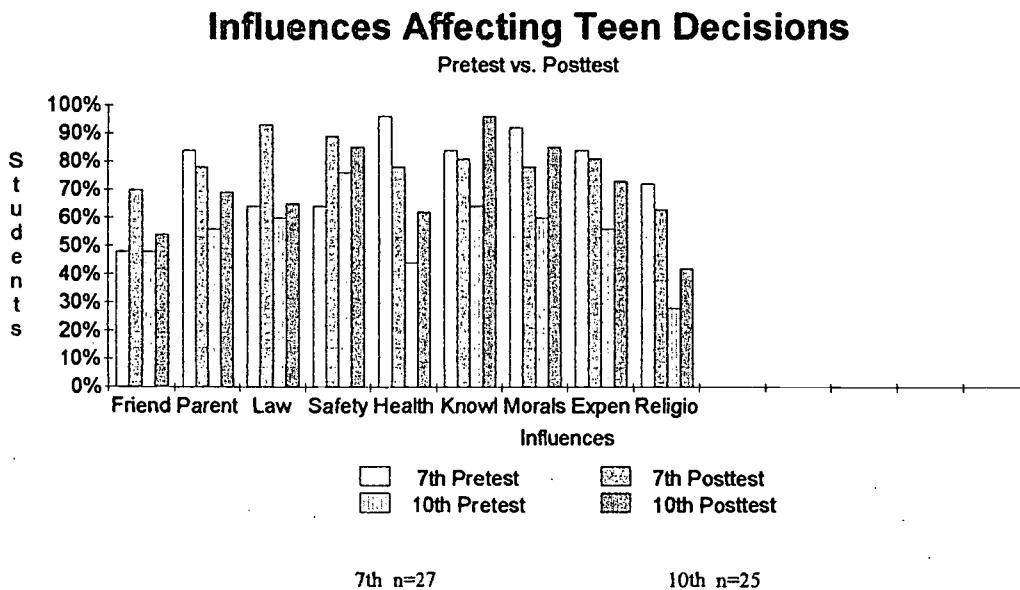
Figure 6. Results of pretest and posttest of influences on decision making.

Knowledge of health facts increased at both levels as illustrated in Figure 7. Almost 100% of the students correctly answered 50% of the questions on the posttest. This reflects an increase in cognitive skills of recall and memorization. A basic awareness of health facts is an essential part of making healthy decisions. Nevertheless, it was the goal of this intervention to move students beyond simple recall to higher order thinking processes when making decisions.

Health Facts
Pretest vs. Posttest

Number of Correct Responses

| | 7th Pretest | 7th Posttest |
| 10th Pretest | 10th Posttest |

7th n=27   10th n=25
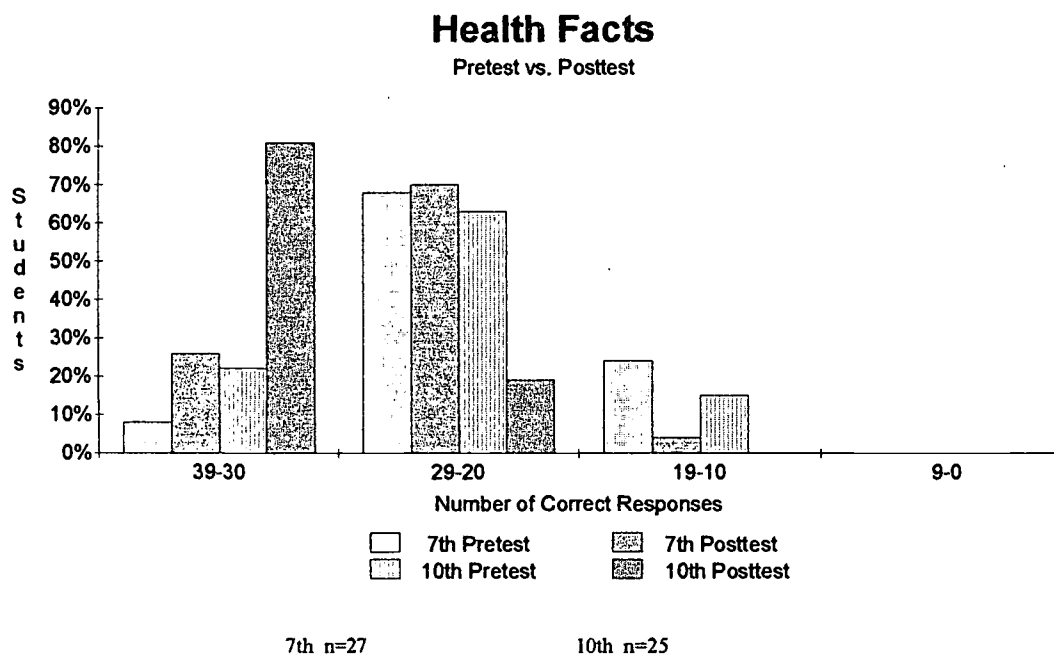
Figure 7. Results of pretest and posttest of health facts.

Decision-making skills seem to have improved as a result of the intervention.

Both grade levels had an increase in scores as illustrated in Figure 8.

Decision-Making Rubric Scores
Pretest vs. Posttest

Points Scored

| | 7th Pretest | 7th Posttest |
| 10th Pretest | 10th Posttest |

7th n=27   10th n=25
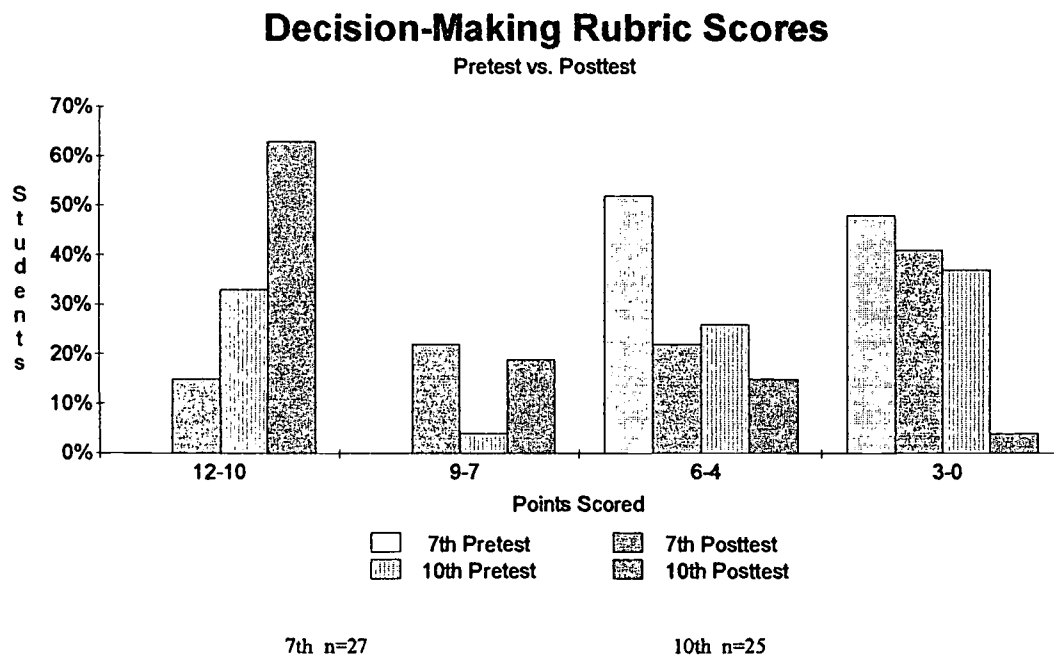
Figure 8. Results of pretest and posttest of decision-making test.

It is evident that repeated reinforcement and practice in using a decision-making model enabled students to transfer the skill to a parallel test situation. Student behaviors and attitudes in the classroom were also positive toward this intervention. Comments and interactions among students indicated a methodical approach to making decisions. Students used higher order thinking skills in analyzing outside influences and identifying personal values. The evaluation of possible consequences was evident as students applied the DECIDE (Pruitt, et al., 1994) model.

Students also discussed alternatives and consequences to problems posed in cooperative groups. Most groups reached healthy, legal, and safe decisions using the given model. Nevertheless, to assume that this intervention had significant transfer to decision making outside of the classroom would be presumptuous. The impact of peer pressure and the strong need for social acceptance are major factors in teen decision making. It is one thing to apply the DECIDE (Pruitt, et al., 1994) model in the safety of the health classroom. It is quite another to make a good decision while under the scrutiny of peers at a party. The DECIDE (Pruitt, et al., 1994) model is one of many tools we can hope to give young people as an aid in making good decisions.

Positive benefits of this intervention were not limited to posttest results. Both instructors noted improved classroom climates due to the cooperative approach to instruction. Students exhibited enhanced social skills. This also reinforced the self-esteem of students.

The multiple intelligences and higher order thinking instruction initiated professional creativity for the teachers. Units were re-evaluated and given a "fresh look" after several years of teaching experience. There was a sense of enthusiasm which made the class more enjoyable for the students.

The instructors also showed professional growth as a result of researching a variety of sources for new ideas and instructional techniques. They have become more

aware of individual needs of students and more sensitive to a variety of instructional approaches. This has enhanced their effectiveness in the classroom. One of the instructors was observed for a formal evaluation by an administrator during this intervention. The observer noted the high level of engagement by the students and the enthusiasm of the instructor. These benefits can only help to increase the amount of learning occurring in the classroom.

Conclusion and Recommendations

Based on the presentation and analysis of data regarding decision making, the students showed marked growth in their ability to apply the DECIDE (Pruitt, et al., 1994) model to a given circumstance in the classroom.

Several recommendations may enhance the effectiveness of this intervention strategy to increase the likelihood of transfer to real life applications. First, longer class periods, such as block eight scheduling, would allow more practice of skills and a more thorough processing of classroom activities. The time constraints of a traditional schedule often made lessons feel rushed or needing completion the following day.

Second, both instructors felt the need to re-evaluate the amount of content covered in favor of deeper understanding of concepts. This selective abandonment would allow students more time to learn and transfer skills.

Third, instructors will continue to refine questioning techniques in challenging students to think at a higher level. More staff development would be helpful for all faculty to improve this skill, as well as others, in teaching higher order thinking to students.

And finally, an improved scope and sequencing in health education would make a logical progression of skills and knowledge more probable. Students would be better able to build upon ideas and concepts as they mature.

This research project has proven to be a worthwhile endeavor for those involved, students and instructors alike. The task of teaching good decision-making skills is an ongoing process for parents and educators. We can only hope that by giving adolescents skills, concern, and support that their decisions will be positive in regard to their health and quality of life.

References

American Medical Association, Department of Adolescent Health. (1988). Healthy youth 2000.

Barell, J. (1991). Refelective teaching for thoughtfulness. Developing minds: A resource book for teaching thinking. (pp. 207- 210). Alexandria, VA: Association for Supervision and Curriculum Development.

Barell, J. (1992). Like an incredibly hard algebra problem: Teaching for metacognition. In J. Bellanca, A. Costa & R. Fogarty (Eds.). If minds matter: A forward to the future. Volume I: Rationale for change. (pp.257-265). Palatine, IL: IRI/Skylight Publishing.

Bellanca, J. (1990). The cooperative think tank. Arlington, IL: IRI/Skylight.

Bellanca, J. (1992). The cooperative think tank II. Arlington, IL. IRI/Skylight.

Bellanca, J. & Fogarty, R. (1991). Blueprints for thinking in the cooperative classroom. Arlington Heights, IL: IRI Training and Publishing.

Bellanca, J. & Fogarty, R. (1993). Catch them thinking. Palatine, IL: IRI/Skylight.

Berman, S. (1991). Thinking in context:Teaching for openmindedness and critical understanding. In Arthur L. Costa. Developing minds: A resource book for teaching thinking (pp.10-16). Alexandria, VA:Association for Supervision and Curriculum Development.

Bergman, B. (1996). A teen says "Warlock" drove him to murder: Did a horror film spark a brutal child slaying? MacClean's, 109, 22-23.

Bete, C. (1996). What every teen should know about peer pressure. [Brochure].

Beyer, B. (1985) Teaching critical thinking: A direct approach. Social Education, 49, 297-303.

Brooks, J. & Brooks, M. (1993). In search of understanding: The case for constructivist classrooms. Alexandria, VA: Association for Supervision and Curriculum Development.

Brownlee, F. (1992). The art of strategic connections. In J. Bellanca, A. Costa & R. Fogarty (Eds.). If minds matter: A forward to the future. Volume II: Designs for Change. (pp.23-32). Palatine, IL: IRI/Skylight Publishing.

Burke, K. (1993). How to assess authentic learning. Arlington, IL: IRI/Sklyight.

Campbell, S. (1991). How do we meet the needs of early adolescents? Schools in the middle: Theory into practice, 1, 19-22.

Casey & Tucker. (1994). Problem-centered classrooms. Kappan, 76 (2), pp. 139-143.

Chapman, C. (1993). If the shoe fits. Palatine, IL: IRI/Skylight.

Costa, A. L. (1991). Teacher behaviors that enable student thinking. In A. L Costa. Developing minds: A resource book for teaching thinking (pp.194-205). Alexandria, VA: Association for Supervision and Curriculum Development.

Costa, A. L.(1991). Teaching for, of, and about thinking. In A. L. Costa. (ED.). Developing minds: A resource book for teaching thinking (pp.31-34). Alexandria, Va: Association for Supervision and Curriculum Development.

Costa, A. L.(1991). The school as a home for the mind. In A. L. Costa. (ED.). Developing minds: A resource book for teaching thinking (pp. 47-53). Alexandria, VA: Association for Supervision and Curriculum Development.

Costa, A. L. & Liebmann, R. (1995). Process is as important as content. Educational Leadership, 52, (6) 23-24.

Dreher, N.(1996). The teen years: Risky business. Current Health, 23, (1), 6-12.

Fusco, E. & Fountain, G. (1992). Reflective teacher, reflective learner. In J. Bellanca, A. Costa & R. Fogarty (Eds.). If minds matter: A forward to the future. Volume I: Rationale for change. (pp.239-255). Palatine, IL: IRI/Skylight Publishing.

Garbarino, J. (1997). Educating children in a socially toxic environment. Educational Leadership, 54 (7),   .

Glatthorn, A. & Baron, J. (1991). The good thinker. In A. L. Costa. (ED.). Developing minds: A resource book for teaching thinking. (pp.63-67). Alexandria, VA: Association for Supervision and Curriculum Development.

Gridley, C. (1992). Asking better classroom questions. Portland, ME:J. Weston Walch, Publisher.

Hambrecht, D. (Ed.). (1992). Skills for adolescence. Granville, Ohio: Quest International.

Jacobs, M.; Turk, B.; Horn, E. (1988). Building a positive self-concept. Portland, Maine: J. Weston Walch.

Johnson, D. & Johnson, R. (1992). Cooperative learning: A theory base. In J. Bellanca, A. Costa & R. Fogarty (Eds.). If minds matter:A forward to the future, Volume I: Rationale for change. (pp. 169-187). Palatine, IL:IRI/Skylight Publishing.

Joyce, B. & Weil, M. (1986). Models of teaching. Englewood Cliffs, NJ: Prentice-Hall.

Kellough, R. & Kellough, N. (1996). Middle school teaching: A guide to methods and resources. Upper Saddle River, New Jersey: Prentice-Hall.

McTighe, J. & Schollenberger, J. (1991). Why teach thinking? A statement of rationale. Developing minds: A resource book for teaching thinking. (pp. 2-5). Alexandria, VA: Association for Supervision and Curriculum Development.

Marcus, R. (1996). The friendships of delinquents. Adolescence, 31, 145-159.

Meeks & Heit, (Ed.). (1987). National Adolescent Student Health Survey, Merrill Health, A wellness approach. Columbus: .

National Decision Systems. (1990). Population-facts: 1990 census report as prepared for Matson Public Library. (STF1A-3A).

Partain, R. (1995). Classroom teacher's survival guide. New York: The Center for Applied Research in Education.

Paul, R. (1991). Teaching critical thinking in the strong sense. Developing minds: A resource book for teaching thinking. (pp. 77-84). Alexandria, VA: Association for Supervision and Curriculum Development.

Perkins, D. & Swartz, R. (1992). The nine basics of teaching thinking. In J. Bellanca, A. Costa & R. Fogarty (Eds.). If minds matter: A forward to the future, Volume I: Rationale for change. (pp.53-69). Palatine, IL:IRI/Skylight Publishing.

Pogrow, S. (1990). Challenging at-risk students: Findings from the HOTS program. Phi Delta Kappan, 71, 389-397.

Princeton Elementary School District 115. (1996). School report card. Princeton, IL.

Princeton High School District 500. (1997). School improvement plan. Princeton, IL.

Princeton High School District 500. (1996). School report card. Princeton, IL.

Princeton High School District 500. (1996-97). Student handbook. Princeton, IL.

Pruitt, Crumpler, Prothow-Steth. (1994). Health: Skills for wellness. New York: Prentice Hall.

Roberts, Fitzmahan & Associates. (1986). Here's looking at U2000. Seattle: Comprehensive Health Education Foundation.

Strouse, J; Buerkel-Rothfuss, N; Long, E., Gender and family as moderators of the relationship between music video exposure and adolescent sexual permissiveness, Adolescence 30, 505-522.

Substance Abuse & Mental Health Services Administration. National household survey on drug abuse: Main findings 1993, 1995 ,pp.33. U.S. Department of Health & Human Services.

Swartz, R. (1991). Infusing the teaching of critical thinking into content instruction. In Arthur L. Costa. Developing minds: A resource book for teaching thinking. (pp. 177-183). Alexandria, VA: Association for Supervision and Curriculum Development.

U.S. Department of Education. (1994). The challenge: Safe, disciplined & drug-free schools, 5,4. Washington, D.C.

U.S. News and World Report 121, 14. (1996).

Wassermann, S.(1994). Using cases to study teaching. Phi Delta Kappan, 602-611.

Widmer, M.; Ellis, G.; Trunnell, E.; (1996). Measurement of ethical behavior in leisure among high and low risk adolescents. Adolescence, 31, 397-409.

Appendices

STUDENT SURVEY

Part I - Evaluation of issues

Place an "x" in the category which best describes your belief of the extent of a health problem or lack of a health problem to teenagers that live in our school district.

		Serious concern	Some degree	Little concern	Not at all
		4	3	2	1
1.	underage drinking	____	____	____	____
2.	marijuana use	____	____	____	____
3.	smoking cigarettes	____	____	____	____
4.	using chewing tobacco	____	____	____	____
5.	unplanned pregnancy	____	____	____	____
6.	sexually transmitted diseases	____	____	____	____
7.	physical violence (fights)	____	____	____	____
8.	gang involvement	____	____	____	____
9.	not wearing seat belts	____	____	____	____
10.	shoplifting	____	____	____	____
11.	vandalism	____	____	____	____
12.	unhealthy eating habits	____	____	____	____
13.	inactive lifestyle (not enough exercise)	____	____	____	____
14.	unhealthy body weight	____	____	____	____

Part II

Place an " x" in the category which best describes how each statement might influence your decision on doing something.

		Always 4	Usually 3	Rarely 2	Never 1
15.	opinion of friends	____	____	____	____
16.	opinion of parents	____	____	____	____
17.	religious beliefs	____	____	____	____
18.	legal consequences	____	____	____	____
19.	safety for self & others	____	____	____	____
20.	affect on health	____	____	____	____
21.	personal knowledge	____	____	____	____
22.	personal beliefs/morals	____	____	____	____
23.	financial expense	____	____	____	____

Appendix A
(Continued)

Part III

Answer the following questions by circling T if you believe the statement is true; F if you believe the statement is false and DK if you do not know the answer to the statement.

T F DK   24.   A healthy body weight affects a person's overall health.

T F DK   25.   Fad diets and quick loss weight products are good ways to lose and keep off unwanted pounds.

T F DK   26.   One should eat the same number of servings from each food group.

T F DK   27.   Exercising vigorously for a minimum of three days a week can be a factor in reducing the incidence of heart disease.

T F DK   28.   Eating more calories than one uses will result in weight gain.

T F DK   29.   There is a difference between aerobic and anaerobic training.

T F DK   30.   Eating a combination of five servings between fruits and vegetables satisfies the recommended servings for those food groups.

T F DK   31.   Drinking too much caffeine contributes to health problems.

T F DK   32.   Skipping breakfast is okay for a healthy body as long as one eats lunch and dinner.

T F DK   33.   Being able to read and interpret food labels enables people to determine if they are eating the correct percentages of fats, carbohydrates and protein on a daily basis.

T F DK   34.   To reduce the chance of being cancer it is wise to eat foods that are low in fats and sugar.

T F DK   35.   It takes only one sexual contact with an infected person to get a sexually transmitted disease.

T F DK   36.   There is no such thing as "safe sex" anymore.

T F DK   37.   There is a vaccine to protect people from contracting sexually transmitted diseases.

T F DK   38.   If sexually transmitted diseases are left untreated, they will normally cure themselves.

Appendix A
(Continued)

T F DK   39.   One should determine limits for expressing affection before they begin dating.

T F DK   40.   If someone loves you, they will respect your limits for expressing affection and not force you to do anything against your will.

T F DK   41.   Many sexually transmitted diseases may not develop symptoms for a long time.

T F DK   42.   Abstinence until marriage is a realistic expectation.

T F DK   43.   Sexual transmitted diseases, if left untreated, can result in the person being sterile.

T F DK   44.   Unprotected sex is a risk behavior.

T F DK   45.   Alcohol is a stimulant because it makes people laugh and feel less inhibited.

T F DK   46.   The amount of alcohol in a can of beer, glass of wine or a shot of whiskey is almost equal.

T F DK   47.   One cannot become an alcoholic if they only consume beer.

T F DK   48.   The amount of alcohol consumed in a certain time length will impair judgement and driving ability.

T F DK   49.   One out of every 10 people who drink will become alcoholics.

T F DK   50.   Teenagers who habitually drink become addicted to alcohol faster than adults.

T F DK   51.   Alcohol is not a drug.

T F DK   52.   Addiction to alcohol is a life long condition.

T F DK   53.   Children exposed to secondhand smoke have more colds and respiratory diseases than children who are not exposed to secondhand smoke.

T F DK   54.   Chewing tobacco is a safe alternative to smoking cigarettes.

T F DK   55.   Nicotine is not addicting.

T F DK   56.   Using nicotine calms a person down by slowing down the heart rate.

Appendix A
(Continued)

T F DK   57.   Smoking causes premature wrinkling of the skin.

T F DK   58.   Cigarette smoking is the major cause of lung cancer.

T F DK   59.   Every year smoking-related diseases kill more Americans than cocaine, heroin, alcohol abuse, auto accidents, homicide, and suicide combined.

T F DK   60.   Mainstream and sidestream smoke are the same thing.

T F DK   61.   Smoking while pregnant does not harm the unborn baby.

T F DK   62.   The body slowly repairs damage caused by cigarette smoking when a person stops smoking.

Appendix A
(Continued)

(Teacher generated assessment)   Seventh Grade

Directions:

Choose one of the following situations. Then discuss step by step how you would reach a decision.

A. Your best friend approaches you in the hallway at school and asks to "borrow" your science homework. He/she explains that the bus got back late from the game last night and he/she was too tired to finish the assignment. You worked really hard to complete the work and know that the teacher would give both of you zero's for cheating. You need to pass this science assignment to make eligibility for the week.

B. Your friends have invited you to go out with them for Halloween. They have been discussing "tricks" they have planned for the neighborhood, including breaking into the school. Your parents will not give you permission. One of your friends has been teasing you because your parents are so strict.

Appendix A
(Continued)

Tenth Grade

Susan and Keith had been going steady for six months. Ever since their first date, they had been together every Friday and Saturday night. They really enjoyed each other and everyone thought they were the perfect couple.

Susan really liked Keith but he had begun to pressure her to become physically intimate. Susan was very nervous about their growing relationship. She had always had a good time with Keith. But Susan just didn't feel that she was ready for physical intimacy. She wanted to take the relationship more slowly. Besides, there were just too many issues to consider. Teen pregnancy, sexually transmitted diseases, and AIDS were all reasons to wait. Susan was embarrassed to talk about these issues with Keith. She wondered if he'd break up with her.

Each time that Keith had pressured her, Susan had handled it casually by suggesting they do something else. But lately Keith was being persistent, and she knew she'd have to say something. One night when they were out, Keith suggested that they go back to his house. "My parents are gone for the weekend,: he said. "Why don't we go to my place."

Appendix B
Rubric for Decision Making

	Near Miss	Almost	Right On
Determines the problem			
Examines alternatives (brainstorms)			
Considers the consequences			
Identifies their values			
Decides action			
Evaluates decision			

Appendix C
Student Assistance Program Statistics

Number of Referrals by School Year:

1993-94	26 students
1994-95	27 students
1995-96	25 students
1996-97	22 students

(Figures include grades 7-12).

Appendix D

Substance Abuse Program Survey
PRINCETON HIGH SCHOOL

SURVEY RESULTS

MAY, 1997 <u>SURVEY</u> <u>FOR</u> <u>GRADES</u> <u>9 - 12</u>

PLEASE DO <u>NOT</u> put your name or Student ID Number on the Survey
or Answer Sheet.

Your answers <u>cannot</u> be connected to you.

SECTION <u>I</u>

1. I am a:

      A. Girl   271   50%

      B. Boy   276   50%

2. I am in Grade:

      A.   9   160   30%

      B. 10   137   25%

      C. 11   153   28%

      D. 12   94   17%

3. I participated in athletics, pom pons, or cheerleading
    this year:

      A. YES   294   55%

      B. NO   238   45%

SECTION II   How often do you use the following drugs?

	Never	Once or Twice a Year	Once or Twice a Month	Once or Twice a Week	Daily
4.Tobacco (cigarettes, cigars, etc)	226 43%	70 13%	55 10%	42 8%	138 26%
5.Smokeless tobacco (chew, dip, etc)	427 79%	48 9%	25 5%	8 1%	30 6%
6.Inhalants (glue, paint, rush, etc)	478 89%	34 6%	14 3%	3 <1%	8 1%
7.Alcohol (beer, wine, etc)	214 40%	123 23%	119 22%	71 13%	13 2%
8.Curare	513 95%	7 1.5%	5 <1%	2 <0.5%	12 2%
9.Marijuana	354 65%	67 12%	45 8%	30 5%	47 9%
10.Cocaine or crack	493 91%	29 5%	5 <1%	3 <1%	11 2%
11.LSD, Mushrooms (acid, shrooms, etc)	487 90%	28 5%	13 2%	4 <1%	12 2%
12.Uppers (speed)	447 82%	43 8%	25 5%	13 2%	14 3%
13.Downers (Valium, etc)	497 91%	21 4%	12 2%	3 <1%	10 2%
14.Heroin or other drugs injected by needle (without a doctor's permission)	517 95%	9 2%	1 -%	4 <1%	10 2%

15.Think back over the LAST TWO WEEKS. How many times have you had five
   or more drinks in a row? (A "drink" is a glass of wine, a bottle/can
   of beer, wine cooler, a shot glass of liquor or a mixed drink)

A.	Never	380	70%
B.	Once	58	11%
C.	Twice	38	7%
D.	3 - 5 times	32	6%
E.	6 or more times	34	6%

SECTION <u>III</u>   When did you LAST USE the following drugs?

	Never	More Than a Year Ago	Last Year	Last Month	This Week
16. Marijuana	318 59%	32 6%	30 5%	57 11%	101 19%
17. Inhalants (glue, paint, rush, etc)	466 86%	15 3%	23 4%	14 3%	21 4%
18. Tobacco (cigarettes, cigars, etc)	220 41%	17 3%	32 6%	65 12%	199 38%
19. Smokeless tobacco (chew, dip, etc)	397 74%	26 5%	34 6%	35 7%	45 8%
20. Uppers (speed)	444 82%	17 3%	17 3%	37 7%	26 5%
21. Alcohol (beer, wine, etc)	231 43%	25 5%	67 12%	125 23%	94 17%
22. Curare	521 97%	1 0%	6 1%	1 0%	9 2%
23. Cocaine or crack	497 92%	10 2%	13 2%	11 2%	11 2%
24. LSD, Mushrooms (acid, shrooms, etc)	487 90%	3 1%	11 2%	24 4%	16 3%
25. Downers (Valium, etc)	505 93%	7 1%	11 2%	11 2%	10 2%
26. Heroin or other drugs injected by needle (without a doctor's permission)	527 97%	6 1%	2 0%	0 0%	9 2%

SECTION <u>IV</u>   How old were you when you FIRST TRIED any of the following
drugs?

	Never	9 or less	10 - 12	13 - 15	16 - 18
27.Cocaine or crack	494 92%	7 1%	7 1%	16 3%	17 3%
28.Inhalants (glue, paint, rush, etc)	456 84%	14 3%	23 4%	39 7%	10 2%
29.Smokeless tobacco (chew, dip, etc)	368 68%	21 4%	44 8%	85 16%	23 4%
30.Tobacco (cigarettes, cigars, etc)	202 37%	46 9%	88 16%	170 31%	38 7%
31.Marijuana	316 59%	14 3%	22 4%	136 25%	51 9%
32.Alcohol (beer, wine, etc)	196 36%	66 12%	74 14%	161 30%	41 8%
33.Heroin or other drugs injected by needle (without a doctor's permission)	512 95%	7 1%	5 1%	10 2%	6 1%
34.Uppers (speed)	443 83%	11 2%	13 2%	46 9%	21 4%
35.LSD, Mushrooms (acid, shrooms, etc)	483 90%	6 1%	12 2%	21 4%	17 3%
36.Curare	515 96%	8 1%	4 <1%	5 <1%	5 <1%
37.Downers (Valium, etc)	494 92%	10 2%	9 1%	16 3%	10 2%

Appendix D
(Continued)

SECTION V.   How easy or hard would it be for you to get any of the
following drugs?

	Easy	Somewhat Easy	Somewhat Hard	Hard	Can't say; Drug Unfa- miliar
38. Tobacco (cigarettes, cigars, etc)	405 75%	65 12%	13 3%	16 3%	39 7%
39. Smokeless tobacco (chew, dip, etc)	343 64%	81 15%	21 4%	20 4%	73 13%
40. Inhalants (glue, paint, rush, etc)	341 64%	53 10%	14 3%	24 4%	101 19%
41. Alcohol (beer, wine, etc)	279 52%	128 24%	57 11%	23 4%	47 9%
42. Curare	61 12%	22 4%	26 5%	34 6%	378 73%
43. Marijuana	205 39%	134 25%	60 11%	56 11%	75 14%
44. Cocaine or crack	78 15%	76 14%	96 18%	121 23%	156 30%
45. LSD, Mushrooms (acid, shrooms, etc)	91 21%	83 19%	80 19%	114 27%	161 14%
46. Uppers (speed)	151 28%	68 13%	68 13%	97 18%	152 28%
47. Downers (Valium, etc)	128 24%	65 12%	58 11%	97 18%	185 35%
48. Heroin or other drugs injected by needle (without a doctor's permission)	73 14%	44 9%	66 13%	150 29%	179 35%

Thank you for taking the time to complete this Survey. Results will
be used to help your school provide quality student services.

Appendix E

Law Enforcement Records

(Ages 12-16)

Violation	**1996 Arrests**
Illegal Consumption	23
Theft Under $300	24
Curfew Violation	20
Criminal Damage to Property	17
Possession of Drug Equipment	7

Appendix F

Human Knot - Team Building Activity

Divide class into groups of six students. Each group will form a circle. Have students extend their right hand and grasp the hand of someone else, as if they were shaking hands. Then, each person extends their left hand and grasps the hand of someone else, so that each person is holding two hands which belong to different people.

Next the group will attempt to unwind themselves from their tangled situation so that they will create a hand in hand circle once more. The physical hand-to-hand contact cannot be broken in order to facilitate an unwinding movement.

After activity, have students complete the following table on what they witnessed their classmates doing and saying while they were participating in the "Human Knot".

Group Member	Skill	Feedback Symbol
	Offer help	
	Check for understanding	
	Encourage others	
	Energize the group	
	Disagree with the idea, not the person	
	Ask group for help if you don't understand the task.	

Reflection: Have students complete journal stems on activity.

Transfer: Students need to see that not only are they a "team" with their base group, they are a team as a class in making it possible for meaningful classroom discussions and they are also a team member to their family, school and community. The next time that the basegroup gets together (2-3 days), students are to share how they were a "team member" either at school, home, or at a community function.

1.   What were you expected to do for this activity?

2.   How did your group solve the problem?

3.   Describe how your group worked together to get the task done.

4.   This activity is similar to the workplace because. . .

5.   I was helpful to my group's success because . . . .

6.   I felt . . . when doing this activity because . . . . .

7.   I dislike it when someone I'm working with does . . . . .

8.   I like it when someone I'm working with does . . . . . .

BRIDGES

TOPIC AREAS: Decision Making, Problem Solving

CONCEPT: Many times, when given a problem to solve, there is more than one solution. This is true whether the problem is being solved by an individual or by a group of people. However when the problem is being worked on by more than one person, the number of solutions and the methods to get to those solutions become increasingly greater. Kids need to have experience in group problem solving and working together. This is the format they will more than likely encounter in the typical workplace. Without an understanding of group dynamics, opinion persuasion, idea presentation and individual follow through, they may not succeed in the average workplace environment.

METHOD: Classroom Activity

TIME FRAME: 30 minutes plus discussion time

MATERIALS NEEDED:
* A large stack of newspapers per team of five people
* One or two rolls of masking tape per each team of five people
* One large can (grapefruit juice or beef stew size, contents are to be left in the can)

ACTIVITY: Divide your group into teams of five. Give each team a stack of newspapers and two rolls of masking tape. The assignment is to build a bridge that is

94   *Activities That Teach*

high enough that the can will be able to pass under it in an upright position and strong enough that the can will be able to sit on it. They may only use newspapers and masking tape to build the bridge. If they need more newspaper or masking tape, you may supply them from a central supply. They may not attach, lean, or in any other way use additional supports for their bridge. Give them a time limit for building. Twenty minutes seems to be adequate, but this is flexible according to the needs of your group. Be sure to give them time warnings throughout the activity so they will know how much time they have left. When time is over, take the can around to each bridge and see if it will fit under the bridge and if the bridge can support the weight of the can. This is not a contest. Each group has the same chance of being successful.

DISCUSSION IDEAS:
*   What was your reaction when you first heard you had to build a bridge out of newspaper that would hold a heavy can?
*   What planning did your group do before it started building?
*   Did the plan work or were adjustments necessary during the building?
*   What kind of adjustments needed to be made?
*   Why were adjustments necessary? Were they successful?
*   What type of leadership did your group have?
*   How was the leader chosen?
*   How did you feel towards your leader?
*   How was the building plan decided upon?
*   Did everyone have the same amount of input into deciding how the bridge would be built? Why or why not?

DOVE

Defer judgement; anything goes

Opt for original; different ideas

Vast number is needed

Expand by piggybacking on other's ideas

Taken from Bellanca & Fogarty - Blueprints For Thinking in the Cooperative Classroom

Appendix I
Decision-making Model

D   **Define the problem**

E   **Explore the alternatives**

C   **Consider the consequences**

I   **Identify your values**

D   **Decide and act**

E   **Evaluate the results**

Taken from Pruitt, Crumpler, Prothrow-Smith

STEROIDS

PART I TRUE-FALSE
Directions: Write the word True for each true statement
and the word False for each false statement.

_____ 1. Anabolic steroids are schedule III drugs.

_____ 2. "Roid rage" is uncontrolled bursts of anger shown by
many anabolic steroid abusers.

_____ 3. Anabolic steroids actually do help muscle growth.

_____ 4. The typical user is a middle-class white male.

_____ 5. Many side effects of anabolic steroid use are
irreversible.

_____ 6. Only professional athletes abuse anabolic steroids.

_____ 7. Anabolic steroids are banned in amateur and professional
sports.

_____ 8. Anabolic steroid abuse can cause psychological
dependency.

_____ 9. Injectable steroids are a risk behavior that may cause
the transmission of AIDS.

_____ 10. Severe acne is a side effect of anabolic steroid abuse.

_____ 11. The hormone testosterone is present only in males.

_____ 12. People who use anabolic steroids cannot become addicted
to these drugs.

_____ 13. Possession of steroids for sale is a felony.

_____ 14. Anabolic steroids make most adolescents grow taller.

_____ 15. The drugs commonly known as anabolic steroids are given
to people suffering from heart disease.

_____ 16. The "muscle building" effects of anabolic steroids are
androgenic effects.

_____ 17. Over half the teens who use steroids start before age
16.

_____ 18. If a test proves an athlete is under the influence of
anabolic steroids, they will be disqualified from
competing in Olympic and NFL and NBA competitions.

_____ 19. Some people that are non athletes use steroids to improve their appearance.

_____ 20. Once a person stops using anabolic steroids, they lose all positive effects.

_____ 21. Male steroid users have an increase in sperm production.

_____ 22. Many negative effects of steroid use are not evident until a decade after the user began taking the drug.

_____ 23. hGH can only be derived from cadavers.

_____ 24. hGH is associated with older people as an antidote for aging.

_____ 25. hGH is approved by the FDA and legal in the United States for the use as an anti-aging drug.

_____ 26. Steroid use may result in death.

_____ 27. Testosterone is responsible for male secondary sex characteristics.

_____ 28. Water base steroids stay in the body longer than oil base steroids.

_____ 29. It is illegal for public schools to test their athletes for drug use.

_____ 30. Selling steroids on school grounds carries stiffer penalties under the law.

_____ 31. Concentration camp survivors were given steroids to restore positive nitrogen balance.

_____ 32. Steroid users may take tranquilizers to "mellow out."

_____ 33. Carbohydrate loading will enable a runner to run faster.

PART II   MULTIPLE CHOICE
         Directions: Select the best answer and write the letter to the left of the test number.

_____ 1. Anabolic steroids were given to soldiers during WWII to make them more aggressive and to increase their muscular strength. These soldiers were from:
a. Russia   c. France
b. Germany   d. United States

_____ 2. In the 1930's, steroids were used medically to treat
a. severe burns   c. liver cancer
b. brain tumors   d. acne

_____ 3. People use anabolic steroids
   a. for medical reasons
   b. to enhance athletic performance
   c. to change their appearance
   d. all of the above

_____ 4. The hormone testosterone
   a. produces masculine effects, such as deepening of the voice
   b. produces feminine effects, such as a higher voice
   c. is present only in males
   d. is responsible for release of beta-endorphins

_____ 5. hGH is used medically to
   a. treat children with growth hormone deficiency
   b. treat teens for muscle disease
   c. treat teens with severe acne
   d. treat children who are hyperactive

_____ 6. Beta blockers are used by some
   a. cross country skiers   b. gymnasts
   c. target shooters   c. divers

_____ 7. Carbohydrate loading is a way to enhance performance. The group of athletes that use this technique are:
   a. sprinters   b. football athletes
   c. endurance runners   d. basketball athletes

_____ 8. Blood doping increases the RBC(red blood cells) and therefore more _____ is carried to the muscle.
   a. nitrogen   b. oxygen
   c. protein   d. vitamins

_____ 9. A disorder characterized by enlarged hands, feet, abnormal facial features as a result of a young mature adult taking hGH is called
   a. hypertension   b. Marfan's syndrome
   c. hyperthyroidism   d. Frankenstein's syndrome

_____ 10. Steroid users many times still visualize themselves as being small and underdeveloped even though in reality they are very muscular. This condition is called:
   a. bodybuilders psychosis   b. anorexia
   c. bodybuilders neurosis   d. reverse anorexia

_____ 11. Steroid users may suffer from delusions or paranoia. This condition is called:
   a. roid rage   b. bodybuilders neurosis
   c. euphoric sensation   d. bodybuilders psychosis

_____ 12. After WWII, Olympic weight lifters used steroids to enhance their performance. They were from:
   a. United States   b. Russia
   c. Bosnia   d. Asia

_____ 13. Beta Blockers are used to:
   a.   reduce inflammation   b.   slow the heart rate
   c.   reduce muscle tremors   d.   both B & C

_____ 14. A drug that increases RBC is
   a.   erythromyocin   b.   protease stimulant
   c.   erythropoietin   d.   hGH

_____ 15. Yellowing of the whites of the eyes may indicate that
          steroid use has begun to affect the functioning of
   a.   liver   b.   pancreas
   c.   kidneys   d.   heart

PART III   MATCHING
          Directions: Match the items in Column I with the correct
          phrase in Column II. Write the letter of the correct
          phrase in the space to the left.

          Column I   Column II

_____ 1. corticosteroid   a. building of body and repair
                                      of body tissue
_____ 2. Norethisterone
                                  b. development of male sex
_____ 3. anabolic   characteristics

_____ 4. black market   c. using steroids orally and
                                      by injection
_____ 5. androgenic
                                  d. hormone produced by
_____ 6. synthetic   pituitary gland

_____ 7. stacking   e. prevents atrophy of
                                      testicles
_____ 8. diuretic
                                  f. flush steroids out of body;
_____ 9. human growth hormone   mask use of steroids

_____ 10. antiestrogens   g. manmade in a lab

_____ 11. HCG   h. prevent development of
                                      breasts in males

                                  i. people or organizations who
                                      supply illegal drugs

                                  j. prevent detection of
                                      steroids in drug testing

                                  k. reduce inflammation

PART IV   SHORT ANSWER

1. Why are anabolic steroids more dangerous for a teenager to use?
   (explain what happens and what the long term effect is)
   4 pts.)

2. Who introduced steroids to elite American athletes? (name not
   needed - describe who he was)   (1 pt.)

3. Athletes that use steroids may be prone to more injuries.
   Explain why.   (2 pts.)

4. Name 4 side effects that may occur specifically in male
   anabolic steroid users.   (4 pts.)

5. List 4 side effects that may occur in specifically to female
   steroid users.   (4 pts.)

6. Name and explain the 3 steroid use patterns.   (6 pts.)

7. Explain why testicles shrink with heavy steroid use. (2 pts.)

Appendix J
(Continued)

8. The athletic team that you are a member of will most likely be
    the most successful team that the school has ever had. Your
    teammates are encouraging everyone to begin taking steroids in
    the summer so that when the season begins, the team will be
    bigger, stronger and faster.

    Use the problem solving approach to answer this question.

Unit Projects

Name:_____

Hour:_____

Project topic:_____

Group Members:_____

Date project is due: _____

Teacher approval: _____

Teacher comments:

1. Visit a local resource which helps people with drug-related problems, and write a report on the resource.

2. Make up anti-drug commercials, or anti-drinking and driving commercials and videotape them.

3. Conduct a survey on people's attitudes toward drug use. Tabulate the results and illustrate your data. Summarize your conclusions.

4. Create a storybook or coloring book about staying drug-free for K-4 students.

5. Interview someone (anonymously) recovering from a chemical dependency. Write a report on the interview.

6. Attend an Alcoholics Anonymous, Alateen, or Alanon meeting and write about your experience. (Call ahead).

7. Collect newspaper articles relating to drugs and comment on them. (at least 5)

8. Collect songs whose lyrics relate to drug use. Write them in a notebook and comment on the writer's view of drugs.

9. Find a story about someone who used drugs while young and how it affected that person's life. Discuss which decisions were thed most significant.

10. Make a list of various drug offenses, and state which penalties you think are appropriate for each. ___ain why you chose the penalties. Then compare them with the real penalties.

11. Make a resource list of community resources dealing with drug use and abuse. Create a display with a brief description of each along with phone numbers.

12. Read a book about drugs and write a report on it.

13. Research the history of a drug and write a report.

14. Write a report on the social impact of drug use. (How does it affect everyone else?)

15. Write a rap that promotes a drug-free lifestyle. Perform your rap for the class live or on videotape. Feel free to use props or costumes.

16. Study the school's drug policy or athletic policy. Comment on the current policy or give suggestions for improving them.

17. Write an article, letter, or editorial for your local newspaper. Share something you have learned about drugs or the drug problem, urge the community to offer more drug-free activities, and/or encourage young people to let others know they do not use drugs.

18. Find out whether any companies or government organizations in your area test employees for drug drug use. Report your findings to the class.

19. Interview a grandparent or senior citizen about how drug use in our society has changed throughout his/her lifetime.

20. Interview three adults about an important decision he/she has made in his/her lifetime. Discuss the factors which influenced the decision. What were the results of the decision? Would this person do anything differently now?

Logical/Mathematical Lesson Plan

Lesson Name: Nutrition

Targeted Intelligence: Logical/Mathematical

Supporting Intelligences: Verbal/Linguistic, Interpersonal, Intrapersonal

Thinking Skills: Categorizing, Analyzing

Social Skills: Taking a turn, Listening

Content Focus: Health Education, Introduction to Nutrition Unit

Materials: Food Cards, Student Worksheet

Product: Completed Student Worksheet, Student SAT

Activity:
1. In cooperative base groups, students will be given a packet of food cards to sort and categorize in a method of the groups choosing.
2. Each student will then be given a worksheet to complete while still in base groups.
3. The teacher then leads a class discussion, supplementing necessary information and clarifying questions raised during the activity.
4. Students then reflect on the activity, using the SAT format.

Appendix M
Sample Graphic Organizers

NAME _____   CLASS _____

VENN DIAGRAM
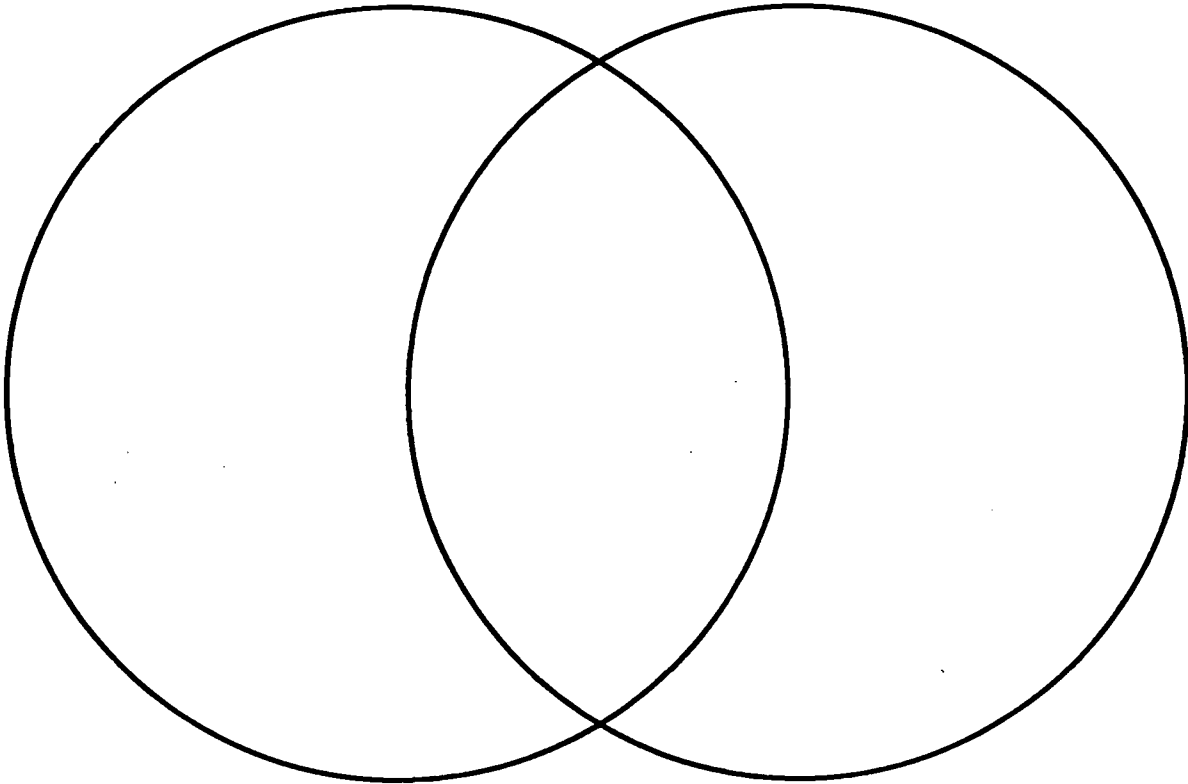
Taken from <u>The Cooperative Think Tank</u> by James Bellanca,
IRI Skylight, 1990.

PMI CHART (PLUS/MINUS/INTERESTING QUESTIONS)

P (+)	M (-)	I (?)

91

90

Taken from The Cooperative Think Tank II by James Bellanca
IRI Skylight, 1992.

NAME _____   CLASS _____

THE GRID

Taken from The Cooperative Think Tank by James Bellanca,
IRI Skylight, 1990.

Appendix N
Seventh Grade
"Fast Food" Sample Lesson Plan

Logical/Mathematical Lesson Plan

Lesson Name: Fast Food

Targeted Intelligence: Logical/Mathematical

Supporting Intelligences: Verbal/Linguistic, Interpersonal, Intrapersonal

Thinking Skills: Analyzing, Evaluating

Social Skills: Coming to Consensus

Content Focus: Health Education, Nutrition

Materials: Fast Food Restaurant Menus, Graph Paper, Base Group Worksheets

Product: Completed Base Group Graphs, Completed Group Worksheets

Activity:
1. Students are placed in base groups and given one of various fast food menus from local restaurants. Each group is to choose one typical meal from the menu.
2. Using the nutritional facts provided by the restaurant information, each group then tabulates the following for the meal: total calories, total fat grams, saturated fat, salt, carbohydrates, and protein.
3. This data is then plotted on graph paper to illustrate the various components. The graphs are displayed around the room.
4. Groups are then given 10 minutes to view the graphs of the other groups.
5. After viewing the graphs, groups then reconvene to discuss questions on the group worksheet.
6. The teacher then leads a class discussion, supplementing necessary information and clarifying questions raised during the activity.
7. Students then reflect on the activity, using journal stems.

FIGURING IT OUT ABOUT FAST FOOD

Name_____

_____

_____

What are the advantages of "fast foods?"

What are the negatives about "fast foods?"

What food groups are usually missing in a fast food meal?

What advice would you give to other teens about fast foods?

94.
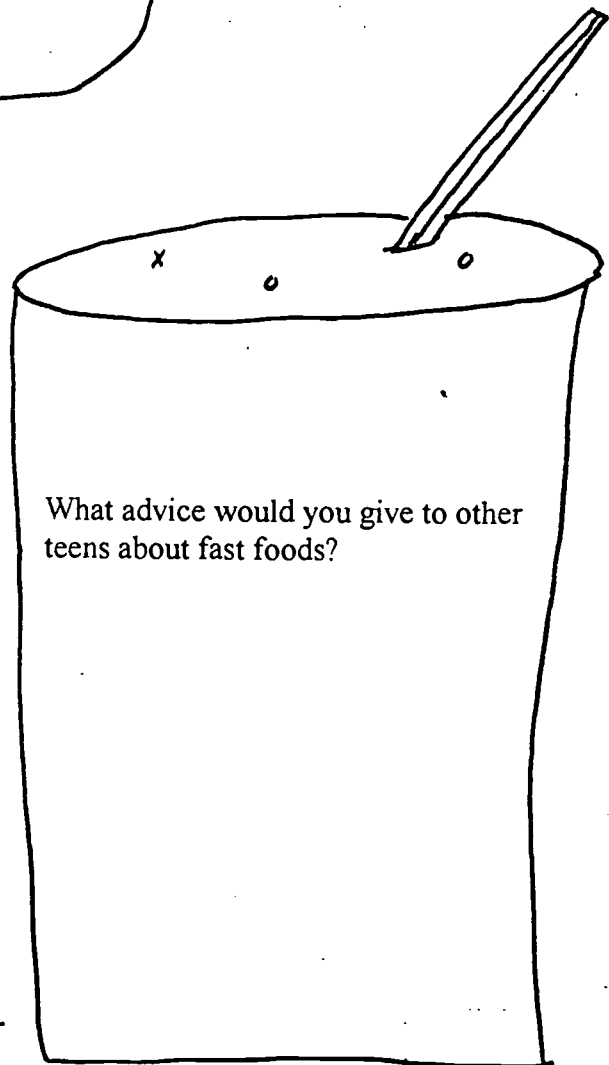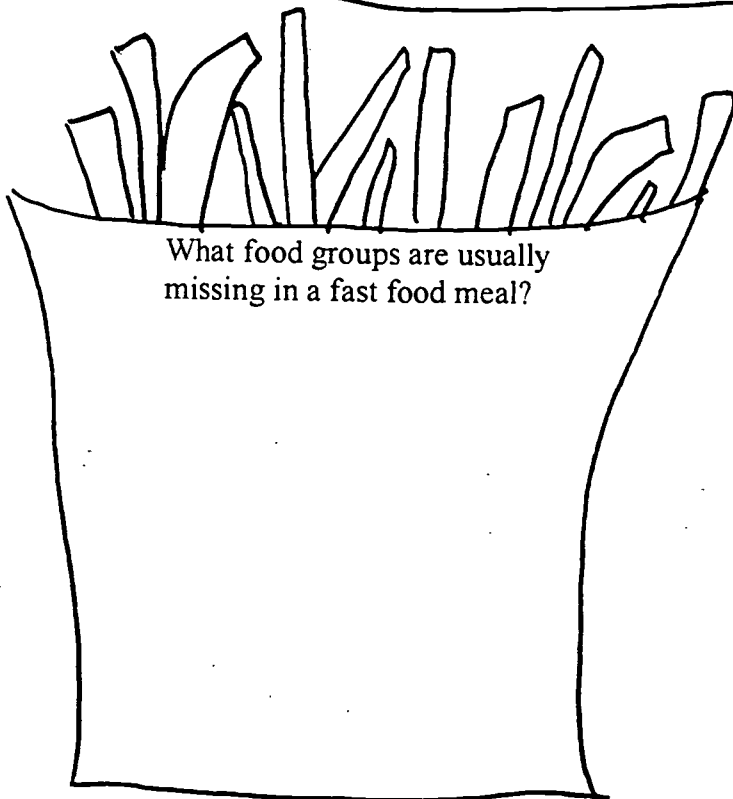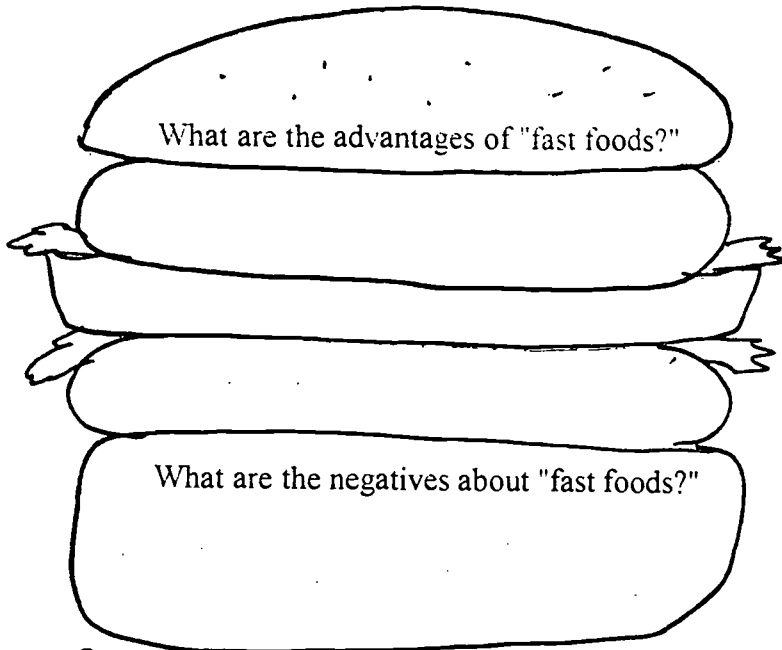
Appendix O
Sample Journal Stems

*Today our group was . . . . .

*Our group was really good at . . . . .

*If our group did this activity again, I would change . . . . .

*In doing today's activity, I learned . . . . .

*I helped my group most by . . . . .

*The hardest part of making a decision is . . . . .

*Decisions about drugs and alcohol are . . . . .

*Nutrition is important because . . . . .

*I think fast foods are . . . . .

*If I could change one thing about the food I eat, I'd change . . . . .

*Learning about CPR makes me feel . . . . .

*Smoking is . . . . .

Appendix P

COMMITMENT TO WELLNESS
SELF-ASSESSMENT

Y   N   1.   I eat a balanced and healthy diet.

Y   N   2.   I usually get between 7-8 hours of sleep a night.

Y   N   3.   I participate in regular exercise at least three times a week.

Y   N   4.   I have people in my life with whom I feel comfortable sharing my emotions.

Y   N   5.   I accept my feelings as part of who I am, and I am not overwhelmed by my emotions.

Y   N   6.   I always use a seat belt.

Y   N   7.   I never ride in a car with anyone who has been drinking alcohol or using illegal drugs.

Y   N   8.   I take time to be alone when I need to be alone.

Y   N   9.   I avoid situations that put my health at risk.

Y   N   10.   I am happy with my relationships with others.

Y   N   11.   I am not afraid to say no to my friends when they are engaging in activities that might affect my health.

Y   N   12.   I am able to recognize false promises made by advertisers.

LOGICAL/MATHEMATICAL INTELLIGENCE

TARGETED INTELLIGENCE: Logical/Mathematical

SUPPORTING INTELLIGENCE: Intrapersonal, interpersonal, visual/spatial, verbal/linguistic.

THINKING SKILLS: Reading, organizing, categorizing, checking for accuracy.

SOCIAL SKILLS: Listening, assisting one another, sharing.

CONTENT FOCUS: Health - Students will group drugs into categories. Once the drugs are categorized, students will identify the following about each drug: slang names, manner in which drug enters the body, drug's physical and psychological effects on the body, effects of overdose, withdrawal symptoms, dangers of the drug.

MATERIALS: Health textbook, pamphlets on various street drugs, magazine articles, selected books from The Encyclopedia of Psychoactive Drugs series, gathering grid graphic organizer.

TASK FOCUS: Students will research and organize required information regarding controlled drugs. Students will record the information on the gathering grid graphic organizer.

PRODUCT: Gathering grid, Venn diagram

PROBLEM: Organizing information and the ability to compare and contrast.

ACTIVITY:

1.   Organize students into cooperative groups of 3.

2.   Assign roles.
     The student who's birthday is closest to today's date is the materials gatherer.
     The person with the birthday farthest away from today's date is the checker, making sure that information gathered by other group members is correct.
     The third person in the group will be the timer, making sure everyone in the group stays on task and aids group members to pace themselves in order to get the work done on time.

3.   The students will be given the last 20 minutes of class on Day 1 and 15 minutes on Day 2 to read and organize the information for the rest of the group. Each student will be given two categories of drugs that they are responsible for collecting the needed information for the grids.

4.   Following the 15 minutes on Day 2, group members will be given approximately 10 minutes in which to copy other group members information about the drugs on their grids.

5.   Next, students will pair up with a student from another group. They will pair share the information and make corrections as needed.

6.   Demonstrate to the class how to draw and use a Venn diagram.

7.   Using a Venn diagram compare and contrast two drug categories at a time until all six have been compared with one another.

REFLECTIONS:

Students will write a SAT on the learning activity.

Appendix Q
(Continued)

Slang Name	How drug is taken	Effects on body	Drug	Overdose	Withdrawal symptoms	Danger
						90

99   100

Subjective Grading Sheet for Group Work

NAME	COMMUNICATION	COOPERATION	ACTIVE LISTENING	COMPROMISE

Key: + = 2 points; ✓ = 1 point; -- = 0 points

101

10?

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