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ABSTRACT

Concern surrounding the status of health education in elementary schools centers around (1) a lack of agreement concerning content, scope, and sequence, (2) its interdisciplinary character, (3) poor teacher preparation, and (4) reliance on incidental teaching and learning situations. Improvement depends upon: (1) defining the areas of concern for health education (experiences influencing knowledge, attitudes, and practices relating to personal, family, and community health), and other health-related areas, such as school health (the determination of health status), and health environment (physical and humanistic surroundings); (2) organized curricular development, as pure subject matter, and as attitude and habit formation; (3) establishing priorities for topics on the basis of importance, relevance, and need, and weighing the discussion of issues on this basis; (4) defining the role of the classroom instructor as the central person (from the child's viewpoint) involved in health observation, environmental improvement, and health instruction; and (5) concept formation and the embodiment of cognitive knowledge in behavioral development. Studies have shown that health course content is both boring and repetitious and ignores the problems of consumer education, sex education, venereal disease, alcohol, drugs and smoking, nutrition, mental health, and environmental hazards. Health education must be recognized as an academic discipline worthy of the respect and concern given to all other academic discipline areas, or this situation will remain unchanged. (Appendixes include a suggested curriculum for grades K-6; the relationship of key health concepts; a bibliography of 32 citations; and a reference list of 17 citations.) (MB)

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HEALTH SCIENCE EDUCATION IN ELEMENTARY SCHOOLS

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Introduction

The general topic of health education or health science has been, historically speaking, one of utmost and significant concern to the professional educator as well as to the general public. This genuine concern has existed and continues today in respect to both the elementary and the secondary curricular levels in our schools. Perhaps no other single curricular segment or content area has experienced the attention, the commotion and the controversy that the general topic and the subject matter of health education has experienced during the past five decades in our American schools.

Part of the cause of the concern and the uncertainty surrounding the general topic of health and health education in our schools - on the elementary and secondary levels - could be linked to the lack of general agreement among both professional educators and the lay public in terms of the content, scope and sequence of health instruction; the certification of teachers of health; the selection of faculty to teach health; the methods of teaching the content within the health curriculum; and, the evaluation process(es) involved in the teaching/learning situations within the health curriculum. Similarly, the lack of a clear understanding of definitions in earlier times for such terms as health, health education, health instruction, health science, and school health

had created and provided many instances for significant and petty disagreement among professional educators and non educators alike and had further hindered meaningful and significant progress for curriculum reform in the area of school health and health education.

While some of these previous areas of unrest and disagreement have been eliminated in recent times and some consensus has been reached in the examination and defining of the terms health, health education, health science, health instruction and school health, there still exists significant areas of concern and lack of agreement. Specifically, one such area of concern involves the question of under whose auspices should health education (health instruction) be organized and taught within the curriculum at the elementary and the secondary level.

Health Education And The Elementary School

The fact that the content of health and health education within the curriculum of our schools has often tended to be overshadowed by concern with specific controversial topics (such as sex education and drugs) has tended, in part, to obscure the real potential of what health education in the schools can be and what objective might be within grasp via a good, structured, planned curricular attack involving the health topics generally accepted as belonging to a sound health curriculum.

One of the reasons that the subject of health, as it fits into the elementary school curriculum, is surrounded by controversy and uncertainty is that the subject matter or content of what is commonly

referred to as health education cuts across, and rightly so, the subject content areas of so many other subjects. Thus, many disciplines claim to have responsibility, or some part of the responsibility, for instruction in the area of health or some sub-topic of health.

Nature Of Health Education

The nature of health education in our schools is both a blessing and a curse. On the one hand it is a blessing since the content, the sub-topics which go to comprise health in our schools can be thought of as involving many other academic areas in the curriculum. Thus, there are ample opportunities, or at least there should be, for additional health learning situations, in addition to the planned health sessions, where the individual student is exposed to positive facts, concepts, attitudes, and behavior patterns in terms of positive general health behavior. Incidental and integrated teaching/learning opportunities should abound in the elementary school in terms of health education/instruction.

Also, by the very nature of health and health education, the task of teaching health is often thought of as a "curse" in that its content, its topics are often classified and claimed by so many different disciplines that oftentimes no one or no single discipline actually does health education justice in the school. Since everyone thinks that they can play a significant role in imparting health values, facts, concepts there often results a poor general

plan of attack, if there exists one at all, for providing meaningful health programs and experiences to the students. This situation is more prevalent within the upper elementary grades where there exists departmental organization in that each teacher of a specific subject must make a conscious effort to include some reference to health within his/her math or science class or else the student will have no exposure to "health". If there is no health teacher or health specialist in the elementary school and if there is not a concerted plan of attack to allow the students to be exposed to the body of knowledge and the positive health behavior patterns via incidental and/or integrated teaching techniques the student will simply not have the opportunity to learn what they should learn in this general subject area.

Health as a subject in the school curriculum has been moved and pushed around within the structure of the various departments or academic disciplines for many years. Health as a subject in the curriculum has been and is being taught by the school nurse, the athletic coach, the biology teacher, the home economics teacher, the physical educator, the history teacher, the social studies teacher, the science teacher, and almost any other individual who would be willing to assume the tedious and often thankless task. Very rarely did a specialist, an individual with a major in health science or health education, become involved in teaching health - on either the elementary or secondary level. This was due, for the most part, to the fact that health science, until recent times, was

treated as a stepchild of the physical education profession and as a result the area of health science did not warrant a trained specialist as did the subject of physical education or the subject of history or any of the other academic disciplines. The result came to pass that health as a subject in our schools was taught by any number of individuals, some with very little training in the academic discipline of health and most with no training at all. The only consistency in health education is its inconsistency in terms of professional preparation during the first fifty years of this century.

Health education has been taught within our schools via a variety of curricular avenues. Health, on the elementary level, has been treated as a separate subject much as history or mathematics. Health has been integrated with other subjects such as science or physical education. Additionally, health has been treated in such a manner that students would be exposed to "health education" via incidental teaching or, as this writer refers to it, via accidental teaching or accidental learning situations. While incidental or accidental learning situations play a very important role in the total educational process in terms of health education, to rely totally upon such a tactic or vehicle is both foolhardy and unprofessional. Health education in the elementary schools must be prepared for via a planned, structured and staged attack throughout the grades, from K through the upper elementary grades and beyond to include the secondary level as well.

Very often educators and parents and other members of the community at large have not been able to see the trees for the forest. Only in relatively recent years has there been a concerted and sophisticated effort on both regional and national levels to bring the topic or subject of "health" out of the cloakroom of darkness; to remove the stigma attached to health education as a stepchild of a variety of other subject areas, and to place health in its rightful place, i.e., as a significant, separate, distinct but yet related subject content area within the schools.

The elementary schools, by their very nature, will provide health education via either departmental or self-contained classroom avenues. In the state of Wisconsin the Department of Public Instruction requires that all elementary schools teachers, to be certified within this state as classroom teachers, must pass a course in health methods with a minimum of one semester hour. This course will be the only exposure for these teachers of elementary school age children in the content area of health and health methodology. Thus, in 1976 in the state of Wisconsin, this writer feels that the future classroom teacher is not being adequately prepared to teach the elementary age child in terms of health instruction. The only salvation for these future classroom teachers will be in-service training and the availability of health education specialists, if any are employed by the school districts.¹

It is also interesting to note that on the secondary level, where one would presuppose that there would be the greatest number of separate, full time specialists teaching the subject of health,

only about 7 percent of all health teachers for grades 9 through 12 are full time teachers (specialists) in health education, according to an investigation in 1964.²

Definition Of Health

Although there has traditionally been, and still is, some uncertainty, some lack of agreement in terms of what comprises health education, there has been a rather general consensus of the definition of health per se. Health certainly means more than mere absence of disease. Today's educators speak of health as involving body soundness, mental soundness, social soundness and spiritual soundness. It is a degree of total personal soundness compared with standards of good, poor and bad as determined by medical experts. Health truly involves the physical, mental, social and spiritual aspects of mankind.³

In 1947 the World Health Organization defined health as a "State of complete physical, mental and social well being and not merely the absence of disease or infirmity".⁴

The health of an individual is determined to a great extent by the total environment in which the person functions and thus individual and community health are mutually dependent on one another and one may not be assessed at the total exclusion of the other. No man is an island. A fact brought home all the more when one realizes that every person added to the environment increases the demand placed on the existing capacity of the world. As population increases so too

must the capacity of our world to care for each and every person in terms of individual and community. With 204 million persons existing in the United States in 1974 and with an estimated 250 million individuals to exist in American by 1990 the implications are obvious.⁵

Good health means many things to many people. However, good health includes being buoyant, free and possessing enough energy to do what an individual wants to do without significant fatigue, having a good zest for life, possessing the ability to rest and relax as well as to recover from fatigue. It also means having a good appetite and experiencing enjoyment from eating, absence of weight variations for one's physical attributes and the ability to make rapid recovery from an occasional illness or sickness.

Health is a much needed quality for the human species. Maslow,⁶ in his text Motivation and Personality, indicated that man possesses various needs and classified these needs on a hierarchy with the physical needs such as food water (among others) forming the foundation. The second level of needs includes the need for safety, freedom from threat, sense of security in the physical sense. The third need level would be that of belonging and the need of love, need for affection. The next level includes esteem needs, need for respect as an individual. The highest level would be described as self-actualization which Maslow states is the highest need classification and is thought of as the need to become what one is capable of becoming as a human being.

Just as there are five levels or categories of needs as illustrated by Maslow, Anderson ⁷ has classified Health into five levels. Specifically, the first level of health includes the lowest level where the level of health of an individual is such that the individual is obviously ill and should not be out in the public or in the schools. The next level of health includes those people who are ill from a chronic infection or some concealed factor. These individuals should not be in school until remediable defects are corrected. The third level involves those who are neither completely sick nor completely well. Low gear would seem to be the best description for those persons who are seen dragging themselves through "life". These individuals lack the vigor and zest of those who enjoy health at the highest level. The highest level includes those who have all the usual attributes of good health, enjoy life, enjoy the company of other individuals and who actively participate in many varied activities during one's life.

School Health Program

There is a distinction to be made between health education and the school health program. The latter is an integrated phase of the total school program dealing with health. This concept has evolved chiefly from an ever increasing interest in the welfare of the children of this nation. The school health program is concerned with social accomplishment, good eyesight and hearing, freedom from disease and handicapping defects, emotional stability and a satisfactory rate of growth as much as it is with classroom

instruction. The focus, the concern, today is on disease prevention within the school health program. Health education or health instruction is a facet, a part of the total school health program.

The school health program includes school health education (whether it is formal, separate health teaching/instruction or integrated or incidental/accidental), health services and health environment.

Health Education

Health education is defined as:

" . . . the process of providing or utilizing experiences for favorably influencing understandings, attitudes, and practices relating to individual, family, and community health." ⁸

Health education and health instruction include the sum of the experiences that favorably influence practices, attitudes, and knowledge relating to health. It is readily seen that we are dealing with something that occurs at all times and in all places in all schools. ⁹ It involves integration, incidental, accidental learning situations and environments. Hence, the entire school personnel and every area of the curriculum have some part in health education.

Health instruction can take place in the natural course of events surrounding the implimentation of health services and the creation and sustaining of healthful school living environments and climates. In elementary schools, where there is often no health

education specialist, all three phases of the total school health program (health instruction, health services and health environment).¹⁰

Health education and the total health program has indeed come a long way from the days when Horace Mann, in 1842, urged educators to include health teaching in the public schools.¹¹

Health Services

Health services are those procedures designed to determine the status of the health of the child, to enlist his cooperation and to inform parents of physical and mental defects. The total health service program involves (1) health appraisals such as physical exams, screening tests for hearing, vision, posture, and other measurements for height and weight. Additionally, health guidance classroom teachers, teacher health and daily observation of the individual students by the personnel of the schools; (2) prevention, the safety measures and planning that exists within the school and within the system for emergency care for the students; (3) correction of remedial defects and follow-up services.

Health Environment

The health environment within a school includes everything in the school's physical property which might have an effect upon the individual students in attendance there. For example, the heat (temperature) and the air conditioning available within the school, the clean areas within the structure, the color of the walls, the physical

characteristics of the school buildings and contents. Additionally, the humanistic qualities of the non physical environment would also fall under the general heading of "health environment".

Curriculum In Health Education

The early part of this century saw the emphasis in health revolving around health knowledge and health facts as pure subject matter. It became more apparent however that educators must appraise both quantity and quality of health information in terms of its effect on attitudes and habits of the students. The objectives of health and health education came under closer scrutiny and the objectives which have survived involve behavior and attitude formation and habit creation and sound concept formulation rather than mere fact retention and recitation. Behavior modification has become a word of significance in health education. Facts create the foundation for concepts. Big ideas, concepts became more significant in the planning for true learning to take place in the schools, especially in the area of health education. Both facts and concepts play an important part in the formulation of attitudes and future choices in terms of health behavior. Since health became associated with facts, concepts, attitudes, behavior, and habits the curriculum and methodology began to take on a slightly different emphasis.

Of concern was health status, health knowledge and health behavior - while in school but also, even more so, following the severing of ties with the educational structure. It became of

concern that all children be exposed to a properly balanced curriculum with adequate scope and sequence, taught by a qualified health educator - and not by someone who was trained in some other related field - who would do justice to all of the major health problems, appropriate for specific age groups, rather than singling out any one popular and perhaps controversial problems for overemphasis.

Elementary health education must have a fully organized and programmed plan of "attack" within the total school curriculum. In elementary schools the health education program will be taught, for the most part, by the classroom teacher and reinforced by the school nurse and perhaps by some outside specialists in the professional health fields. School health coordinators and curriculum specialists work with classroom teachers and strive to provide an up-to-date, continuing in-service program to keep teachers up on the most recent advances within the field and to foster and encourage creative teaching. This is the ideal. This is what the health educators are striving to achieve within the schools.

Nice pie in the sky talk does not really help the pragmatist who must work on the firing line each and every day. What exactly is to be included in the health education curriculum on all levels? This question has served as a basis for many of the controversial arguments in education for decades. The educational policies Commission of the National Education Association has stated

repeatedly that an educated person needs to understand the basic facts concerning health and disease; the educated person is able to protect his own health and that of his dependents; and an educated person works to improve the health of his community. Building upon these basic desirable behavior outcomes one must then examine the wide variety of possible experiences which might enable an individual to develop the competencies mentioned above.

How does one exactly go about to organize the major health topics in the instructional programs from grades one through six or eight? What health topics are appropriate at each level? Is there a danger of too much repetition on a yearly basis? Is there merit to a cycle plan in which certain topics are omitted or simply reviewed every other year?

Certainly it has been the custom to have a considerable spread of information through the grades in the elementary school rather than to have too great a concentration at certain grade levels. Each major health topic, the selection of which will be examined presently, is often taught at each grade level rather than being omitted at any specific grade level. This tactic is taken in the belief that healthy repetition and frequency acquaints the pupil with something that might have been missed the year previously. It is generally recognized that it is extremely difficult to keep from repeating too often what is said in the second grade to the children in the third grade. The real issue is not whether the presentation on a cycle basis or on a

yearly basis is best, but rather, what exactly is covered, what is taught and how is it presented, especially controversial subjects.

One must decide what to teach out of the myriad of areas comprising the entire field of health. Curriculum should be organized according to the logical development of subject matter. Each teacher should know where he and the students, individually, have been and where each is going. This might involve health knowledge tests and health inventory tests or health interests tests in an effort to ascertain the relative starting point for each and every student. However, caution must be exercised in the early elementary grades as the students at this level often lack a frame of reference with which to relate in completing many of the various forms of tests mentioned above. Background information regarding the students' home life is often of significant importance. This is especially true in the case of building attitudes and behavior which might affect future patterns of choice in health related matters.

Many samples of curriculum are available. One recent approach in terms of curriculum formation has been the creation of the STRANDS or general themes approach around which the curriculum and subject content will be built and presented. The city of Milwaukee is currently in the process of creating five strands or themes which will assist teachers in teaching and presenting the content of "health" to elementary age students. The five strands include: (1) drugs (Perspective on Drugs), (2) mental health,

(3) environmental and community health, (4) physical health, and (5) education for survival. Thus far, in 1976, only the Perspective On Drugs is completed and in print for professional implementation on the elementary level within the school system. These curriculum guides are being constructed as a result of health agencies, teachers, parents, students and administrative staff members within the various departments of the Milwaukee Public School System working together to develop a systematic approach to health instruction.¹²

The above mentioned strands are certainly not the only example of the subject content for elementary grades nor are they the only example of approaches to curricular innovation in terms of health.¹³

There are eleven strands as proposed by Fodor, Glass, Gmur, Moore, Neilson and Byrd. These include: (1) health knowledge, attitudes, decisions, and behavior, (2) mental and social health, (3) growth and development, (4) safety and first aid, (5) diseases and disorders, (6) nutrition, (7) environment, (8) health information, products, and services, (9) dependency-causing substances, (10) health organizations, (11) health and the future. The authors cited above have created a program involved health education for children in grades K through eight complete with texts and study guides for use by the classroom teacher and/or health specialist.¹⁴

The breakdown of each of the above mentioned strands for each of the elementary grades (K through six) may be found in Appendix I. Within each grade level the major topics are presented as are the more numerous sub-topics.

Other classifications have been made by nationally recognized organizations. For example, the joint committee of NEA-AMA recommended eleven general topics of areas of concern which should combine to formulate general topics of the curriculum in health education from K through grade 12. Such topics being: (1) structure and function, (2) growth and development, (3) personal health behavior, (4) consumer health, (5) stimulants and depressants, (6) nutrition, (7) community health, (8) safety, (9) disease, (10) family living, and (11) mental health (integrated in all of the first ten headings). Similar and dissimilar classifications have also be created. The important thing to remain cognizant of is that the classification is necessary for significant treatment of content. Perhaps the actual classifications are not as important as the fact that an organized approach has been undertaken and a systematic plan of attack is encouraged via such a move. What is essential is that the content within the broad classifications be selected on the basis of the latest findings and research. The individual teacher will need to conduct research within the school in which he is teaching. Courses of study and curriculum guides must be consulted. The May 1967 issue of the Journal of School Health devoted its entire issue to a suggested program of sex education or family life education for grades K through 12.

Controversial Topics And Objectives

Topics that are controversial should have both sides presented

according to the level of students and their capacity to understand. A controversial issue involves problems about which different individuals and groups urge conflicting courses of action. In other words, it is an issue, or relates to an issue, which society has not found a solution that can be universally or almost universally accepted. Sex education, homosexuality, drug education might be classified as controversial topics in some communities. It is unfortunate that so much of the concern with health instruction revolves around the so-called controversial topics and the other areas within health are often neglected.

Since health instruction is so broad (encompassing everything from sex education to the problem of metabolic disturbance resulting from movement through various time zones) it is essential that priorities be established on the basis of importance, relevance and need. Creating behavioral objectives in health is necessary, although oftentimes difficult. For example, most of the objectives in health involve present or future behavior or choice of behavior. Specific evaluation in health courses still rests on testing and evaluating "facts". How does one evaluate and grade on health habits and health behavior. Yet, it is health habits and behavior patterns and health choices which educators are attempting to influence and direct.

This inconsistency - between the objectives in health and the evaluations in health - is compounded by the following fact. One of the objectives in health education is to have individuals act on the basis of their own health knowledge. Hence, knowledge is

important. However, it is abundantly clear that simply informing people about health matters is not generally sufficient to alter specific behavior patterns, reinforced by years or months of habit, particularly if problems of psychological or physical dependency or social approval are involved.

In this area of accountability, the joint committee on Health Problems in Education of the NEA and AMA adopted (February, 1971) the following resolution:

" . . . that the resolved that the school health program be directed to give more attention to student behavioral change through such evaluations as parent, teacher, peer interviews and case studies, and review of school records, and . . .".¹⁵

Earlier, in 1970, the American Medical Association adopted a program and theme dealing with a "quality of life" in order to increase the public's awareness of personal responsibility for health and that merely knowing facts would not suffice as action, based on current facts and reinforced by a motivating need, would be required.¹⁶

Goodlad has pleaded for a greater concentration on human values and interests. He refers to humanistic curriculum which would foster the situation in which the individual would advance at his or her own rate.¹⁷ Values must be taken into consideration in the teaching of health on all levels. Values such as trust, respect, honesty, sharing and concern for fellow man. Experiences, in the many areas of "health education" are the key to meaningful learning. Curriculum is organized for living and learning. Thus the health curriculum and the teaching of health should emphasize the relationship of experiences to the learning process.¹⁸

The Role Of The Classroom Teacher

The role of the classroom teacher is indeed unique. The classroom teacher in the elementary school is the most single important individual in terms of making significant contributions to the health of the school age child (within the school system). No other person sees the child as does the classroom teacher, a great vantage point that neither the parent nor the family doctor can match. It is the classroom teacher who cooperates with school health services personnel; it is the classroom teacher who is in the best position to detect health abnormalities and to refer students to proper authorities for correction; it is the classroom teacher who is able to make the school environment pleasant (both physically and emotionally); and it is the classroom teacher who is most often, in the elementary grades, responsible for providing health instruction in the classroom.

Schneeweiss and Jones¹⁹ indicate that it is the classroom teacher, by that teacher's proximity to the child, who is best able to notice any slight or sudden change in the child. The teacher may note an increase in symptoms of the common cold during the month of November thus suggesting the possibility of shifting the curricular emphasis to the topic of communicable disease, etc. As behavior patterns are laid down early in life it is the parents and early elementary grade teachers who have opportunities for greatest input and affect upon the child's health behavior.

It should be remembered that children are not miniature adults. They are children who will become adults. It is the teachers who must help them become adults. Neither mere exposure to facts and experiences nor indoctrination techniques lead to meaningful education. Each individual child must be helped to realize that he must take responsibility for what he does with his body and his life, commensurate with the individual's ability to understand and act.

Concept Formation

Behavior of students cannot always be measured in terms of how they translate and use information, because some behavior is not able to be observed until long after the individual has left school or some behavior is not able to be observed at all. The objective remains however, for the student to be exposed to a body of information (cognitive), realize and place its implication within his individual character (affective), and also show that the values inherent in the information can be expressed in actual behavior (action). The end result - action - is often the result of an earlier formed attitude or concept or habit. How to teach for concepts has become the concern of educators.

Many concepts are developed without specific teaching. For example, if my child sees our dog, is able to touch the dog and is able to have the dog touch him the child when he hears the name of the dog or the word "dog" will be able to develop positive and/or negative attitudes and concepts toward that dog in particular. Upon

having further experiences with other dogs the child is then able to develop positive and/or negative attitudes and concepts towards "dogs" in general. Unfortunately many students are just as likely to form incorrect concepts based upon incorrect facts and information as they are liable to form correct, positive concepts based upon correct facts and knowledge. Students should be encouraged to organize facts, symbols, and isolated experiences around a concept or conceptual scheme. Of course, mere possession of correct facts or knowledge does not guarantee the creation of correct concepts or any concepts at all.

Woodruff²⁰ has phrased a definition for curriculum planning which states:

"A concept is a relatively complete and meaningful idea in the mind of a person. It is an understanding of something. It is his own subjective product of his way of making meaning of things he has seen or otherwise perceived in his experience."

Conceptualization is a natural process, and the difficulty is not of arranging for it to take place, for it will indeed take place by accident if by no other means. Rather, the difficulty is in arranging for the kinds of perceptions that lead to positive, constructive concepts. The skip between knowledge and purposeful action, behavior is shorter when there exists meaningful concepts bridging the way.

School Health Education Study

The most thorough research into the status of health education

and the needs of youth was initiated in 1961 and was brought to a head in 1965 by the School Health Education Study. The findings of this research investigation indicated that the health content then available in the schools of this nation was both repetitious and boring throughout the grades without consideration for the real problems of youth. Further, the universally neglected content areas of interest in the elementary grades were consumer education, sex education, venereal disease, non-communicable disease, smoking, alcohol and drugs, community health programs, environmental hazards, mental health, and nutrition and weight control.^{21, 22}

The background of the School Health Education Study (SHES) can be traced back to 1960 when the NEA-AMA Joint Committee on Health Problems in Education recommended a survey of the nation's school children to determine the status of health education in the schools. Under a grant from the Samuel Bronfman Foundation (1961) the School Health Education Study was initiated. Its purpose was to discover the status of health instruction and to gain support from the public for reform measures.^{23, 24}

The SHES brought together health education specialists, supervisors and classroom teachers to develop a sample experimental curriculum and materials based on a concept approach. It was in 1966 that SHES received support by the Minnesota Mining and Manufacturing Company (3M) to continue the development and publication of curriculum materials which had been previously started during

the 1964-65 academic year in various organizational meetings. In 1967 packets of materials pertaining to the concepts were available commercially. Further nationwide examinations and investigations in 1967 again revealed glaring weaknesses in health education in large, medium and small school districts in the United States. Curriculum was repetitious and specific areas within health education were being completely ignored either by design (too controversial) or by ignorance.²⁵

Although SHES is not regarded as a national curriculum it is to be thought of as a suggested approach to curriculum development based on big ideas or the conceptual approach. The SHES curricular approach revolved around three large concepts supported by ten central concepts and these in turn were supported by various sub-concepts. Refer to Appendix II for composite of the conceptual approach to health education.^{26, 27}

The American Association for Health, Physical Education and Recreation in the mid-sixties was prompted by the significant lack of training for prospective elementary teachers to form a committee to focus on the need for improvements in the elementary programs of health education.²⁸ Aubrey²⁹ stated that health education in public schools had both low status and esteem in the eyes of most teachers, students and administrators. Reasons cited for this situation included inadequate training of teachers (especially in the areas of group dynamics, attitude formation and value clarification) and lack of enforcement of mandatory state laws concerning the teaching of health.

The AAHPER (American Alliance for Health, Physical Education and Recreation) endorses the development of certification programs in health education and urges that states develop health education certification standards requiring separate subject area preparation for health education teachers and that state departments establish health education as an academic subject area.³⁰ The state of Minnesota in a recent move (fall 1976) had revealed that no longer will that state's Department of Public Instruction allow individuals to be certified as both physical educators and health educators via means of a major in physical education. Separate and distinct requirements are now in effect in order for an individual to be certified as a health educator and to teach health in the public schools in Minnesota. However, there was a grandfather clause so the improvement, if any, in the teaching of health will be gradual.

Conclusions

When dealing with the subject of health education it is essential that one recognizes that health education is an academic discipline worthy of the respect and concern which is given to all other significant, academic areas. It is imperative that the teachers of health be qualified and interested in helping their students develop a healthy personality, form feelings and values which underlie a positive self-image and which are foundations for future relationships. The objective, or at least one of them, is

to improve the health of the citizenry through the creation of well-planned programs of health education in the schools. Desirable health practices are the objectives of the total school health program which includes the health education segment. To enable an educated individual to choose positive health behavior based upon facts, knowledge, feelings, attitudes, habits, and needs is the ultimate and to this end the teacher will utilize various techniques and methods combined with a soundly constructed curriculum in health education.^{31, 32}

APPENDIX I

SUBJECT: EDUCATION FOR SURVIVAL

GRADE LEVEL: K

OBJECTIVE: TO HELP THE CHILDREN ACQUIRE CERTAIN INFORMATION AND
DEVELOP CERTAIN CONCEPTS, ATTITUDES, AND BEHAVIOR RELEVANT
TO SAFETY AND FIRST AID.

MAJOR TOPICS

SAFETY EDUCATION

FIRST AID

SURVIVAL EDUCATION

GRADE LEVEL: K

SUBJECT: PHYSICAL HEALTH

OBJECTIVE: TO HELP THE CHILDREN ACQUIRE CERTAIN INFORMATION AND DEVELOP CERTAIN CONCEPTS ATTITUDES, AND BEHAVIOR THAT WILL ASSIST THEM IN UNDERSTANDING AND PROMOTING THEIR TOTAL GROWTH AND DEVELOPMENT AND ASSIST THEM IN DEVELOPING AND USING GOOD HEALTH PRACTICES.

MAJOR TOPICS:

HEALTH STATUS

NUTRITION

SENSORY PERCEPTION

DENTAL HEALTH

DISEASE PREVENTION AND CONTROL

PHYSICAL FITNESS

SUBJECT: SOCIAL HEALTH

OBJECTIVE:

TO HELP THE CHILDREN ACQUIRE CERTAIN INFORMATION AND DEVELOP CERTAIN CONCEPTS, ATTITUDES, AND BEHAVIOR THAT WILL ASSIST THEM IN ESTABLISHING THE PRACTICE OF ASKING BEFORE DOING SOME THINGS WHICH INVOLVE HARMFUL SUBSTANCES.

MAJOR TOPIC: ALCOHOL AND OTHER DRUGS

SUBJECT: MENTAL HEALTH

OBJECTIVE: TO HELP THE CHILDREN ACQUIRE CERTAIN INFORMATION AND DEVELOP CERTAIN CONCEPTS, ATTITUDES, AND BEHAVIOR THAT WILL ASSIST THEM IN FEELING GOOD ABOUT THEMSELVES AND OTHERS.

MAJOR TOPICS:

PERSONALITY DEVELOPMENT, MENTAL HEALTH AND HUMAN RELATIONS

FAMILY LIFE EDUCATION AND HUMAN SEXUALITY

SUBJECT: ENVIRONMENTAL AND COMMUNITY HEALTH

OBJECTIVE: TO HELP THE CHILDREN ACQUIRE CERTAIN INFORMATION AND DEVELOP CERTAIN CONCEPTS, ATTITUDES, AND BEHAVIOR THAT WILL ASSIST THEM IN MAINTAINING A CLEAN, NEAT, SAFE, AND QUIET ENVIRONMENT IN AND AROUND THEIR HOME AND SCHOOL.

MAJOR TOPICS:

ENVIRONMENTAL AND PUBLIC HEALTH

ECOLOGY AND EPIDEMIOLOGY

CONSUMER HEALTH

HEALTH CAREERS

FIRST GRADE MAJOR TOPICS:

A MEANING OF BEING HEALTHY
A HAPPY DAY

MENTAL AND SOCIAL HEALTH
GETTING ALONG WITH OTHERS

GROOMING
YOU ARE GROWING

SAFETY
BEING CAREFUL

DISEASES AND DISORDERS
COLDS

NUTRITION
YOUR MEALS AND YOUR TEETH

ENVIRONMENTAL HEALTH
YOUR SCHOOL

HEALTH INFORMATION, PRODUCTS, AND SERVICES
ASK FIRST

A MEANING OF BEING HEALTHY

A HAPPY DAY
KEEPING CLEAN
EATING MEALS
BEING CAREFUL
PLAYING
RESTING

MENTAL AND SOCIAL HEALTH

GETTING ALONG WITH OTHERS
MEANING OF GETTING ALONG WITH OTHERS
HELPING OTHERS
COURTESY
SHARING
PLAYING WITH OTHERS
THINKING OF OTHERS

GROOMING

YOU ARE GROWING
WAYS OF GROWING
GENERAL PHYSICAL GROWTH
NEW TEETH AND GROWTH
INDEPENDENCE AND GROWTH
SOCIAL GROWTH
SHAPING GROWTH

SAFETY

BEING CAREFUL
SAFETY GOING TO AND FROM SCHOOL
SAFETY AND CROSSING STREETS
SAFETY AT A BUS STOP
SAFETY ON A BUS
SAFETY AND STRANGERS

DISEASES AND DISORDERS

COLDS
SYMPTOMS OF COLDS
CAUSES OF COLDS
SPREADING OF COLDS
KEEPING COLDS FROM OTHERS
GETTING WELL FROM COLDS
STAYING WELL

NUTRITION

YOUR MEALS AND YOUR TEETH
IMPORTANCE OF MEALS
IMPORTANCE OF TEETH
HOW TO BRUSH TEETH
HOW TO FLOSS TEETH

ENVIRONMENTAL HEALTH

YOUR SCHOOL
PEOPLE WHO KEEP A SCHOOL ENVIRONMENT CLEAN
KEEPING A SCHOOL ENVIRONMENT CLEAN
KEEPING A SCHOOL ENVIRONMENT QUIET
KEEPING A SCHOOL WASHROOM CLEAN
KEEPING A PLAYGROUND SAFE

HEALTH INFORMATION, PRODUCTS, AND SERVICES

ASK FIRST
IMPORTANCE OF ASKING ABOUT SUBSTANCES
SAFE AND UNSAFE PRODUCTS AND FOODS
MEDICINE
TAKING THINGS FROM STRANGERS

SECOND GRADE MAJOR TOPICS:

MEANING OF BEING HEALTHY
WAYS TO KEEP HEALTHY

MENTAL AND SOCIAL HEALTH
FAMILIES

GROWTH AND DEVELOPMENT
GROWING

SAFETY
BEING SAFE ALL THE TIME

DISEASES AND DISORDERS
YOUR EYES AND YOUR EARS

NUTRITION
EATING MANY FOODS

ENVIRONMENTAL HEALTH
YOUR HOME

HEALTH INFORMATION, PRODUCTS, AND SERVICES
SAFETY AND MEDICINE

MEANING OF BEING HEALTHY

WAYS TO KEEP HEALTHY

SEEING THE DOCTOR

RESTING

EATING GOOD MEALS

KEEPING CLEAN

DRESSING TO SUIT THE WEATHER

KEEPING SAFE

MENTAL AND SOCIAL HEALTH

FAMILIES

HOW FAMILIES ARE ALIKE AND DIFFERENT

HOW FAMILIES GROW IN SIZE

WAYS OF GETTING ALONG WITH FAMILY MEMBERS

GROWTH AND DEVELOPMENT

GROWING

CONTINUOUS GROWTH

VISIBLE GROWTH

UNSEEN GROWTH

MENTAL GROWTH

SOCIAL GROWTH

DOCTOR'S HELP REGARDING GROWTH

HELPING ONESELF GROW

SAFETY

BEING SAFE ALL THE TIME

MEANING OF SAFETY

SAFETY ON THE PLAYGROUND

SAFETY AND BICYCLES

SAFETY AND SKATING

SAFETY AROUND ANIMALS

SAFETY IN THE HOME

SAFETY AROUND WATER

SAFETY AT SCHOOL

DISEASES AND DISORDERS

YOUR EYES AND YOUR EARS

SEEING AND SAFETY

HOW EYES ARE PROTECTED

TAKING CARE OF ONE'S EYES

HELP PROVIDED BY EYE DOCTORS

HEARING AND SAFETY

TAKING CARE OF ONE'S EARS

HELP PROVIDED BY EAR DOCTORS

NUTRITION

EATING MANY FOODS

FOODS IN GENERAL

FOUR GROUPS OF FOODS

EXAMPLES OF NUTRITIOUS MEALS

ENVIRONMENTAL HEALTH

YOUR HOME

HOME ENVIRONMENT

SAFETY IN HOME ENVIRONMENT

NOISE POLLUTION IN HOME

CLEAN AND ATTRACTIVE HOME ENVIRONMENT

WATER CONSERVATION IN HOME

ELECTRICAL POWER CONSERVATION IN HOME

HEALTH INFORMATION, PRODUCTS, AND SERVICES

SAFETY AND MEDICINE

USING MEDICINE WHEN ILL OR HURT

MEDICINES

DOCTORS AND PHARMACISTS

READING LABELS ON MEDICINES

SAFE USE OF MEDICINE

THIRD GRADE MAJOR TOPICS

MEANING OF BEING HEALTHY
A HEALTHY YOU

MENTAL AND SOCIAL HEALTH
YOUR FEELINGS

GROWTH AND DEVELOPMENT
YOUR GROWING BODY

SAFETY
KEEPING YOURSELF AND OTHERS SAFE

DISEASES AND DISORDERS
ILLNESSES

NUTRITION
FOOD AND YOU

ENVIRONMENTAL HEALTH
YOUR NEIGHBORHOOD ENVIRONMENT

HEALTH INFORMATION, PRODUCTS, AND SERVICES
HEALTH AND SAFETY WORKERS

DRUGS
DRUG FACTS/KNOWLEDGE

MEANING OF BEING HEALTHY

A HEALTHY YOU

WHAT MAKES UP HEALTH?

WHAT CAN HELP PEOPLE BE HEALTHY?

HEALTH CHOICES

HEALTH PRACTICES

MENTAL AND SOCIAL HEALTH

YOUR FEELINGS

WHY PEOPLE HAVE FEELINGS

A CLOSER LOOK AT FEELINGS

FEELINGS AND HEALTH

UNDERSTANDING OTHER PEOPLE'S FEELINGS

GROWTH AND DEVELOPMENT

YOUR GROWING BODY

SOME THINGS A GROWING BODY CAN DO
(NERVOUS AND SKELETAL SYSTEMS)

CHANGES IN A GROWING BODY

SOME PROBLEMS IN GROWING

SAFETY

KEEPING YOURSELF AND OTHERS SAFE

SAFETY IN AND AROUND CARS

SAFETY AND BICYCLES

SAFETY FROM FIRES

SAFETY IN AND AROUND WATER

DISEASES AND DISORDERS

ILLNESSES

EFFECTS OF BEING ILL

SOME ILLNESSES CAUSED BY GERMS

SOME ILLNESSES NOT CAUSED BY GERMS

FIGHTING ILLNESSES

THIRD GRADE

NUTRITION

FOOD AND YOU

WHY PEOPLE EAT

WHAT HAPPENS TO THE FOOD PEOPLE EAT
(DIGESTIVE SYSTEM)

FOUR FOOD GROUPS

MAKING CHOICES ABOUT FOOD

PROBLEMS HAVING TO DO WITH EATING

ENVIRONMENTAL HEALTH

YOUR NEIGHBORHOOD ENVIRONMENT

PARTS OF A NEIGHBORHOOD

IMPORTANCE OF A NEIGHBORHOOD

TAKING CARE OF A NEIGHBORHOOD

HEALTH INFORMATION, PRODUCTS, AND SERVICES

HEALTH AND SAFETY WORKERS

WHAT HEALTH WORKERS AND SAFETY WORKERS DO

SOME HEALTH WORKERS

SOME SAFETY WORKERS

DRUGS

DRUG KNOWLEDGE

USES OF DRUGS

SOME MEDICINES

OTHER THINGS WITH DRUGS IN THEM

MAKING CHOICES ABOUT DRUGS

FOURTH GRADE MAJOR TOPICS

MEANING OF BEING HEALTHY
GOOD HEALTH PRACTICES

MENTAL AND SOCIAL HEALTH
BEING HAPPY WITH YOURSELF AND OTHERS

GROWTH AND DEVELOPMENT
GROWING AND CHANGING

SAFETY
PREVENTING ACCIDENTS

DISEASES AND DISORDERS
FIGHTING DISEASES

NUTRITION
EATING FOR GOOD HEALTH

ENVIRONMENTAL HEALTH
WATER AND HEALTH

HEALTH INFORMATION, PRODUCTS, AND SERVICES
HEALTH AIDS

DEPENDENCY-CAUSING SUBSTANCES
DRUG USE AND ABUSE

HEALTH ORGANIZATIONS
OUR HEALTH DEPARTMENT

MEANING OF BEING HEALTHY
GOOD HEALTH PRACTICES
HOW GOOD HEALTH PRACTICES CAN HELP PEOPLE
HOW TO BUILD GOOD HEALTH PRACTICES

MENTAL AND SOCIAL HEALTH
BEING HAPPY WITH YOURSELF AND OTHERS
BEING HAPPY WITH ONESELF
BEING HAPPY WITH OTHERS
GETTING ALONG WITH OTHERS

GROWTH AND DEVELOPMENT
GROWING AND CHANGING
HOW THE BODY GROWS
(CIRCULATORY SYSTEM)
GROWING BONES
(SKELETAL SYSTEM)
GROWING MUSCLES
(MUSCULAR SYSTEM)
OTHER WAYS OF GROWING
RATES OF GROWING
HELPING ONESELF GROW

SAFETY
PREVENTING ACCIDENTS
WHERE AND WHY ACCIDENTS HAPPEN
PREVENTING ACCIDENTS AT HOME
PREVENTING ACCIDENTS AT SCHOOL
PREVENTING ACCIDENTS IN STREETS
FIRST AID FOR CUTS, BURNS, AND BRUISES

DISEASES AND DISORDERS
FIGHTING DISEASES
PROBLEMS OF BEING ILL
CAUSES OF COMMUNICABLE DISEASES
DEFENSES AGAINST COMMUNICABLE DISEASES
PROTECTING ONESELF AND OTHERS AGAINST
COMMUNICABLE DISEASES

FOURTH GRADE

NUTRITION
EATING FOR GOOD HEALTH

WHY PEOPLE EAT
FOODS PEOPLE NEED
GOOD EATING PRACTICES
CARING FOR TEETH AND GUMS

ENVIRONMENTAL HEALTH
WATER AND HEALTH
WHY PEOPLE NEED WATER
KEEPING WATER FROM BEING WASTED
PROBLEMS OF WATER POLLUTION
HOW WATER BECOMES POLLUTED
FIGHTING WATER POLLUTION

HEALTH INFORMATION, PRODUCTS, AND SERVICES
HEALTH AIDS
FINDING HEALTH AIDS
CHOOSING HEALTH AIDS
USING HEALTH AIDS

DEPENDENCY-CAUSING SUBSTANCES
DRUG USE AND ABUSE
VALUE OF DRUGS
ABUSE OF DRUGS
FIGHTING DRUG ABUSE

HEALTH ORGANIZATIONS
YOUR HEALTH DEPARTMENT
WORK OF A HEALTH DEPARTMENT
HEALTH DEPARTMENT WORKERS

FIFTH GRADE MAJOR TOPICS

A MEANING OF BEING HEALTHY
GOOD HEALTH ATTITUDES

MENTAL AND SOCIAL HEALTH
YOU AND YOUR FEELINGS

GROWTH AND DEVELOPMENT
THINGS THAT CONTROL YOUR GROWING

SAFETY
SAFETY AT PLAY

DISEASES AND DISORDERS
CHRONIC DISEASES

NUTRITION
FOOD AND YOUR HEALTH

ENVIRONMENTAL HEALTH
AIR AND YOUR HEALTH

HEALTH INFORMATION, PRODUCTS, AND SERVICES
HEALTH INFORMATION

DEPENDENCY-CAUSING SUBSTANCES
TOBACCO AND ALCOHOL

HEALTH ORGANIZATIONS
HEALTH LAWS

A MEANING OF BEING HEALTHY

GOOD HEALTH ATTITUDES

- WHY PEOPLE NEED GOOD HEALTH ATTITUDES
- HOW TO BUILD GOOD HEALTH ATTITUDES

MENTAL AND SOCIAL HEALTH

YOU AND YOUR FEELINGS

- KINDS OF FEELINGS
- HOW DIFFERENT PEOPLE'S FEELINGS ARE DIFFERENT
- IMPORTANCE OF FEELINGS
- CAUSES OF FEELINGS
- KEEPING PLEASANT FEELINGS

GROWTH AND DEVELOPMENT

THINGS THAT CONTROL YOUR GROWING

- GLANDS AND GROWING (ENDOCRINE SYSTEM)
- PEOPLE AND GROWING
- OTHER THINGS THAT HAVE TO DO WITH GROWING
- DIFFERENCES AND PROBLEMS IN GROWING

SAFETY

SAFETY AT PLAY

- SAFETY IN ACTIVE GAMES
- SAFETY IN OR NEAR WATER
- SAFETY ON OUTINGS
- SOME THINGS TO DO AND NOT TO DO FOR
- FIRST AID FOR CUTS, PUNCTURES,
- BROKEN BONES, AND CHOKING

DISEASES AND DISORDERS

CHRONIC DISEASES

- LEADING CHRONIC DISEASES
- THINGS THAT CAUSE CHRONIC DISEASES
- CONTROLLING CHRONIC DISEASES

NUTRITION

FOOD AND YOUR HEALTH

- WHAT FOOD DOES FOR PEOPLE
- HOW FOOD IS DIGESTED (DIGESTIVE SYSTEM)
- HOW NUTRIENTS GET TO BODY CELLS (CIRCULATORY SYSTEM)
- FOODS FOR GOOD HEALTH

FIFTH GRADE

ENVIRONMENTAL HEALTH

AIR AND YOUR HEALTH

- WHY PEOPLE NEED AIR
- HOW OXYGEN GETS TO BODY CELLS
- THE PROBLEM OF AIR POLLUTION
- FIGHTING AIR POLLUTION

HEALTH INFORMATION, PRODUCTS, AND SERVICES

HEALTH INFORMATION

- PEOPLE'S NEED FOR HEALTH INFORMATION
- WRONG IDEAS ABOUT HEALTH
- GETTING GOOD HEALTH INFORMATION

DEPENDENCY-CAUSING SUBSTANCES

TOBACCO AND ALCOHOL

- TOBACCO
- ALSOHOL

HEALTH ORGANIZATIONS

HEALTH LAWS

- NEED FOR HEALTH LAWS
- NEED FOR LAWS TO PROTECT THE ENVIRONMENT
- MAKING HEALTH LAWS WORK

SIXTH GRADE MAJOR TOPICS

A MEANING OF BEING HEALTHY
YOUR HEALTH KNOWLEDGE

MENTAL AND SOCIAL HEALTH
LIVING WITH STRESS

GROWTH AND DEVELOPMENT
GROWTH DURING ADOLESCENCE

SAFETY
SAFETY DURING EMERGENCIES

DISEASES AND DISORDERS
DISORDERS OF THE NERVOUS SYSTEM AND SENSES

NUTRITION
NUTRIENTS AND YOUR HEALTH

ENVIRONMENTAL HEALTH
POLLUTION AND YOUR HEALTH

HEALTH INFORMATION, PRODUCTS, AND SERVICES
HEALTH PRODUCTS AND SERVICES

DEPENDENCY-CAUSING SUBSTANCES
THE ABUSE OF DRUGS

HEALTH ORGANIZATIONS
PROTECTING PEOPLE'S HEALTH

A MEANING OF BEING HEALTHY

YOUR HEALTH KNOWLEDGE

PEOPLE'S NEED FOR HEALTH KNOWLEDGE
KINDS OF HEALTH KNOWLEDGE PEOPLE NEED
ADDING TO HEALTH KNOWLEDGE

MENTAL AND SOCIAL HEALTH

LIVING WITH STRESS
CAUSES OF STRESS
HOW STRESS MAY BE HELPFUL
HOW STRESS MAY BE HARMFUL
WHAT TO DO ABOUT HARMFUL STRESS

GROWTH AND DEVELOPMENT

GROWTH DURING ADOLESCENCE

PHYSICAL GROWTH DURING ADOLESCENCE
(ENDOCRINE SYSTEM)
EMOTIONAL GROWTH DURING ADOLESCENCE
SOCIAL GROWTH DURING ADOLESCENCE

SAFETY

SAFETY DURING EMERGENCIES

SAFETY DURING FIRES
SAFETY DURING STORMS
SAFETY DURING EARTHQUAKES AND FLOODS
FIRST AID FOR WEAKENED OR STOPPED
BREATHING, FROSTBITE, AND ELECTRIC SHOCK

DISEASES AND DISORDERS

DISORDERS OF THE NERVOUS SYSTEM AND SENSES

IMPORTANCE OF A HEALTHY NERVOUS SYSTEM
IMPORTANCE OF HEALTHY SENSE ORGANS
CONTROLLING DISORDERS OF THE NERVOUS SYSTEM
CONTROLLING DISORDERS OF THE SENSE ORGANS

SIXTH GRADE

NUTRITION

NUTRIENTS AND YOUR HEALTH

FOODS AND THEIR NUTRIENTS
A BALANCED DIET
PREPARING FOODS FOR EATING
WRONG IDEAS ABOUT FOODS

ENVIRONMENTAL HEALTH

POLLUTION AND YOUR HEALTH
PESTICIDES
RADIATION
NOISE
SOLID WASTES

HEALTH INFORMATION, PRODUCTS, AND SERVICES

HEALTH PRODUCTS AND SERVICES
IMPORTANT HEALTH PRODUCTS AND SERVICES
QUACKS AND QUACKERY
CHOOSING HEALTH PRODUCTS AND SERVICES

DEPENDENCY-CAUSING SUBSTANCES

THE ABUSE OF DRUGS

WHY PEOPLE ABUSE DRUGS
DEPRESSANTS
STIMULANTS
HALLUCINOGENS AND OTHER SUBSTANCES
CONTROLLING DRUG ABUSE

HEALTH ORGANIZATIONS

PROTECTING PEOPLE'S HEALTH

THE JOB OF PROTECTING HEALTH
LOCAL HEALTH DEPARTMENTS
STATE HEALTH DEPARTMENTS
THE UNITED STATES PUBLIC HEALTH SERVICE
COOPERATION FOR WORLD HEALTH

APPENDIX II

THREE KEY CONCEPTS

- (1) Growing and Developing
- (2) Interacting
- (3) Decision Making

RELATIONSHIP OF TEN CONCEPTS (supporting the "three key concepts")

. . . Growth and development influences and is influenced by the structure and functioning of the individual.

. . . Growing and developing follows a predictable sequence, yet is unique for each individual.

. . . Protection and promotion of health is an individual, community, and international responsibility.

. . . The potential for hazards and accidents exists, whatever the environment.

. . . There are reciprocal relationships involving man, disease, and environment.

. . . The family serves to perpetuate man and to fulfill certain health needs.

. . . Personal health practices are affected by a complexity of forces, often conflicting.

. . . Utilization of health information, products, and services is guided by values and perceptions.

. . . Use of substances that modify mood and behavior arises from a variety of motivations.

. . . Food selection and eating patterns are determined by physical, social, mental, economic, and cultural factors.

(RELATIONSHIP OF THE THREE KEY CONCEPTS AND THE TEN CONCEPTS IN A SUPPORT ROLE)

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