ABSTRACT
                Intended to assist district and school curriculum
developers, this report offers clarification of the relationships
among 12 state goals of education using information obtained through
a survey of Department of Education staff and representatives of
professional associations. Defined as the goals of education are the
areas of communication skills, mathematics, science and technology,
citizenship, arts and humanities, analytical thinking, family living,
work, health, environment, self-esteem, and understanding others.
Nearly half the report is devoted to summarizing the relationships of
each goal to the 11 others. A numerical comparison of the perceived
relatedness among goals is followed by a listing of closely related
goals to be addressed simultaneously in developing curricula. A
chapter on the relationship of courses to goal attainment identifies
the degree to which various traditional courses contribute to
achieving each of the goals. Other goal attainment factors such as
management procedures, school policies, teaching methods, and
community involvement are enumerated, and specific contributing
factors are listed for each goal. Brief descriptions of selected
planned courses are provided as models of integration of two or more
goals. (MJL)

The Interrelationship of Pennsylvania's Quality Goals of Education

Pennsylvania Department of Education

ACKNOWLEDGEMENTS

5

Table of Contents

Introduction
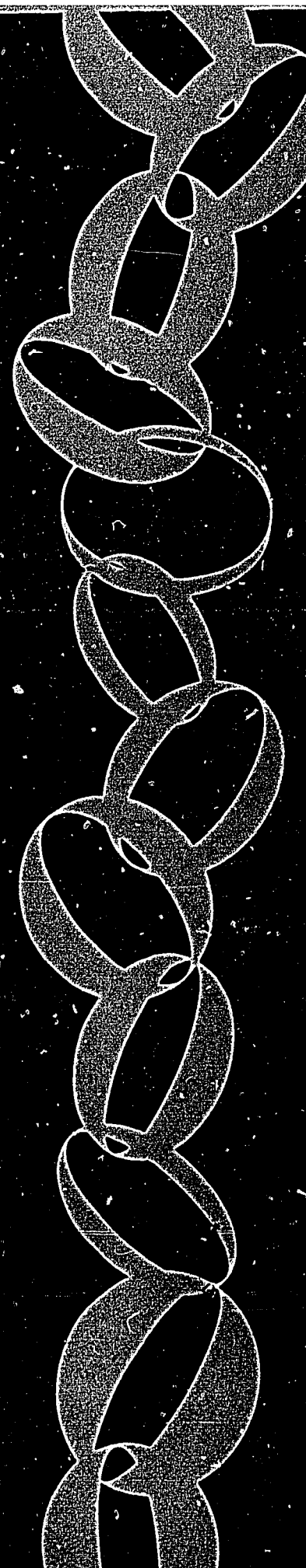
The Constitution of the Commonwealth of Pennsylvania states, "The General Assembly shall provide for the maintenance and support of a thorough and efficient system of public education to serve the needs of the Commonwealth." Although school districts have the primary responsibility for the attainment of the Twelve Goals of Quality Education, the state has the responsibility to provide leadership and assistance to the schools. In light of this charge the information contained herein is offered to school districts in an attempt to clarify and show a relationship among the Twelve Goals of Quality Education. The information may be used by school district personnel in their continuous curriculum development activities.

This publication is designed to assist school personnel in general curriculum development and improvement. Also, it may be used as a tool in the development of Long-Range Plans which should prove to be valuable. It will assist curriculum leaders and teachers to analyze and clarify the Twelve Goals of Quality Education, relate them to courses being taught and assist in the integration of two or more goals as planned courses are developed for use in classrooms.

The information is offered in both narrative and numerical form in order to give the reader different viewpoints. The data was gathered through a survey of Department of Education staff and representatives of various professional associations.

The document attempts to identify programs in selected school districts that integrate two or more goals in a planned course. Obviously, there are many of these throughout the school districts of the state.

The ultimate purpose of this document is to clarify the goals and show the relationships that will assist school district personnel in the ongoing task of curriculum development and/or Long-Range Planning.

7

Part 1

Goal Interrelationships
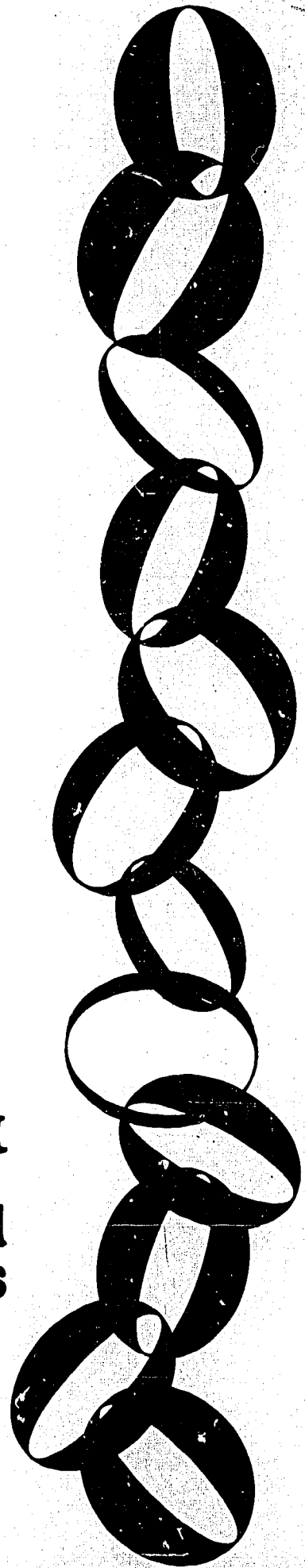
PART I.

GOAL INTERRELATIONSHIPS

Each of the Twelve Goals of Quality Education is interrelated to the
other goals in varying degrees. In order to assist curriculum directors, long
range planning coordinators, administrators, teachers and community members to
understand these direct and/or subtle relationships, the following narrative
comparisons have been developed. The information in this section has been
prepared in a narrative format for the purpose of aiding school personnel to
get a "feel" for each goal as it relates to the other goals, as well as provide
a basis for integrating two or more goals into a single planned course.

Each goal is listed with the other eleven goal comparisons directly
following. For purposes of clarity, there is some repetition in the listings.
For example, the relationship of the Communication Skills Goal to the Mathematics
Goal will appear under each of the two goals as they are listed. This redundancy
is necessary in order to eliminate the need to refer back and forth among the
pages. This same format is used for all of the goals.

Mathematics

Because mathematics has a unique language of words and symbols with its own syntax, communication skills are basic to the learning and application of mathematics. Applications include creating and interpreting mathematical problems, utilizing information sources, disseminating information, understanding and appreciating the visual and auditory application of mathematics concepts.

Science Technology

Communication skills are essential for identifying and analyzing problems, searching related literature, describing experimental results and reporting scientific findings.

Citizenship

Communication skills are vehicles for social interaction. In order to come to an understanding of and ability to make informed judgements regarding political, economic, and historical issues, one must be able to listen and read critically. To participate fully as a citizen one must be able to speak and write effectively as well.

Arts and Humanities

In arts and humanities education communication skills are fundamental to facilitate perception, interpret attitudes and values and enable critical responses. Arts education extends beyond cognitive and verbal skills. The whole realm of symbol coding and decoding is central to experiences in the arts as well as the humanities. Humanities education, including the study of foreign languages and cultures, rhetoric, history, religion and philosophy depend upon the skills of listening, speaking, reading and writing.

Analytical Thinking

Communication skills are essential for gathering information. Through the application of logical, critical and creative thinking to information, one is able to make decisions, solve problems and achieve understanding.

Family Living

Communication skills are the basic tools for developing, assessing, and managing talents and resources. Effective consumerism requires knowledgeable use of information sources and mastery of oral and written skills. To function within the family and society, one must develop and maintain interpersonal relation skills which promote positive community interaction and serve to communicate personal needs and goals.

10

Work

The mastery of communication skills is essential for finding, obtaining and holding a job. Interpersonal relations rely heavily on sensitive, accurate communications among and between workers and management. Interviewing skills and vocabulary as well as listening and speaking skills enhance a person's ability to obtain employment.

Health

Medical science is continually developing knowledge related to the prevention and treatment of health related problems. Communication skills are essential for describing symptoms and explaining problems related to our personal health as well as communicating current knowledge and practices related to promoting and maintaining physical and mental health.

Environment

Effective applications of communication skills are essential for the identification of environmental problems and the implementation of solutions to problems in both the scientific and political arenas.

Self-Esteem

The ability to express oneself effectively in speech and writing is valuable in helping students gain in self-understanding and a feeling of self-worth. Personal beliefs and adaptability to change are influenced by the ability to comprehend the written and spoken word.

Understanding Others

Communication skills, language, and literature are essential for understanding others. Communication skills can serve to eliminate many misunderstandings that occur between people with different values or different cultures. Through the study of languages and literature, students learn to understand and empathize with others. Language provides opportunities for cultural and cross-cultural understandings necessary for positive interpersonal relations. Literature depicts persons in all types of situations and assists us in our understanding of the world about us and the worlds beyond us.

Communication Skills

Because mathematics has a unique language of words and symbols with its own syntax, communication skills are basic to the learning and application of mathematics. Applications include creating and interpreting mathematical problems, utilizing information sources, disseminating information, understanding and appreciating the visual and auditory application of mathematics concepts.

Science and Technology

Mathematics, especially measurement, is the "language" of science and technology. Science and technology constantly deal with the total range of mathematics and the appreciation of science and technology requires the application of mathematical skills and concepts.

Citizenship

The use of mathematical skills to anlayze, interpret and display data enhances the development of responsible citizenship. The application of mathematics is essential to the study and understanding of economic trends as they relate to effective citizenship. Elementary or basic mathematics skills are essential in order to function as a contributing member of society.

Arts and Humanities

Elements of the arts (in music, meter and time; in dance, space and energy; in art, size and proportion; in theater, space and cadence) help students to explore spatial and quantitative relationships with symbols drawn from mathematical concepts. The interrelationships are most evident in reasoning, problem solving and creative solutions.

Analytical Thinking

Creative, logical and critical thinking applied to quantitative and spatial concepts is basic to learning and applying mathematical concepts and skills.

Family Living

Consumer skills involving time and money management for efficient operation of a home and the wise use of leisure time require mathematics knowledge and skills. Mathematical abilities enable the consumer to make intelligent decisions.

Work

Mathematical knowledge and skills are basic for entry level employability in most occupations. They are also important for building and maintaining skills for career advancement in a technological society.

Health

Mathematics knowledge and skills are necessary in physical education, safety and first aid and personal and family health. The range of applications extends from simple mathematical computations to complex procedures such as: (1) scoring in selected sports, determining batting averages and team ratings; (2) using metric geometry as the basis for design and layout of sports and recreational areas; and (3) statistical analysis to calculate percent of lean body mass, pulse rate, and blood pressure, in the identification of health risk factors.

Environment

Measurement and mathematical analyses are an integral part of environmental education. Since much of environmental study relates to the sciences, mathematics becomes the language and basic method of recording, analyzing and reporting information.

Self-Esteem

Success in mathematics can lead to the enhancement of self-esteem. Within a wide range of possible mathematical applications, students can achieve levels of success that develops self-confidence.

Understanding Others

- Mathematics is a man-made invention; mathematics is constantly being invented and extended by individuals and groups worldwide. Mathematical ideas and the language of mathematics extends beyond cultural boundaries. Mathematics scholars of diverse cultures must cooperate and respect contributions from various sources. The knowledge and skills of mathematics are used to clarify conditions and trends in society. The analysis of charts and graphs is particularly relevant to understanding.

Communication Skills

Communication skills are essential for identifying and analyzing problems, searching related literature, describing experimental results and reporting scientific findings.

Mathematics

Mathematics, especially measurement, is the "language" of science and technology. Science and technology constantly deal with the total range of mathematics and the appreciation of science and technology requires the application of mathematical skills and concepts.

Citizenship

Decisions on the use of technology are most often made upon the basis of political or economic alternatives. For decisions to be rational, they must be based upon a working knowledge of the history and facts of science and technology; for them to be equitable, they must respect individual rights.

Arts and Humanities

Science, technology, and the arts are in constant interface. Many historical figures such as Leonardo DaVinci were both artists and scientists. Technical processes continue to play a greater role in the arts whether they are evident in video equipment, lazer light shows, or multi-tracked, synthesized, sound recordings. Likewise, artists, eager for new tools for self-expression, use technology to create new products that report on the human condition and remind society of its responsibility to the environment-natural and human made. Intellectual and attitudinal explorations associated with the arts and sciences overlap, interrelate, and allow students to work in creative ways.

Analytical Thinking

Science and technology require the skills of analytical thinking such as: (1) information management; (2) logical, critical and creative thinking and; (3) the ability to utilize problem solving and decision making techniques.

Family Living

Our technical world requires a knowledge of science and technology. The impact upon individual and family life styles are most evident in the areas of consumer goods and services, mental and physical health practices and resources.

Work

Science and technology is a fundamental area for pre-employment exploration and entry levels in an increasing number of careers. In this regard, instruction should also convey how technological change will affect careers and personal lifestyles. Science, engineering and employment in technical fields are important parts of the world of work.

Health

Decisions related to mental and physical health practices should be based upon accurate scientific findings. Effective health care is dependent upon scientific knowledge supported by modern technology.

Environment

Environmental education is the humanistic applications of science and technology to preserve, maintain and enhance the quality of our surroundings.

Self-Esteem

The ability to effectively adapt to the scientific and technological changes may enhance individual self-esteem. Within a wide range of scientific and technological applications, students can find a level of achievement that leads to self-confidence.

Understanding Others

The use of scientific and technological processes may enhance understanding of cultural and individual needs and differences. Advances in science and technology may serve to unite, rather than to fragment, society. Therefore, interpersonal skills may become increasingly more important in tomorrow's highly scientific and technical world.

CITIZENSHIP

Communication Skills

Communication skills are vehicles for social interaction. In order to come to an understanding of and ability to make informed judgement regarding political, economic, and historical issues, one must be able to listen and read critically. To participate fully as a citizen one must be able to speak and write effectively as well.

Mathematics

The use of mathematical skills to analyze, interpret and display data enhances the development of responsible citizenship. The application of mathematics is essential to the study and understanding of economic trends as they relate to effective citizenship. Elementary or basic mathematics skills are essential in order to function as a contributing member of society.

Science and Technology

Decisions on the use of technology are most often made upon the basis of political or economic alternatives. For decisions to be rational, they must be based upon a working knowledge of the history and facts of science and technology; for them to be equitable, they must respect individual rights.

Arts and Humanities

Within the context of a democratic and pluralistic society, individual rights and responsibilities associated with citizenship are manifest in the development of artistic expression. The importance of the arts and humanities within the context of historical description adds an essential element to the study of human development. A powerful tool of history is the residue to human accomplishments - artifacts. These provide the study of human development with a positive and humanizing element.

Analytical Thinking

Essential components of citizenship education in today's society are analysis and interpretation of political, economic and social issues. The skills of information management (from a variety of diverse sources) logical thinking and decision making are critical to effective participation in our society.

Family Living

The major bridges between citizenship and family living are in the areas of economics and individual rights and responsibilities. Citizenship enables the family to understand its role in asserting and changing various regulations, rights and responsibilities imposed by various agencies within society. Many of the attitudes developed within the context of the family will influence the socialization of children as well as their attitudes toward citizenship.

16

Work

Understanding one's rights and responsibilities and a system of economics in society and the work place is critical. This involves understanding our economic systems, how our society creates employment and the place of labor unions in this scheme, including the historical perspective of the development of our society, division of labor and other related concerns.

Health

Understanding one's rights and responsibilities is important if individuals are to act as responsible citizens in health related matters. Historical evidence provides us with a source of information to aid current societal decisions regarding health and safety. These decisions may result in rules and laws that regulate, prevent or control disease and/or drug and alcohol abuse.

Environment

Each citizen is responsible for maintaining the quality of life in a balanced environment. This involves an understanding of the interrelationships and interdependence of natural and human systems in the development of personal attitudes and values.

Self-Esteem

Citizen's rights and responsibilities and the participation involved in democratic systems are tied to self-esteem/self-confidence. Much of civic action rests upon value decisions and a sense of self is critical of the process. Self-esteem and citizenship have a reciprocal relationship to the extent that training in democratic citizenship gives one a feeling of full partnership and participation in human society. Such training will contribute to the enhancement of self-esteem.

Understanding Others

Citizenship and understanding others have a direct relationship within the field of social studies. To understand history or economic and political issues, one must have the cultural components relating to this goal. It is difficult to conceive of citizenship in the United States without a fair share of "Understanding Others." The bridges between citizenship and understanding others are in the areas of one's rights and responsibilities and histories. Many of the values and attitudes necessary for responsible citizenship are found in the knowledge and appreciation of different cultures.

17

Communication Skills

In arts and humanities education communication skills are fundamental to facilitate perception, interpret attitudes and values and enable critical responses. Arts education extends beyond cognitive and verbal skills. The whole realm of symbol coding and decoding is central to experiences in the arts as well as the humanities. Humanities education, including the study of foreign languages and cultures, rhetoric, history, religion and philosophy depend upon the skills of listening, speaking, reading and writing.

Mathematics

Elements of the arts (in music, meter and time; in dance, space and energy; in art, size and proportion; in theater, space and cadence) help students to explore spatial and quantitative relationships with symbols drawn from mathematical concepts. The interrelationships are most evident in reason_ng, problem solving and creative solutions.

Science and Technology

Science, technology, and the arts are in constant interface. Many historical figures such as Leonardo DaVinci were both artists and scientists. Technical processes continue to play a greater role in the arts whether they are evident in video equipment, lazer light shows, or multi-tracked, synthesized, sound recordings. Likewise, artists, eager for new tools for self-expression, use technology to create new products that report on the human condition and remind society of its responsibility to the environment-natural and human made. Intellectual and attitudinal explorations associated with the arts and sciences overlap, interrelate, and allow students to work in creative ways.

Citizenship

Within the context of a democratic and pluralistic society, individual rights and responsibilities associated with citizenship are manifest in the development of artistic expression. The importance of the arts and humanities within the context of historical description adds an essential element to the study of human development. A powerful tool of history is the residue of human accomplishments - artifacts. These provide the study of human development with a positive and humanizing element.

Analytical Thinking

Thinking is unique to homo-sapiens. The humanities, including language, rhetoric, literature, history, religion, and philosophy, require logical, creative, and critical thinking skills. Artists draw heavily upon such thinking skills as they strive to engage the mind via metaphor, symbols, and design-order.

Family Living

Knowledge of the arts and humanities will help to heighten one's apprecia- tion of the ways that individuals can and do share responsibilities. As evidenced by the purchase of home entertainment centers, the greater emphasis on clothing styles, the abundance of new reading materials, the arts and humanities permeate all facets of family living. Because arts activities can involve the immediate family, as well as the extended family, and because the arts generally reflect

current trends and fads, they can be the ideal vehicle for exchanging ideas and feelings. Knowledge of the arts and humanities provides more opportunities for improving the quality of family life.

Work

This goal area, like all those that deal with academic disciplines and skills, represents and provides basic exploratory experiences in terms of possible career or occupational options. At advanced levels of instruction, the arts, in particular, provide opportunities for developing a life perspective that should seek to enrich the individual's existence beyond the work place. In some cases, the arts provide for fulfilling alternative careers. The arts and humanities are exemplary of productive endeavor.

Health

Sports, games and dance are art forms that have been and continue to be a part of all cultures. They are frequently reflected in art and literature. The arts and humanities relate to health most effectively within the realm of mental and emotional well-being. Also, gross and fine motor control as well as creative/emotional expression are important elements of arts programs. Arts activities are often used as basic instruments of therapy and rehabilitation.

Environment

The realm of aesthetic concern in environmental education points to an obvious and basic relationship to the arts and humanities. Perceiving natural and man-made environments through sight and sound relates to how one is made alert and more sensitive to what is pleasing, useful, and life sustaining. Human beings, as makers and users of environments, utilize basic tenets of arts and humanities education as well as environmental education.

Self-Esteem

Self-esteem has a high correlation with arts and humanities. The realization of some area of creative ability in one's self will enhance a feeling of self worth and give outlet to the conflicting drives and desires that inhibit self-acceptance. Arts experiences of a personal and responsive (audience) nature depend greatly upon positive self-images and require a process of engaging individual experiences with developed or emerging personal points of view.

Understanding Others

The arts and humanities are built upon knowledge and appreciation of cultural diversity, including individual differences and accomplishments. Feelings, values and viewpoints of others in various time frames can be explored in depth through the arts. The arts and humanities relate to world-wide accomplishments and demonstrate the interdependence of human beings. Such interdependence can be demonstrated in dramatic ways such as: Musical ensembles, theatre troupes, dance troupes and philosophical discourse.

19

ANALYTICAL THINKING

Communication Skills

Communication skills are essential for gathering information. Through the application of logical, critical and creative thinking to information, one is able to make decisions, solve problems and achieve understanding.

Mathematics

Creative, logical and critical thinking applied to quantitative and spatial concepts is basic to learning and applying mathematical concepts and skills.

Science and Technology

Science and technology require the skills of analytical thinking such as: (1) information management; (2) logical, critical and creative thinking and; (3) the ability to utilize problem solving and decision making techniques.

Citizenship

Essential components of citizenship education in today's society are analysis and interpretation of political, economic and social issues. The skills of information management (from a variety of diverse sources) logical thinking and decision making are critical to effective participation in our society.

Arts and Humanities

Thinking is unique to homo-sapiens. The humanities, including language, rhetoric, literature, history, religion, and philosophy, require logical, creative, and critical thinking skills. Artists draw heavily upon such thinking skills as they strive to engage the mind via metaphor, symbols, and straight forward design-order.

Family Living

Effective personal and family living requires the skills of information management, logical thinking, decision making and problem solving. One should be able to perceive and analyze wholesome practices in interpersonal relations, with family members and with groups diverse in background, values and beliefs.

Work

Thinking is a fundamental correlative to the development of career planning skills and is essential for holding a job. Career decision making requires both logical and critical thinking and information management skills. In addition, career planning involves the finding and utilizing of information and the transferring of skills, knowledge and abilities across occupations.

Health

In seeking health services, consumers must be prepared to analyze their needs and make decisions concerning the multitude of services and products available. Logical and critical thinking as well as information management are essential for analyzing these alternatives. Problem solving skills are necessary to maintain health and physical well-being. These skills are essential to and can be developed through participation in individual and team sports and games.

Environment

Environmental decisions depend upon the anlaysis of data. In order to maintain the quality of life in a balanced environment, students should develop skills for information management, logical thinking, problem solving and decision-making.

Self-Esteem

Self-esteem is directly related to successful accomplishment. Through the ability to think logically, make effective decisions and solve problems, students learn to cope with educational and personal challenges and thus develop a sense of accomplishment and self-esteem.

Understanding Others

Analytical thinking skills are essential for understanding interdependent relationships among diverse peoples and are effective weapons for countering the biases nurtured through propaganda and stereotyping. These skills are necessary to understand the values and life styles of others.

FAMILY LIVING

Communication Skills

Communication skills are the basic tools for developing, assessing, and managing talents and resources. Effective consumerism requires knowledgeable us : of information sources and mastery of oral and written skills. To function within the family and society, one must develop and maintain interpersonal relation skills which promote positive community interaction and serve to communicate personal needs and goals.

Mathematics

Consumer skills involving time and money management for efficient operation of a home and the wise use of leisure time require mathematics knowledge and skills. Mathematical abilities enable the consumer to make intelligent decisions.

Science and Technology

Our technical world requires a knowledge of science and technology. The impact upon individual and family life styles are most evident in the areas of consumer goods and services, mental and physical health practices and resources.

Citizenship

The major bridges between citizenship and family living are in the areas of economics and individual rights and responsibilities. Citizenship enables the family to understand its role in asserting and changing various regulations, rights and responsibilities imposed by various agencies within society. Many of the attitudes developed within the context of the family will influence the socialization of children as well as their attitudes toward citizenship.

Arts and Humanities

Knowledge of the arts and humanities will help to heighten one's appreciation of the ways that individuals can and do share responsibilities. As evidenced by the purchase of home entertainment centers, the greater emphasis on clothing styles, the abundance of new reading materials, the arts and humanities permeate all facets of family living. Because arts activities can involve the immediate family, as well as the extended family, and because the arts generally reflect current trends and fads, they can be the ideal vehicle for exchanging ideas and feelings. Knowledge of the arts and humanities provides more opportunities for improving the quality of family life.

Analytical Thinking

Effective personal and family living requires the skills of information management, logical thinking, decision making and problem solving. One should be able to perceive and analyze wholesome practices in interpersonal relations, with family members and with groups diverse in background, values and beliefs.

- 16 -

22

Work

Pupils need to understand how the choice of career will affect the family structure. One's lifestyle may be dependent upon the type of work in which one is engaged. Work affects the family's income, leisure and degree of community involvement. The work goal aids in helping the family to identify and understand its role in providing basic sustenance. Also, pupils need to understand how their family can be helpful in the career planning process.

Health

A knowledge of human growth and development and nutrition contributes to effective family living. Families need to be selective when purchasing health related products and to become more involved when considering the impact of health policies on the individual as well as society. One needs to understand the role of the family in health maintenance and prevention of illness and to identify regulatory aspects of consumer health, public health and safety.

Environment

Environmental maintenance is necessary for successful family living. A knowledge of how forces within the environment as well as what is included in the general matrix of environmental education are essentials for family living. Developing positive attitudes toward maintaining a healthy environment can be a major factor in family life. Conservation of resources and reasonable use of skills in solving environmental problems are important elements of family living.

Self-Esteem

The development of skills in personal and family relationships may be definite prerequisites for success in interpersonal relationships so necessary to acceptance and a positive self image. Self-esteem provides a foundation for furthering self improvement in interpersonal relationships and consumer skills. It aids one to become more confident as a communicating family member and as a consumer.

Understanding Others

The need to understand others is a crucial factor in determining the quality of family life in order to achieve positive family interpersonal relationships. Attitudes toward others begin early and have an important impact upon one's reactions to the similarities and differences of others. As a community member and a consumer, one will be able to understand the various roles people play.

23

Communication Skills

The mastery of communication skills is essential for finding, obtaining and holding a job. Interpersonal relations rely heavily on sensitive, accurate communications among and between workers and management. Interviewing skills and vocabulary as well as listening and speaking skills enhance a person's ability to obtain employment.

Mathematics

Mathematical knowledge and skills are basic for entry level employability in most occupations. They are also important for building and maintaining skills for career advancement in a technological society.

Science and Technology

Science and technology is a fundamental area for pre-employment exploration and entry levels in an increasing number of careers. In this regard, instruction should also convey how technological change will affect careers and personal lifestyles. Science, engineering and employment in technical fields are important parts of the world of work.

Citizenship

Understanding one's rights and responsibilities and a system of economics in society and the work place is critical. This involves understanding our economic systems, how our society creates employment and the place of labor unions in this scheme, including the historical perspective of the development of our society, division of labor and other related concerns.

Arts and Humanities

This goal area, like all those that deal with academic disciplines and skills, represents and provides basic exploratory experiences in terms of possible career or occupational options. At advanced levels of instruction, the arts, in particular, provide opportunities for developing a life perspective that should seek to enrich the individual's existence beyond the work place. In some cases, the arts provide for fulfilling alternative careers. The arts and humanities are exemplary of productive endeavor.

Analytical Thinking

Thinking is a fundamental correlative to the development of career planning skills and is essential for holding a job. Career decision making requires both logical and critical thinking and information management skills. In addition, career planning involves the finding and utilizing of information and the transferring of skills, knowledge and abilities across occupations.

Family Living

Pupils need to understand how the choice of career will affect the family structure. One's lifestyle may be dependent upon the type of work in which one is engaged. Work affects the family's income, leisure and degree of community involvement. The work goal aids in helping the family to identify and understand its role in providing basic sustenance. Also, pupils need to understand how their family can be helpful in the career planning process.

Health

The importance of good health, regular attendance and other similar factors is essential to understanding what is expected on the job. Productivity of the workforce in any area of employment is directly related to the health status of workers. Good safety habits, on and off the job, must be developed and stressed constantly. Pupils should become aware that a significant portion of the nation's workers are involved in occupations related to health care.

Environment

The environment goal represents an area for career exploration. An understanding of work environments and their importance to the individual should be emphasized in the process of career planning and choice. Many rewarding careers are found in the area of environmental science.

Self-Esteem

Generally, one's career is a prime factor in establishing personal identity. Self-esteem is a fundamental correlate to career awareness in understanding oneself in terms of personality, interests, abilities and career aspirations. An awareness of the dignity and worth of one's chosen work and a sense of personal success in the pursuit of a career in that area, as well as success in the implementation of one's life career plan, will contribute to a higher feeling of self-esteem.

Understanding Others

Success on the job and in one's career rests heavily on the ability to get along with other people. This involves understanding relationships between employee and employer, between workers and the importance of teamwork. The knowledge of the differences caused by varied types of employment and socio-economic factors is critical to understanding others. Pupils should understand the limiting consequences of stereotypical thinking in the process of career decision making with respect to sex and race.

25

Communication Skills

Medical science is continually developing knowledge related to the prevention and treatment of health related problems. Communication skills are essential for describing symptoms and explaining problems related to our personal health as well as for communicating current knowledge and practice related to promoting and maintaining physical and mental health.

Mathematics

Mathematics knowledge and skills are necessary in physical education, safety and first aid and personal and family health. The range of applications extends from simple mathematical computations to complex procedures such as: (1) scoring in selected sports, determining batting averages and team ratings; (2) using metric geometry as the basis for design and layout of sports and recreational areas; and (3) statistical analysis to calculate percent of lean body mass, pulse rate, and blood pressure, in the identification of health risk factors.

Science and Technology

Decisions related to mental and physical health practices should be based upon accurate scientific findings. Effective health care is dependent upon scientific knowledge supported by modern technology.

Citizenship

Understanding one's rights and responsibilities is important if individuals are to act as responsible citizens in health related matters. Historical evidence provides us with a source of information to aid current societal decisions regarding health and safety. These decisions may result in rules and laws that regulate, prevent or control disease and/or drug and alcohol abuse.

Arts and Humanities

Sports, games and dance are art forms that have been and continue to be a part of all cultures. They are frequently reflected in art and literature. The arts and humanities relate to health most effectively within the realm of mental and emotional well-being. Also, gross and fine motor control, as well as creative/emotional expression, are important elements of arts programs. Arts activities are often used as basic instruments of therapy and rehabilitation.

Analytical Thinking

In seeking health services, consumers must be prepared to analyze their needs and make decisions concerning the multitude of services and products available. Logical and critical thinking as well as information management are essential for analyzing these alternatives. Problem solving skills are necessary to maintain health and physical well-being. These skills are essential to and can be developed through participation in individual and team sports and games.

Family Living

A knowledge of human growth and development and nutrition contributes to effective family living. Families need to be selective when purchasing health related products and to become more involved when considering the impact of health policies on the individual as well as society. One needs to understand the role of the family in health maintenance and prevention of illness and to identify regulatory aspects of consumer health, public health and safety.

Work

The importance of good health, regular attendance and other similar factors is essential to understanding what is expected on the job. Productivity of the workforce in any area of employment is directly related to the health status of workers. Good safety habits, on and off the job, must be developed and stressed constantly. Pupils should become aware that a significant portion of the nation's workers are involved in occupations related to health care.

Environment

Environmental conditions play an integral part in health maintenance. The quality of the environment as related to issues such as air quality, pollution control, population control and other environmental factors impact directly upon both individual and societal health.

Self-Esteem

The successful maintenance of physical and emotional well-being and appearance contributes to one's view of self-worth. The ability to perform both physically and mentally contributes to the development of self-esteem.

Understanding Others

Mental and physical health and a well-balanced life have much to contribute to satisfactory relationships among people. Many health problems are global issues and can only be resolved through cooperative efforts that are dependent on diverse groups understanding each other. Sports and games can provide a common ground through which people of diverse social and political backgrounds learn to appreciate and understand each other. On the individual level, we must provide opportunities for people with diverse physical and mental capabilities.

27

Communication Skills

Effective applications of communication skills are essential for the identification of environmental problems and the implementation of solutions to problems in both the scientific and political arenas.

Mathematics

Measurement and mathematical analyses are an integral part of environmental education. Since much of environmental study relates to the sciences, mathematics becomes the language and basic method of recording, analyzing and reporting information.

Science and Technology

Environmental education is the humanistic applications of science and technology to preserve, maintain and enhance the quality of our surroundings.

Citizenship

Each citizen is responsible for maintaining the quality of life in a balanced environment. This involves an understanding of the interrelationships and interdependence of natural and human systems in the development of personal attitudes and values.

Arts and Humanities

The realm of aesthetic concern in environmental education points to an obvious and basic relationship to the arts and humanities. Perceiving natural and man-made environments through sight and sound relates to how one is made alert and more sensitive to what is pleasing, useful, and life sustaining. Human beings, as makers and users of environments, utilize basic tenets of arts and humanities education as well as environmental education.

Analytical Thinking

Environmental decisions depend upon the analysis of data. In order to maintain the quality of life in a balanced environment, students should develop skills for information management, logical thinking, problem solving and decision-making.

Family Living

Environmental maintenance is necessary for successful family living. A knowledge of how forces within the environment as well as what is included in the general matrix of environmental education are essentials for family living. Developing positive attitudes toward maintaining a health environment can be a major factor in family life. Conservation of resources and reasonable use of skills in solving environmental problems are important elements of family living.

28

Work

The environment goal represents an area for career exploration. An understanding of work environments and their importance to the individual should be emphasized in the process of career planning and choice. Many rewarding careers are found in the area of environmental science.

Health

Environmental conditions play an integral part in health maintenance. The quality of the environment as related to issues such as air quality, pollution control, population control and other environmental factors impact directly upon both individual and societal health.

Self-Esteem

Successful living and the ability to adapt to the environment will contribute to a person's feeling of well-being and result in a positive self-image. Self-esteem is necessary for the successful adaptation to and improvement of the environment.

Understanding Others

Environmental comparisons contribute to the understanding of other peoples and cultures. Cultures develop to assure survival in the environment. In order to understand people of other cultures, it is essential to understand their environment and environmental concerns.

29

Communication Skills

The ability to express oneself effectively in speech and writing is valuable in helping students gain in self-understanding and a feeling of self-worth. Personal beliefs and adaptability to change are influenced by the ability to comprehend the written and spoken word.

Mathematics

Success in mathematics can lead to the enhancement of self-esteem. Within a wide range of possible mathematical applications, students can achieve levels of success that develops self-confidence.

Science and Technology

The ability to effectively adapt to scientific and technological changes may enhance individual self-esteem. Within a wide range of scientific and technological applications, students can find a level of achievement that leads to self-confidence.

Citizenship

Citizen's rights and responsibilities and the participation involved in democratic systems are tied to self-esteem/self-confidence. Much of civic action rests upon value decisions and a sense of self is critical to the process. Self-esteem and citizenship have a reciprocal relationship to the extent that training in democratic citizenship gives one a feeling of full partnership and participation in human society. Such training will contribute to the enhancement of self-esteem.

Arts and Humanities

Self-esteem has a high correlation with arts and humanities. The realization of some area of creative ability in one's self will enhance a feeling of self worth and give outlet to the conflicting drives and desires that inhibit self-acceptance. Arts experiences of a personal and responsive (audience) nature depend greatly upon positive self-images and require a process of engaging individual experiences with developed or emerging personal points of view.

Analytical Thinking

Self-esteem is directly related to successful accomplishment. Through the ability to think logically, make effective decisions and solve problems, students learn to cope with educational and personal challenges and thus develop a sense of accomplishment and self-esteem.

Family Living

The development of skills in personal and family relationships may be definite prerequisities for success in interpersonal relationships so necessary to acceptance and a positive self image. Self-esteem provides a foundation for furthering self improvement in interpersonal relationships and consumer skills. It aids one to become more confident as a communicating family member and as a consumer.

Work

Generally, one's career is a prime factor in establishing personal identity. Self-esteem is a fundamental correlate to career awareness in understanding oneself in terms of personality, interests, abilities and career aspirations. An awareness of the dignity and worth of one's chosen work and a sense of personal success in the pursuit of a career in that area, as well as success in the implementation of one's life career plan, will contribute to a higher feeling of self-esteem.

Health

The successful maintenance of physical and emotional well-being and appearance contributes to one's view of self-worth. The ability to perform both physically and mentally contributes to the development of self-esteem.

Environment

Successful living and the ability to adapt to the environment will contribute to a person's feeling of well-being and result in a positive self-image. Self-esteem is necessary for the successful adaptation to and the improvement of the environment.

Understanding Others

In order to understand others, one must first develop a sense of self-worth. An understanding of our human commonality and the richness of our diversity will enhance our self-esteem. An understanding of how others view us and an application of how their cultural values influence their judgment contributes to self-acceptance.

31

Communication Skills

Communication skills, language, and literature are essential for understanding others. Communication skills can serve to eliminate many misunderstandings that occur between people with different values or different cultures. Through the study of languages and literature, students learn to understand and empathize with others. Language provides opportunities for cultural and cross-cultural understandings necessary for positive interpersonal relations. Literature depicts persons in all types of situations and assists us in our understanding of the world about us and the worlds beyond us.

Mathematics

Mathematics is a man-made invention; mathematics is constantly being invented and extended by individuals and groups worldwide. Mathematical ideas and the language of mathematics extend beyond cultural boundaries. Mathematics scholars of diverse cultures must cooperate and respect contributions from various sources. The knowledge and skills of mathematics are used to clarify conditions and trends in society. The analysis of charts and graphs is particularly relevant to understanding.

Science and Technology

The use of scientific and technological processes may enhance understanding of cultural and individual needs and differences. Advances in science and technology may serve to unite, rather than to fragment, society. Therefore, interpersonal skills may become increasingly more important in tomorrow's highly scientific and technical world.

Citizenship

Citizenship and understanding others have a direct relationship within the field of social studies. To understand history or economic and political issues, one must have the cultural components relating to this goal. It is difficult to conceive of citizenship in the United States without a fair share of "Understanding Others." The bridges between citizenship and understanding others are in the areas of one's rights and responsibilities and histories.

Arts and Humanities

The arts and humanities are built upon knowledge and appreciation of cultural diversity, including individual differences and accomplishments. Feelings, values and viewpoints of others in various time frames can be explored in depth through the arts. The arts and humanities relate to world-wide accomplishments and demonstrate the interdependence of human beings. Such interdependence can be demonstrated in dramatic ways such as: musical ensembles, theatre troupes, dance troupes and philosophical discourse.

Analytical Thinking

Analytical thinking skills are essential for understanding interdependent relationships among diverse peoples and are effective weapons for countering the biases nurtured through propaganda and stereotyping. These skills are necessary to understand the values and life styles of others.

Family Living

The need to understand others is a crucial factor in determining the quality of family life in order to achieve positive family interpersonal relationships. Attitudes toward others begin early and have an important impact upon one's reaction to the similarities and differences of others. As a community member and a consumer, one will be able to understand the various roles people play.

Work

Success on the job and in one's career rests heavily on the ability to get along with other people. This involves understanding relationships between employee and employer, between workers and the importance of teamwork. The knowledge of the differences caused by varied types of employment and socio-economic factors is critical to understanding others. Pupils should understand the limiting consequences of stereotypical thinking in the process of career decision making with respect to sex and race.

Health

Mental and physical health and a well-balanced life have much to contribute to satisfactory relationships among people. Many health problems are global issues and can only be resolved through cooperative efforts that are dependent on diverse groups understanding each other. Sports and games can provide a common ground through which people of diverse social and political backgrounds learn to appreciate and understand each other. On the individual level, we must provide opportunities for people with diverse physical and mental capabilities.

Environment

Environmental comparisions contribute to the understanding of other peoples and cultures. Cultures develop to assure survival in the environment. In order to understand people of other cultures, it is essential to understand their environment and environmental concerns.

Self-Esteem

In order to understand others, one must first develop a sense of self-worth. An understanding of our human commonality and the richness of our diversity will enhance our self-esteem. An understanding of how others view us and an application of how their cultural values influence their judgement contribute to self-acceptance.

33

Part 2
Numerical Interrelationships
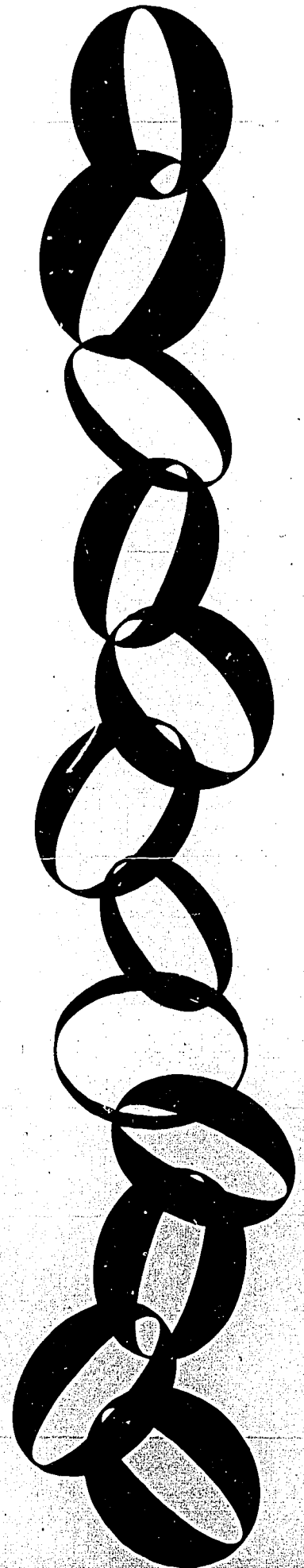
NUMERICAL INTERRELATIONSHIPS

Part I elaborated on interrelationships among the goals. Each goal was
compared to other goals in a narrative format which provided insight into each
goal from various perspectives. Part II now analyzes the relationship among
the goals from a numerical viewpoint. The statistical (numerical) importance
of a goal to all other goals is shown through the following matrix chart (Table
I) and gives a starting reference in terms of integrating goals. The data was
drawn from information received from staff of the Pennsylvania Department of
Education, representatives of the Pennsylvania Association of Supervision and
Curriculum Development, the Pennsylvania Association of School Administrators,
the Pennsylvania Association of Elementary School Principals and selected
teachers of the Commonwealth. The matrix should not be considered as conclusive
evidence of goal relationships, but it does give some evidence of those goals
that have a high correlation of compatibility. The numerical interrelationships
are signified from a rating of five to a rating of one (5-strongly interrelated,
1-little or no interrelationship).

ANALYSIS

The numerical interrelationships are highlighted with the cross hatched
blocks if the numerical rating was 4.5 or above. This is done to afford the
reader the opportunity to pick out those goals that have a high degree of
interrelationship. However, other goals also show a high numerical relationship
such as:

        Communication Skills to Citizenship - 4.1
        Communication Skills to Arts & Humanities - 4.0
        Communication Skills to Analytical Thinking - 4.1
        Communication Skills to Self-Esteem - 4.0
        Science & Technology to Environmental Education - 4.3
        Citizenship to Family Living - 4.1
        Citizenship to Understanding Others - 4.4
        Analytical Thinking to Work - 4.0
        Family Living to Health - 4.0
        Family Living to Self-Esteem - 4.2
        Family Living to Understanding Others 4.2
        Work to Self-Esteem - 4.3
        Environmental Education to Understanding Others - 4.3

There were a few goals that did not show a high interrelationship rating
2.0 or above. These are:

        Mathematics to Health - 1.8
        Mathematics to Understanding Others - 2.0
        Arts and Humanities to Health - 2.1

CONCLUSIONS AND RECOMMENDATIONS

It is obvious from the chart data that certain goals should be addressed simultaneously when developing programs and planned courses.

The numerical ratings are intended as guides and should not prevent curriculum strategies that integrate goals regardless of their numerical relationship.

36

TABLE I

NUMERICAL INTERRELATIONSHIP
AMONG GOALS

	MATHEMATICS	SCIENCE AND TECHNOLOGY	CITIZENSHIP	ARTS AND HUMANITIES	ANALYTICAL THINKING	FAMILY LIVING	WORK	HEALTH	ENVIRONMENTAL EDUCATION	SELF-ESTEEM	UNDERSTANDING OTHERS
COMMUNICATION SKILLS	2.8	3.8	4.1	4	4.1	3.2	3.8	2.5	3	4	4.7
MATHEMATICS		4.9	2.5	2.8	4.8	3.2	3.8	1.8	2.9	3.1	2
SCIENCE AND TECHNOLOGY			2.8	2.5	4.6	3	3.8	3.4	4.3	3.1	3
CITIZENSHIP				3.2	3.5	4.1	3.6	2.8	3.7	3.8	4.4
ARTS AND HUMANITIES					3.3	2.7	3	2.1	2.7	3.5	3.8
ANALYTICAL THINKING						3.4	4	3	3.5	3.2	3.3
FAMILY LIVING							3.8	4	3.1	4.2	4.2
WORK								3.4	3	4.3	3.8
HEALTH									3.5	4.5	3.3
ENVIRONMENTAL EDUCATION										3	4.3
SELF-ESTEEM											3.3

38

Part 3

Closely Related Goals

39
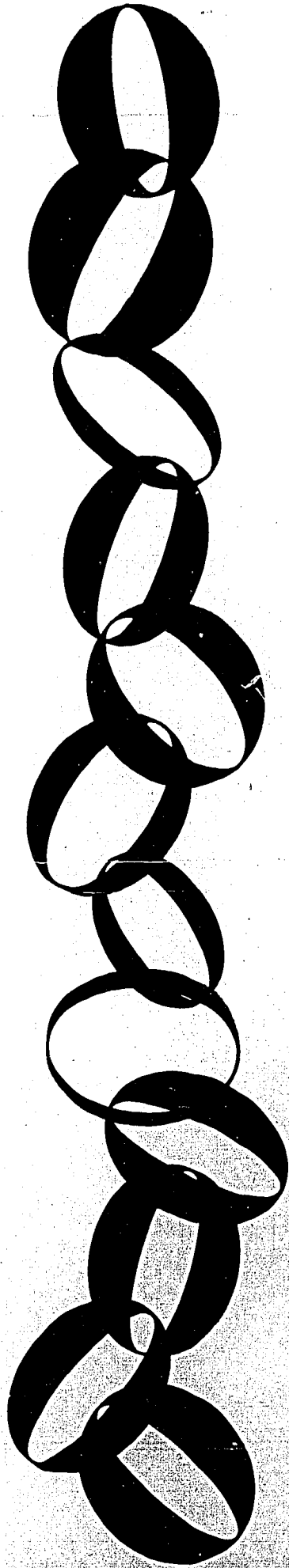
PART III

CLOSELY RELATED GOALS

Obviously, as shown in Part II, there is an interrelationship among the twelve goals. However, most goals have a more definite and/or closer relationship to certain goals as opposed to others. This section attempts to identify each goal with there other goals that are very closely aligned. The information is offered to school personnel in an attempt to help identify curriculum strategies and subject offerings that will lead to goal proficiency through a planned course or program. The section may be of assistance with specific Long Range Planning items. There are certain goals that have a general relationship to all other goals such as: (1) Work Goal and (2) Self-Esteem. These are signified and school district personnel should keep this fact in mind when thinking of integrating goals into planned courses.

The related goals are listed in preferential order. However, curriculum planners should keep in mind that all three goals are closely related to the listed goal.

Communication Skills:

1. Arts and Humanities
2. Analytical Thinking
3. Understanding Others

Mathematics:

1. Analytical Thinking
2. Science and Technology
3. Work

Science and Technology:

1. Mathematics
2. Analytical Thinking
3. Communication Skills

Citizenship:

1. Understanding Others
2. Analytical Thinking
3. Communication Skills

Arts and Humanities

1. Communication Skills
2. Understanding Others
3. Self-Esteem

Analytical Thinking

1. Science and Technology
2. Communication Skills
3. Mathematics

Family Living:

1. Citizenship
2. Communication Skills
3. Health

Work:*

1. Self-Esteem
2. Analytical Thinking
3. Understanding Others

Health:

1. Science and Technology
2. Family Living
3. Environmental Education

Environmental Education:

1. Science and Technology
2. Arts and Humanities
3. Citizenship

*The work goal tends to be more generic and appears to have a close relationship to all goals in terms of the career that may be of interest to an individual.

40

Self-Esteem:**

    1.   Communication Skills
    2.   Arts and Humanities
    3.   Health
          Understanding Others

Understanding Others:

    1.   Self-Esteem
    2.   Citizenship
    3.   Analytical Thinking
          Arts and Humanities

**Achievement in any goal area should increase the liklihood of improved self-esteem.

41

Part 4

Relationship of Courses to Goal Attainment

42
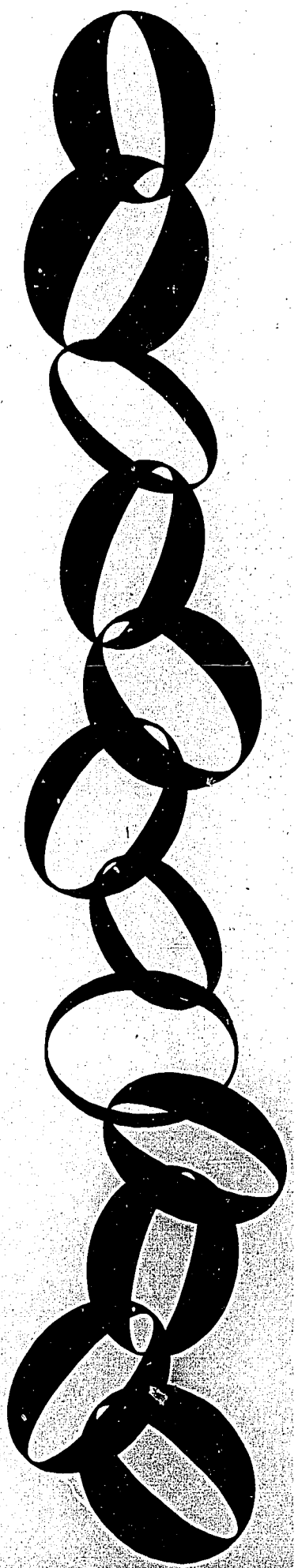
PART IV

RELATIONSHIP OF COURSES TO GOAL ATTAINMENT

There are numerous factors and/or variables that are important to student attainment of goals. Some of these are obvious and will be elaborated on in Part V (Attainment Factors). However, one of the basic vehicles for attaining goals is still the traditional course work that a student takes during a school career (K-12). Certain courses have a tremendous overlap with certain goals, while others tend to be more specific to the attainment of a single goal.

Part IV (Table II and Table III) attempts to identify the courses that are of primary and secondary importance when pursuing goal achievement. As mentioned above, course work is not the only means of students attaining goals but it still remains the most common form of imparting knowledge and goal assimilation. The numerical relationships are signified from a rating of 5 to a rating of 1 (5-strongly related, 1-little or no relationships).

ANALYSIS

The high relationship of courses to goals is highlighted with cross hatched blocks if the numerical relationship was 4.5 or above. A course/goal rating of 2.0 or less signifies that the course does not contribute greatly to the attainment of that specific goal.

TABLE II
NUMERICAL RELATIONSHIP OF COURSES TO GOAL ATTAINMENT
(ELEMENTARY)

GOAL \ SUBJECT →	LANGUAGE ARTS	MATHEMATICS	SCIENCE	SOCIAL STUDIES	ART	MUSIC	HEALTH	PHYSICAL ED.	SAFETY ED.	ENVIRONMENTAL EDUCATION	FOREIGN LANG.	CONSUMER ED.
COMMUNICATION SKILLS	5	2.8	3.5	4.8	3.8	3.8	2.8	2.8	3.8	3.8	5	
MATHEMATICS	3.8	5	4.8	2.8	3.8	3	2.3	2	2	2.5	1.3	
SCIENCE AND TECHNOLOGY	3.5	5	5	4	2.3	2.3	4.3	3.8	4.3	5	1.8	
CITIZENSHIP	3.2	2	2.2	5	2	2	2.8	2	2.8	3.2	2.2	
ARTS AND HUMANITIES	3.4	3.2	2.2	3.2	5	5	2.2	2.6	1.4	3	3.2	
ANALYTICAL THINKING	4.2	5	5	4.8	2.8	2.8	3	3	3	3.2	2.6	
FAMILY LIVING	3.5	3.5	4	4	2	2	5	3.5	4.3	3.3	1.3	5
WORK	4.3	4.3	4.3	4.3	2.3	2.3	3.3	3.3	4.3	3	2.8	
HEALTH	3.5	1.8	4.8	3.8	2.8	2	5	5	5	4	1.8	
ENVIRONMENTAL EDUCATION	2.6	2.6	4.2	4.2	2.2	2.2	4.2	2.4	3.4	5	2.2	
SELF-ESTEEM	4.2	3.8	3	4.6	3.6	3.6	4	3.6	2	2	1.4	
UNDERSTANDING OTHERS	4.2	2.4	3.6	5	4	4	3.6	3.6	2	4.2	4	

- 42 -

44

TABLE III
NUMERICAL RELATIONSHIP OF COURSES TO GOAL ATTAINMENT
(SECONDARY)

GOAL \ SUBJECT →	ENGLISH	READING	MATHEMATICS	SCIENCE	SOCIAL STUDIES	ART	MUSIC	HEALTH	PHYSICAL ED.	INDUSTRIAL ARTS	HOMEMAKING	SAFETY ED.	ENVIRONMENTAL ED.	BUSINESS ED.	FOREIGN LANG.	CONSUMER ED.	VOCATIONAL ED.	PSYCHOLOGY	DRAMA/THEATRE
COMMUNICATION SKILLS	5	5	3.5	3.5	4.8	3.8	3.8	2.8	2.8	3.8	3.8	3.5	3.8	4	5	4	4		5
MATHEMATICS	1.5	4	5	5	3.8	3.8	3.8	2.3	2.3	4	3.8	2.3	4	3.8	2.8	4	4		
SCIENCE AND TECHNOLOGY	3.5	5	5	5	4	3	3.8	4.3	4	5	4.3	4.3	5	3.8	4	4.3	5		
CITIZENSHIP	3	4	2	2	5	2.4	2.2	3	3	2.2	2.8	3	3.2	2.4	2.2	4	2.2		
ARTS AND HUMANITIES	5	5	3.2	3	3.2	5	5	2.2	3.4	2.4	2.4	2.2	3	2	2.2	2	2.2	4	5
ANALYTICAL THINKING	5	5	5	5	4.8	3.6	3.6	3	3	3.8	3.8	3	4	3.8	3.4	4	4		
FAMILY LIVING	4.3	4.3	4.3	4	4	2.3	2.3	5	4.3	2.8	4.3	3.5	4	3.3	2.3	4.3	4		
WORK	5	5	5	5	5	2.8	2.8	3	3.8	4.5	3.8	4.3	3.8	4.5	3	4	4.5		
HEALTH	2.8	2.8	2	4.8	3.8	2	1.3	5	5	2.8	4	5	4	2.8	2	4	3.8		
ENVIRONMENTAL EDUCATION	2.6	2.6	2.6	4.2	4.2	2.4	2.4	4.2	3.6	2.2	2.4	3.4	5	2.2	2.2	3.4	2.6		
SELF-ESTEEM	4.2	4.2	3.8	3	4.6	3.6	3.6	4	3.4	3	3	2	2	3.8	3	3	3		
UNDERSTANDING OTHERS	4	4	2	3	5	4	4	3.6	3.8	2.8	3	2	4.2	3.6	4	2	2.8		

- 43 -

Part 5

Other Attainment Factors

PART V

OTHER GOAL ATTAINMENT FACTORS

Part IV addressed courses that are closely related to the attainment of goals. Conversely, this item will deal with other variables and factors that are also important. First, a general list of factors is presented that can be generally applied to the attainment of all goals. Some of the factors deal with teacher strategies in the classroom; while others deal with broader aspects of school operations. The point of this section is to help indicate selected management procedures, school policies, teacher methods and community involvements that have an impact on the attainment of goals and overall school effectiveness. Second, specific factors are listed by goal area that lead to the attainment of that goal.

GENERAL FACTORS

1. High expectations by teachers and administrators.

2. Encouragement of and positive response to student work.

3. Cheerful and relaxed environment in the classroom, library, cafeteria and resource center.

4. Positive and relaxed interpersonal relations among students and between students and teachers.

5. A variety of instructional materials in each classroom.

6. A written curriculum directing instruction and evaluation.

7. Parental encouragement and support of the student, the teachers and the administration.

8. The use of community resources in addition to the normal classroom instruction.

9. Subject should be taught by properly certificated and knowledgeable teachers.

10. Well planned and coordinated programs to address individual differences of students.

11. Adequately scheduled time for classes with a minimum of interruptions in order to provide for sustained effort of students.

12. Teachers should be open and honest with students and should cultivate the ability to share personal experiences.

13. Administrative policies and management decisions should provide an atmosphe of learning for students and professionalism for teachers.

14. Ample opportunities for students to participate in a variety of extra-curricular or interscholastic activities.

15. Stability of instructional staff.

16. An organized plan for school-wide staff development.

17. School-wide program to recognize academic achievement.

18. School-wide policy to maintain order and discipline.

SPECIFIC FACTORS

Communication Skills

. Regular opportunities and experiences in class to speak, read and write.

Mathematics

. Knowledgeable instructors who are enthusiastic about mathematics and believe every student has a mathematical capability.

. Instructional strategies that incorporate the elements of a meaningful learning sequence (concrete-symbolic); relation of mathematical ideas to real world situations.

Science and Technology

. Adequate equipment to each laboratory science.

. Availability of technological aids such as computers.

. A deep commitment of teachers to a process approach and hands-on experimentation.

. Accentuate the importance of scientific advances and their societal impact.

. Emphasis on understanding science as a way of asking questions of the unknown.

Citizenship

. The use of participatory activities such as role playing, simulation, community involvement, mock elections, student projects.

Arts and Humanities

. Community resources should be utilized to optimum advantage. These would include: museums, concert halls, artists, historical sites, records and objects.

. Adequate and well furnished rooms that provide for studio aspects of the arts such as: Pianos, stage, paint ventilation and kilns.

. Library resources that include slides, records, films and cassettes.

Analytical Thinking

. Higher level of questioning that encourages analytical thinking.

. Provide problems that require reasoning, problem solving and creativity in order to reach solutions.

. Encourage students to look beyond surface answers and analyze situations.

Family Living

. Conducive physical environment and adequate equipment.

. Set a high degree of expectations for students as future parents, citizens and workers.

. High degree of parental involvement.

. Attempt to identify common family traits and problems and relate them to individual student needs.

Work

. The total infusion of a career education perspective into all subject areas at all grade levels.

. Establish and use an active local advisory council that will help to coordinate activities and use community resources.

. Establish and equip a career resource center that is accessible to all students.

. Extensive use of business, industry, and labor personnel as local resource people for speakers and field trips.

. A well developed career guidance program related to the curriculum.

Health

. Adequate school health services.

. Healthful school and classroom environment.

. A good school food service program as it relates to nutrition education.

Environmental Education

. Access to an outdoor site.

. Availability of field trips.

. Stress on interaction of science, technology, social studies, society and the environment.

Self-Esteem

. The general school climate should condition the student to view himself/ herself in a positive way.

. Classroom teachers should encourage and recognize student work rather than judging from a negative aspect.

. The guidance staff should focus the school's effort on the personal success of students in order to improve individual confidence and self-esteem.

Understanding Others

. Planned courses that emphasize the cultural, political, economic, and religious backgrounds of people around the world.

. Analysis and emphasis on the factors that make people more alike than different.

. Teacher and/or student exchange programs.

. Role playing and simulation.

52

Part 6

Integrated
Planned Courses
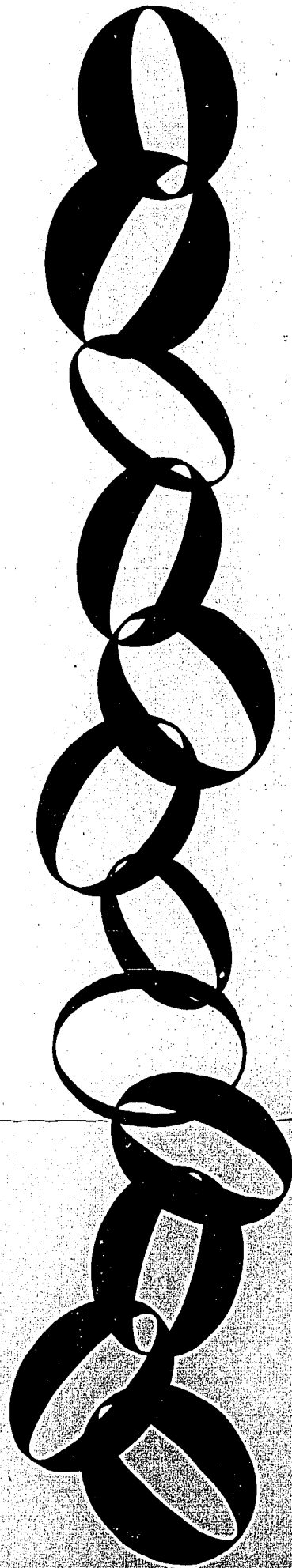
PART VI

SELECTED INTEGRATED PLANNED COURSES

Since 1969, the Pennsylvania Department of Education has emphasized the
development of planned courses using a prescribed format. For purposes of
general curriculum development and Long Range Planning, it is possible and
permissable to integrate two or more Quality Goals of Education into one
integrated planned course. This section identifies a number of school districts
across the Commonwealth where this is happening. Obviously, these are not the
only school districts that have integrated planned courses. However, the
following are believed to be representative. Each listed program (integrated
planned course) is organized by: (1) school district or intermediate unit; (2)
contact preson; (3) goals addressed; (4) planned course title and; (5) a brief
description. If any of the listings appear to be something you can use, please
get in touch with the contact person at the specific school district. Regional
information of this type may be available through your intermediate unit.

1. SCHOOL DISTRICT: Neshaminy
   CONTACT PERSON: John Harvey
   GOALS ADDRESSED:

   a. Citizenship
   b. Self-Esteem
   c. Understanding Others

   PLANNED COURSE TITLE: Citizenship Education
   BRIEF DESCRIPTION: The program is a planned course in citizenship
       education at the elementary level. The strength of this program is
       the integration of these major goals as critical components of the
       instructional plan.

2. SCHOOL DISTRICT: West Mifflin
   CONTACT PERSON: James P. Carr
   GOALS ADDRESSED:

   a. Citizenship
   b. Self-Esteem
   c. Understanding Others
   d. Health
   e. Communication

   PLANNED COURSE TITLE: Community Involvement for Responsible Citizenship
       (CIRC)*.

   BRIEF DESCRIPTION: This is a citizenship program developed for grades one
       through eight that emphasizes the goals listed above. In grades
       seven and eight a special "Language Arts" curriculum is integrated
       into the program.

*Other CIRC programs are operating at Jefferson-Morgan School District, Duquesne
School District and Gateway School District. Materials are available at
Intermediate Unit #3.

3. SCHOOL DISTRICT: Governor Mifflin
   CONTACT PERSON: Neil Haring
   GOALS ADDRESSED:

   a. Arts and Humanities
   b. Communication Skills
   c. Citizenship

   PLANNED COURSE TITLE: Related Arts
   BRIEF DESCRIPTION: The program has a long history (approximately 15 years) of cooperative effort among the teachers of Art, English and Social Studies to integrate their courses.

4. SCHOOL DISTRICT: Central Intermediate Unit; IU #10
   CONTACT PERSON: Shirley Sturtz/Jonnie Ramsey
   GOALS ADDRESSED:

   a. Arts and Humanities
   b. Communication Skills
   c. Mathematics
   d. Work

   PLANNED COURSE TITLE: Integrated Arts
   BRIEF DESCRIPTION: Local artists are used to supplement course work in other subject areas. The teachers cooperate on student exhibits and programs.

5. SCHOOL DISTRICT: Harrisburg City
   CONTACT PERSON: Barbara McGeary
   GOALS ADDRESSED:

   a. Arts and Humantiies
   b. Self-Esteem
   c. Work
   d. Communication Skills

   PLANNED COURSE TITLE: Arts
   BRIEF DESCRIPTION: The program, an effort to use the "magnet concept," integrates basic skills of reading and mathematics into programs that focus upon arts concepts. Emphasis is placed on student self-perceptions and the course work often results in television broadcasts to the community.

6. SCHOOL DISTRICT: Mechanicsburg
   CONTACT PERSON: R. L. Singiser
   GOALS ADDRESSED:

   a. Citizenship
   b. Mathematics
   c. Science

   PLANNED COURSE TITLE: World Cultures: Levels I and II
   BRIEF DESCRIPTION: The program was developed for World Cultures with cross references to desired goals.

7. SCHOOL DISTRICT: Bristol Township
    CONTACT PERSON: Michael Dodds
    GOALS ADDRESSED:

        a. Work
        b. Self-Esteem

    BRIEF DESCRIPTION: This is a well developed K-12 curriculum guide for
        career development.

    Note -   A number of other school districts have developed curriculum
             guides and broad based programs that integrate the work goal
             with other quality goals of education. Some of these are:
             Council Rock S.D., Quakertown S.D., Tunkhannock S.D., New
             Brighton S.D. and the West Shore S.D.

8. SCHOOL DISTRICT: Lancaster City
    CONTACT PERSON: Robert Herr
    GOALS ADDRESSED:

        a. Understanding Others
        b. Science and Technology
        c. Environmental Education

   PLANNED COURSE TITLE: Global Studies
    BRIEF DESCRIPTION: This is a planned course that integrates social
        studies and science at the secondary level.

9. SCHOOL DISTRICT: Lewisburg
    CONTACT PERSON: Don Baumgartner
    GOALS ADDRESSED:

        a. Understanding Others
        b. Communication Skills
        c. Arts and Humanities

    PLANNED COURSE TITLE: Global Issues
    BRIEF DESCRIPTION: This is a semester program at the secondary level. It
        integrates Language Arts and the Social Studies in a course dealing
        with the interpendence of people around the world.
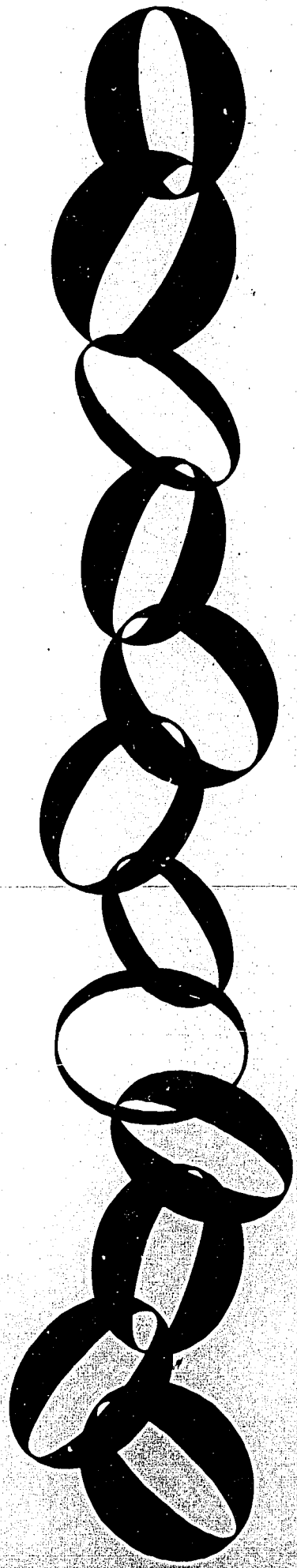
Summary

SUMMARY

The preceding information was developed and is offered to school district personnel in order to bring some order to the question of relationships between and among goals. The publication, although not based on a strict research approach, does give clues to curriculum coordinators, teachers, administrators and parents with respect to which goals have close relationships, which courses are closely tied to the attainment of certain goals and those general and specific factors of methodology, educational environment and school policy that contribute to goal attainment.

The publication clearly points out where strong interrelationships exist between goals. It also points out those course offerings that contribute to the attainment of specific goals. Curriculum planners should be able to utilize this information when developing curriculum programs or Long Range Plans.

The interrelationships stated in Part I and others that the reader may be aware of should contribute greatly to efficient curriculum development and management.

Programs enumerated in Part VI as well as others familiar to the reader can serve as models for the integration of two or more goals into a single planned course.

It is urged that the information in this publication be shared with the instructional staff and others.

58