

FRESHBLOODS

IN EDUCATION

Middle School/Junior High School Theory and Practice



STANWOOD,
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EDITORIAL

This issue of *Thresholds* is concerned with the middle/junior high school. This period of pre-adolescence and early adolescence is very important in terms of developing both cognitive and affective skills, abilities, and knowledge. It is a period of bio-social transition from which will emerge an individual with particular interests, abilities, degrees of motivation and other personality characteristics. Thus, it is important that theory concerning 1) the adolescent years, 2) learning and retention, 3) motivation and achievement, 4) group dynamics, 5) instructional processes, 6) measurement and evaluation, and other pertinent variables be part of the professional preparation of junior high teachers. Teachers and administrators who utilize theory in the planning and implementation of the curriculum will be better able to facilitate the development of the students' positive self concepts and the development of their cognitive and affective skills, abilities and knowledge. An overview of the articles to follow will provide the reader with an advanced organizer of the theory and/or practice elaborated on by each of the authors.

Poetry and art work by junior high students can be seen throughout the issue.

The junior high school can be many things as Humm points out in his article in which he identifies the characteristics of Illinois junior high schools. Data on school size, schedule, curriculum offerings, and length of time devoted to specific subject offerings are presented. The information shows a great similarity of junior high school programs. This is especially true of similar communities.

Lewis points out how some groups wish that the middle/junior high school curriculum would return to the basics. Data are provided that indicate that the K-test scores indicate that there hasn't been the drop in reading scores and that high school reading scores have only leveled off if one considers the reduction of the drop out rate over these past 15 years. He advocated the use of competencies, but maintains that they should be integrated with the functions of the middle/junior high school.

Mackey describes the concept of adolescent alienation as 1) personal incapacity, 2) cultural estrangement, and 3) guidelessness. His article points out the need for professional educators to utilize theory in their daily practice.

Gilmore and Larson provide a brief overview of societal events that support the assertion that there is a need for the school to engage in moral education and value clarification. They suggest a scale for terminal values, which indicated a difference between the student's values and his/her parents'.

Bunt and Armstrong provide a list of 34 computational behavioral objectives and the results of a test measuring these objectives in a junior high school in northern Illinois. The test can be used to assess current curriculum and for diagnostic purposes. Results can be used 1) to provide an individual profile of strengths and weaknesses and 2) to plan for future instruction.

Daniel describes the current program at the John Hope Middle School in Chicago where reading is taught in the subject matter area. Diagnostic testing and grouping by needs is basic to the program.

Udell provides a model for an art curriculum which is conceptual in nature and theoretically sound. The model provides structure and yet allows individual teacher creativity when planning the curriculum.

Lanning advocated the use of social science learning labs in conjunction with the regular curriculum to enhance problem-solving skills and research skills. Students learn to share responsibility and to more precisely verbalize their ideas. In addition to learning cognitive and affective skills, the students will discover a structure to the discipline being studied.

Bradtmueller's article discusses the theory of teaching reading and lists twelve principles of reading. The use of the U.S.S.R. reading technique is a valuable part of the reading program and is gaining acceptance in more and more northern Illinois middle/junior high schools.

Smith suggests that the scientific community views science as a way of thinking, not as a content area. This view has implications for the methods of organization and measurement which are identified and described. Basically, if the schools are to utilize the "new" science curricula that are based upon theory, then the measurement process must be appropriate to the goals of that curriculum.

Bunt offers a model for individualized competency-based instruction that can be used in any subject area that has its terminal objectives specified. Careful inspection of the graph and its explanation will be useful to those interested in remedial work.

Thomas and Vacca have a provocative article dealing with the law and high school students, but there are implications for middle/junior high school professionals.

Hopefully, the information in these articles has provided some reinforcement for what is being done and some ideas that warrant further consideration. The middle/junior high school can be more professional as the staff translates and utilizes more theory into their daily practice.

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THEORY: DOES IT HAVE A VIABLE ROLE IN THE MIDDLE SCHOOL?

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"Don't bother me with theories, I want something that will help me in the classroom."

"Forget what you heard in those education classes, it won't work here in the trenches."

Assertions like the first statement have been heard by many teacher educators and statements similar to the latter are frequently the greetings given the beginning teacher by experienced teachers. Should the educational profession be guided by theory? What is the value of theory? How does theory evolve? Is one person's "theory" as good as another's in our democratic society? Is theory necessary for improvement of instruction and learning?

To a profession, theory is not an individual's opinion or idea. Theory is often the result of the collection, analysis and synthesis of data, formally or informally collected, that describes, explains and has the power to predict outcomes concerning specific phenomena. Thus, theory provides a logical unified framework, which, if used to guide practice, should help teachers to accomplish specifically designed goals. If the implementation of the theory does not effectively and efficiently accomplish the goals, the theoretical model can be modified by the analysis of the data obtained. Hence, theory building is not the result of haphazard trial and error activity. Sound theory can offer the practitioner a consistent basis on which to design, implement, measure, analyze and modify instructional endeavors.

The Middle School and/or the Junior High School has the responsibility to facilitate the bio-social transition of the young adolescent. Although the school's philosophy, policy and curriculum may profess several objectives, i.e., the in-

dividual's 1) social growth, 2) physical maturation and 3) intellectual development, the school's reward system generally values intellectual development over the others. Thus, a theory to promote intellectual development would be an asset to practitioners and is the focus of this paper.

Where can one find a unified theoretical model for the intellectual development of the young adolescent? What would constitute such a model? Could such a model be effective when there are so many types of school districts with differing organizational patterns and individual differences within each school? These are a few of many questions that could be asked, but let us review some assumptions about the goals of education in order to focus our attention.

There has been much written over the past seventy years concerning the role of the school. The prime objectives that head most lists of goals are: 1) the ability to think, 2) effective citizenship and, more recently 3) the development of a positive self-concept. All of these objectives seem desirable ends for each level of the educational system but especially so for the young adolescent.

A review of experimental studies of instruction designed to meet the objective of development of the ability to think revealed that some researchers report a "gut" feeling that the experimental (inquiring) groups achieved instructional objectives more so than control (traditional) groups. But the measuring instruments and statistical analyses generally did not support their "gut" reactions to the research studies. After reviewing several research studies with their inconclusive results, the author sensed a lack of a unified model or theory of instruction that could help the classroom practitioner. There is a need for a theoretical model that would con-

sider 1) individual differences, 2) success experiences to promote a positive self-concept, 3) individual initiative and responsibility and 4) the intellectual development inherent in effective citizenship as an adolescent or an adult.

What would such a model contribute? It would provide for a logical organization of information in order to make valid judgments concerning: 1) curriculum development, 2) instructional procedures, 3) measurement techniques and 4) statistical analyses. Consideration of these components, all of which would be compatible with the nature of our culture and the needs of the pre and early adolescent is necessary to make adequate and effective instructional decisions to encourage the intellectual development of the adolescent.

The theoretical model described would evolve from the synthesis of related theories of other professionals, and years of testing such an eclectic approach, not from nebulous vision received in the "ivory tower" as some individuals may believe.

The theoretical model to be discussed provides a synthesis of the ideas contained in the theories of Bruner (spiral curriculum and prerequisite learning), Gagne(10) (types of learning), Ausubel (advanced organizers), Festinger (cognitive dissonance), Piaget (abstract and concrete reasoning) and, in addition, others such as Flanders (interaction analysis). To help implement such a model, a working knowledge of the **Watson-Glaser Critical Thinking Appraisal**, the **Sequential Test of Educational Progress** and basic educational statistical procedures would be beneficial.

Briefly, the practitioner makes a professional decision based upon knowledge of the culture and his/her community to select specific information, skills and attitudes which are generalizable as instructional objectives. These ob-

jectives result in a body of knowledge and skills to be taught in a sequence that promotes understanding, (Bruner, Gagne(10)). The objectives provide the gestalt for the learning situation. Hence, they provide the practitioner with an advanced organizer (Ausubel) in the selection of stimuli and procedures. It taught deductively, the advanced organizers can be given to the student and may cause some cognitive dissonance (Festinger), which should promote learning.

The preferred instruction for intellectual development and development of a positive self-concept of the adolescent is primarily through inductive procedures. In such a teaching approach, the global advanced organizers provide the instructor with a guide to select and organize more specific instructional stimuli and strategies of instruction. The teacher's encouragement for the student to observe qualities or attributes of the concrete stimuli provided contributes to effective and efficient learning and thinking. The teacher facilitates one's acquisition of a concept (Gagne) and one's ability to logically reason with abstract concepts (Piaget) by asking students to find relationships among their observations.

What means of evaluation are available to the teacher using inductive methods? How would one measure and evaluate the instruction, since teachers and school districts are responsible for a myriad of individuals with unique needs? In the first place individualization of instruction can be achieved only if broad general objectives and specific sub-goals are identified and instruments are available to measure such goals. Then, an analysis of the classroom interaction can be made to ascertain the psychological climate prevalent, which influences attitudinal predispositions and self-concepts (Flanders), and to see if the intended climate actually exists. And, in addition, the practitioner needs an achievement test for content, a critical thinking or problem-solving instrument, a self-concept instrument and perhaps, an attitudinal or motivational scale. Also, a learning style preference scale is desirable. (See

Appendix A for recommendations and sources.)

Once these instruments are selected, they can be used for pre and post testing. The pretest can be used for diagnostic and prescription purposes for individualization of instruction. The post text scores can be adjusted on the basis of the pre-test scores, covarying out initial individual differences in order to ascertain the effectiveness of instructional strategies. For those interested in changes in self-concept, motivation and attitudes, the data collected by an appropriate pre-post instrument can be subjected to a chi-square analysis to ascertain the growth in such goals. The point is that accountability measures are within the reach of the professional practitioner. A more detailed account of research methods for the teacher can be found in Armstrong (1978).

Although the foregoing is brief, hopefully it has led to the following question: "What would such a theoretical model contain?" A framework is provided below.

UNIT TITLE

I Broad General Objectives.

These would not necessarily be measurable except for "gut" feeling and/or a series of specific tests. Sometimes referred to as teacher objectives, i.e., students will appreciate and understand the role of math in our lives.

II Student Objectives. Specific goals that are measurable and sequential and lead to the attainment of B.G.O.'s.

A. Content (See Gagne)

1. Generalizations (principles and rules)
2. Concepts (generally single words)
3. Facts

B. Skills

1. Intellectual
2. Psychomotor

C. Attitude, Values

III Measurement and Evaluation

A. Pre-test Post-test

B. Statistical Analysis

IV Instructional Materials and Procedures

- A. Inductive reasoning tasks
- B. Deductive reasoning tasks
- C. Problem solving tasks
- D. Memory tasks

Will this theoretical model work in the classroom? It has been

tested many times. The author taught a unit on the factors influencing the location of manufacturing sites in the United States to eighth graders. Although his topic was not the most interesting for this age group, it was designed to teach several intellectual skills, to facilitate individual initiative and responsibility, and to provide for success, thus enhancing one's self-concept and attitude toward social studies. The unit was taught in six weeks using data selected by the author to promote critical thinking skills through inquiry-oriented (inductive) instructional procedures. Both the experimental and control groups were taught inductively with the experimental variable being whether or not the correct answers were given at the close of each class. The results were similar to those resulting from studies by Chenoweth and Constantinides, who contend that instructional materials designed to improve critical thinking can do so. The statistical probability of the students attaining the increased scores on the **Watson-Glaser Critical Thinking Appraisal** by chance was less than 1 in 100. Whether or not the correct answers were given at the close of each class session was not a significant variable, hence the gain was probably due to the nature of the instructional materials (data oriented) and the inductive method of instruction.

How do present teaching methods fit the proposed model? The author has reviewed several dozen classroom teacher-made tests and would have to conclude that the instruments do not coincide with the aims of the instructional model developed in this paper. As a matter of fact, if the tests measure what is taught, it isn't any surprise that students do not function at the higher levels of intellectual skills (Jenkins). The test items measure memory (facts-number II A3 in the model). Memory is a relatively low level of intellectual activity (Bloom) and is not vital for organization and synthesis of data to formulate generalizations, which are more permanent and transferrable forms of knowledge.

Teacher-made tests were also void of any need for students to demonstrate the full hierarchy of

intellectual skills to answer the questions. Also conspicuous by their absence were indications that attitudes and values were an important part of the formal socialization process.

Are instructional materials to use the model commercially available? If one were to apply the part of the model dealing with content, would one find ready-made material to present as data for the learner to process intellectually? Generally, the answer would be no. Rather the material would be presented and organized in a prose form as statements of fact. What would happen to education if instructional materials were generated from theory and teachers were trained to adequately and effectively use these materials? There would be fewer articles and books criticizing public education and the stated broad general objectives would probably be achieved.

In the middle school, the young are experiencing the bio-social transition into mature, responsible, rational citizens. They are eager to learn, responsive, and open in nature. Their very nature invites the teacher to also be responsive. . . to reconsider the value of theory concerning instructional materials, instructional organization and strategies, differing learning styles, differing individual needs and preferences in a non-stressful psychological climate. Yes, theory should play a vital role for the professional education of Middle School students.

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Competencies and the Functions of the Junior High/Middle School

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A few years ago educators were discussing the individualization of instruction and trying to enable students to maximize their potential. Today, the "word" is not individualization but standardization through the use of competencies in the form of tests. That this has occurred is not surprising. The education system of the United States has, for a number of years, been becoming adept at adopting business approaches to education. Certainly producing a "standardized product" is the epitome of business in education. The adoption of competencies that is now upon many school districts is being made at a time when definitions of competence are nebulous and are frequently viewed in an emotionally laden situation stirring up the "good old days," and "this made America great" types of reactions. Objective views regarding present achievement of students, the relationship of competencies to the functions of the junior high/middle school, and the question of how the educator uses and/or should use competencies have not been attacked.

For many what is meant by competencies is tied directly to the "back to the basics movement." This group is represented by the Council for Basic Education. Their view has been stated as the student will. . .

. . . be able to read at eighth grade level, write with grace and accuracy, possess computational skills, have the perspective provided by sound historical knowledge, have some acquaintance with a foreign language and its culture, some knowledge and understanding of science, and an appreciation of the role of the arts in the history of man and contemporary life.(1)

The question of whether these

competencies should mean basic skills in subject areas, basic skills in life areas, basic skills applied in each school subject, basic skills applied in life areas, or be defined in terms of basics to the junior high/middle school student's psychological, sociological and physiological development has not been answered.

The widespread demand for the basics movement has been precipitated by findings such as:

Recent tests reveal that one out of five adults tested do not possess minimum skills needed to cope with requirements as a citizen in contemporary society.

Scores on the SAT have fallen from a mean of 473 on the verbal section in 1965 to a mean of 434 in 1975 and from a mean of 496 on the quantitative section in 1965 to a mean of 472 in 1975.

The Association of American Publishers revised its textbook study guides for college freshmen in 1975 gearing the reading level down to 9th grade.(2)

A recent U.S. Department of Health, Education, and Welfare report estimates that 13 percent of the nation's 17 year old high school students are "functional illiterates." This means that these students cannot do simple tasks, such as reading newspapers or roadmaps.(3)

"Education malpractice" suits, such as the Peter Doe vs. San Francisco Unified School District in 1973, have been initiated by parents and students. Peter Doe, a high school graduate, was unable to read at even a sixth grade level. The suit which charged negligence and fraud was dismissed.(4)

The fastest growing offshoot of the basics movement is competency stated in the form of tests. Thirty-four states since 1975 have adopted some form of minimal competency. For the most part,

these require high school students to read, write, and calculate at an eighth grade level prior to receiving their high school diploma. However, New York has announced that by 1981 their test will require graduating seniors to pass tests at high school level.(5)

Another assessment of the literature indicates that although competencies may be needed, hard data tends to discredit the need for headlong rushing into the melee without trying to see what is up ahead. The research prior to 1970 finds that Boss, in studying the reading achievement in St. Louis from 1916 to 1938, found no difference.(6) Gates, in norming his reading tests in 1937 and 1957, found the 1937 children well ahead of the 1957 children until he analyzed the data by age rather than grade. Then he found that the 1957 children were far ahead of their 1937 counterparts. Indeed, as one studies the picture, gains in achievement were made during the 40's, 50's and early 60's with peaks occurring in the mid 60's followed by decline until about 1970. What has happened since 1970? Two studies reported by Munday(7) indicate that there is little need for panic. In a study by Tissier and Farr reading skills of Indiana sixth and tenth graders in 1976 were compared with their counterparts of 1944. The findings were that the 1976 students did as well as the 1944. This fact is compounded when the decline in school dropout rate is considered. In the study by Gates, in norming his reading test 1976-77 students were tested and their scores compared back to a previous norming in 1964 and 1968. The study shows that in the lower grades the 1976-77 children did better in reading than the children of 1964. At the upper grades very slight differences occurred and again one must add the reduction in the dropout rate which accompanied this same time span. According to Munday, the sharp decline

in test scores in the late 60's has stopped. Since 1970 there has been a leveling off of school achievement and the achievement of today's elementary school is probably above that of the 1960's and the high school student's achievement is probably at the level of the early 1960's.(8) Thus hard data indicates that competencies in basic skills are seemingly being met.

Now what relationship does the adoption of competencies bear on the junior high/middle school? First and most alarming is the fact that the competencies for the junior high/middle schools may not be influenced by the faculty, administration, students or parents of students in the junior high/middle school. If competencies "filter down" from the high school then the junior high/middle school will have abrogated its right to determine its own curriculum and content. If a receiving high school sets, as one of its entry level behaviors, reading as eighth grade level, then that entry level behavior for high school becomes an exit behavior for the junior high/middle school. Thus it is clear that junior high/middle schools must reaffirm their position in the American education system in terms of philosophy, curriculum, content, and competencies.

In viewing this, perhaps it would be well if junior high/middle schools reviewed their functions as stated by Gruhn.(9) These functions are equally valid in today's junior high/middle school for they were formulated over a long period of time to fit that particular institution. The first of these functions is that of integration which is defined as providing learning experiences so that students may use the skills, attitudes, interests, ideals, and understandings previously acquired. . . and providing for all pupils a broad, general, and common education in the basic knowledges and skills which will lead to wholesome, well-integrated behavior, attitudes, interests, ideals, and understandings.(10) Clearly there is no conflict with this function and the competency movement, nor for that matter with the basics movement.

The second function is that of exploration. This function seeks to lead pupils to discover and explore

their specialized interests, aptitudes, and abilities as a basis for decisions regarding their educational opportunities, and future vocational decisions. It also seeks to widen their range of cultural, social, civic, avocational, and recreational interests. Here one is apt to uncover conflict with the competency movement. If junior high/middle schools allow themselves to be caught up in seeking to have all students reach stated competencies, then the concomitant action is one of pulling back the curriculum offerings to contain only those courses that teach the competencies. This generally results in a reduction of the curriculum offerings and the curtailment of exploration by students of subjects and/or activities in which they might develop and interest. In other words "competency based education" "shuts doors" when the junior high/middle school should be the leader in "opening doors."

The third function of guidance may in fact be aided by the competency movement. This can occur if the competencies are measured often, by a variety of means, and the results used in diagnostic/prescriptive teaching. This is somewhat different approach to the use of competencies. In most instances, competencies have been enacted as a screen to keep incompetent students from receiving a high school diploma. To be useful for guidance and assist pupils to make intelligent decisions regarding present and future education, vocations, and personal/social adjustments, competencies must be viewed as a tool to help students "know themselves."

The fourth function is that of differentiation. This function states that the junior high/middle school should provide facilities and opportunities suited to the varying backgrounds, interests, aptitudes, abilities, personalities, and needs of pupils in order that each pupil may realize most economically and completely the ultimate aims of education. Thus stated, it relates well to the 94-142 law and the expressed goal to provide education for all students in the least restricted environment. (It also speaks to the multi-ethnic education movement.) But competencies

have not been merged with mainstreaming nor to differentiation or individualization. Conflicts are bound to occur since competencies require standardization. Unfortunately, these conflicts may be settled in the courts.

The fifth function is that of socialization. This function seeks to provide for learning experiences designed to help pupils develop for effective and satisfying participation in the complex social order, . . . adjust themselves, and contribute to future developments and changes in that social order. Objectives for this function lie mainly in the affective domain. This domain is most difficult to measure and since it does not lend itself to measurement by the usual objective test, it is generally not found in a list of competencies for graduation. Yet socialization is a valid and most important concern for junior high/middle schools. This is the time of social development. The establishment of independence, the formation of friendships, the formation of relations between the sexes all occur at the junior high/middle school level. The junior high/middle school student who attends a school designed to meet cognitive competencies but which makes little or no provision for systematic integration of social skills is being "short changed" and the results will be long lasting.

The sixth function, that of articulation, seeks to provide a gradual transition from pre-adolescent education to an educational program suited to the needs and interests of adolescent boys and girls. This is much more encompassing than simply identifying strands of the curriculum that seem to flow from K-12. It here indicates a bridge that takes the pre-adolescent student from elementary school and gradually, but in orderly fashion, develops the curriculum from that of a classroom concerned with basic skills and basic socialization processes to a curriculum that remains student oriented but is more complex in concept formation and prepares the adolescent to enter the high school and continue study in the discipline areas. If a school has developed a comprehensive curriculum that attends to both psychological, physiological and social development as well as sub-

ject matter and has structured the content to meet these ends, then competencies do not pose a hazard.

Thus the functions of the junior high/middle school do not totally conflict or agree with specifying competencies. In terms of integration, guidance (properly used), and articulation, competencies may not only be incorporated but may serve to strengthen the functions. But the functions of exploration, differentiation, and socialization may require extensive and careful consideration in order to avoid being either eliminated or given perfunctory use.

Perhaps a final question should be raised that seems to have been ignored in the literature. Does a person have a right to, through integration, articulation, guidance, and exploration, find his/her cluster of abilities, make a choice for his/her life that is consonant with those abilities and develop those abilities so as to become a contributing member of society. Or does the school have the right to demand that all students regardless of their individual abilities must develop a specified set of competencies whether they need them or not. Our society depends upon a diversity of competencies. Its economic interdependence is predicated upon this diversity. Specialization, which for all its ills gives talent the opportunity to develop to its fullest, is not standardization. The usual answer from proponents of standardization through competencies is that competencies do not place a ceiling but rather a floor in education. But in practice the placing of competencies is very similar to setting up a track upon which are placed educational hurdles. These hurdles are defined and identified carefully by experts to determine the proper height. Then the student is forced to run the track and jump the hurdles or not receive a diploma. In such a situation, who in their right mind is going to jump one inch higher than necessary to clear the hurdles.

Three specifically disturbing development produced by the minimum competency movement are:

There are indications that minimum competency requirements being established in



some states are leading to an increase in the number of youngsters dropping out of school.

Minimum competency requirements probably are leading to a decline in student achievement.

Minimum competency requirements may be weakening rather than strengthening support for public education.⁽¹¹⁾

Competencies for the junior high/middle school—why not incorporate them? But let them be incorporated carefully and in conjunction with the functions of the junior high/middle school.

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THE JUNIOR HIGH SCHOOL: "NO-PERSON'S-LAND" OF COMPROMISE

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The junior high school is probably the most compromised area of the common school program. Its claim to the grade span domain is very limited—usually two years of grades 7 and 8; and only occasionally three years to include grades 7-9. It gets confused organizationally and philosophicaly with the "middle school" and sometimes gets changed from a 2-year school to a 3-year school, or vice versa, as school enrollments rise or plummet.

The junior high school does not always enjoy a home of its own. It sometimes must share its facilities with an elementary school or a high school. And junior high schools are small. When compared with high schools, the junior high is truly "junior." It almost always has no more than 1,000 students enrolled.

The junior high school has a mission. It intends to be a transition to the high school. It wants to offer the student some electives within the program of studies. But it cannot allow as much freedom of choice as the high school, because of such factors as small size, limited grade span, its preparatory nature, and the seemingly ever-present constraints of budgeting for the "in-between-school."

Because of the characteristics cited as well as others familiar to educators, the junior high school could be called the "no-person's-land" of public K-12 schooling. That it is one of compromise is a view that is based on this writer's observations from a study of secondary school course offerings and enrollments in a major Midwestern state, Illinois. Because the data reflect schools of diverse sizes and community types (rural, urban independent city, suburban, and central city), many of the study

findings can probably be generalized to schools in similar settings elsewhere. The sections which follow attempt to describe in a census-like manner the junior high school and its curriculum.

What are the basic characteristics of junior high schools?

In Illinois, most junior high schools are urban and have enrollments of 200-1,000 students. Few junior high schools have more than 1,000 students (only 3%). More than one-half of the 459

junior high schools (52%) were in suburbs and 96 percent of these schools had 200 or more enrollment. Within central cities (the major cities within the Standard Metropolitan Statistical Areas in Illinois) the majority of junior high schools had enrollments of 500-999. In relative order of size by community type the junior high schools followed the pattern of: (1) central cities—largest, (2) suburbs—second largest, (3) independent cities—third largest, and (4) rural—smallest.

JUNIOR HIGH SCHOOLS BY SIZE AND COMMUNITY TYPE

Community Type

Size	Central City	Suburb	Independent City	Rural	All	%
200	0	9	15	59	83	18.1
200-499	3	105	46	40	194	42.3
500-999	22	117	23	5	167	36.4
1000 or more	4	9	2	0	15	3.3
ALL	29	240	86	104	459	100.0
%	6.3	52.3	18.7	22.7		

The 459 schools ranged in size from 37 to 1321 students, with one-fourth having less than 237 students, one-half having less than 416 students, and three-fourths less than 632 students.

The two-year junior high school (grades 7 and 8) represents the dominant grade organization pattern. Seven out of eight schools (88%) were two-year, and one-tenth were three-year, grades 7-9, schools. The two-year pattern was most common in all sizes of junior high schools, as these schools constituted all of the less than 200 enrollment schools, 96 percent of the 200-499 enrollment schools, 75 percent of the 500-999 enrollment schools, and 47 percent of the 15 schools with 1,000 or more enrollment schools.

What is the type of schedule most

in evidence in junior high schools, and what is the maximum number of classes that a student can schedule?

A structure of uniform class periods each week was the predominate type of schedule reported for junior high schools. Only about 10 percent of the schools claimed to have a structure different from the uniform class period schedule. Less than 6 percent of the junior high schools identified the schedule as "flexible-modular" (only 2 percent of the high schools reported this type of schedule). From an examination of the actual schedules utilized by the schools, it was apparent that many junior high schools use a block-type schedule in which the same students receive instruction as a group in

various classes (i.e., groups of students are rotated among various teachers for different classes). This type of scheduling reflects the high degree to which

courses in junior high schools, especially smaller schools, are essentially all required, and the extent which electives, if any, are very limited.

Substantial differences in the pattern of lengths of junior high school and high school courses were noted—especially in the subject areas of art, business, health, home economics, industrial arts, and social sciences. The statistics show that in art, for example 61 percent of the high school courses were full-year, while only 27 percent of the junior high school courses were full-year. Similarly, for business, 73 percent of the high school courses were full-year, but only 34 of the junior high school courses were that length. Readily documented by the data was the degree to which the traditional academic courses (English, foreign languages, mathematics, science, and social studies) tend strongly to be organized as full-year courses. Differences in patterns of course lengths are not in themselves significant, but when viewed across subject areas and/or school types, the differences reflect such diverse factors as: (1) relative importance of the subject areas in the total program of studies, (2) level of staffing to provide elective offerings, (3) tailoring of the program of studies to meet legislative requirements, (4) constraints or limitations of local resources or facilities, and (5) perceptions about the amount or extent of instruction in various subject areas that is desirable or appropriate at a given grade level. Length of course offerings by subject area are shown in the following table.

TYPE OF SCHEDULE UTILIZED

	N	%
Uniform Class Periods Each Week	409	89
Flexible-Modular Schedule	26	6
Rotating Weekly Schedule	11	2
Interchanging Schedule in Alternate Weeks	5	1
Other	8	2

The maximum number of classes that a student could schedule in a school day was, in order of frequency, reported: seven (39%), eight (27%), and six (20%). Two percent reported 5 classes or less as the maximum; 4 percent reported a maximum of 9-10 classes; and 8 percent did not specify the maximum number of classes that could be scheduled.

alternative learning program was available to students in the school. From the data reported, junior high schools of 500 enrollment or more were found to be almost twice as likely to report alternative learning programs as were smaller schools. More than one-fourth of the larger schools, but only one-eighth of the smaller schools, were reported to have such programs. Further, schools in suburbs were most likely to report alternative learning programs; rural schools were least likely to report these programs.

How prevalent are alternative learning programs in junior high schools?

Respondents were asked if an

PERCENT OF JUNIOR HIGH SCHOOLS REPORTING AN ALTERNATIVE LEARNING PROGRAM, BY SCHOOL SIZE

200	200-499	500-999	1000 or	All
10	14	26	40	18

What length courses are being offered in junior high schools? Does length vary among the different subject areas?

Over two-thirds (69%) of all course offerings reported for junior high schools were one school year in length, and about one-eighth (13%) were half-year in length. The length of courses in junior high schools is summarized in the table which follows.

PERCENT OF JUNIOR HIGH SCHOOL COURSES OF VARIOUS LENGTHS BY SUBJECT AREA

Subject Area	% Full Year	% Half Year	% Quarter or Trimester	% Less than a Quarter
Agriculture	63	26	--	11
Art	27	31	32	6
Business	34	38	23	3
English	80	9	8	1
Foreign Languages	82	8	7	1
Health	13	20	50	15
Home Economics	22	39	31	4
Industrial Arts	23	37	32	5
Interdisciplinary	58	33	8	--
Junior ROTC	100	--	--	--
Mathematics	96	1	1	1
Music	71	12	11	2
Natural Sciences	85	7	2	--
Personal & Public Service				
Occupations	--	--	75	25
Physical Education*	79	7	1	--
Safety/Driver Ed.	17	17	50	17
Social Studies	81	8	7	2
Special Education	82	8	5	1

*Not shown here are a significant proportion of 3/4 year courses.

PERCENT OF JUNIOR HIGH SCHOOL COURSE OFFERINGS BY LENGTH

Length (weeks)	%
1-8	2
9-10 (Quarter)	8
11-12 (Trimester)	4
18-20 (Half-Year)	13
36-40 (Year)	69
Other	4

What do the data indicate about the typical program of studies in the junior high school?

Using the median as a measure of the typical number of course offerings in junior high schools three major findings were evident. First, school size was not related or was only slightly related to number of offerings reported in the majority of subject areas, including English, natural sciences, social studies, agriculture, business, junior ROTC, personal and public service occupations, physical education, safety/driver education, special education, and interdisciplinary studies. Second, the typical number of courses in several subject areas was zero — specifically, in agriculture, junior ROTC, personal and public service occupations, safety/driver education, special education, and interdisciplinary studies (the first four of these subjects are classified as

vocational-related). Third, the typical number of courses in several subject areas was zero for smaller junior high schools; these were: (1) foreign languages—schools under 500 enrollment, (2) business—schools under 1,000 enrollment, and (3) home economics and industrial arts—schools under 1,000 enrollment.

The typical junior high school program was found to be comprised of **52 percent academic courses, 16 percent arts (music and art) courses, 13 percent vocational-related courses, and 13 percent health-related courses.** The remaining portion of the program of studies consisted of special education and/or interdisciplinary courses. Summary statistics for the four major program areas and all subject areas are included in the table on number of course offerings.

Another perspective on the typical program of studies can be obtained by examining the proportion of schools statewide which offered courses in the various subject areas and by determining the extent to which students statewide have an opportunity to enroll in at least one course in the various subject areas. The tables which follow show both of these characteristics. The extent to which students have an opportunity to enroll in a course in various subject areas was calculated from the percent of school enrollment statewide within schools offering at least one course in these subject areas.

NUMBER OF JUNIOR HIGH SCHOOL COURSE OFFERINGS

Number of Courses

	School Enrollment	Low	High	25th Percentile	Median	75th Percentile
All Subject Areas	200	10	34	15	17	21
	200-499	10	45	18	20	24
	500-999	9	63	21	26	35
	1000 or more	22	76	26	36	48
	All	9	76	18	21	27
All Academic Courses	200	6	15	8	10	11
	200-499	6	26	9	11	12
	500-999	0	39	10	13	17
	1000 or more	11	38	12	14	26
	All	0	39	9	11	14
All Vocational-Related Courses	200	0	9	0	1	3
	200-499	0	9	1	3	3
	500-499	0	14	3	3	6
	1000 or more	2	11	3	5	9
	All	0	14	2	3	4
All Arts	200	0	5	2	3	3
	200-499	0	11	2	3	4
	500-999	0	15	3	4	5
	1000 or more	2	12	5	6	7
	All	0	15	3	4	5
All Health-Related Courses	200	2	5	2	3	4
	200-499	0	6	2	3	4
	500-999	1	7	2	3	4
	1000 or more	2	6	2	3	4
	All	0	7	2	3	4

OUR WORLD

If I were asked of my opinion
Of the world and its dominion
I would say "I'm proud to be
Part of its big family tree."

But I'm so sad, I have to say
(On this bright and sunny day)
That somewhere on this big world
Fingers 'round some guns have
curled.

While women at home, are making
dough
Men at war, are fighting their foe.
And it's so sad to hear the cry,
"This one too, is doomed to die."

But war is not the only care,
For birds in the air,
And fish in the sea,
Are all a pretty sight to me.

And the trees,
They have beauty,
And they have grace,
While upon Earth's pretty face.

But the words written here are
only part
Of what I have inside my heart,
For there is something which
means much more:
Faith helps me open door after
door.

PERCENT OF JUNIOR HIGH SCHOOLS OFFERING ONE OR MORE COURSES AND PERCENT OF STUDENTS HAVING AN OPPORTUNITY TO ENROLL BY SUBJECT AREA

	% OF SCHOOLS OFFERING	% OF STUDENTS HAVING OPPORTUNITY TO ENROLL
Agriculture	4	5
Art	90	94
Business	20	28
English	98	97
Foreign Languages	44	56
Health	51	49
Home Economics	76	87
Industrial Arts	77	87
Interdisciplinary	2	3
Mathematics	99	99
Music	95	97
Natural Sciences	99	99
Personal and Public Service Occupations	1	1
Physical Education	100	100
Safety/Driver Education	2	2
Social Sciences	97	97
Special Education	44	47

In general, the junior high school program of studies is limited in terms of number of course offerings as well as percent of schools which offer courses in specific subject areas. For example, 97 percent of the junior high schools reported at least one course in only five subject areas (English, mathematics, natural science, physical education, and social sciences). More than 90 percent reported at least one course in art and music, and just over 76 percent reported one or more courses in home economics and industrial arts. Foreign languages were **not offered** by 56 percent of the schools, and 44 percent of the students in junior high schools statewide could not have received instruction in foreign languages in their schools. Business as a subject area was offered by less than 20 percent of the junior high schools, with only 28 percent of the students statewide in schools which offered at least one business course (most frequently—typing, introduction to business, business arithmetic, or consumer education). Relatively few schools (less than 5 percent) offered courses in vocational-related subject areas other than business, home economics, and industrial arts. Courses in health were reported by slightly over half of the schools.

When course enrollments were analyzed, seven subject areas, English, mathematics, social

sciences, physical education, natural sciences, music, and art, accounted for most of the course enrollment in junior high schools. The next four subject areas (in order of course enrollment), industrial arts, home economics, health, and foreign languages, had less combined enrollment than natural sciences. A reasonably good indicator of the status of the various subject areas in the junior high school curriculum was obtained by indexing the year-equivalent course enrollments to English, the subject area with the highest total enrollments. The statistics showing the status of the subject areas are included in the table which follows.

Among the traditional academic subjects, the total year-equivalent course enrollment statewide was distributed approximately as follows: English—31 percent, mathematics—23 percent, social studies—22 percent, natural sciences—21 percent, and foreign languages—4 percent. Thus, English was allocated 36 to 47 percent more weight (time and enrollment) in the program of studies than either mathematics, social studies, or natural sciences, and over 850 percent more weight than foreign languages. The arts (music and art) ranked sixth and seventh in the composition of the junior high school program of studies, with music showing over 50 percent more year-equivalent enrollment than art. Home economics and industrial arts ranked eighth and ninth respectively with approximately equivalent proportions of course enrollments. Health was ranked tenth, and foreign languages, which had only slightly less enrollment, was ranked eleventh.

In summary, what do the study finding suggest? The findings suggest a number of conclusions. First, the detailed analyses (only summarized here) document how similar junior high programs are regardless of school size, especially within similar community types. Specifically, they show that the majority of junior high schools have less than 500 enrollment, and it is in these schools that course offerings and enrollments are most

continued on next page

INDEX OF YEAR-EQUIVALENT COURSE ENROLLMENTS (YECE) BY SUBJECT AREA FOR JUNIOR HIGH SCHOOLS

Subject Area	Index of YECE
English	100.0
Mathematics	73.7
Social Studies	71.5
Physical Education	69.3
Natural Sciences	68.5
Music	36.5
Art	23.6
Industrial Arts	18.6
Home Economics	16.9
Health	12.0
Foreign Languages	11.7
Special Education	5.5
Business	3.6
Interdisciplinary Studies	0.6
Safety/Driver Education	0.2
Agriculture	0.2
Personal and Public Service Occupations	0.05
Junior ROTC	0.01

THE MIDDLE SCHOOL STUDENT AND THE CONCEPT OF ALIENATION

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The conventional wisdom contends that the most important decisions an individual makes are arrived at on the lofty mountain peaks of adulthood. The reality of contemporary society suggests that this "wisdom" is no longer true, if it was ever true. Increasingly it appears that the choices that shape the course of a person's life are made on the arid plains of early adolescence, often when the student is in the middle school. Although many adolescents approach this crucial juncture with care, intelligently analyze their options and take paths that are in their best interest, others lose their way and wander aimlessly into chronic truancy, drug abuse and petty crime.

Many social analysts have viewed the adolescent plight, seen the malaise, apathy, cynicism and

No Person's Land- continued from preceding page

likely to be similar. The findings also indicate that relatively few junior high schools are able to offer many courses beyond the traditional academic subject areas and the required health-related areas. Grade span is a factor in this generalization, of course. In addition, foreign languages, while offered in 4 out of 9 schools, represents a relatively weak component of the curriculum compared to the other traditional academic subject areas. And in relative terms, music is a more significant part of the curriculum than is art, but both are more significant in the curriculum than foreign languages.

The detailed analyses also indicate how compromised the program of studies is in schools which must provide students opportunities for preparation, remediation, and exploration in an "in-between school" setting.

lr:15E

powerlessness and labelled these disenchanting youth alienated. The commentators have made alienation one of the most frequently encountered concepts in the discourse about adolescent disaffection. Unfortunately, the amorphous global concept of alienation has become a catchword without much definitional specificity. I have attempted to remedy this state of affairs with my research.

For ten years, I have worked at defining the primary dimensions of adolescent alienation. My work has proceeded through five distinct parts. First, a set of distinct descriptions of alienation was distilled from the literature. Second, a series of propositions regarding subgroups of alienated adolescents was deduced from the dimensions. Third, an attitude scale measuring the dimensions of alienation was developed. Fourth, the attitude scale was administered to a large and diverse sample of early adolescents and the dimensions of response analyzed to provide an empirical redefinition of adolescent alienation. Fifth, the validity of the dimension measures was investigated by comparing the pattern of group differences to the pattern expected from the conceptualization of alienation.

The categories of alienation were derived from classic statements such as Marx, Weber, and Mills, and from modern empirical research studies conducted by sociologists, psychologists, and educators. There were five hypothesized dimensions in all.

Subsequent to the conceptualization of adolescent alienation the five dimensions were represented with likert-type items. The item pool was created from a variety of sources which included other attitudinal scales, rock music lyrics, the underground press, and interviews with adolescent. The conceptualization of adolescent alienation, however,

guided the selection of all items. Each of the 94 likert-type items was identified with one of the five dimensions of alienation. There were approximately 18 items in each of the five dimensions. This item pool as screened by expert review and pilot-tested and administered to a sample of 500 ninth graders in Minnesota. The sample included two groups from different parts of a large city, — a core area and working class neighborhood, — a suburban group, and a group of rural youth. The results of the student survey were then submitted to statistical analysis. The purpose of analysis was to determine whether the hypothesized dimensions emerged from the data.

Analysis demonstrated that adolescent alienation could be characterized by three independent and measurable dimensions: a) **personal incapacity**; b) **cultural estrangement**; and c) **guidelessness**. Let me discuss each of these forms of adolescent alienation in turn.

Personal incapacity is the feeling of not having the skills needed to succeed. The major ingredient in **personal incapacity** is the adolescent's feeling of incompetence in dealing with his social world. All early adolescents feel incompetent under certain circumstances, but the feelings are more intense in students who score high on the **personal incapacity** scale.

It is impossible to overemphasize the importance adolescents place on competence. The idols of adolescents are always highly skilled individuals. From the major league athlete to the rock musician, the respected person for the adolescent is one who displays great ability. The importance that competence plays in adolescent lives is illustrated by Edgar Friedenbergs comment that, "A youngster who does not know what he is good at will not know what he is good for; he must

know what he can do in order to know who he is."

Cultural estrangement is the rejection of the predominant criteria for success. The primary component in **cultural estrangement** is the adolescent's lack of commitment to American values. Highly culturally estranged students feel that, although Americans flourish physically, they are starved emotionally. The adolescent ideology incorporates the belief that dehumanized cultural institutions control American life. The culturally estranged adolescent's response is a vote against institutions and a demand for a new definition of the social order.

Guidelessness is the rejection of the conventional rules for succeeding. In **guidelessness** there is a disproportion between the adolescent's desires and his means for achieving these desires. It is the feeling that social rules are

either ineffective or unrealistic. Combined with this feeling is a resentment toward the society that fails to provide him with sufficient opportunity to achieve his desires.

Differences Among Groups of Adolescents

My inquiry revealed that I was measuring something consistently that people called alienation. If this was indeed alienation it ought to be possible to predict how adolescents would fall on the respective dimensions. According to the theoretical contexts in which the dimensions of alienation were formulated, and consistent with previous research, different groups of adolescents would have markedly different likelihood of having these forms of alienation. To ascertain these different adolescent profiles, a series of proportions were deduced from the conceptualization. The propositions hypothesized the relationship

between the dimensions of alienation and five independent variables; sex identity, community type, perceived academic ability, and two measures of socioeconomic status. Because they would be more likely actually to have knowledge, skills, role models and encouragement, the more advantaged adolescent would be expected to feel less of a sense of **personal incapacity** and **guidelessness**. On the other hand, because of these same opportunities the advantaged adolescent was expected to develop the critical stance toward middle class values that is inherent in feelings of **cultural estrangement**.

Table 1 summarizes the results of the statistical analysis. The analysis used was one way analysis of variance which is a statistical procedure used "to test the significance of the difference between the means of a number of different samples.(1)

Table 1
Group Statistics on Alienation Scales and F values for One-way Analyses of Variance

Category and Group	Personal Incapacity				Cultural Estrangement				Guidelessness			
	Mean	SD	N	F	Mean	SD	N	F	Mean	SD	N	F
Perceived Ability												
Above average	34.93	6.61	177		36.21	5.64	173		23.40	4.57	177	
Average	36.88	6.33	273	9.88***	34.90	5.99	266	4.79**	26.08	5.15	273	20.26***
Below average	40.42	7.16	24		38.14	5.68	21		28.13	5.25	24	
Parent Occupation												
Professional	34.41	6.75	145		35.67	5.86	138		23.58	4.85	144	
Skilled labor	37.07	6.37	230	9.24***	35.47	6.02	226	0.04	25.51	5.18	230	12.40***
Unskilled labor	37.43	6.34	99		35.53	5.73	96		26.71	4.92	100	
Parent Education												
College	34.63	6.69	144		35.64	6.02	136		23.96	5.01	142	
High school	36.82	6.53	276	8.74***	35.74	5.81	271	1.85	25.43	4.97	279	8.43***
Grade school												
Community												
Suburban	35.20	6.61	312		35.77	5.94	299		24.63	5.03	312	
Working class city	37.67	5.92	85	11.44***	36.71	6.27	84	6.36***	25.82	4.91	85	4.25**
Inner city	38.40	5.80	50		34.50	5.34	50		27.10	5.74	50	
Rural	41.30	6.20	26		31.35	2.43	26		26.00	5.25	26	
Sex												
Male	36.25	6.24	228	0.13	35.00	5.97	224	3.75*	25.82	5.20	229	7.06**
Female	36.47	6.94	244		36.07	5.82	234		24.57	5.00	243	

Note.--Numbers of subjects in groups are those for which no scale items were missing.

* $p < .05$; ** $p < .01$; *** $p < .001$

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An analysis provided substantial confirmation for the construct validity of the three dimensions of adolescent alienation. The group differences for **personal incapacity** were as expected; the differences

for **guidelessness** were as expected, with minor exceptions; differences for **cultural estrangement** were as expected, with some distinct exceptions.

Discrepancies in guidelessness.

Both males and inner-city adolescents were unexpectedly high on **guidelessness**. The sex difference might be explained by the differences in the process of identity formation in early adolescence; for boys the key developmental task of this period is the establishment of independence; for girls the process of identity is less discontinuous, concerned more with deepening extant relationships. (Perhaps this difference will fade as the new role directions fostered by the women's liberation movement permeate adolescent consciousness).

Discrepancies in cultural estrangement. The construct validation for **cultural estrangement** was not as clear cut as were the other two dimensions. As expected there were significant differences among the ability groups and community groups, but not precisely in the predicted order.

Contrary to the initial conjecture, low-ability students were more culturally estranged than either of the higher-ability groups. This is understandable if **cultural estrangement** is considered to be essentially a measure of lack of adjustment to middle-class values. The superior student who is secure in his ability as a student is apt to develop an intellectually critical stance toward middle-class values inherent in **cultural estrangement**, while low-ability students are inclined to reject cultural dictums that are cast in terms of values and opportunities that they feel are beyond their reach.

The communities fell in the expected order on **cultural estrangement** except that the highest level of alienation was found for the working-class community rather than for the suburban community. This deviation from the simplistic "advantage" proposition is not unduly dissonant because the working class has recently had special cause for this type of alienation. During the past decade the working class in America has been alternately ignored and caricatured. All around them, people of the working class see change and ferment; groups above and below them in the social structure are seen obtaining advantages, while the working class is ignored and derided. In sum,

members of the working class increasingly seem to feel poorly served by the institutions of American society.

The lack of significant difference among socio-economic status groups, defined by parent education and parent occupation, was surprising. Perhaps it can be understood if the historical context of the early 1970's, when the data was gathered, is considered. The short but vivid period represented an aberration in American social history. Inner city and campus riots, political assassinations, and especially the Vietnam War left indelible marks on the era. This maelstrom of events may have combined to mold the attitudes of adolescents at all socioeconomic levels in a similar fashion.

Subsequent studies were conducted in 1975 and 1977 employing adolescents from six additional groups to determine whether the patterns found in the somewhat variance restricted "normal" initial groups could be appropriate for characterizing distinctly deviant groups. Groups that represented



both sides of the advantage spectrum were employed for this purpose. It was encouraging for the validity of the conceptualization to note that the three groups chosen for their exceptionality — students in an elite prep school, adolescents from a suburban school who were placed in a special program for estranged students, and a group of Native American students from yet another special program — deviated the most from the overall group average. This was in line with the hypothesized outcomes.

Summary

In general it is possible to say that my inquiries, which sought to define alienation more precisely by developing and validating a set of attitude scales to measure the dimensions of alienation in adolescents, have accomplished their purpose. Given the greater clarity afforded by the scales in the definition of adolescent alienation, researchers may be able to investigate more meaningfully its incidence, correlates and causes. More importantly we may more accurately characterize alienation.

MORAL EDUCATION OF OUR YOUTH: AN EXPERIMENT IN PUBLIC SCHOOL INVOLVEMENT

Barbara Gilgore and Darlene G. Larson

Today's youth are having a difficult time growing up amidst a myriad of continual societal and moral changes. Even though other periods of history have experienced social upheavals and radical changes, none has proceeded at such a rapid speed as the changes of today. Several factors are contributing to such changes.

A general disintegration of moral fibre might be attributed to such factors as rising divorce rates, the increase of single households, and the economic necessity of two working parents. These changes have led to less parental supervision of children. In addition, constant changes in our environment have bewildered youth as well as adults. Advanced technology and its accompanying increase in leisure time, overpopulation, and increased urbanization are symptomatic of such changes. The biological and sexual revolutions are currently challenging traditional religious and moral doctrines.

As students further experience the process of socialization, they are subjected to the pressures of decision making. In our evolving pluralistic society, alternative life styles abound. Even the adult world trembles and provides few models for the development of acceptable behavior patterns for the young. Thus youth are constantly faced with distinctly unique problems for which there are no precedents.

If parents themselves are unsure or unwilling to provide answers for today's youth, the question arises whether or not the public schools should attempt to educate students to deal with these steadily mounting changes occurring within our society. These schools have already assumed the responsibility of such residual functions as instruction in driver education

and sex education. It could be argued that moral education should also be a residual function of the public schools.

Since schools are small societies which are run by the local community, they must be relevant to the needs of society. They must interact with society in order to grow and meet society's needs. If schools are part of society and yet a microcosm within themselves, perhaps moral education should be included in a school curriculum. Perhaps schools should concern themselves with the development of the "whole child", his/her social and emotional development, as well as his/her academic progress. Some teachers are not fully cognizant of the fact that they deal with issues of moral education on a daily basis by exercising the following prerogatives: 1. administering rewards and punishments to students, 2. acting as role models, and 3. formulating formal evaluations of student behavior.

However, in our society, there is a great deal of rejection of moral education. Attitudes concerning moral education may be classified into two major groups. These may be labeled "indoctrinatory" and "isolationist". Both attitudes assume the position that moral education implies training children to think in accordance with some first order norm or authoritative standard. The indoctrinatory group is eager for schools to train children in values. Indoctrinarians believe primarily in the instruction of traditional values. In contrast, the isolationists favor a separation of academic teaching and religious topics, such as morality. Isolationists feel that values are individualistic and should not be forced or defined by a select few.

Perhaps there is no first order norm as suggested by the indoctrinarians and isolationists. We live in a pluralistic society which has difficulty reaching a consensus on values. Can one set of morals be in-

clusive for all individuals? English philosopher Thomas Hobbes denies that there is a "sunum bonum" or a general good. Values are relevant to the uniquely individual person. Certain human beings may adhere to values isolated from those of the mainstream of society. Such values are termed "individual values." Other segments of society may adhere to the values of a particular social or peer group, and these values may be termed "social values." Individuals may adhere to some values which are held in common with the majority of the people in a given society. These values are termed "core," "normative," or "traditional values." Emergent values may at any time become accepted core values of any society. The traditional values of the work-success ethic, future time orientation, individuality in the autonomous self, and Puritan morality are today being replaced with the emergent values of sociability, present time orientation, conformity, and relativity.

Louis Rath and Sidney Simon have developed a model of "valuing" entitled "value classification" that is useful and possibly acceptable to both indoctrinarians and isolationists. This process of "valuing" assists a student in discovering and clarifying his/her own values whether they be core, emergent, or individual. There is no value indoctrination. The process of "valuing" is divided into three parts: choosing, prizing, and acting. Under the first division of "choosing," a student must be able to freely choose a value from a list of alternatives after careful thought of the consequences of each alternative. Under the division of "prizing," the student should demonstrate that a chosen value is cherished. He/She should be happy with this choice, and the value should be prized enough to make the choice public. Under the final division of "acting," the

student's chosen value should be acted upon repeatedly, until it becomes a pattern of life.

Thus, through the process of value clarification, students become consciously aware of the available alternatives and consequences of various chosen values or actions. Society seems to clearly dictate some of the consequences of chosen actions in such ways as: 1. the enforcement of adult authority, 2. statutory and constitutional laws, 3. religious preachings, 4. customs, and 5. democratic ideals and institutions which reflect and stress certain core values. Perhaps both isolationists and indoctrinarians would agree to value clarification being taught in our public schools since students would be given freedom to choose and differentiate between values, and participation in any phase of value clarification would be voluntary. Students may choose to pass on any activity. In general, schools would be relatively free from major criticisms if they identified and stressed in their value clarification exercises the core values of the society as a whole, while also discussing individual, alternative, and emergent values in the secondary public schools. The schools must assist students in generating appropriate values that are conducive to the general social welfare. This directive might be accomplished by making the students consciously aware of chosen alternatives and their concomitant consequences.

An experiment in which Louis Rath's "valuing" system was incorporated, was conducted by the writers of this article. The experiment designed by the researchers, was a comparison study of seventh, eighth, and ninth graders and their values in two Chicago suburban secondary schools. The ninth graders were enrolled in a senior high school comprised of students who are middle to upper middle class in social economic status; the seventh and eighth grade students used in the study were from a blue collar community. The schools were chosen because of their accessibility for the researchers.

In both schools students in seventh, eighth, and ninth grade Language Art/English classes were

presented with the Rockeach Value Survey of Instrumental and Terminal Values. Students were requested to rank the following eighteen terminal values: a **comfortable life, an exciting life, a sense of accomplishment, a world of peace, a world of beauty, equality, family security, pleasure, salvation, self-respect, social recognition, true friendship, and wisdom.** They were then presented with a second list of instrumental values for ranking which included the following: **ambitious, broadminded, capable, honest, imaginative, independent, intellectual, logical, loving, obedient, polite, responsive, and self-controlled.** Lastly, the researchers' original Student Values Survey was presented to the students. This instrument consisted of six major areas of pupil concern. These areas included: family, peers, boy-girl relationships, self-identity, social pressures, and goals. Both traditional and emergent statements were presented to the participants. Upon analysis of student choices in these six areas, student values could be labeled as: a) traditional, b) emergent, or c) neutral [if no choice were made], depending upon his/her choice of statements.

The aforementioned instruments were administered as pretests and again five weeks later as post tests following an extensive unit utilizing a set of value clarification modules. These modules were created by the researchers with the students interests and needs in mind; they corresponded with six areas of interest to the students. The same modules were used in both schools but altered slightly because of the difference in the students' ages. They involved activities in reading, writing, and large and small group discussions. Fifty-five students from each school were tested, and fifteen parents also participated, in the study on a limited basis. The researchers' purpose was to determine if a concentrated value study has any effect on establishing, altering, or strengthening pre-adolescent values.

The value clarification activities were administered several times a week after initially establishing a classroom atmosphere in which students felt comfortable in ex-

pressing their views. They were always given the opportunity to pass if they did not wish to discuss a given topic, and teacher opinions were presented only after the students made their opinions public.

After administering the pre and post tests of the Student Value Survey, results indicated that the ninth graders were far more traditional in their values, especially in the areas of family, peers, social pressures, and goals. Perhaps these students were more traditional because they were a little older and of a higher social economic class. Their satisfaction with the status quo was reflected in their values.

The eighth grade students surveyed seemed traditional in planning for their career but emergent in not having a clear educational goal and in their ranking of material possessions. This may be indicative of the fact that most of these students will pursue a full time job after school instead of attending college. Also junior high school students are further removed from the job market than high school students. On the other hand, most of the ninth graders had a clear educational goal in mind upon high school graduation.

In examining the results of the Rockeach Survey of Instrumental Values a few significant differences were evident. A significant difference was defined by the researchers as a change of two or more rankings in the hierarchy of choices between the rankings of the pre and post tests.

Generally, seventh graders chose the instrumental values of **honesty, loving, helpful, ambitious, and forgiving** as their highest rankings on both the pre and post tests. Eighth graders chose as their highest priorities the values of **honesty, helpful, loving, forgiving, and responsible.** The values of **honesty, loving, and responsible** were ranked consistently high by the ninth graders.

The following values were generally ranked higher in the post tests of the seventh, eighth, and ninth grade students: **broadminded, forgiving, and independent.** Through participation in various value clarification activities and exercises, students were exposed to widely differing and divergent

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SUPPLEMENT

"YOU CAN LEAD A HORSE TO WATER" OR "THE CASE OF JEREMY JONES"

Stephen B. Thomas
and
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A Sketch of Facts

The scene is a traditional high school somewhere in southwestern America. It is late May and dust is in the air. Temperatures are already in the upper 90's and the days are long and clear. The school facility, made from clay bricks and terra-cotta, is 40 years old. Its paint is beginning to crack as are the graying asphalt in the parking lot and the concrete of the front steps. Foliage is sparse; grass is present only in front of the administrative offices; and the grounds are hard and dry.

The student body is composed of 800 students: 60 percent Anglo, 35 percent Mexican-American, 3 percent black, and 2 percent somehow registered as "other." Most are comparatively well behaved while a student rights handbook (distributed only to faculty) is the yardstick for discipline. Grades are high (some school patrons call it inflation, while others term it "teaching for success"). Norm-reference scores from standardized tests are consistently below the mean (both state mean scores and national mean scores). Remedial, special, and bilingual programs are available but are limited in support, both financial and moral.

The faculty and administration are 90 percent and 100 percent Anglo, respectively. A look at the full-time instructional staff reveals the presence of one Black and two Mexican-American teachers. No teachers are or ever have been engaged in multicultural studies. Mr. White, an Anglo, is the instructor in History of Black America, while Mrs. Jawarski is in charge of the bilingual program. Most faculty members are tenured with a majority having taught at the high school for fifteen years. There is very little turnover; only two teachers have been dismissed in the last twenty years (one for inefficiency and the other for incompetency); and in the history of the school system just one administrator has had his contract terminated (due to misappropriating the petty cash fund).

Salaries, per pupil expenditures, curricular offerings, and available media and materials all are lower than those of surrounding districts. The assessed valuation of property is one of the lowest in the state, average income is only slightly above the poverty level, and over 65 percent of the student are involved in the federal free-lunch program. Total tax effort is low as are educational aspirations among the school age population.

The average education level of adults in the community is the 8th grade, and few

have graduated from college. Adult education classes are held at the high school and include reading, basic math, home budgeting, and jewelry making. Enrollment in these classes is generally low; few parents participate in the P.T.A.; public relations appears to be a major problem for the school board; and most community folks are only aware of the athletic program, especially football.

As the day begins, we travel down a school corridor, walk up the staircase, and journey to the end of the hall where the American history room is located. The windows are open and hot, dry air is circulating throughout the room. The teacher is busy-ing herself writing questions on the blackboard. Only an occasional squeak of the chalk or the dropping of a pencil can be heard as the students are taking a brief exam. Mrs. Salinas, the senior instructor in the history department, has taught in the system for some 30 years. She has a master's degree, is certified for life, and is well respected by peers and students alike. Her involvement with her students would have been deemed humanistic long before the term became fashionable. She is well prepared, well organized, and seems to have the ability to be informative, yet entertaining.

On this particular day, after the exam, two or three students again appear to lead the discussion while half a dozen others contribute occasionally. Numerous students, however, appear to be wandering in thought if not in body. A smile or occasional nod are employed to convince the teacher that participation is good but she understandably is aware that her words may be falling on busy ears. She, nevertheless, works endlessly attempting to reach each and every student. Her experience tells her, however, that regardless of her methodology, utilization of media, or individually guided programs, some pupils may leave her room today and know very little American history. She also believes that these same students may also learn very little algebra, English, or science—not only during this day, but this week, and even this year.

One of Mrs. Salinas' students is Jeremy Jones, the focus of our attention for he is to become the plaintiff in a future law suit against the school system. He is large in size and has the appearance of a mature "Spanky." He is quiet and very shy, is seldom involved in team sports, is an apparent loner, and participates in class only upon request. He is not considered a discipline problem and never disrupts the class (except for an occasional rocking of his chair. Peer conflicts seem nonexistent. Young Jeremy attends only four classes daily (his father requesting a 5th and 6th hour pass for him to work) and appears to

be receiving satisfactory grades for his efforts. In fact, Jeremy has failed only one class in his educational career; that being reading in the 2nd grade. He currently maintains a 2.1 grade point average but represents the lower 10 percent on his S.A.T. scores. Nevertheless, in less than two weeks, Jeremy is to graduate, albeit somewhat less than magna cum laude, and will enter the labor market. His reading and computation skills (approximately the 5th grade level) will allow him to fill out a placement folder and maintain a checkbook with only marginal accuracy. His academic, verbal, and social weaknesses will become apparent when interviewed.¹

If we could peer into the future we would see Jeremy seeking a position traditionally reserved for the high school graduate and find him screened out early within the evaluation process. As a graduate he will learn quickly that a schooling and an education may not be synonymous and that the former without the latter is ineffective in obtaining or retaining employment. After several months of sporadic job hunting, Mr. Jones will become concerned and will begin to point the finger. Personal responsibility for his educational inadequacies will not enter his mind and he will convince himself that the attempts of school personnel to ameliorate his learning skills were merely palliative and their token efforts were largely ineffective. He will then seek legal counsel professing a desire to sue someone—anyone—although he will not be sure who or for what. One day he will hear of Peter Doe in California (professing his name as familiar)² and of Edward Donohue in New York³ and will be convinced that the family attorney, Mr. Lawless, should be retained immediately for legal council.

Jeremy's parents, although admittedly reluctant in the beginning, nevertheless, will assist their son (a high school graduate) in his pursuit of justice. They will meet with a panel of local attorneys to discuss the legal and fiscal implications of their lawsuit. Revenues will be forthcoming (primarily from anonymous parties) and additional fees will be provided only upon a favorable decision. Five million dollars will be sought for damages emanating from a loss of aesthetic, affective, and cognitive development, required tutorial training, and a lifetime income differential. Publicity will become national, interviews numerous, and public opinion mixed. Win or lose, Jeremy will bring scrutiny to the public schools of his community. His case will be filed in a lower state court and will be dismissed. It will be appealed to a Court of Appeals where it will be concluded that plaintiff failed to state a cause of action. And finally, it will be further appealed to the State Supreme Court.

Jeremy's Day in Court

Throughout their brief, Jeremy's attorneys will identify similarities with higher education contract cases.⁴ They will seek relief in the forms of a petition of mandamus⁵ but also will seek damages claiming negligence and intentional misrepresentation on the part of the school system. Additionally, they will accuse the school system of **misfeasance** claiming that they improperly carried out their legal duty to provide and adequate, effective, and meaningful education for their client, Jeremy Jones. This final charge will become the crux of their claim and request for remedy. They will discuss his right to an adequate education, appropriate classification, valid and reliable evaluation, and the like.⁶ They will observe that his state proposes a "thorough and efficient system" and that "each child shall have the opportunity to develop to his ... full potential."⁷ They will further propose that although Jeremy was provided exposure to potential learning experiences, he did not possess the minimal skills essential for academic development. They will rely on *San Antonio Independent School District v. Rodriguez*,⁸ *Shofstall v. Hollins*,⁹ *Griffin v. County School Board of Prince Edward County*,¹⁰ *Pennsylvania Association for Retarded Children v. Commonwealth of Pennsylvania*,¹¹ *Mills v. Board of Education*,¹² *Fox v. Benton*,¹³ *Hosier v. Evans*,¹⁴ and *Brown v. Board of Education*,¹⁵ in claiming the importance of education and the right to an educational program (each represents unique circumstances, but discusses the concepts of functional exclusion and/or absolute deprivation). They will also employ *Lau v. Nichols*,¹⁶ *Serna v. Portales*,¹⁷ *Arvizu v. Waco Independent School District*,¹⁸ and *United States v. Texas*¹⁹ as precedent in identifying the importance of the early acquisition of reading skills. (Although the aforementioned relate to bilingual students, a similar rationale will be utilized in amplifying the importance of basic English skills which are perceived "at the very core of what their public schools teach.")²⁰ Plaintiff will claim that to presume that such skills have been developed even for Anglo students "is to make a mockery of public education".²¹

As a part of seeking both compensatory and punitive damages, and to undergird their negligence claim, counsel will seek to convince the court of the applicability of the *res ipsa loquitur* doctrine. They will attempt to show that defendant school district, its agents, and employees had it within their exclusive control to provide plaintiff with adequate instruction, guidance, counseling, and/or supervision in basic academic skills and to insure certain acceptable levels of educational outcomes.

Counsel will insist further that in awarding a high school diploma to their client, the school board falsely and fraudulently represented to plaintiff's parents that plaintiff was performing at or near an acceptable grade level.²² Plaintiff will further claim that defendant school district has a duty of instruction, that gross negligence resulted due to a breach of duty, and that actual injury occurred as a proximate result.²³ They will state that relief should be granted, for school officials and teachers alone have it within their exclusive control to avoid educational injuries negligently inflicted on individual students.²⁴

In peroration, counsel will observe that the opportunity for every child to receive an equal and effective education is of primary importance to our society, and public school systems are thus legally charged by constitutional mandate to provide children with sufficient knowledge of the basic skills necessary for self-reliance.²⁵ Until and unless compulsory attendance is coupled with compulsory responsibility to educate, the failures of public education may be lamented by the people but are likely to remain uncorrected by the schools.²⁶ They will profess that their quest is one of responsibility, professionalism, and accountability. The case of Jeremy Jones, they will say, will provide an impetus for reform and a stimulus for greater societal involvement by American children everywhere in this nation.

In its brief, the school board will argue that they (and their professional employees) are not the only responsible parties involved in the education of a child. They will emphasize that school administrators and teachers cannot possibly succeed in their professional tasks with children unless they have continuous parental support and involvement. In Jeremy's case, they will assert that his parents were "neither interested nor supportive" of school efforts and, not only were they apathetic, but also often neglected their responsibility for Jeremy's education, growth, and development.

Counsel for the board will next suggest that all factors affecting the education of each child are not within the board's exclusive control. Finance of the schools, community apathy, community social stratification and several other factors, the board will contend, have as much to do with whether a child is "successful in his educational development" as does the schools' curriculum. Therefore, a public school board if often placed in an impotent position, one it cannot possibly remediate because it cannot control factors external to the school.

The board's brief will also assert that Jeremy himself should take some of the blame for his own failure. Evidence will show that he was given help by teachers, and that several teachers tried everything they could to motivate him, yet, Jeremy never once assumed a positive role in his own educational development. If negligence was present, it took the form of **contributory negligence** on Jeremy's part, aided by his parents' failure to provide necessary stimuli.

Finally, the board will ask for a dismissal of plaintiff's claim, citing the nonexistence of any manageable standards upon which to base a judgment. Counsel will show the existence of considerable disagreement among educators regarding a definition of a "meaningful and effective education." They will also show that educators debate on the subject of "basic literacy testing," with no apparent consensus. How then, counsel will ask, can a court render a definitive decision when the "scholars" themselves can't agree?

A Decision

After reviewing related documents and scrutinizing the rhetoric provided by plaintiff's attorney, Chief Justice Wright of the State Supreme Court will glean appropriate precedent, draw inimical conclusions, and

will dismiss the case for failure to show a cause of action. He will discuss in depth the tendency of appellants to employ the courts as a short cut to fundamental educational reform,²⁷ when other avenues for remedy are readily available to Jeremy's family. He will express the opinion that courts have not and must not enter the sacred realm of academic decision-making; judging academic progress of students is best left to scholars and not to lawyers and judges. He will further opine that although "the common law is not a compendium of mechanical rules written in fixed and indelible characters,"²⁸ the court has limited ability to expand a legal concept beyond the limits of its logic.²⁹

Mr. Justice Wright will express the view that malpractice cases are simply the forerunner of an effort on the part of parents to bring into material focus, through the judicial system, their claim that the public schools of America have failed to provide the Peter Does of this country the kind of education to which they are entitled.³⁰ In his view, however, such a problem (if one exists) is one better resolved by lay citizens and educators than by courts.

The Chief Justice will next examine the specific allegations of negligence. He will observe that no reasonable person would conclude that being educators did not impose upon appellees a "duty of care" and a "duty to instruct children" within any common meaning of those terms, and that public authorities who are duty bound to educate are to accomplish that goal with "care." However, he will proclaim, that the "duty of care" and "duty of instruction" are not terms of common parlance (even among educators) and they are instead legal concepts created by judges to sustain liability for negligence; thus, they must be analyzed in that light.³¹ According to the Chief Justice, an affirmative declaration of duty simply amounts to a statement that two parties stand in such relationship that the law will impose on one a responsibility for the exercise of care toward the other. Inherent in this simple description are various and sometimes delicate policy judgments including: the social utility of the activity out of which the injury arises, compared with the risks involved in its conduct; the kind of person with whom the actor is dealing; the workability of a rule of care, especially in terms of the parties' relative ability to adopt practical means of preventing injury; the relative ability of the parties to bear the financial burden of injury and the availability of means by which the loss may be shifted or spread; the body of statutes and judicial precedents which color the parties' relationship; the prophylactic effect of a rule of liability; in the case of a public agency defendant, the extent of its powers, the role imposed upon it by law, and the limitations imposed upon it by budget; and finally, the moral imperatives that judges share with their fellow citizens.³² Justice Wright will also acknowledge that "duty" is not sacrosanct in itself, and must be established by fact, in each case. The legal concept of "duty owed" is an expression of the sum total of those considerations of fact which lead the law to say that the particular plaintiff is entitled to protection³³ and ultimate remedy in the form of damages.

Mr. Justice Wright will next observe that on occasions when the State Supreme Court has opened or sanctioned new areas

AN APPROACH TO MEASUREMENT IN THE MIDDLE SCHOOL SCIENCE CURRICULUM

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The view that science is not a content area, but a way of thinking is generally accepted in the scientific community. This dynamic view of science has important implications for all aspects of instruction. The implications affect both the organization of content and the evaluation process.

The view of science as a way of thinking involves certain assumptions about the nature of knowledge and of learning. These are that:

The categories of science are invented rather than discovered.

Learning the discipline means learning the conceptual structure of that discipline.

The concepts of a discipline cannot be understood apart from the problem situation out of which they were derived.

Learning a discipline means learning the methods of inquiry of that discipline.

The way concepts of a discipline were derived vitally affects their generalization.

Science instruction is beginning to reflect these assumptions, but evaluation and measurement procedures are still based on a static, classical view of knowledge. This paper involves a discussion of ways of adapting measurement to reflect the dynamic changing concept of science.

The educational objectives of teachers, who recognize that science is a way of thinking - rather than a content area, differ considerably from those of teachers operating from a classical conception of knowledge, and their measurement and evaluation procedures should reflect this difference.

Science teachers are perhaps

more aware of the rationale behind the "new" curricula than any other group of teachers. There is, however, an inconsistency that generally exists between the objectives that science teachers have set for their students to achieve and the measurement procedures used to assess these achievements. Generally speaking, conscientious science teachers are aware that too much of the evaluation that is performed in science classes requires only that the student remember and give back materials that have been presented either in the text or in class discussion. Even those test items that appear on the surface to be measuring higher level problem solving upon closer examination can often be answered by students who have memorized particular methodologies.

There are two rather serious consequences likely to be derived from this inconsistency between stated and measured objectives. The first and more apparent result of this inconsistency is that teachers have no way of knowing whether their stated objectives have been achieved or not. A second, and perhaps more damaging effect of using memory level test items is that we are reinforcing a psychological set to memorize. Like it or not, students infer what is important from what they find on the test. In our schools, grade-conscious students memorize and give us back exactly what we measure — "knowledge" with or without understanding.

The fact that many schools have adopted a "new" curricular philosophy requires that the teachers take a new look at their methods of measurement and evaluation. The philosophy behind the "new" curricula suggests that the measurement and evaluation procedures used in the classroom should involve a much greater consideration of both the nature of

knowledge and the manner by which it evolves.

Test questions should be at least as concerned with the production of ideas as they are with their consumption. Questions intended to evaluate the effectiveness of the "new" curricula should generally be concerned with the historical evolution of the structure of the discipline, and more specifically, they should be concerned with such things as:

The nature of the problem situation and the theoretical formulations used in its solution.

The nature of the experiment performed.

The formulation of "new" hypotheses and the design of experiments to test them.

Items concerned with the nature of the problem situation and the theoretical formulations used in its solution.

In the "new" curricular philosophy it is generally recognized that the concepts which make up the **structure of a discipline are invented in an attempt to predict the form and pattern of nature.** The hypothesis about the interrelationships between these concepts are derived from theory and tested through experimentation. Each of the experiments performed reflects a particular hypothesis about the nature of the concept or relationship. The proponents of the "new" curricula are continually emphasizing the fact that the concepts of a discipline cannot be understood apart from the problem situation and theoretical framework that led to its formulation. An understanding of these two conditions is a necessary prerequisite for evaluating the use of principles in different problem situations.





Test items of the type which generally require that the student, given an experiment, either recognize or reproduce the hypothesis involved, would seem

to be appropriate for measuring this type of behavior. Newton's **Experimentum Crucis** serves nicely to provide an example of how the thinking behind early experiments can be used as a source of ideas for evaluating the objectives of the "new" curriculum. Three multiple choice questions of this type are shown below.

1. Newton darkened his room and made a small hole in his window shutter to let in the sun's light. He placed a prism near the hole so that the sun was refracted to the opposite wall. After observing the form of the spectrum on the wall, he was surprised to find that the form wasn't circular. Which of the following theories concerning the nature of light would most adequately account for Newton's expectations of a circular image? The theory that sunlight

- A. contains all colors of the spectrum which are differentially refracted by the prism.
- *B. was altered by passage through the prism and that different colors were caused by passage through different thicknesses of glass.
- C. was altered into a spectrum when passed through a prism.
- D. consists of colors derived from natural bodies.

2. If in an experiment a circular ray of sunlight enters a prism and the ray is projected onto the wall, the shape of the image projected onto the wall will be a

- A. 
- B. 
- *C. 
- D. 

3. The shape of the image of the spectrum projected on the wall in Newton's experiment supports a conception of a beam of sunlight as composed of the different colors of the spectrum

- A. which are derived from the reflection and refraction from natural bodies.
- B. each of which is differentially bent by a form of magnetism when it passes through the prism.
- C. each color of which con-

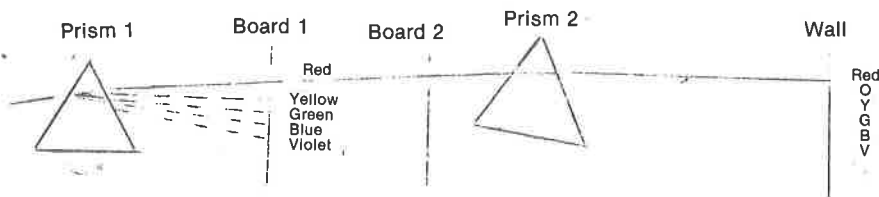
sists of a particular wavelength that is differentially refracted.

- *D. both B and C would account for the shape of the image.
- E. both A and B would account for the shape of the image.

Newton's **Experimentum Crucis** provides an additional example of how descriptions of early experiments can be utilized as a source of ideas for constructing both multiple choice and open-ended items which require the student to either recognize or reproduce the theory behind an experiment. Newton, for example, states that he took a single colored beam of light and

...refracted it with prisms, and reflected it with bodies which in daylight were of other colour; I have intercepted it with the coloured film of air, intercepted two compressed plates of glass; transmitted it through coloured mediums and through mediums irradiated with other sorts of rays, and diversely terminated it. Each of Newton's experiments reflects a hypothesis about the nature of light which can be used as a base for constructing items.

It should be recognized that the intellectual function required of the students by this type of item is primarily an analytical function rather than a synthetic function. This is true regardless of whether



The experimenter found that when he rotated the first prism, the different colors of the spectrum were caused to strike the second prism and be refracted (or bent) onto the wall.

1. In this experiment the function of the second board is to
 - A. insure that only a light beam of a certain color strikes prism 2.
 - *B. insure that all of the colored light beams strike prism 2 at the same angle.
 - C. filter out extraneous white light.

the item is multiple choice or open-ended. The items require analysis because the student is given an experiment and asked to deduce the hypothesis rather than actually being asked to produce the hypothesis or experiment.

The utilization of source book materials in the construction of test items that require the students to reproduce for themselves the original hypotheses (both the valid and the invalid) of earlier scientists should be of considerable value in helping remove some of the mystique concerning the working procedures of the creative scientist as well as providing insights into the constructed nature of knowledge.

Questions Relating to the Nature of the Experiment Performed

Questions relating to the experiment often require either a verbal or graphical description of the experiment. This is especially true if the student hasn't been directly exposed to the experiment in class work. Utilizing unfamiliar experiments would seem to be a justifiable procedure if the student behavior desired is critical analysis. A graphic description of Newton's experiment is presented below. The description provides the basis for the following sample items related to the experimental methods used.

Observe the experiment shown below.

- D. allow the experimenter to control the size of the opening.
2. In the experiment shown above rotating prism 1 has the effect of
 - A. recombining the colors of the spectrum.
 - B. changing the amount a particular light ray is bent.
 - *C. causing a different colored ray to pass through the opening in board 1.
 - D. further separating the colored rays.

Items Concerned with the Formulation of New Hypotheses and the Design of Experiments to Test Them

One of the most important objectives implicit in the "new" curriculum is that of producing students who have the ability to inquire effectively. Thus, measurement and evaluation procedures should reflect this objective.

In science this means that teachers should be concerned with the development of test items that require the student to formulate new hypotheses and design experiments to test them. Questions that attempt to measure this type of achievement must of necessity be open-ended.

Teachers generally have tended to borrow too uncritically from the professional test writers. They may have done this without fully comprehending the differences between their objectives, and those of individuals involved in the construction of standardized tests and/or text book exams.

Teachers have, for example, tended to accept the contention of test writers that a good multiple choice item is preferable to an item requiring a constructed response. In reality this is still a point of debate. The arguments put forth by the proponents of multiple choice tests have focused around two points: (1) the more precise discriminations required to answer multiple choice items and (2) the increased scorer reliability inherent in the items. The minority view represented by those favoring items requiring a constructed response have contended that **knowledge that can be recalled is of more worth to the individual than knowledge that can only be recognized.**

For the teacher, both of these arguments represent an oversimplification of the problem. Teachers as it should be, are more concerned with evaluating the educational progress of students and utilizing this evaluation as a basis for modifying instruction than with improving the predictive validity of the test. The ultimate determinate of the type of item used should be the intellectual process involved in obtaining the answer. If we are concerned with creating analytical thinkers, then multiple choice items of the type

used above are probably appropriate. These items, however, are not a good criterion upon which to base judgment relevant to how well an individual can function as a producer of ideas.

Multiple choice items such as the one shown below at first glance seem to require a type of synthesis. The primary fault of the item stems from the nature of the multiple choice item. While there is little doubt that if these questions were left open-ended they would satisfy the criteria for "synthesis," the fact that responses are provided makes it unnecessary for the individual to provide his own response. Students can, if they so desire, analyze the alternatives presented to come up with the correct answer. In this case, the process involved is analytical rather than synthetic, and nothing new is created. For example, in the following item the students are provided with alternatives which they might not have been able to reproduce for themselves. They can, if they so choose, work deductively to reproduce the hypothesis involved and relate it to Newton's experiment.

In view of Newton's experiment, the most logical next step is to

- A. Pass each individual color through a prism.
- B. Use two prisms and perform the experiment shown below.
- *C. Use two prisms and perform the experiment shown below.
- D. Try to break red light down farther as shown below.

A. Pass each individual color through a prism.

B. Use two prisms and perform the experiment shown below.

SUNLIGHT $\triangle \triangle$

- *C. Use two prisms and perform the experiment shown below.

SUNLIGHT $\triangle \nabla$

D. Try to break red light down farther as shown below.

RED LIGHT \triangle

For teachers interested in evaluating the degree to which their students can function as producers of ideas, the use of open-ended questions appears to be the only possible solution. In science, most of these open-ended questions will involve providing the students with a description of an experiment or set of experiments and then asking open-ended questions relating to either (1) the next question that should be asked or (2) the next experiment that should be performed. In the process of utilizing these questions the teacher must of necessity sacrifice a measure of precision in order to obtain a measure of the students' ability to synthesize. Open-ended questions of the type called for above typically do not have any one right answer. There are, in fact, normally several appropriate questions to be asked, and several relevant experiments that can be legitimately performed. It is also true that certain questions are much more relevant and appropriate than others when viewed in the light of a previous experiment or experiments. If, as suggested in the philosophy behind the "new" curriculum, we are to create students who (1) understand the invented or constructed nature of knowledge and (2) are adept in inquiry, our measurement should help our students to realize not only that there is no one right question to ask, but also come to understand the nature of the criteria by which the worth of a question can be judged.

Conclusion

When a school decides to utilize the "new" curricula they have in effect accepted a "new" curricular philosophy and with it a new set of instructional goals and objectives. In most cases the measurement procedures utilized within the school systems do not reflect this change in objectives. If we are to evaluate the effectiveness of our instructional procedures for the production of students who can both critically analyze and produce ideas, then the teachers need to re-examine their measurement procedures in light of the "new" curricular goals.

INDIVIDUALIZED, COMPETENCY BASED INSTRUCTIONAL MODEL

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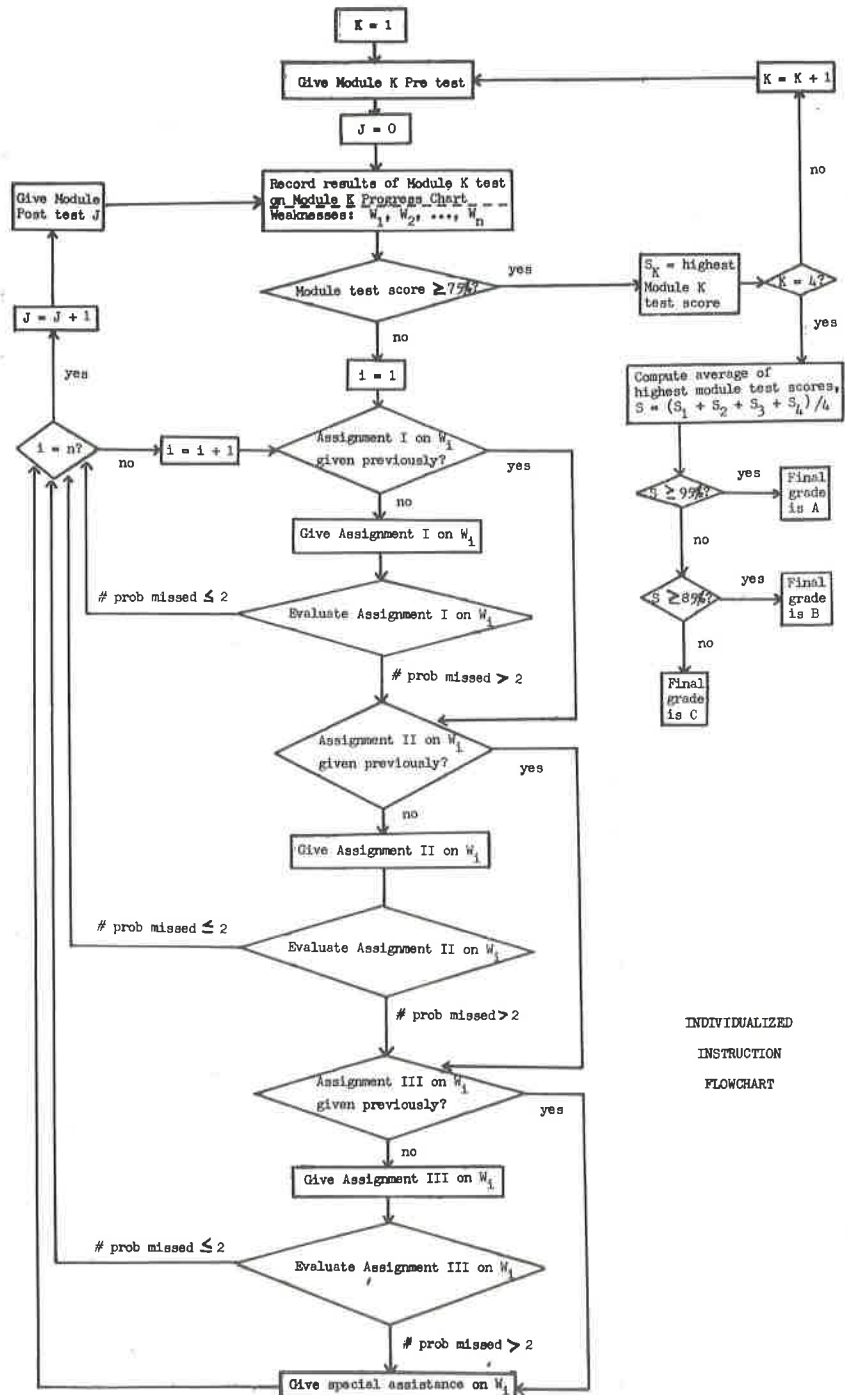
This paper describes an instructional model based upon the following position statement.

Specific learning outcomes (behavioral objectives) should be predetermined. These behavioral objectives should be grouped logically to provide learning outcomes for each of several modules. Each module (instructional unit) should contain specific assignments and test items measuring module behavioral objectives. Each assignment should contain a component to assess the extent to which a student has mastered the corresponding behavioral objective.

At the beginning of each module, a diagnostic pre test covering all module objectives should be administered to identify each student's strengths and weaknesses. In order to move from one area of weakness to his next area of weakness, a student should be required to demonstrate a predetermined level of competence. After demonstrating competence on each identified area of weakness in a module, a student should be required to demonstrate competence on a comprehensive module post test examination. Each student should be allowed to work at his own pace until he has demonstrated competence on each module.

The instructional system should provide an updated record of each student's progress.

The model presented here is the result of an attempt to translate the philosophical position statement into a workable format. An operational definition of this model is exhibited in the Individualized Instruction Flowchart.



INDIVIDUALIZED
 INSTRUCTION
 FLOWCHART

Fortran equalities are used in the flowchart. A = B means put B into location A. For example, K = 1 means put 1 into location K. Variables K, j, i and n used in the

flowchart take on different values as a student progresses through the instructional sequence. K is the module number, J the post test number (a J of zero indicating a pre

test), i the weakness number and n the number of weaknesses on the most recent pre or post test.

The Individualized Instruction Flowchart illustrates an instructional system with four modules and three assignments per behavioral objective. A score of 75% was arbitrarily chosen as the minimal competence level required on each comprehensive module test. In addition, a minimal competence level for evaluation of assignment must be determined. In this instructional system a student can miss no more than two problems on any assignment to demonstrate competence.

Module I Pre Test is administered on the first day of instruction. The results of this test are recorded on Module I Progress Chart. If a student scores at least 75% on this test he moves to Module II. If not, he is given an assignment corresponding to his first weakness as indicated by diagnostic information on the Progress Chart. The student continues working on assignments corresponding to this weakness until he demonstrates competence (misses no more than two problems). He is then given assignments on his next weakness until competence has been demonstrated. This process is continued until he demonstrates competence on all n of his identified weaknesses. At this point Module I Post Test 1 is administered and the results recorded on the Progress Chart. If the student scores at least 75% on this test he moves to Module II; if not, his weaknesses are identified and he is given assignments on each weakness until he has demonstrated competence. At this point, Module I Post Test 2 is administered. This process is continued until the student demonstrates competence on Module I. The same procedure is followed on each of the other three modules.

In educational systems where letter grades are used in the student evaluation process, a method of assigning grades must be determined. It seems reasonable that students who have demonstrated competence on each module should be assigned at least an average grade. The following grading scale accompanies the Individualized Instruction Flowchart:

continued from page B

of tort liability, it has noted that the wrongs and injuries involved were both comprehensible and assessable within the existing judicial framework.³⁴ Such is not true of wrongful conduct and injuries allegedly involved in educational misfeasance for classroom methodology affords no readily acceptable standards of care, or cause, or injury.³⁵ The science of pedagogy itself is fraught with different and conflicting theories of how or what a child should be taught, and any layman might—and commonly does—have his own emphatic views on the subject. What is more, there are so many intangible factors that enter the educational process, none of which are within the control of the school system.

Making specific reference to the *res ipsa* doctrine, Justice Wright will conclude that substantial professional authority attests that the achievement of literacy in the schools, or its failure, is influenced by a host of factors that affect the pupil subjectively, from outside the formal teaching process, and beyond the control of its ministers. They may be physical, neurological, emotional, cultural, environmental; they may be present but not perceived, recognized but not identified. He will find in this situation no conceivable workability of a rule of care against which defendants' alleged conduct may be measured, no reasonable degree of certainty that plaintiff suffered injury within the meaning of the law of negligence, and no such perceptible connection between the defendant's conduct and the alleged injury. Proximate cause, that necessary nexus, has not been clearly shown. To hold educators to a duty of care in the discharge of their academic functions, would expose them to tort claims, real or imagined, of disaffected students and parents in countless numbers.³⁶ The ultimate consequences, in

terms of public time and money, would burden them, and society, beyond calculation.³⁷ Thus, he will conclude that the charges of negligence (in instruction and evaluation—misrepresentation) and the claim of misfeasance do not state a cause of action; also, that judicially manageable standards for objective evaluation are nonexistent and do not apply in this case. The judgment of dismissal will be affirmed.

A Post-Mortem

Jeremy will leave the courtroom on the day of the decision and will have only the memories of his struggle against the system. The decision will actually be no surprise to him and, to be truthful to himself, he will be relieved when it is over. He will return to his local community, as have four generations of Joneses before him, and will eventually become employed as a laborer for various construction companies. He will not retain a position for an extended period of time, but will, nevertheless, join the lower middle class, purchase an undersized home, marry, and have children. He will not engage in higher or adult education, obtain tutorial assistance, or become active in local organizations, clubs, or PTA. He will consistently vote against local bond elections (regardless of their purpose), complain but not participate in government, and retain low educational aspirations, even for his children.

His state's public school system will eventually employ functional literacy tests for graduation, mandate more stringent periodic accountability and diagnostic procedures, and apply higher standards of quality for instructional personnel.³⁸ Within the local school system, grade levels will be eliminated (employing a learning continuum instead), teacher recruitment will become more intensified, and a move "back-to-

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A 95% - 100%, B 85% - 94% and C 75% - 84%. Students failing to demonstrate competence on one or more modules may be assigned an incomplete or a failing grade.

The Individualized Instruction Flowchart has served as the model for instruction in Mathematics 104, a non-credit introductory algebra course taught at Chicago State University. The test, **Series in Mathematics Modules**, Modules I-IV (Ablon, Leon J., Sherry Blackman, Helen B. Siner, and Anthony Giangrosso; Menlo Park, California: Cummings Publishing Company, 1973), consists of four modules covering operations on signed numbers, basic algebraic operations, linear equations and lines, and factoring and operations

on algebraic fractions. A total of seventy five behavioral objectives were constructed based on analyses of the text, examinations published in the instructor's manual and examinations constructed by several instructors. Objectives were distributed over the four modules as follows: 25 for Module I, 20 for Module II, 17 for Module III and 13 for Module IV.

A pre test and four post tests measuring corresponding module behavioral objectives were constructed using a multiple choice format. A sample item from Module I Pre Test measuring the behavioral objective "Perform arithmetic operations in correct order" is displayed below.

Item 25, Module I, Pre Test

$$25. \quad 1/2 - -3/5 + -1/6 =$$

- A. -1 B. -14/30 C. -15/23 D. 1 E. 1/10

A chart used to record each student's progress was constructed for each module. A list of module behavioral objectives, stated in abbreviated form, appears on the left side of each progress chart. Spaces are available

to record each student's performance on three assignments and Module Pre and Post Test items corresponding to each behavioral objective. Module I Progress Chart illustrates these features.

Turn to page 32.

Module I Progress Chart

Name: _____
 S.S. #: _____
 Section: _____
 Term: _____

No. Behavioral objective	Assignments			Form Date	Module Examinations								
	I	II	III		Pre test	Post 1	Post 2	Post 3	Post 4				
	Date	Number correct	Date	Number correct	Date	Number correct	Item No. (raw score)	Score (%)					
1 Factor composite							1						
2 Reduce positive fraction							2						
3 Multiply positive fractions							3						
4 Divide positive fractions							4						
a Numerator whole number							5						
b Denominator whole number							6						
c Other							7						
5 Add positive fractions							8						
a Like denominators							9						
b Whole number addend							10						
c Other							11						
6 Order numerals							12						
7 Add integers							13						
a Two addends							14						
b More than two addends							15						
8 Subtract integers							16						
a Multiply integers							17						
b Zero factor							18						
c No zero factor							19						
9 Divide integers							20						
a Like denominators							21						
b Integer addend							22						
c Other							23						
10 Subtract signed fractions							24						
11 Perform operations in correct order							25						
12 Multiply signed fractions							26						
13 Divide signed fractions							27						
a Numerator an integer							28						
b Denominator an integer							29						
c Other							30						

Don D. Bunt 1978

C=Correct; I=Incorrect; ▽ Indicates competency

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views. These changes can be related to the value clarification process itself. This exposure widened the students' perspectives and strengthened their willingness to take a stand on controversial issues.

In regard to the instrumental values, parents ranked **loving** above **honest** as their first priority. **Responsible, logical, ambitious, broadminded, and independent** were instrumental values also ranked higher by parents. Parents ranked **imaginative, clean, and intellectual** as their lowest priorities.

In examining the results of the Rokeach Survey of Terminal Values, no significant differences appeared between the pretesting and post testing of the seventh, eighth, and ninth graders. It is therefore suggested that perhaps terminal values necessitate a longer period of time to change than instrumental values. Two or more related instrumental values may have to change before one terminal value change is indicated. Also, terminal values, or end goals may remain the same while instrumental values, or methods implemented to reach these same end goals, may be changed.

On the pre and post test of the Rokeach Survey of Terminal Values seventh graders chose the following values as their highest priorities: **freedom, a world at peace, happiness, true friendship, and a world of beauty.** Eighth graders chose **freedom, a world at peace, true friendship, happiness, and wisdom** as their highest priorities. Thus seventh and eighth graders generally agreed on their rankings of terminal values. The ninth graders chose **freedom, family security, happiness, and true friendship** as their highest ranked terminal values. Generally speaking, the ninth graders ranked **wisdom, a sense of accomplishment, and family security** higher than the seventh and eighth graders.

The parents surveyed ranked the terminal values of **family security, self-respect, mature love, salvation, and inner harmony** as their highest priorities. Compared to all of the students surveyed, parents ranked the following values lower: **freedom, loving, a world at peace, happiness, true friendship, and a world of beauty.**

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basics" will be achieved. Emphasis still will be placed on affective development and individualized instruction will become almost universal. All of this will be made possible by the expansion of state and federal aid and significant increases in equalization funds. Nevertheless, some children may still sift through the system, as Jeremy had done years before, and may know very little American history, mathematics, science, English, and the like, may have developed a relatively low self-image, and may be unprepared for adult life.

There is a Jeremy Junior in the future. Much like his father, he will receive remedial work in reading and math and will make only marginal progress. Jeremy Junior, however, will probably not graduate with a diploma (reserved for those demonstrating certain competencies in basic skills), but will receive a 12-year certificate (reflecting only attendance). He, too, will be unconcerned with school and will provide limited participation and involvement. His effort will remain low and he will appear to be waiting for something to happen. Unfortunately for Junior, nothing ever will happen for he, too, will not accept the fact that he must be the primary catalyst for his own development and that efforts of school personnel are to supplement, not supplant, his own. Regardless of the advances made by legislators, laymen, educators, or even parents, the child must be at least partially responsible for his own development. A working relationship between teachers, students, and parents appears more likely to improve the educa-

tional product than working in his own direction, perhaps in opposition to the others. If Junior is to avoid a destiny similar to his father's, he, his parents, and school personnel must all assume responsibility and accountability for his education.

An End

As we are leaving this southwestern region, we can observe that the economic and social circumstances within the community have not significantly changed. The town is larger, the population has doubled, and the economy remains dependent on agriculture and related services. Economic variables are only slightly higher, the federal free breakfast is as large as the lunch program, more federal controls have accompanied funds, and local financial and moral support is low.

Visualizing the school system we can see growth and improvement. Two new high schools, two junior high schools, and three elementary schools have been constructed. They are better maintained and administered, and working conditions are vastly improved. We can also see Jeremy working in the local community and Jeremy Junior in the school lunchroom. Junior is consuming his meal with the vigor of any 14-year-old ready to be outside. His dessert first, then his meat, down with his soda (although milk was available) and off he gallops toward the playground, leaving behind only his vegetables and large glass of cool water.

Extensive references can be obtained from the authors.

What are some implications of the experimental research completed by the authors? Foremost is the desirability of teachers creating and adopting value clarification modules related to varied disciplines. Perhaps whole schools or school districts may become involved in extensive programs providing articulation between and among grade levels and subject areas.

The following are suggestions for teachers wishing to implement a value clarification program similar to the one discussed in this article. First, motivation must come from the student. The degree of participation must be voluntary. The teacher, as the facilitator, must however, establish a certain trusting, supportive atmosphere in the classroom. Differences of opinion should be accepted and desired, and acceptance must be nonjudgmental. It must be remembered that there are no right or wrong answers in value clarification. Grading is detrimental to this activity as it may stifle trust, honesty, and a willingness to self-

disclose. In lieu of grading, continuous self-evaluation by the students and the teacher should be facilitated.

More extensive research over longer periods of time is also needed in the study of student values. Five weeks of work in this area is far too little. Value clarification should be a continuous process in the schools. Actually the public schools should define, discover, and consider the values of parents, teachers, and students in planning and preparing a comprehensive curriculum. For example, what happens to a school's morale and discipline if the parents' and students' values are inconsistent with the values of the school which foster obedience, conformity, and structure? Finally, value clarification does not necessitate radical change but merely facilitates a clarifying, self-actualizing process. It may be unrealistic to expect a great deal of change in students' values as most pupils are initially becoming consciously aware of their values. The term "value clarification" denotes

continued on next page

Arithmetic Skill Competencies of Eighth Grade Students

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Many school testing programs report results in terms of grade equivalents or percentile ranks. These measures are norm referenced and may be used to determine each student's relative standing within the group tested. They also provide information concerning how well a given class or school sample performs on a standardized test compared to similar groups of students. Important as this information may be, it does not provide data concerning the percent of students who can perform each specific objective, nor does it contain diagnostic informa-

tion concerning each student's strengths and weaknesses. Additional criterion referenced measures are required to identify specific content and skill areas which should be improved.

The purpose of this study was to describe specific arithmetical skill competencies of a sample of eighth grade students. Objectives used were taken from a Chicago State University mathematics remediation program (Bunt, 1974a). These objectives comprise the following four categories:

(1) the operations of addition, subtraction, multiplication, and division performed on counting numbers, decimals, fractions, and mixed numbers; (2) conversions among fractions, decimals, percents, and improper fractions; (3) percent problems; and (4) prose problems (story problems) involving the solution of proportions. The thirty-four computational

behavioral objectives, stated in the following list, each begin with a behavioral verb, as advocated by Gronlund (1971, p. 38).

Computational Behavioral Objectives

1. Add five four-digit counting numbers
2. Subtract any two four-digit counting numbers
3. Multiply any two counting numbers having four or less digits—neither factor ending in a zero
4. Multiply any two counting numbers have four or less digits—both factors ending in zero
5. Divide any counting number by an exact divisor of the dividend
6. Divide any counting number by a divisor which is not an exact divisor of the dividend
7. Add a series of decimals
8. Subtract two decimals
9. Multiply two decimals
10. Divide two decimals
11. Add two mixed numbers
12. Subtract two mixed numbers
13. Multiply two mixed numbers
14. Divide two mixed numbers
15. Add three fractions
16. Subtract two fractions
17. Multiply two fractions
18. Divide two fractions
19. Recognize two equivalent fractions
20. Reduce a given fraction
21. Determine a fraction having a specified denominator which is equivalent to a given fraction
22. Convert a fraction to a decimal
23. Convert a decimal to a fraction
24. Convert $N\%$ to a fraction
25. Convert a fraction to a percent
26. Convert a percent to a decimal
27. Convert a decimal to a percent
28. Change a mixed number to an improper fraction

continued from preceding page

its objective which is to assist students in discovering and consciously clarifying their own values.

In conclusion, perhaps the responsibility for the availability of value clarification programs and opportunities for youth lie ultimately with the parents, schools, local community, and the state and federal governments. In some instances parents may be too self-occupied to be of significant assistance. Thus, public schools may initiate value clarification programs, claiming this right as a residual function of the school. Once the public schools become involved in value clarification, the state and federal governments may grant money for extensive pilot programs and studies on the effectiveness of value clarification activities in our public schools. The ultimate goal for proponents of value clarifica-

tion programs would be for the state to mandate value clarification in the public schools' curriculum. However, administrative fears, political entanglements, unprepared and untrained teachers, a miseducated public, and the ideal of the sanctity of the home have in the past and may in the future preclude the adoption of value clarification programs in our public schools. This hindrance could be totally devastating for the development of our society's youth. The consequences of the public schools not making available instruction in value clarification may result in further confusion, alienation, and instability for today's youth. Living in today's complex, rapidly changing society may actually require exposure for youth to formal value or moral education in order for our society to produce a mentally healthy, self-actualized future generation of adults.

29. Change an improper fraction into a mixed number
30. Determine what percent is equivalent to a of b
31. Determine the number, b, such that C% of b is a
32. Compute C% of b
33. Solve a problem stated in prose requiring the solution of a proportion involving mixed numbers
34. Solve a problem stated in prose requiring the solution of a

proportion involving decimals

A multiple choice item was constructed to measure each behavioral objective (Bunt, 1974b). The resulting thirty-four item criterion referenced test was administered to 262 eighth grade students from a Midwestern city with population approximately 15,000. This sample of students contained a majority of the eighth grade students enrolled in this city's school system. A Kuder-

Richardson Formula 20 reliability estimate of the test results was .82.

FINDINGS

Two measures of central tendency, mean = 17.92 and median = 18.00, indicated that approximately 50% of the eighth grade students received scores of less than 53% on the test of basic arithmetical skills. Diagnostic profiles, indicating each student's strengths and weaknesses, were generated via computer output (Bunt, 1979).

An item analysis of the results included the percent of students answering each item correctly (Stolarz, 1973). Since each item corresponds to a specific behavioral objective, the item analysis indicated the percent of students who demonstrated proficiency on each of the thirty-four behavioral objectives. These percents are reported in Table 1.

Item 7 was the easiest item on the test with 92% of the eighth graders demonstrating competence at adding a series of decimals. Item 24 was the most difficult item on the test; only 5% of the eighth graders were able to "write 4.26% as a reduced fraction." For seventeen of the thirty-four items, no more than half of the students demonstrated the desired behavior.

Percents of students demonstrating the desired behavior for the four fundamental operations performed on counting numbers ranged from 75 to 90 with median 88.5. At least three-quarters of the eighth graders demonstrated competence in adding, subtracting, multiplying, or dividing counting numbers.

Most of the eighth graders were able to add and subtract decimals (92% and 89% respectively). About three-tenths of the students could not multiply decimals. Approximately four-tenths of the eighth graders were unable to perform a long division problem with decimals.

The percent of students able to perform an operation on mixed numbers drops monotonically from 75 to 37 as we move through the operations of addition, subtraction, multiplication, and division (75% for addition to 60% for subtraction to 45% for multiplication to 37% for division).

Table 1
Percent of Eighth Graders Demonstrating Desired Behavior on Each Behavioral Objective

	Item	Percent
Counting numbers		
Addition	1	90
Subtraction	2	90
Multiplication	3	90
	4	87
Division	5	75
	6	82
Decimals		
Addition	7	92
Subtraction	8	89
Multiplication	9	72
Division	10	64
Mixed numbers		
Addition	11	75
Subtraction	12	60
Multiplication	13	45
Division	14	37
Fractions		
Addition	15	50
Subtraction	16	46
Multiplication	17	71
Division	18	49
Fraction-fraction conversions	19	44
	20	32
	21	78
Fraction-decimal conversions	22	53
	23	33
Fraction-percent conversions	24	5
	25	15
Decimal-percent conversions	26	8
	27	30
Mixed number-improper fraction conversions	28	53
	29	62
Percent problems		
Know a,b, find c	30	23
Know a,c, find b	31	14
Know b,c, find a	32	24
Prose problems		
Mixed numbers	33	28
Decimals	34	27

Learning to Read in Content Areas: The Approach From Hope

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The information provided herein was obtained from Mr. Earl Bryant, principal of John Hope Middle School, Mrs. Betty Bennett, Assistant Principal in Charge of Curriculum, Ms. Ingrid Carney, Unit Leader and Mrs. Camille Johnson, Art Teacher. Appreciation is extended for their willing participation, provision of materials and interviews.

The John Hope Middle School is located in the inner city of Chicago and exemplifies a school dedicated to the encouragement of student progress and development at the academic and human levels.

The general ambience suggests creativity, ordered activity, ethnic awareness and stability and the nurturing of diverse interests. This is a black community school which attracts students from three feeder schools in the area who bring with them varying levels of talent, need and ability. The school is unique in that the attractive structure, which was opened in 1972, was designed around a particular style of arranging students for learning experiences. That is, the school is non-graded and groups students by their needs and not necessarily by subject matter of particular age level. Hope School is child centered not subject matter centered.

The School, which was originally based on the **Wisconsin Design for Middle Schools**, is divided into five houses which each consist of two teams. Each team carries on unit leader, four teachers and either a counselor or a special education teacher. The latter two team members work with both teams in a house. Two of the houses also have learning disability teachers. Teachers who are not members of a house are part of the Research, Resource and Instructional staff (RR and I) which includes music, art, home economics, physical education and shop. In the fall of 1979 over 1100 students were attending Hope School. These students are taught using a multi-

continued from preceding page

Percents of students able to perform the four fundamental operations on fractions ranged from 46 to 71. About one-half of the students were able to add, subtract or divide fractions; 71% were able to multiply fractions.

The median percent for items measuring conversion from one numeral type to another was 33. On the average, less than 50% of these students could perform a conversion from one numeral type to another.

Only 32% of the eighth graders could reduce a fraction. Forty-four percent of the students could recognize two equivalent fractions. Seventy-eight percent of the students could "determine a fraction having a specified denominator which is equivalent to a given fraction."

Fifty-three percent of the testees demonstrated competence in converting a fraction to a decimal. Only 33% were able to convert a decimal to a fraction.

Item 24, measuring "convert $n\%$ to a fraction" was quite difficult, with only 5% of the students answering correctly. Fifteen percent were able to convert a fraction to a percent.

Eight percent of the eighth graders were able to convert a percent to a decimal; 30% were able to convert a decimal to a percent.

Between fifty and sixty percent of the students were able to perform mixed number—improper fraction conversions.

The percents of students demonstrating competence on the three percent problems ranged from 14 to 24. The median percent for percent problems was 23. On the average, less than 23% of the students could solve a percent problem.

About 30% of the eighth graders were able to solve a story problem involving mixed numbers or decimals.

CONCLUSIONS

Most of the eighth graders tested know their fundamental arithmetic facts, can perform the four fundamental operations on counting numbers and can add and subtract decimals. They possess a moderate ability to perform the four fundamental operations on fractions and mixed numbers but exhibit weakness on numeral conversions, story problems and percent problems. A large majority of the eighth graders are quite weak

in ability to solve any problem involving a percent. Results of administering items measuring specific behavioral objectives may be used in the assessment of the effectiveness of current educational programs and provide targets for subsequent instruction.

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age approach which combines 6th, 7th and 8th graders, in the classroom rather than teaching each level separately. By using this method students studying at lower levels do not hinder other students and faster learners do not cause unnecessary pressures on others to move faster.

One of the primary functions of middle schools in to prepare transient adolescent students, who are no longer children but not yet adults, to make the transition from one stage of development to the other. Certainly, there are considerations to be made relevant to the emotional maturity of students as well as their readiness to learn. In both instances, teaching materials should be developed which incorporate sensitivity to the interests of the students and encourage skill mastery at their varied levels of development. Since the students in each house are placed with the same students and house staff for three years an attempt is made to develop a rapport between a student and one or more of the staff members who can best stimulate and motivate that child, thus meeting his/her academic and social needs.

Consistent with this desire to meet specific student needs, the administration of Hope School has determined that a shift from traditional methods of teaching reading, utilizing only basal readers and a reading teacher, to a broader based effort is a necessary imperative for improving reading skills. The shift was to teaching reading in content areas as of fall, 1978.

Reconsidering Approaches to Reading

Reading programs instituted in the 1960's have met with much failure. The failure of these programs has received national attention. Because of this trend the Chicago Public Schools have been appraised of the **Chicago Board of Education Promotion Policy** which clearly places stringent emphasis on the areas of reading and mathematics. It provides greater academic opportunity for students and makes them aware of future demands to be made on them. Clearly, some students may not be prepared to meet this challenge due to prior educational ex-

periences and may be required to spend an extra year at Hope School. During this year the student's reading and math skills are more fully developed in preparation for high school. If one's skills improve sufficiently, one will be able to participate in enrichment programs, which can provide for advance placement in the high school program. Students who have already been performing on or above stated level also participate in these enrichment activities.

It may be assumed that the failure of previous programs was due to where reading was taught, by whom and the transferrability of reading instruction. Students were being taught reading by a reading teacher in a setting which was separate from the conditions under which reading skills were actually needed and used, i.e., in the content areas. Another practical consideration is that there are generally many more reading skills to be mastered than can be practically and efficiently taught by a single reading teacher. Moreover, students who are taught reading in isolation from other content areas may stand less of a chance of performing well at the high school level where more abstract concepts must be mastered.

A further indication of the need for an adjustment in teaching reading is the lack of positive correlation between improved reading scores and reading performance in other subject areas. That is, even though students might be able to read words and sentences, they might not be able to comprehend and extract meaning from the reading materials. Thus, early learning instruction cannot be blamed for curtailing reading development if no attempt is made by later instructors to encourage the transfer of reading skills into content area performance.

Teacher Training and Roles

Because teachers in subject areas other than reading may feel uncomfortable or unprepared to teach reading in their classrooms some introductory in-service training was indicated. Thus, teachers were introduced to the teaching of reading using the content area materials from science, social studies, math and literature.

Each content area demands concepts and specific reading skills peculiar to its subject matter and learning conditions. Most content fields present reading tasks far more complicated than those found in basal reading materials. Some areas, such as science and mathematics, involve a great deal of symbolism. Some deal with factual materials, others with tone and mood. Some require rapid rates of reading and extensive reading while others demand slow, intensive treatment. Each content area has its own technical vocabulary, and has special connotations for general terms.

The point must be made that a distinction remains between the duties and approach of the reading teacher and those of the content area teacher. Although the reading teacher encourages transfer of skills into various areas of student interest and involvement, his/her primary duty is to teach reading skills. Analysis of student needs and the prescription of an overall program is established by the reading teacher. Content or subject matter is not the primary concern of the reading teacher who might choose reading tools for teaching skills and processes from any subject area.

The fundamental aspect of instruction for which the content area teacher is responsible is the ordering of concepts and ideas in the curriculum. These teachers also analyze student needs and choose materials which best facilitate the achievement of curriculum goals such as the relationships between ideas, logic and sequencing of ideas and recognition of concepts and facts particular to the subject area for use as applied knowledge. Thus, the content area teacher must be aware of meeting the demands of the curriculum as well as providing a format for practicing and reinforcing specific reading skills. While the function of the two types of teachers are clearly different, their levels of success with the students are integrally related. The role of the reading teacher is strengthened and perhaps becomes more functional with greater support from the other teachers and the curriculum objectives of the content area teachers are not compromised.

The Program

Analysis of the results of the 1978 Iowa Test of Basic Skills suggested the reorganization of the five houses into groups reflecting reading scores. Consequently, House I contains students whose reading scores were lowest. Students with the highest scores [on or above grade level] are House V.

After working on certain skills included on the Chicago Board of Education Reading Mastery Record Cards, team members decide when to administer the Criterion Reference Test [CRT] provided by the Chicago Board of Education. Because the Iowa test and the CRT require different types of achievement, emphasis is placed on meeting the Board of Education requirements in preparation for mastering the skills on the Iowa test. In order to remove reading deficiencies it is sometimes necessary for students to learn three years of work in one year. While the students are learning specific skills their progress is recorded on the individual Mastery Cards. The learners also have access to a progress chart which notes their level of progress and identifies which skills need emphasizing.

Because there are so many reading skills to be mastered [i.e., mastery of a minimum of 218 objectives must be indicated on the Upper Cycle Test administered prior to graduation] related skills, which progress from simple to complex, are usually clustered into units and tested as a group. In this way all students are exposed to upper level skills even though they may not master all of them.

An example of a skill reading developmental experience from a content area uses a condensed version of Charles Dickens' **A Tale of Two Cities**. After the children have read the story they are given a study guide and asked to extract specific information from the story. The information directly relates to the content of the story but also taps, in this instance, the student's ability to demonstrate an understanding of mood, plot and setting which is one cluster of reading skills required for mastery. The teacher is able to check the student's comprehension by having him write out the mood, plot

and setting of the story. In addition, this lesson also includes the writing of character traits, another mastery skill, for certain characters in the literature. This exercise could be expanded to include a cluster of skills which can be sensibly taught together, such as the skills of notetaking and outlining.

In another circumstance the students were involved in a pilot reading activity which they reported to be very enjoyable. Scripts from popular television programs such as **Spider Man** [a superhero based on a comic book character] were obtained and loaned to the children to use at home. While the program was being aired the readers were able to follow the plot by reading the script along with the good guys and villains. This gave them an opportunity to read but the practice was placed in a more normal context which was entertaining and fun for the learners. The scripts also include study activities which tap such skills as inference, comprehension and vocabulary which are checked during class sessions. Several teachers expressed that the students need more such activities which will give them opportunities to actually practice reading in addition to the two periods of reading each day.

In another example, an art teacher reported that the reading program has smoothed out for both teachers and students since its inception. Initially the teachers in areas such as art, where the primary emphasis is placed on classroom activities, were not sure how reading could practically be taught. Now they are able to neatly "slip in" the practice of reading by using short passages relevant to the art concepts and skills or artists being studied. The children volunteer to read aloud at the lower levels or are read to by the teacher who periodically asks them to demonstrate that they are keeping up by pronouncing or spelling certain words and discussing the passage read. The middle and upper level students have mandatory oral reading experiences and discussions. All students are given vocabulary exercises which are drawn from the art area. This approach has proven functional because the teachers are now bet-

ter able to determine if the student comprehends the principles which accompany the art experiences and the intent of the lesson is not diminished.

Implications and Assessment

A formal evaluation of the reading program has not yet been conducted, although the Chicago Board of Education has begun to study city wide trends. Reading scores from Hope School compare favorably with middle schools
continued on next page

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The Art Is Curriculum Model

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Artistic development is the result of complex forms of learning. It is not an automatic consequence of maturation and research has indicated that it can be facilitated through instruction. Learning experiences which are planned for and internally organized allow instruction and learning to proceed in a more efficient manner. The problem facing every teacher of art is how quality instruction might most effectively be planned. The **Art Is** curriculum model, a long-term sequentially organized plan for art instruction in

grades six through eight, was developed in response to this need for direction in organization and planning.

This paper is divided into two parts. In part I, the **Art Is** structure will be presented along with the supporting theoretical rationale. In part II, a plan will be developed by which the individual art teacher might operationalize the theoretical model.

Part I The Theoretical Roots Curriculum In Perspective

Historically, curricular structures have been responsive to the current social demands. Changes which have occurred have resulted

continued from preceding page

across the city. That is, students are performing at or above level with "upper grade centers". Although some deficiency can be seen when comparisons are made with contained classrooms in more affluent areas in many instances, Hope scores exceed economically comparable schools in Chicago.

The general response from teachers and administrators is that there are many advantages to the structure and this approach to teaching of reading. Grouping students by needs is more worthwhile to students and teachers due to the diagnostic materials used which encourage the development of students from a specific indication of need. Students also have more opportunity for individual development since they can return to weak areas or pursue special interests without adversely affecting the progress of their fellow students.

As data are gathered the program is modified and reading materials are adapted based on analyses of test items and student success with the items.

The staff at John Hope Middle School appear to have im-

plemented an approach to reading which incorporates individual attention to students, feasible inclusion in the curriculum, productive use of staff and assessable results. Such a program is more valuable because its fundamental principles can be applied at lower and higher levels of learning for consistency. Fluidity in learning is desirable for other educators as well who emphasize the need for promoting skill mastery which is applicable for life.

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Board of Education-City of Chicago
Reading Mastery Record Cards,
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in large measure from shifts in the American social order. It might be well to ask, Elliot Eisner proposes, what society is like today and how the curriculum of art education is related to the kind of society we have now and that which seems to be emerging in the future.(1)

Due to the economic conditions of the 1970's and the prevailing Proposition 13 mentality, society today is demanding a 'back to basics' movement in education. Considering this atmosphere which often results in art program cutbacks, it is more important than ever for art educators to clearly define the role an effective art program can and should play in the development of the adolescent. Art programs based solely upon the teaching of manual skills and processes are superficial and unresponsive to current demands. "Why," the grumbling taxpayer might ask, ". . . is it important for my child to dabble in clay or printer's ink? What is he really learning?" The teacher whose instructional focus never goes beyond the manipulation of tools would be hard pressed to logically and convincingly answer this question.

What is called for is an art program which results in substantive learning which involved art with life and life with art. Curricula must be designed which bring the student to the awareness that art is an integral part of one's life. The problem facing the teacher of art is how to bring about the realization that art does indeed pervade everyone's life and that without it our collective world would be greatly and negatively affected. It is this purpose and challenge to which the **Art Is** curriculum structure is responsive.

The Art Is Curriculum Structure

Elliot Eisner identifies the construction of long-term sequentially organized curricula having continuity as one of the most fundamental needs of the field.(2) In the planning stages of the **Art Is** model, these three aspects were considered and incorporated into the design within a conceptual framework stressing the relation of art to life and life to art. The resultant **Art Is** curriculum model supports a conceptual and thematic approach to the teaching of art

which is based upon Jerome Bruner's theoretical model of the Spiral Curriculum.(3) The term concept will be used repeatedly throughout this paper and needs some definition. Taken in its broadest sense, a concept is an idea which forms the base of a mental association. The **Art Is** structure consists of a conceptual statement about the nature of art followed by five sub-statements (big ideas) which function as organizing centers. These statements are important ideas about the nature of art and the role art plays in the life of the student. The big ideas (organizing center concepts) serve as unifying themes under which all curricular content and resultant carrier activities are organized. The five organizing center concepts are:

Art is more than just making things. Art is. . .

- People communicating through a visual language
- An important part of **your** world
- An important part of other worlds
- You expressing ideas and feelings about yourself and others
- You improving your world

These ideas, in keeping with Bruner's model, are intended to be built upon and to be introduced in increasingly complex forms as the child progresses from sixth through eighth grade.(4) The long-term continuum is designed to encompass this three year (sixth through eighth grade) growth span. It is important to note that the organizing center ideas remain the same during this three year period. Concepts are, however, developed in increasingly sophisticated ways in keeping with the teacher's assessment of his or her students' changing needs and developmental patterns.

The Sequential Nature of the Structure

The revisiting of key concepts requires a planned sequencing structure. According to Gagne, the basic reason for sequences of instruction is simply that desired learning cannot take place all at once.(5) Therefore, learning must be designed to occur in a series of steps on a succession of occasions.(6) This should not be confused with the building block approach to sequencing advocated

by those of the mechanistic philosophy.(7) The actual sequence of topics within the **Art Is** structure is governed largely by what Gagne terms 'fallible' common sense logic.(8). The organizing center concept to be developed at any given time is flexible and dependent upon the interests and needs of the students, their developmental levels and readiness. Presentations are often influenced by external factors such as special times of the year or community happenings. Experiences are planned to build one upon the next and, thereby, reinforce the student's art knowledge base. This requires, of course, much preplanning and preparation on the part of the teacher. The ideational base becomes a unifying factor and is designed to help the student sensibly organize the body of information he receives.

Ideas As Organizing Centers

One critically analyzing this approach to the organization of art learning must ask what makes ideas more satisfactory as organizing centers as opposed to processes or activities. Jerome Bruner maintains that the first object of any act of learning is that it should serve us in the future. Learning should not only take us somewhere but should allow us to go further more easily.(9) In order for learning to proceed in such a manner, basic ideas which lie at the very heart of the subject matter must be taught.(10) Bruner contends that an ideational curricular base constructed from key concepts which give structure to the subject performs four functions.(11) These are:

- 1) Understanding of basic ideas makes a subject more comprehensible.
- 2) Such structure provides a pattern into which details may be placed thus insuring they will not be forgotten so easily.
- 3) The understanding of fundamental ideas appears to promote transfer.
- 4) By constantly re-examining the fundamental character of a subject, one is able to narrow the gap between advanced and elementary knowledge.

Functions of Organizing Centers

The second question an analyst

of structure might ask is how the conceptual organizing centers function within the **Art Is** curriculum model. It has already been established that (in Bruner's terms) the learner learns initially not a skill but a general idea which he is then able to use as a basis for recognizing subsequent ideas and problems as special cases of the original idea.(12) But how does the teacher of art go about building and developing the key concepts in order to facilitate this on-going process? Where must or should the emphasis be placed in the teaching-learning transaction? A closer look at the function of the organizing center concepts within the **Art Is** structure gives direction to these questions.

Humans tend to sort and categorize phenomena. The imposed categories bring structure and order to the environment and thereby enable the learner to deal with it more effectively.(13) Learners deluged with experiences, media, materials and ideas will not necessarily sensibly organize them.(14) What is called for is a conceptual base which the teacher may use to assist the student in organizing stimuli. The big ideas (organizing center concepts) play this role within the **Art Is** structure. Having accepted this role of big ideas within the structure, the teacher must consider the content of the curriculum.

Barkan and Chapman state that art programs should be planned from the following perspectives:(15)

- Subject, theme or idea about visual structure
- Medium and forming processes
- Art Form or
- Style or cultural idiom

Organizing center statements used in the design of the **Art Is** structure follow the format of the first perspective. This is not to say that the other considerations of which Barkan and Chapman write are not important. On the contrary! In selecting one's curricular content, the art teacher must certainly incorporate information about and/or experiences involving media, art forms and cultural aspects of art. These areas are important to and evident within the total structure but are subsumed under the organizing center concepts. The big ideas become, in effect, unify-

Figure 1: THE ART IS CURRICULUM MODEL... ORGANIZING CENTERS AND IMPLICATIONS FOR THEIR DEVELOPMENT

FOCUS: ART IS MORE THAN JUST MAKING THINGS. . .ART IS. . .

ORGANIZING CENTER CONCEPT	RELATED AREAS OF ART LEARNING
-People Communicating through a visual language.	-Components of the visual language. -Elements and principles of design. -Art as communication. -Art as a powerful tool used to influence. -Art as perception.
-An Important Part of Your World.	-The role of art in everyday life. -Art as perception. -Valuing Art. -Developing visual awareness. -The role art plays in the life of the student.
-An Important Part of Other Worlds.	-Historical aspects of art. -Art as a reflection of culture. -Understanding about artists and their work.
-YOU Expressing Ideas and Feelings About . . . -Yourself -Others	-Art as expression -Art as a form of emotional release. -Interpersonal behaviors.
-You . . .Improving your world	-Art as an agent of change. -Thinking new.

Note: All organizing center areas have the potential of involving the student in the following behaviors: perception, knowing, reacting, analytical, judgement, evaluation, execution and valuing behaviors.

ing themes which provide continuity within the program. For a graphic portrayal of the related areas of art learning which may be subsumed under the organizing center concepts please see Figure

Part II From Theory to Practice Curriculum Planning as Decision Making

Curriculum planning behavior, like teaching behavior, involves chains of decision-making. Each aspect of planning a total program or an individual lesson necessarily involves a complex series of decision sets. Let us begin this analysis of the pragmatic applications of the theoretical **Art Is** curricular model by examining in detail the sets of decisions facing the art teacher implementing the model.

The teacher begins by choosing one of the five organizing center concepts about the nature of art as the big idea. . . the focal point of the lesson or unit. Basic is the idea that all related concepts, supplementary activities, etc. chosen by the planner will clarify and further develop the big idea. This remains at the heart of the lesson or

unit throughout the planning and teaching transactions.

As a second step the planner identifies those goals (reasons for teaching a body of knowledge) which will best lead to the development of the big idea. Goals may be identified by the individual teacher or mandated by specific school district guidelines. Implicit is the idea that the art teacher should readily be able to identify the reasons why he or she is teaching a particular skill or concept.

When the planner has chosen the focus and has determined specific goals to be met, he or she begins to consider the concepts and related competencies expected as a result of the art learning experience. At this point the teacher asks him or herself what the child will know and, relatedly, what the child will be able to do as a result of the carrier activity. Such identification of concepts and competencies at this stage of planning provides a clear direction for the planner and aids in the formulation of evaluative criteria.

When these initial steps have been completed, the planner begins to consider the vehicle by

and through which the content might best be delivered. The first three phases of planning answer the 'What idea to teach?' question, while selection of the actual carrier activity provides direction to the 'How to teach it?' dilemma.

When considering the carrier activity, the teacher must take many variables into consideration. He or she must assess the interests and needs of the students, their backgrounds, previous knowledge base, and readiness for the impending experience. Physical limitations imposed by time or location, applicable media, and availability of materials must also be considered. In addition to thinking about the students and the physical aspects of the activity, the teacher must make the choice as to what exit behaviors can be expected from the student's experience with the carrier activity. As Anderson points out, the development of awareness, sensitivity to visual stimuli and related art behaviors are as important to the well-founded art program as the provision of opportunities for visual organizational learning.(16)

Once the vehicle by and through which the desired concepts may be taught is selected, the teacher must make several decisions concerning materials, physical layout of the room or work area(s), day-by-day procedures and evaluative criteria. Properly conceived, the decisions discussed occur prior to actual contact with students. When actually carrying out the plan, the teacher may make in-process and adjustment decisions for the purpose of delivering the intended ideas effectively. This approach is intended to assist the art teacher in clarifying one's thinking regarding what should be taught and the most effective ways of teaching it. The proposed structure provides the teacher with an organizational tool. Any curricular plan is only as effective as the teacher implementing it. The basic structure should serve as an aid to planning and the art teacher should not become a slave to it.

See figure 2 on following page

Lesson Plan Rationale and Organization

Within the **Art Is** structure, the lesson plan effectively maps out

Figure 2

DECISION STEPS IN THE IMPLEMENTATION OF THE ART IS CURRICULUM MODEL

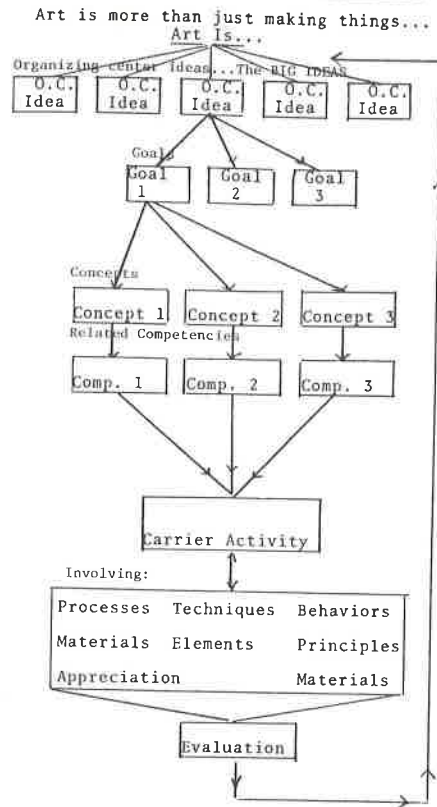
Decision Step I
Selection of the BIG IDEA...
Organizing Center Concept

Decision Step II
Identification and selection of art goals which will aid in formation of the BIG IDEA.

Decision Step III
Identification and selection of concepts and related competencies to be developed in the lesson or unit.

Decision Step IV
Planning of the Carrier Activity through which concepts will be developed.

Decision Step V
Evaluation of student learning. Assessment of program strengths and weaknesses.



the plan of action for the teacher. In considering this suggested plan (see figure 3) it is necessary to further explain some of its component parts and the purposes which they serve.

The behavioral objective is intended to pinpoint what the student will be able to do as a result of an experience with the carrier activity. It serves as a concise statement of purpose for the activity and is further subdivided in sections of the plan dealing with concepts and competencies.

Instrumental to the Art Is model is the continuous assessment of both student and program strengths and weaknesses. These aspects are provided for in the last two sections of the plan dealing with evaluative criteria and adjustments/comments. In terms of student learning, it is suggested that the teacher implementing the model make provisions for both formative (continuous, in-process) and summative (end product) evaluation techniques. In terms of the total program, it is suggested that the teacher make note of difficulties or successes involving implementation of the plan so that

the quality of instruction may be improved in future applications.

Figure 3: Lesson Plan Format... The Art Is Curriculum Model

Focus: ART IS MORE THAN JUST MAKING THINGS Class: _____
 ART IS: _____ Level: _____
 Organizing Center Concept: _____ Date: _____
 CAREER ACTIVITY: _____
 (Title... Brief Description)

BEHAVIORAL OBJECTIVE: _____

GOALS: _____

CONCEPTS: The student will know... _____

RELATED COMPETENCIES: The student will be able to... _____

VOCABULARY: _____

MATERIALS: _____

MOTIVATION: _____

PROCEDURE: _____

EVALUATIVE CRITERIA: FORMATIVE: _____

SUMMATIVE: _____

ADJUSTMENTS / COMMENTS: _____

See figure 4 on following page

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SOCIAL SCIENCE ACTION LABS: ENRICHING SOCIAL STUDIES IN THE MIDDLE SCHOOLS

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Many middle school students have a fairly well developed concept of a scientist in the physical and natural sciences. However, these same students when discussing their social studies assignments are less aware of the contributions of the social scientists relative to the facts, concepts and theories, inherent to the social studies.

The expansion of knowledge and the increasing specialization within the major social science disciplines has been overwhelming during the last two decades as it has been for the physical and natural sciences. The initial goal for Social Science Action Labs (SSAL) at this time is not to "drown" the middle school student with the vast content and

specializations of the social sciences, but to help one become more aware of some of the professional activities and contributions of the sociologist, economist, geographer, anthropologist, psychologist, and historian.

Although many middle school social studies programs have generally espoused the goal of improving critical thinking and inquiry skills, there are many schools that give lip service only to the teaching of these skills. In addition many teachers have ignored (totally or in part) the contributions that research skills promote in keeping with the goal of improved critical thinking. Is there any help available? Yes! Social Science Action Labs can supplement and strengthen the middle school social studies curriculum by emphasizing the skills, activities and the implications of social science research for better understanding of the social issues and needs of

the individual and society. (Ponder, '79)

The uniqueness and strength of the SSAL approach can best be stated by inspecting its major goals:

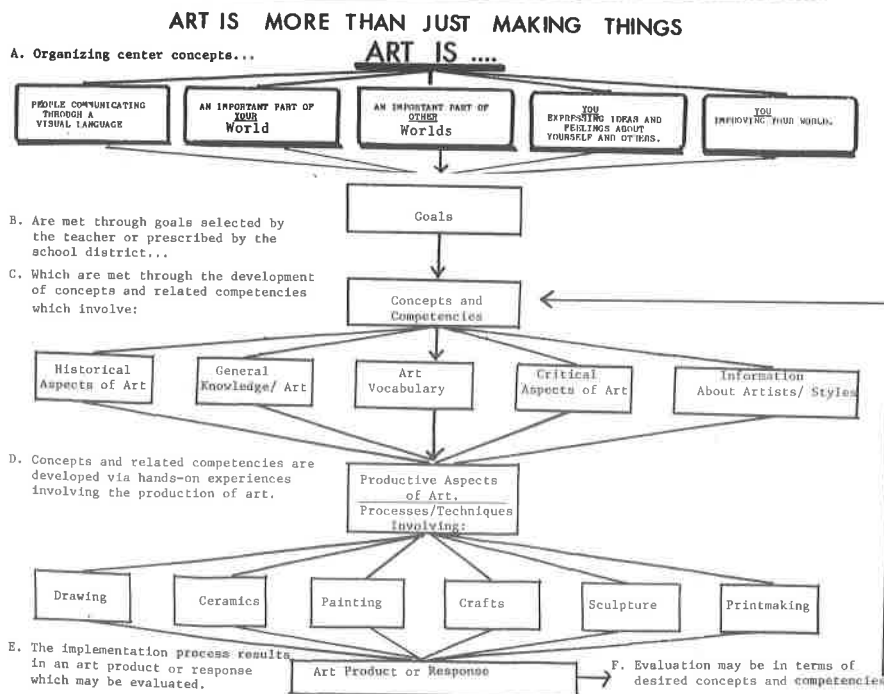
1. To develop an increasing awareness of the contributions of the social scientists.
2. To introduce and develop some of the basic research skills and strategies.
3. To introduce and develop (at their level of understanding) basic research design.
4. To introduce and discuss the responsibilities of those who do research with human subjects.
5. To stress active participation and content relevancy as it relates to the research mode of inquiry.

Basic to SSAL is the continuing development of inquiry skills. Perhaps, a task analysis of the inquiry process would indicate that critical thinking is a "collection" of specific skills rather than a unitary skill. If so, it would help reemphasize the varying individual cognitive needs of the student. Identifying and providing activities to develop specific inquiry skills for individual specific needs can give an additional "dimension" for continuing to improve these skills. (Gagne '70)

One example of a simple task analysis performance model for inquiry skills is as follows:

1. Expected performances associated with identifying a problem.
 - a. The student identifies the major ideas or issues of problems situations.
 - b. The student can state problems in a question or hypothesis form.
2. Expected performances associated with analysis of problems.
 - a. The student can identify

Figure 4: The Art Is Curriculum Structure...Considerations involved in the Implementation of the Model



- tify key concepts and/or words in a stated problem.
- b. The student can explain, in her/his own words, the key concepts.
3. Expected performances associated with gathering of data. Since there are so many skills involved in this aspect of inquiry the use of an inventory check list of skills could aid the teacher in evaluating the strength and weaknesses of each student relative to these skills.
 4. Expected performances associated with organizing information or data that has been collected.
 - a. The student can categorize data.
 - b. The students can translate data presented in written form to visual representations such as a graph, chart; etc.
 - c. The student can prepare summaries in written or outline forms.
 5. Expected performances associated with the interpretation of data.
 - a. The student can explain relationships which exist between main ideas or concepts.
 - b. The student can identify contradictions between or among statements.
 - c. The student can determine the relevancy of stated conclusions from data.
 - d. The student can identify statements that are assumptions.
 - e. The student can formulate hypotheses or questions based on relationships found between main ideas.
 6. Expected performances associated with using data to check the validity of the hypothesis.
 - a. The student can locate and use authoritative sources to check one's tentative conclusions.
 - b. The student rechecks

the data to verify interpretations.

7. Expected performances associated with formulating a conclusion are consistent with the data.

Relevant experiences and practice in one or more of the above skills based on the individual's needs can promote the continued improvement of one's inquiry skills.

While the purpose of SSAL is not to make researchers of middle school students, the introduction and development of a few basic research strategies of the social scientists may begin to provide the student with some comprehension of a discipline, and its research and inquiry methodology. Thus, the student should begin to be able to evaluate data, to be aware of their own fallibility and be able to appraise the often tenuous connections between facts and propositions.

The examples which follow are a few selected basic research strategies which the middle school student should be able to develop and use:

1. **Research Design** The emphasis of SSAL on research design should not burden the student with difficult concepts about research design. However, at least three basic research categories could be presented to orient them to the initial consideration of concepts relevant to research. A development and/or extension of the following definitions could be a starting point:

- A. **Descriptive**—The descriptive approach is essentially a gathering of information, in various ways, about some situation to determine its present status.

- B. **Historical**—Historical research is generally a descriptive form of research. The main difference is that while descriptive survey research is interested in the present activities of social institutions, individual or groups, historical research is interested in the beginnings (antecedents) of present social activity.

- C. **Experimental**—The

tradition of experimental research was primarily developed within the framework of physical and natural sciences. The social sciences also conduct much experimental research in which the method and purposes of determining the nature of relationships and value of one technique over another are much the same as those of physical and natural sciences.

2. **Observation and Anecdotal Records** Students are not always aware that the very simple techniques of observation have served some of the social scientists such as the anthropologist and sociologist to make significant contributions to our understanding of man and society. Keeping written or anecdotal records of the behavior of individuals and groups can often provide worthwhile information and understanding about human behaviors.

Skills To be Developed

1. Stress the importance of objective reporting.
2. Working with two or more observers to improve objectivity.
3. Writing anecdotal records of behaviors should be free from subjective interpretations.
4. Identifying specific behaviors to be observed.
5. Distribution (times and number) of observational and anecdotal sampling.

3. **Interviewing** Many action lab activities can be centered on collecting data from peers and adults through the interview technique.

Skills To Be Developed

1. Deciding on the problem to be investigated.
2. Deciding or choosing the persons to be interviewed i.e. considering such population variables as sex, age, profession, race, and others.
3. Planning and writing the basic questions

that should be asked.

4. Planning where the interview should take place.
5. Planning how to use and analyze the data that is collected.

4. **Questionnaires** The questionnaire, basic to many studies, is a research strategy that the middle school student certainly can use for a variety of action lab research.

Skills To Be Developed

1. Deciding on the kinds and number of questions that get enough data to adequately deal with the problem or issue.
2. Writing the questions clearly enough so that they will be understood by the population to be surveyed.
3. Deciding on the kinds of responses wanted e.g.:
 - a. yes no
 - b. scaled responses—
Poor Excellent
 1 2 3 4 5
 - c. open ended or discussions questions

5. **Simulation** The initial enthusiasm for the use of simulation in social studies has diminished considerably in the last few years. Social science action labs should reemphasize the action research potential that simulations can give students in complex social situations and issues that could never, realistically, be dealt with in the conventional social studies program.

Skills To Be Developed

1. Determine overall simulation objectives.
2. Determine scope of the game in terms of time, place, and issues.
3. Determine key actor's role, social groups or organizations making critical decisions.
4. Determine actors' objectives in specific contests (power, wealth, etc.).
5. Determine actors' resources (i.e. physical, social, economic informational, political).
6. Identify potential constraints on actions of

actors such as trust, legitimacy and coalition formation.

7. Understanding scoring rules or win criteria.
8. Debriefing and evaluating simulation experiences. Generating tentative conclusions and/or simplifications about simulated experiences. (Smith, H. '75 pp. 259-6)

Though the majority of inquiry or research experiences on the part of students using peers or adults would not jeopardize these people, nevertheless, recent national concern for the rights of human subjects strongly suggests that students be made aware of this issue. Therefore, when students plan to gather information from human subjects the following guidelines can be helpful to them in understanding some of the ethical issues to be considered:

1. Informed Consent—Students should make sure that they have permission from their subjects to participate in the gathering of information.
2. Confidentiality—Names of participants, peers and adults, should be protected.
3. Subjects Rights and Welfare—Students should not introduce unnecessary situations that could be a hazard or cause embarrassment. (Smith, H. '75 pp. 12-15)

The use of valuing strategies and discussion about these issues should develop insights and responsibilities that both researchers and students should have in obtaining their information.

There are several organizational strategies that can help correlate SSAL into the social studies program, some of which are briefly described below.

Supervised Lab Center for Social Studies Social studies lab centers can be established as part of the middle school's learning center or in a separate designed room. A teacher may be assigned the responsibilities to gather and organize materials and to guide the action lab activities and projects of the students. Generally, the lab center would receive students that

would be sent from various social studies classes for special group or individual projects or they could be assigned on a regular basis.

Scheduled, in Class, SSAL Activities The social studies teacher may schedule specific times (on a daily or weekly basis) during regular social studies periods to devote the full time for developing action lab activities and research skills.

Social Science Action Lab Contracts Through student-teacher planning, action lab contracts can be written that will: (1) identify the problems to be researched, (2) state a hypothesis or question to be studied, (3) state possible importance to student and/or community, (4) length of time needed to complete inquiry project, and (5) how project should be evaluated. The important point about the above strategies is that action labs have a separate entity, an identity if you will, in the structure of the social studies curriculum.

The cognitive strength of SSAL is maintained to the extent that its inquiry and/or research activities reflect the disciplines of the social sciences. For example, a student "action lab" activity examining the problem of increased prices or inflation should not only be concerned with the specific elements of the problem, *per se*, but should know that the discipline of economics contributes some basic concepts that are important to our understanding of the reasons for inflation. As we encourage students to actively inquire or to do research in some of the many problems and issues inherent to a social studies curriculum, effort should be made by the teacher and student to identify the one or more of the social science disciplines that seem to contribute the most data to the specific SSAL inquiry. One other point to be made for emphasizing social science contributions is that it can help the student to be more aware of a structure to knowledge that requires more than a casual perusal if it is to be adequately understood.

When SSAL is used to enrich the standard text-oriented social studies curriculum there is an increased possibility for a more comprehensive evaluation of both the affective and cognitive skills. One

continued on next page

Trends in Reading in the Middle School: Theory into Practice

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The years since 1960 have seen an increase in the middle school as an organizational pattern in the

American public education institutions Alexander (1) Cuff (4). This came about partially as a protest against the fact that the junior high schools, which were originally developed to help bridge the gap

between the elementary and senior high school, had become mini high schools that were more oriented to adolescents than pre-adolescents and early adolescents Puhr (11).

The teaching of reading, which followed the basic pattern of departmentalization Alexander (1) in most junior high schools, was often only a remedial program centered on the teaching of word recognition skills. In fact, through the 1960's many junior high schools and middle schools had no formal reading programs as such.

The last five years has produced an increased interest in reading instructional programs at the middle school level and led to the introduction of "Reading in the Content Area" courses at many institutions of higher learning. A whole series of articles were published by the International Reading Association in the *Journal of Reading* and the *Reading Teacher* in the 1970's.

The characteristics of the middle school or pre-pubescent child are considerably different from the elementary school child in the latency period of development and from the adolescent period of the high school student. This child has developed into an organism that is both independent and dependent at various periods of time under varying circumstances. Observation of the same child on the same day in the period of an hour can reveal an extremely independent attitude that is ready to rebel against all parental and school authority to one of dependence that would like to crawl onto Mommy's lap and be cuddled for reassurance. This often leaves both teachers and parents somewhat at a loss as to how to deal with the preadolescent and early adolescent child.

Heilman (9) suggested twelve basic principles of reading in the middle school may be used as a basis for a theory of reading in-

continued from preceding page

such dimension is the use of some unobtrusive evaluation. For example, signs that SSAL is having a positive impact could be:

1. increased shared responsibility for cooperative group work on research projects.
2. increased behaviors (interests) in problems solving activities.
3. increased verbalization of ideas and concepts with peers and teacher.
4. better performances in conventional testing situations.

These and other indirect or unobtrusive actions can be an important part in evaluating individual and group interest, skills, and understanding in social studies. (Webb '66)

Another dimension for evaluation is guided self-evaluation of action lab projects. On completion of a SSAL project it is important to direct the students in self-evaluation of what they have accomplished. Such questions as: (1) Why the problem was chosen? (2) Was there an adequate amount of facts gathered? (3) Does your conclusion seem justified? and (4) What implications and/or recommendations would you make? can help students gain evaluative insights into both the nature of the problem and the quality of their work.

SSAL should be able to promote synergistic (cooperative) learning relationships. Since many lab activities may stress group problem solving, evaluation should consider some of the social skills of group dynamics. Effective group

leadership, shared decisions, and shared work responsibilities are a few group skills that can represent a more comprehensive evaluation—that additional dimension!

Finally, although the literature calls for increased emphasis on content relevance, it is not a significant or dominant theme among social studies teachers at any level. (Denny '77 & Smith '77)

This may in part help explain the lack of enthusiasm on the part of students for social studies. The evaluation of SSAL, then, should be sensitive to the extent that action lab experiences will manifest a relevant content to the students and contribute to the overall quality of the middle school social studies program.

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struction. These have been put into practice by various means through administrative plans and the use of varied and sundry programs. They are:

1. Evaluation of individual students is necessary to determine each one's capacity and level of instruction in relation to
 - a. sight vocabulary
 - b. work recognition
 - c. silent reading level
 - d. vocabulary and conceptual level
 - e. level of listening comprehension
 - f. oral reading level
 - g. ability to use reference materials and study skills
 - h. habits of work and attitudes toward reading
 - i. rate of reading
2. Diagnose and devise a reading program designed to give all students a successful reading experience
3. Develop a systematic and specific reading instructional program
4. Incorporate reading instruction into all content area subjects
5. Help children expand their stock of concepts
6. Give opportunity for practice in functional reading
7. Guide students in recreational and leisure reading
8. Broaden students' reading interests
9. Make available a wide selection of reading materials
10. Develop appreciation for good literature, poetry, drama
11. Develop reading programs for the gifted
12. Help children increase their rate of reading and to vary this rate to suit the material and purpose for reading.

These principles were formulated in the early seventies and are representative of current theory of reading instruction in the middle schools.

The present day situation regarding reading instructional programs to be found in the public middle schools, especially in Northern Illinois, reveals some of the following patterns.

Organizational patterns are many and varied. Some schools will retain the 8-4 pattern and continue to utilize the self contained classroom. Others modify this pattern by using a platoon approach with the core subjects for part of the students in the A.M. and another group in the P.M. at each grade level.

This same organizational pattern may be found in other schools with several teachers involved in the instruction of each core group, e.g., social studies, science, math, language arts-reading. Still other schools utilize the core time organizational pattern with one teacher being responsible for instruction of all subjects with a heterogeneous group of sixth, seventh, and eighth graders. This combines a self contained classroom with a continuous progress multi-grade grouping plan.

The multi-grade, continuous progress plan also has the variation of utilizing a team of teachers who are responsible for the instruction of a group of middle school students. The time organization is flexible with much individual and small group work. Much use of independent study and utilization of the learning and media center are involved. The team is made up of various subject specialists and the reading teacher works with all to involve reading instruction in all aspects of the curriculum. This pattern is desirable in that it makes reading an integral part of all study and learning activities.

A Joplin plan or modified Joplin plan approach is utilized in several middle schools. This plan provides that all students be involved in reading instruction at the same time every day. Students are grouped by reading achievement and go to their achievement level group for instruction. This same time plan is also used with heterogeneously grouped classes and even in some multi-grade continuous progress organizational plans.

The reading instructional materials in use include basals, trade books, literature anthologies, paper backs, kits, workbooks, etc. The choice of materials often was closely related to the type of program developed. Many attempts were made to match pupils and books to insure that every child

had an opportunity to be successful.

The reading teacher usually had the task of determining the instructional level of each student, the selection of instructional materials, the development of instructional groups, and the coordination of instruction in the content areas. This practice of matching materials and students is an attempt to diagnose a child's reading problems and plan a program that will help him to improve and grow in his/her reading skills and abilities.

This planning for reading instruction in various classrooms includes both individual and group work. Skills developmental groups are often formed to provide for the development of needed skills and then dissolved as students show proficiency in these skills. Then another group is formed and dissolved as needed. Some stories are studied as a group and others are studied individually as students proceed on their own individual study programs. More and more the opportunity to read for pleasure and recreation is becoming a part of many middle school programs.

The development of study skills and comprehension skills via the use of questioning and study guides has received renewed emphasis with the publication of Herber's(10) and Aull's(2) tests. Many excellent and interesting suggestions and techniques are included.

The principles of instruction suggested by Heilman (9) in 1972 are largely being utilized in many middle schools today. The major ones, the diagnosis and prescription of instruction, the use of materials at or near the instructional level of the students, the development of skills and abilities as needed, the development of appreciation of literature, interests, and recreational reading, and the integration of the reading program into all aspects of the school curriculum have been put into practice in many of today's middle schools by means of the many organizational and curricular plans found in use today.

In conclusion, there seems to be a renewed interest in the instruction and development of reading skills in the middle school. One

technique, often called U.S.S.R. reading, (uninterrupted, sustained, silent reading) has become an addition to the regular reading program in an increasing number of middle schools in the Northern Illinois area. Surveys of middle school teachers in the author's classes has revealed a growing knowledge of the technique and an increased usage in their building. This technique involved the setting aside of a period of time each day or week in which everyone in the school, principal, teachers, janitors, cooks, secretaries, etc. read. They read anything of their choice. This plan impressed upon students that the very act of reading is important enough to be given a regularly scheduled activities time block.

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Thirty multiple choice items on each Module I Pre or Post Test measure the twenty five Module I behavioral objectives. A "C" or an "I" is circled to indicate correct or incorrect performance for each of these thirty test items. Circled I's indicate a student's weaknesses.

Students complete assignments corresponding to circled I's until they miss no more than two problems on each related assignment. Student performance on these assignments is recorded to the immediate right of the relevant

behavioral objectives. When a student has demonstrated competence on an assignment, the triangle in the lower half of the box under the heading "Number correct" is shaded. Using the shaded triangles, an instructor is able to tell at a glance when a student is competent on an assignment.

Assignment I for Behavioral Objective 13 is a typical assignment for Mathematics 104 students. Students may seek assistance on this assignment except while taking the Mastery Quiz.

13. Perform arithmetic operations in correct order

Assignment I

Study pp 103-108 in Module I. Do practice problems 2-5 and 26-38 on pp 109-110 and check your work against the solutions given on p 111. Also do additional practice problems on reverse side and check your answers against those given. After you have successfully completed all practice problems, take Mastery Quiz I.

Name: _____
Section: _____ Date: _____
Practice problems completed? yes no
Score: _____
Go to objective No. _____
Assignment: I II III

The Individualized Instruction Flowchart is a functional competency based model for instructional situations whenever predetermined learning outcomes

have been stated in behavioral terms. Implementation of this model for students at any level and in any content area can be accomplished.

Mastery Quiz I: SHOW YOUR WORK!

Simplify each of the following.

Problems

- (1) $(-3)(3 - 5)$
- (2) $(-3) \cdot (3) - 5$
- (3) $\frac{(-4) + 10}{-2}$
- (4) $7 - 4 + 2 - 5$
- (5) $\frac{-2}{3} \div \frac{5}{6} + \frac{-1}{6}$
- (6) $\frac{(3)(-6)}{-3}$
- (7) $-3 - (4 + 3) + 2$
- (8) $\frac{5}{-2} \div (\frac{2}{3} - \frac{4}{15})$
- (9) $5 - 3 \div (-24)$
- (10) $(-2) + (-13) \div 5 + 8$

Answers

- (1) _____
- (2) _____
- (3) _____
- (4) _____
- (5) _____
- (6) _____
- (7) _____
- (8) _____
- (9) _____
- (10) _____



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