IDENTIFICATION AND EVALUATION OF SELECTED INTEGRATIVE BEHAVIORS AS RELATED TO HOME ECONOMICS EDUCATION

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CHAPTER I

DESCRIPTION OF THE STUDY

Experiences for adults of tomorrow will be different from those of adults today. Moreover, the many economic, social, and technical changes occurring daily make the problems of educating youth more complex than ever before. These changes and their implications for education require that educators take a forward look at the educational needs of future adults.

It has been generally accepted that one cannot accurately visualize specific needs of the future. It is just as generally accepted, however, that important decisions made day by day form a basis upon which future judgments can be established.

Ideas, attitudes, and skills learned in the various general, specialized, and professional courses must be continually reorganized and reconstructed in new and meaningful ways if they are to be of value in home economics or in any other area of learning. This reorganization takes place through the process of integration, in which an individual (1) sees relationships among facts, ideas, and generalizations, (2) reconstructs values, goals, and attitudes, and (3) develops manipulative skills. This continuous and interactive process is assumed to result in increased ability of students to develop and execute plans of action which are guided by comprehensive thought, by possessed skills, and by disciplined feelings.

No doubt opportunities for observation and identification of student behaviors are provided in most college courses. One such course, "Principles and Practices in Demonstrations," is offered in the senior year as an elective in the sequence of professional courses for home economics education majors. This course is designed to help students bridge the gap between theory and practice at a time when their professional aspirations become increasingly meaningful to them. It seems logical then, to assume that opportunities should be provided for students to practice some of the activities they will face as professional people and to further develop integrative behavior. Hence, the work of students in this course was selected as a source of data.

Statement of the Problem

The study reported here is an attempt to explore the effectiveness of learning experiences in the integration of general, specialized, and professional education with respect to their application in the solution of practical problems encountered by homemaking teachers as provided in a selected course. More specifically, the study is an attempt to identify integrative behaviors of students and to measure growth in selected cognitive behaviors.

Purposes of the Study

Educators, in recent years, have become concerned with the process of learning referred to as integration. In spite of the broadness of the term and the complexity of the learning process, some of America's top educators thought it important enough that the National Society for

the Study of Education devoted a whole volume of its yearbook[1] to exploring various aspects of integration as related to educational experiences.

Another group concerned about the various aspects of learning is found at Oklahoma State University. The home economics faculty at that institution has been working on various phases of curriculum revision for several years. An effort has been made to identify needed changes in courses and/or programs of work which would better serve the students in each department.

Because emphasis has been placed on integration as a process of effective education; because the home economics faculty members are interested in providing the best possible opportunities for students interested in fields served by home economics education; because there is little written concerning integration in the area of home economics; and because the writer was interested in the subject, this study was attempted with the following purposes in mind:

1. To identify specific cognitive, affective, and manipulative behaviors that students demonstrate while enrolled in a selected course.
2. To study various behaviors in an attempt to identify patterns of behavior which are parts of the integrative process.
3. To evaluate progress in students' abilities to apply facts and generalizations from various areas of home economics and related fields, to interpret relevant data, and to develop logical plans during the time they are enrolled in the course selected.

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[1] Nelson Henry, ed., The Integration of Educational Experiences. National Society for the Study of Education, Fifty-Seventh Yearbook, Part III, (Chicago, 1958).

4. To develop the necessary instruments for the identification and evaluation proposed.
5. To make recommendations, based on the results of the study, for facilitating the further development of the tested behaviors.

Definition of Terms

Respected educators have spent time and effort in defining the term integration and in applying it to educational experiences. The writer respects their efforts and has drawn heavily on Tyler and Bloom in defining integration as used in this study.

Integration can be defined as a continuous, interactive process through which an individual (1) sees relationships among facts, ideas, and generalizations, (2) reconstructs values, goals, and attitudes, and (3) develops manipulative skills which result in increased ability to develop and execute courses of action which are guided by comprehensive knowledge and thought, by skills possessed, and by disciplined feelings.[2] The term, integration, can be further explained by the following classification of behaviors-

a. cognitive, the mental process through which one (1) applies facts and generalizations, (2) interprets relevant data, and (3) develops logical plans.[3]
b. affective, the emotional process through which one reconstructs values, goals, and attitudes.

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[2]Ralph W. Tyler, "Curriculum Organization," The Integration of Educational Experiences. National Society for the Study of Education Fifty-Seventh Yearbook, Part III (Chicago, 1958), p. 105.

[3]Benjamin S. Bloom, Taxonomy of Educational Objectives (New York, 1956), pp. 201-207.

c. manipulative, the process through which one develops physical skills.

The Course, refers to HEE 413, "Principles and Practices in Demonstration" which is a professional course in the Home Economics Education curriculum.

Generalization, in this study refers to general statements which have been supported by evidence and are applicable in a number of problem situations.

Interpretation of Data in this study involves the ability of students to select and use relevant information and materials.

Basic Assumptions

Several assumptions have been accepted as basic to the hypotheses of this study.

The first assumption accepted as basic was that education results in changed behavior. This assumption is supported by many educators. Trow defined education as; "the process by which desirable changes are brought about in an individual apart from maturation..."[4] Smith and Tyler stated, "...education is a process which seeks to change the behavior patterns of human beings."[5] Hopkins said that "...education is concerned with the improvement of life and living,..."[6]

A second assumption made was that integration is an organic process

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[4]William Clark Trow, Psychology in Teaching and Learning (Cambridge, 1960), p. 457.

[5]Eugene R. Smith, Ralph W. Tyler, et al., Apprasing and Recording Student Progress (New York, 1942), p. 11.

[6]L. Thomas Hopkins, Integration: Its Meaning and Application (New York, 1937), p. 2.

and involves many kinds of behavior. Hopkins explained that "...efforts toward adjusting in the interacting process are called behavior. All living is interacting, adjusting behavior."[7] He continued then by saying,

...the individual reacts as a whole organism. This means that all aspects of his being are involved. For purposes of discussion these may be treated in four major groups: the physiological,...; the physical,...; the emotional,...; and the mental,..."[8]

A third assumption was that evaluation is an appraisal of changes of behavior that takes place. Many writers agree with this definition. Typical statements are made by Travers when he said, "...the process of appraising student progress is referred to as evaluation..."[9] and by Arny when she wrote,

The major functions of evaluation have been discussed in foregoing pages: discovering what students know prior to instruction, motivating their learning, and measuring various aspects of learning;...[10]

It was further assumed that progress made by students in the development of integrative behaviors can be measured.

The fourth assumption was that the progress of students in their development of integrative behaviors, is to some extent, the result of experiences encountered in the courses they take. Dressel[11] implied

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[7] Ibid.

[8] Ibid., p. 4.

[9] Robert M. W. Travers, How to Make Achievement Tests (New York, 1950), p. 2.

[10] Clara Brown Arny, Evaluation in Home Economics (New York, 1953), p. 2.

[11] Paul Dressel, "The Meaning and Significance of Integration," The Integration of Educational Experiences. National Society for the Study of Education, Part III (Chicago, 1958), pp. 17-18.

that students can be helped to integrate educational experiences by attempting to bridge gaps in the planned curriculum. This involves the identification of organizing elements, selecting appropriate organizing principles, and developing a curriculum structure which brings together important aspects of the students' experiences...the structure for relating learning experiences over time and from one area of life to another can be carefully planned and yet be flexible. Since such organization is attempted in the selected course this assumption was believed to be logical.

Hypotheses of the Study

Two major hypotheses were used to give direction to this study. The results of the study were expected to show that:

1. Integrative behaviors exist in students enrolled in the Course and can be identified in terms of specific behaviors.
2. Learning experiences provided in the Course do contribute to the further development of integration.

   It was believed that this major hypothesis could be tested by three minor hypotheses.

   a. Students, while enrolled in the Course, progress in their ability to apply facts and generalizations from various areas of home economics in the solution of problems common to homemaking teachers.

   b. Students progress in their ability to interpret relevant data while enrolled in the Course.

   c. Students progress in their ability to develop logical plans while enrolled in the Course.

Delimitation of the Study

Early in the study it was recognized that not all of the work taken by the students, nor all of the activities of any one class, could be included in such a study. Therefore, the following limitations seemed necessary early in the study.

First, since one cannot possibly include all phases of integrative behavior, this study was primarily concerned with,

a. The identification of specific integrative behaviors, cognitive, affective, and manipulative, that could be observed in the Course.

b. An evaluation of the further development of students' abilities in the cognitive area while they are enrolled in the Course. Specifically, to apply facts and generalizations, to interpret relevant data, and to develop logical plans.

Second, collecting the data for identifying specific behaviors in the Course was limited to an analysis of demonstration plans and other class records for six selected home economics education majors enrolled in the spring of 1960.

Third, collecting the data for evaluation of student progress involved all students enrolled in the Course during the fall semester, 1961.

General Procedures

The general procedure of this study was exploratory in nature. While it was concerned with the interpretation of specific ideas upon which certain educational practices rest, it was not subject to the

precision of an exact measurement nor the prediction and control that is often expected from scientific experimentation.

In order to solve the problem of this study, a search was made in literature in the areas of home economics and education to find ways in which integration was defined. Many definitions proposed were analyzed and one was selected which most nearly expressed the idea the writer had in mind. The terminology of the definition chosen was then adapted to conform to certain objectives of the Course and to form the basis for continuing the study.

In order to show progress in the development of integrative behavior, it became obvious to the writer that specific behaviors which seemed to be integrative in nature would have to be identified. Therefore, a four-point graphic rating scale was constructed. It consisted of specific affective, manipulative, and cognitive behaviors which were tentatively identified from literature, from personal observation, and from available class records.

The rating scale was used with six selected students during the spring semester, 1960. It was used in an attempt to discover what specific behaviors could be identified during the period of one semester.

Upon completion of the semester, some of the behaviors, including affective, manipulative, and cognitive, were selected to be analyzed in this study. After selecting those to be presented, the results were recorded in profile form and interpreted.

After specific behaviors had been identified and presented in profile form, evaluation instruments were constructed for determining the progress of students in developing integrative behavior in the cognitive area during a one semester period. Three instruments were

constructed for this purpose. An Application of Generalizations Test was constructed to check progress of students' abilities to apply generalizations and to explain or justify a conclusion. Two graphic rating scales were constructed; one to rate students' progress in selecting and using relevant information and materials and one to rate students' progress in developing logical plans.

The three instruments were used in a pilot study during the spring semester of 1961. The instruments were revised during the summer and then used to gather data for this study during the fall semester, 1961.

After the data were collected the results were scored for the Application of Generalizations Test, and totaled and averaged for the rating scales. The data were interpreted in terms of behavior patterns on the basis of the response of the group as a whole and observed patterns were pointed out.

Conclusions were drawn from the results of the study and recommendations concerning the use of study results were made. Recommendations were also made concerning further research along similar lines.

In view of the importance of having explanations near the concentrated area of the study, fuller explanations of specific procedures are presented with the data.

CHAPTER II

BELIEFS UNDERLYING INTEGRATION AS RELATED TO HOME ECONOMICS EDUCATION

Home economics is steeped in tradition in that it makes its greatest contribution to the family, the oldest social unit in existence. Formal education in this field has not always been available for only within the last seventy-five years has home economics been recognized as an important field of learning. However, the family has always been the place where meals were served, clothing was made available, shelter was provided, children were brought up and protected, and the most basic human relations, love, sorrow, companionship, and so on, occurred.

In the early days the tasks of homemaking primarily involved only the feeding, clothing, housing, and protecting the family. These tasks were learned by imitating older members of the family in a "Do As I Do" procedure. Actually this kind of education was sufficient in those days. There was little knowledge available to learn, few ways of doing things were known, a limited variety of tools were available, and family members were not exposed to the insecurities faced in a complex society.

Recent years have brought many changes which have affected the emphasis placed on present day education in the United States. Around the turn of the twentieth century the realization of changes going on in the homes and the visualization of what the future might hold for family members by such persons as Ellen H. Richards and Isabel Bevier gave rise to home economics as a field of study. These early leaders

had great vision and set forth definite objectives designed to improve family living and to meet the challenging problems that changes were expected to bring. It is not known whether or not they visualized men in space but they anticipated many of the changes that were about to occur.

Simple methods of learning are no longer sufficient. Home economics is not limited to the traditional functions. As changes have occurred the role of the family and of family members has changed, the variety of tools has been increased, knowledge has been expanded, and the society has become more complex.

Since its beginning, home economics has continued to expand its influence. The development of the American Home Economics Association has influenced the development of home economics at all levels since its beginning in 1909. In 1959 the Committee on Philosophy and Objectives of Home Economics set forth in printed form some of the past accomplishments and made suggestions for the further development of home economics. The committee described home economics in the following manner.

> Home economics is the field of knowledge and services primarily concerned with strengthening family life through:
> -educating the individual for family living
> -improving the services and goods used by family members
> -conducting research to discover the changing needs of individuals and families and the means of satisfying these needs
> -furthering community, national, and world conditions favorable to family living[1]

In order to provide the best possible educational experiences for satisfactory living, factors which influence the educational process as a whole must be recognized. Home economics operates on the same general

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[1] Dorothy Scott, et al., Home Economics, New Directions, A Statement of Philosophy and Objectives (Washington, 1959), p. 4.

basis and is affected by the same basic factors as most other areas of learning. It is unique in that it is an applied field and draws knowledge from its own research and from many other disciplines and applies it in the improvement of all aspects of family life. The integrative nature of home economics is described by the Committee in the following statement.

> Home economics synthesizes knowledge drawn from its own research, from the physical, biological, and social sciences and the arts and applies this knowledge to improving the lives of families and individuals. Its concern is with these aspects of family living:
> - -family relationships and child development
> - -consumption and other economic aspects of personal and family living
> - -nutritional needs and the selection, preservation, and use of food
> - -design, selection, construction, and care of clothing, and its psychological and social significance
> - -textiles for clothing and for the home
> - -housing for the family and equipment and furnishings for the household
> - -art as an integral part of everyday life
> - -management in the use of resources so that values and goals of the individual, the family, or of society may be attained[2]

Actually home economics educators have been aware of the integrative nature of home economics for some time. For example, about twenty years ago the Joint Committee on Curriculum Aspects for Home and Family Living said, "...home and family life is essentially an integration area to which many different disciplines contribute,..."[3]

The application of the arts and sciences to home and family living is an important area of education for all mankind. Most men, women, and children have some kind of home life. What is more important than for an individual to be able to apply principles from the various disciplines

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[2]Ibid., pp. 4-5.

[3]Joint Committee on Curriculum Aspects for Home and Family Living, Family Living and Our Schools (New York, 1941), p. 265.

to improve himself as an individual, as a family member, and as a member of society? This responsibility should challenge home economics educators to seek out and use every available avenue to provide the most effective educational experiences for future homemakers and professional home economists.

Education in home economics, as well as in other areas, must adjust to changes in teaching methods and techniques, in teaching materials and equipment, and in the over-all objectives of education. Educational practices are dependent upon three major factors; (1) what people believe man is, (2) the social, economic, and technological developments, and (3) how people believe man learns.

In arriving at ways in which integrative behavior occurs, home economics educators need to understand changes in thought and events affecting education as a whole, particularly that related to integrative learning. It is the purpose of this chapter to explain briefly that educational practices are dependent on what people believe man is like; on social, economic, and technological changes; and on changing ideas about how man learns. It is also the purpose of this chapter to show how integrative learning can be facilitated in classrooms and how a selected class in home economics education can contribute to such learning.

What is Man Like?

Many books concerning the various philosophies held by man have been written. Those philosophies referred to in this report are limited in number and scope. They are expected to give direction to the remainder of the study and to help the reader develop some understanding of

various philosophies underlying the planning of educational activities for all areas of learning, including home economics.

One group of individuals believe that man is primarily a soul with an eternal destiny. These people say that the body is only an instrument to be directed by the soul, which is sometimes referred to as mind. Advocates of this philosophy tend to believe that knowledge is already present at birth and has only to be recalled at the appropriate time in present and future living. Several concepts have been presented about how this knowledge is made known to the individual. Thut[4] stated that Plato thought knowledge came about through revelation and that this revelation could be accomplished by the systematic development of the imagination, severe discipline, and self denial.

Schools based on this philosophy usually practice little freedom; require strict obedience; and provide a prescribed course of study, including mathematics, geometry, philosophy, theology, art, history, pure sciences, languages, and other traditional courses. Since family living and other applied arts and sciences depend on useful and creative application of knowledge, they are not likely to have a place in an educational program based on this philosophy.

Others who believe that the soul and the body are separate elements are not so severe. They too, believe that some difficult and uninteresting study is necessary, but that interest is an important factor in effective learning. These men recommend that schools provide not only classical subjects similar to those mentioned earlier, but include some practical courses in which students show interest.

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[4] I. N. Thut, The Story of Education (New York, 1950), p. 61.

A second group of philosophers believe that "man is a reasoner, a thinker, a contemplator, a mind."[5] They too, advocate that the mind and body are separate. They further believe that,

> ...every organism, from the simplest plant to the most complex animal, is brought within the compass of natural explanation...that life itself...will be produced in the laboratory as soon as we learn more of the chemical relations required.[6]

This belief implies that intelligence is the "sought-for" accomplishment. Material goods are considered desirable to have, but are worthless unless accompanied by wisdom. The group also believes that knowledge is gained through nature and the experiences that it provides.

These philosophers disagree among themselves in what they believe the curriculum should be. Some say that the curriculum should be very difficult, regardless of the subject matter, in order to train the mind to deal with difficult problems. Others feel that early courses should include some modified activity. However, most seem to believe that subjects should be presented in "series of blocks built one upon the other, from simple beginnings in numbers and language to very complex structures."[7] Some of these people say that vicarious learning is best, since it relieves the mind from confusion brought about by personal experiences. Wild reported,

> The peculiar function of the school is to cherish and to cultivate pure knowledge. Hence, it must be detached from concrete life and practice. The scholar is a man of leisure...in the sense that he must be released from the immediate demands of concrete action.[8]

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[5] Brameld, Patterns of Educational Philosophy, p. 217.

[6] Ibid., p. 221.

[7] Ibid., p. 254.

[8] John Wild, "Education and Human Society: A Realistic View," Modern Philosophies and Education (Chicago, 1955), p. 28.

Courses recommended by the majority of these philosophers include mathematics, languages, writing, speech, literature, history, and so on, but practical courses such as home economics and those concerned with religious ideals are excluded.

A third group of philosophers believe that "mind is one of the ways man acts; it is a form of behavior."[9] This group thinks of man as nothing more than a remarkable animal. They believe that man and nature should be an organic unity and that only those things which are tangible and visible are real. No value is placed on the satisfactions of family living, ideals, and aspirations. The whole purpose of life is for man to "...better understand his world and to live well in it."[10]

These people further believe that man learns best through "The scientific method---the method of observation-hypothesis-experimentation-verification-deduction."[11] They seem to agree that man can never know all there is to know about nature, but that he must continue to increase his knowledge. Schools based upon this philosophy depend on the natural sciences such as astronomy, geography, physiology, and botany, for most of their course work. Thut, when speaking of a prominent philosopher, said,

> ...was quite critical of the great emphasis upon language and literature found in the schools of his day. He was convinced that these subjects dealt only with the problems of the past and contributed little that might help in dealing wisely with the problems of the living generation.[12]

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[9]Troy Organ, "The Philosophical Basis for Integration," The Integration of Educational Experiences, National Society for the Study of Education, Fifty-seventh Yearbook, Part III, (Chicago, 1959), p. 28.

[10]Ibid., p. 36.

[11]Ibid., pp. 35-36.

[12]Thut, p. 241.

In supporting this philosophy, Organ[13] mentioned that space fiction is probably of more value to study than Shakespere and other classical selections. Since education for family living draws and applies knowledge from many fields it is not likely to have a place in a school supported by this philosophy.

A fourth group of philosophers oppose the idea of absoluteness in all of its forms. They believe in man's

> ...own natural powers, particularly his self-regenerative power to face continuously and to overcome satisfactorily the fears, superstitions, and bewilderments of an ever-threatening environment.[14]

Each individual is influenced by the society in which he lives and the society in turn is affected by his behavior. All learning is achieved, and no learning is native. This implies that man is a changing individual who lives in a changing world. As Brameld pointed out, "The child is an experiencing organism. He is part-and-parcel of the flow of events, relations, feelings, thoughts, and things."[15] Therefore the whole child is involved, not just the mind.

Because man is a changing individual in a changing world, practical experience is believed to be the best means for learning. Brameld explained this view when he said,

> Experience is struggle. Life is action and change. Change, the unexpected, the novel and unforeseen always play a major role. Men, like other animals, survive and advance as they too change, struggle, explore, dare, probe, and act.[16]

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[13] Organ, "The Philosophical Basis for Integration," pp. 26-27.

[14] Brameld, Patterns of Educational Philosophy, p. 100.

[15] Ibid., p. 137.

[16] Ibid., p. 109.

This implies that education needs to be adaptable and to make use of individual and group experiences in order to meet the needs of individuals in a changing world.

Individuals who support this view suggest a curriculum emphasizing that which is immediately useful. Students should be provided opportunities to develop and use their intellect through solving problems, imagining, relating, communicating, discriminating, and generalizing. As Dewey said, "...the good school is concerned with every kind of learning that helps students...to grow."[17] This kind of education is expected to provide the individual with experiences needed for present and future living.

The writer believes that each of the above philosophies has some acceptable ideas. However, man is as these have indicated and more. Man is a spiritual being; yet he is a physical being. He has an eternal destiny; yet he solves personal, social, and professional problems in order to create the best life for himself and his fellowmen. Man must be flexible and adapt to the changing world; yet he needs those basic values which give him direction in planning his future.

Actually man is a whole and very dynamic organism. Thoughts, attitudes, skills, and actions are not separate elements, but are one, and operate as one. Ideas are revealed and discovered. Man must put them together according to his own experiences. Therefore, he is able to shape his own destiny to some extent. He can plan his own actions. He can conform or he can be different. He can raise himself to a higher level of living, if he is determined to do so. Thut explained this

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[17] Ibid., p. 149.

matter of choice when he wrote, "...ideas are subject to scrutiny, to criticism, to revision, and to rejection when better ones are produced."[18]

If education is to better the individual and the society in which he lives, useful plans should be made. To do this, cooperative planning by all individuals involved is required. Since both individual and group needs are of basic importance, some attention should be given to elective as well as to prescribed courses of study in the curriculum. Attention should also be given to theoretical courses as well as practical courses which emphasize the application of knowledge to solving problems encountered in daily living.

Social, Economic, and Technical Developments Affect Educational Practices

Educational practices are continually undergoing changes which are influenced by several factors including the economic, social, and technological developments that affect man. There is evidence that education in some form has been present since the beginning of history. Not only has it been present, but its aims and methods have been influenced by men's needs and interests. The speed of educational changes has been comparable with the speed of the social, economic, and technological developments within various societies. For example, the change in American education has been rapid, while change in some countries has been slow.

In primitive times life was simple. The society was rather stable,

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[18] Thut, p. 300.

and there was little knowledge to be learned. Wilds[19] said that primitive man spent most of his time in supplying the immediate physical needs and attaining security from his enemies, both seen and unseen. In those days, education was simple. Educational activity occurred in and around the home. "When youth knew as much as his father, his education ceased; when the girl's knowledge was equivalent to her mother's, her education stopped."[20]

Methods of education were also simple. The young were expected to imitate their elders and conform to the standards of the group. They were not expected to understand why or to question the standards used.

As time went on, social situations developed in which one learned to do something new or how to do something better by accident or by trial and error. According to Wilds[21] this seems to have been the beginning of a trend toward division of information and skill which eventually led to specialized education, as it is known today.

Around the eleventh or twelfth century, ancestors of the Greeks moved to the mountainous area now known as Greece. The mountainous terrain made it almost impossible to communicate among groups. With limited opportunity to communicate, people began to develop individuality in living practices. New concepts of education arose. People began consciously to teach their children. This gave rise to formal education in later years. However, according to Wilds,[22] learning continued to be

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[19]Elmer Harrison Wilds, The Foundation of Modern Education (New York, 1960), p. 18.

[20]Ibid., p. 26

[21]Ibid., p. 27

[22]Ibid., p. 86.

achieved through example and imitation and involved only the practical skills needed at that time.

As cities developed, travel increased, and commerce and trade expanded, knowledge also increased. People found it necessary to live among other people, to understand their ways, and to work with them for the betterment of society. These changes meant that people needed opportunities to develop cultural understandings, tolerance, patience, and specialized skills. The educational theories proposed brought about a skepticism in the people. They began to ask for proof. Their questioning attitude led to the development and use of the scientific method as it is known today.

In modern times, more goods and services within the price range of the American masses are available. Automation has made it possible to produce goods at lower costs. Employment trends have changed. The nation's middle class has been brought into an increasingly dominant position. Improved means of communication and transportation have drawn the world closer together. The population has increased tremendously.

The changes mentioned in the preceding paragraph have brought about changes in the needs of people. In turn, they have caused educators, including home economics teachers, to become concerned about more effective educational practices. Much of this concern is due to the uncertainty about effective ways of meeting the needs of individuals and groups in such an environment.

Most of the practices used throughout history have lingered on and are used in some schools today. These practices plus the stable and changing functions and needs of the family and its members are making

the problem of education more complex than during any other period in history.

Increased Understanding of How Man Learns Influences Educational Practices

The analytical study of learning as a scientific part of the educational program is relatively recent. Several theories concerning the learning process have been proposed. Each has had some influence on educational practices.

One theory is that learning is accomplished through the senses and involves a series of stimulus and response connections. Some theorists believe that certain hereditary reflexes and instincts are inborn and form the basis upon which learning occurs. Sandiford explained,

> Unlike other theories of learning, connectionism lays great stress upon the "original nature of man" and hence upon the study of heredity. What a man does is the result of his original nature and the forces which act upon him...how well one learns depends only partially on the quality of education to which one is subjected and also partially (mainly in fact) upon one's native abilities. Intelligence is a natural trait.[23]

According to Bode, this theory rests on the belief that "the mind is,...., dependent on the body for stimulations from the outside world." He continued, "...when these stimulations are once received, it [the mind] can act independently...The decision comes from the inside and not from the outside."[24]

That intelligence is natural implies a need for the individual to reach a certain level of maturity to learn most effectively. The simple

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[23]Peter Sandiford, "Connectionism: Its Origin and Major Features," The Psychology of Learning, National Society for the Study of Education, Forty-first Yearbook, Part II (Bloomington, 1942), p. 132.

[24]Boyd Henry Bode, How We Learn (Boston, 1940), p. 28.

act of living and the contacts made by such living tends, to some extent, to develop this maturity. Along with maturity, one develops interest and recognizes some needs in his own life.

Those who hold this view, believe that learning is additive; that one should be taught one part and then another. Also, practice is an important and necessary step in getting things to work smoothly. This theory is based on the assumption that a frequently made response in a certain kind of situation will become a habit.

A second theory of learning assumes that the mind is a vacuum in which the student stores knowledge given him by the teacher. Some authorities refer to learning as a process of "absorption." Others describe it as a "stamping in" process in which every response is stamped into the brain. John Locke likened the mind to a "blank tablet of wax" in which experiences sent by way of the senses were recorded. The teacher's job was to supply the information to be recorded. It was expected that experiences in mind would be available for use when needed. Locke assumed that experiences recorded in the mind determined the kind of individual one would be. This belief led some educators to insist that children carefully imitate the teacher. The imitation was expected to prevent the recording of mistakes in the brain, since they would tend to be repeated under appropriate circumstances. No provisions were made for mistakes which the teacher might make.

It was also assumed that experiences recorded in the brain were recalled in certain patterns according to the individual's need. Bode reported,

The psychologists...have told us that our experiences are compounds of various elements, such as sensations, images, and affective qualities...

They (experiences) constitute what we call our memories; and these memories enable us to interpret the experiences of the moment.[25]

Schools holding this viewpoint usually emphasize instruction with maximum teacher interpretation given and minimum freedom for the student to make his own interpretations.

A third theory of learning rejects the idea that mind and body are separate factors. Those who hold this view assume that the mind and body operate together and that learning occurs through association. Bode explained, "...learning is a process of building up new reflexes... this is done by coupling up stimuli with new responses so as to make new pairs."[26] Learning results in habits that cause one to react automatically when certain stimuli are presented. Crow and Crow said,

> In the learning of certain school subjects, automatic and consistent responses to stimuli are of primary importance. Automatic responses rather than reflective thinking is needed in the learning of penmanship and spelling. The efficient learning masters these to such a degree that they serve as time and energy saving habits.[27]

Until the early twentieth century, it was assumed that knowledge automatically transferred from the time of learning to the time of need. Sandiford wrote that, "Before the days of Thorndyke, educators almost universally believed in universal transfer. Study in any branch of learning affected other branches directly or indirectly."[28]

However, Thorndyke was not convinced that transfer of learning was automatic. During the early 1900's Thorndyke and Woodworth conducted

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[25]Ibid., pp. 143-144.

[26]Ibid., p. 177.

[27]Lester D. Crow and Alice Crow, Educational Psychology (New York, 1958), p. 233.

[28]Sandiford, p. 133.

controlled experiments to test the theory of transfer. Results showed that knowledge learned in one situation was not automatically transferred to another situation. This new idea shook the foundation upon which education had been developed until that time. Bode likened the results to a "...bombshell dropped into the camp of orthodox complacency."[29]

After many experiments, Thorndyke concluded that certain conditions were necessary for transfer of learning to occur. Transfer occurred best when the learner was mature enough to accomplish what was desired as a result of the learning. He also found that better results were achieved when the student was interested and recognized that what was being learned met a need in his own life. He was convinced that one is more likely to learn when that being taught satisfies the goal of the learner or helps him make satisfactory adjustments to new situations. He also found that exercise, or practice, was a necessary condition for transfer of learning. Crow and Crow reported that, "The primary laws of learning as conceived by Thorndyke are generally referred to as the laws of readiness, exercise, and effect."[30]

According to Thorndyke's theory, classroom instruction should be planned on the maturational level of the individuals involved. It also suggests that some practice should be included and that interests of the learner should be carefully considered.

Integrative Learning is Complex

All of the philosophies, environmental conditions, and theories of

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[29]Bode, p. 99.

[30]Crow and Crow, p. 229.

learning previously mentioned, have influenced educational practices. Some have been more influential than others. Some have gradually diminished in influence, while others have become more outstanding. The writer believes that learning is more complex than any of the ideas expressed. Man learns through integrative experiences to the end that behavior is changed. What man learns is determined by his beliefs, innate abilities and by the demands of the society upon him. He inherits few fixed ways of reacting to situations. His interests, attitudes, appreciations, skills, and abilities are primarily the result of learning. Young stated,

> Culture is learned. Moreover it is learned from other persons. Gradually, the culture comes to affect the individual in what he thinks, what he believes and how he acts. Culture is an expanding and persisting accumulation of ways of doing and thinking which one generation hands down to the next. In fact, culture represents a kind of expected behavior which individuals require of those around them.[31]

The previously mentioned theories about how man learns are based on sensual and/or mental influences. Integrative learning is extremely complex and involves more than any of these theories mentioned. It involves the total individual---the full range of his physical action, mental processes, and emotional feelings. One part of the body does not act alone, rather all parts act together, as a whole. In fact, the whole loses part of its meaning when it is broken into its component parts. This means that stimuli and responses are combined in an organized manner. Learning is not the collecting of items of information or skill, or a number of concrete reactions. It is a reorganization and reconstruction of behavior which gives the individual more effective

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[31] Kimball Young, Social Psychology (New York, 1956), p. 48.

control over the solving of his own problems. Crow and Crow reported,

> ...a learning situation is more than the elements of which it is composed. Hence,..., the situation should be learned as a whole rather than separated into its component parts and learned piece by piece.[32]

Man is constructed so that he can see the "whole" and later distinguish the details involved. He can also choose from the materials around him and direct his behavior toward his own goals. Integration is a process of putting wholes and parts together in new ways to form new wholes. Bode indicated that when one learns something new he makes a new connection, creates a new meaning or develops a new understanding.[33] When this happens, learning becomes so much a part of the individual that he is a changed person and will never be the same again.

Man's activity involves the use of understandings, skills, and attitudes that have been learned in various areas of learning. Bode explained,

> Learning is an intellectual affair since it is identified with the perception of significant relationships.[34]
> Learning as reconstruction combines thinking, skill, information, and appreciation in a single unitary process, and it is characterized by flexibility, since it must constantly adapt itself to the circumstances of the situation.[35]

Integration, then, occurs when one sees and understands the relationships among ideas, facts, and generalizations; attitudes, values, and goals; and manipulative skills; and when one uses these understandings to develop logical plans of action for solving problems which confront him.

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[32] Crow and Crow, p. 234.

[33] Bode, p. 233.

[34] Ibid., p. 254.

[35] Ibid., p. 249.

But even then, integration is not complete. After planning, one must carry through on the plans he has made. He must put his feelings, skills, and thought together to the end that action results. Then the individual has a basis upon which his actions can be evaluated, thoughts organized, attitudes refined, and skills improved.

The development of integrative behavior is a personal matter and no one can do it for another individual. According to Chen,

> Integration in the last analysis is an individual matter. After all is said and done, it is the individual student who must do the integrating. To do this the student must have some purpose in study. A gripping purpose is a great integrating force. If, therefore, the students could be helped to conceive worthy purposes for his studies, the problem of integration would be much simplified.[36]

Integrative Learning Can Be Facilitated

The writer believes that all academic courses, including home economics, should provide learning experiences which help the student to further develop integrative behaviors. Such experiences should help form broad foundations from which personal, social, and professional problems may be solved. An individual is not expected to face all problems with certainty. However, an integrative education can help him to acquaint himself with facts and generalizations in various fields of knowledge, and to interpret and use them in relation to his objectives.

If integrative behavior is important to the welfare of man, it seems that each teacher should structure learning situations which facilitate the development of such behaviors. As American youth preparing for various positions in life are observed, one is reminded that

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[36] Theodore Hsi-en Chen, "Toward Integration," Journal of Higher Education, XII, (1941), p. 310.

the success of education cannot rest on a hit and miss program. A definite plan of work is needed. It must be an integral part of the educational programs across the nation. Organ expressed the belief that,

> ...Times are too serious to hope that a practical integration will be accomplished somehow in the rough and tumble of life. Knowledge that is not translated into action is a loss which democratic society cannot afford.[37]

Dressel further remarked,

> Integration is a process actively engaged in by individuals alert to new ideas and new values and consciously trying to incorporate these into new and more meaningful organizations of knowledge and experience is too important an outcome to be left to chance.[38]

It seems obvious that a "teach as you can" policy is too haphazard to get the best results. If integration is a means for developing values, attitudes, understandings, and generalizations, it is imperative that educators take seriously the task of providing opportunities for students to further develop integrative behaviors.

An education planned to help students develop integrative behavior is a serious business, not an incidental matter; it is work, not play. Only the teacher with knowledge of human behavior and an understanding of the problems which confront an individual will be able to plan and carry out a program which meets the needs of students in the further development of integrative behaviors. Schorling and Batchelder emphasized the idea that,

> ...if you know a good deal about your pupils, their needs, activities, interests, satisfactions, and dissatisfactions; if you know something

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[37] Organ, "Integration in Higher Education," Journal of Higher Education, XXVI, (1955), pp. 180-186.

[38] Dressel, p. 21.

about your community, its resources and mores; and if you have clearly in mind the general goals of education, you are already a long way down the road.[39]

But the question is often asked, What teaching methods provide students with opportunities to develop integrative behavior? The writer firmly believes that all classes can be taught so that students can further develop these behaviors. The lecture method can be an integrative experience, if it arouses feelings of curiosity in the student, leads him to new understandings, and stimulates him to use his new knowledge to solve problems within and beyond the classroom. However, the lecture method has a tendency to become an experience in which the student depends on mere recall of presented information in order to pass a test. This eliminates self-activity on the part of the student and lessens his chances of gaining the understandings, attitudes, and skills needed for effective adjustment to life situations.

The writer believes that the laboratory method offers the student more opportunities for using knowledge than does the lecture class. Practice in certain activities is possible under the guidance of trained teachers who can help the student crystallize his thinking and test some of his ideas in actual practice. This procedure makes it possible for the student to analyze his activities and improve his future performances if he is so motivated. These are typical of the many activities necessary in developing effective adjustments.

Even though the laboratory classroom is better equipped to provide opportunities for the student to participate actively, many factors may

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[39]Raleigh Schorling and Howard T. Batchelder, Student Teaching in Secondary Schools (New York, 1956), p. 213.

cause it to lack the qualities necessary for the development of integrative behavior. For example, the teacher may be autocratic and designate exactly what is to be done. In this situation, active practice may not be relevant to the student's needs and interests. Or, the leadership may be laissez faire so that little or nothing may be accomplished. The student's attitude may be such that he reacts in a negative manner. Such factors tend to diminish the value of the activity for the individual and to retard the development of integrative behaviors.

Between the extremes of the lecture and the laboratory, there are different combinations and/or variations of the two teaching methods. Each is likely to have both desirable and undesirable qualities, depending upon the philosophy, purposes, attitudes, and skills of the teacher and of the students involved. The writer believes that learning opportunities offered the students are a more important basis for the development of integrative behaviors than is the type of class organization.

Not all experiences can be evaluated by the same criteria. However, educational authorities tend to agree that an effective teaching-learning situation provides students with opportunities to:

1. Participate in the planning of individual and group objectives, procedures, and evaluations.
2. Establish relevance for school experiences through personal experiences to make them more meaningful.
3. Use a wide variety of experiences and resources in the processes of solving practical problems.
4. Select and organize experiences in meaningful sequences through individual and group action.
5. Recognize and cope with changes according to personal, group, and community needs and values.
6. Communicate through various media.

7. Relate small parts of knowledge to total problems.

8. Utilize principles from various disciplines in meeting the demands of problem situations.

9. Develop and improve understandings, skills, habits, attitudes, and values applicable in a variety of situations and to interpret and apply them in school, in the home, and in the community.

10. Evaluate progress toward planned objectives for themselves and the group and use the results of their evaluations for further planning and self-direction.

The writer believes that classes which provide such experiences will likely facilitate integrative behavior. The following discussion is an attempt to show, to some extent, the importance of each criterion and how it may provide opportunities for students to further develop integrative behaviors.

1. An integrative experience provides the student with opportunities to participate in the planning of individual and group objectives, procedures, and evaluations. Integration may be facilitated through teacher-student cooperation in planning. The first step is for the teacher to set up tentative objectives, consistent with the aims of education and with the kind of person she expects to emerge as a result of the educational experiences. In setting up tentative objectives, the teacher needs to identify student abilities, values, attitudes, understandings, and skills that need to be developed or strengthened. Tentative objectives should bridge the gap between past experiences and desired learning and give direction to determining new objectives.

After tentative objectives have been formulated, it becomes the teacher's obligation to guide the students in adapting them to meet individual and group needs. This is the first step in the process of building a meaningful program of integrative experiences. Schorling and

Batchelder said,

> The teacher who encourages the pupil to participate in planning is on psychologically sound ground. When teachers and pupils plan together they should plan within a framework that has already been pre-planned by the teacher.[40]

When students are permitted to participate in the formulation of objectives, the learning experience is more likely to be meaningful to them and relevant to their needs.

2. An integrative experience provides the student with opportunities to establish relevance for school experiences through personal experiences to make them more meaningful. Relevance is an important factor in effective learning. It was pointed out earlier that knowledge is important when it is relevant to problems of the individual.

Many of the problems which students meet in everyday life can be used to illustrate, interpret, and integrate concepts from various fields of knowledge. For example, home economics is rich in possibilities for the application of basic art principles. The basic desire for beauty can be satisfied in many ways. However, applications which have meaning and immediate use for the students are likely to be more effective in the stimulation of new learning. Such areas as clothing, table setting, and interior design can be used to illustrate many art principles and the relationship between esthetic satisfactions of family members and their environmental setting. Since many rich sources of meaningful experiences exist, knowledge is so vast, and time is limited, teachers should plan learning experiences which are meaningful and useful to the students.

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[40]Schorling and Batchelder, p. 146.

When relevance is established, students should be able to integrate knowledge from various fields and find increased unity in new understandings, values, attitudes, and skills, valuable to them in dealing with problems which confront them.

3. An integrative experience provides the student with opportunities to use a wide variety of experiences and resources in the process of solving practical problems. Valuable experience is gained in the utilization of a variety of appropriate resources. The most effective teaching situation stimulates the individual to search for new ideas, understandings, skills, and other experiences. The use of various resources and techniques helps the teacher to find cues which may stimulate students to learn, and also provide further acquaintance with ideas and knowledge which may help in solving problems.

Some resources offer both the teacher and the student opportunities to continually evaluate beliefs and to make changes as problems arise. Individuals see that which is presented in the light of their own experiences and apply what they learn as it has meaning for them. These relationships are very important and resources should be well selected to provide stimulation to form desirable relationships with the material available.

Resources are not limited to books and periodicals. Students may find needed information in a film, a field trip, television, talking to people and in watching and listening to various groups. The cultural world is their field, the facts learned their tools when students are helped to use them in solving problems.

4. An integrative experience provides the student with opportunities to select and organize experiences in meaningful sequence, through

individual and group interaction. Since well-chosen experiences provide the "key" to effective learning, there should be a wide variety from which the teacher and students may select. As previously pointed out, the teacher must know something of the background of his students and they should have an active part in selecting the experiences used.

The organizing of experiences in sequences provides students with opportunities to integrate knowledge. In a cooperative effort, with an individual and with a group, the teacher may guide the students in developing an awareness of the learnings and experiences upon which new learning is dependent. Often students are able to recognize that one experience builds upon past experiences and at the same time provides a foundation for future experiences. Since individuals come from many environments it is difficult for the teacher to recognize past experiences which the students have to build upon. Cooperative planning on the part of students and teachers makes it possible to provide more meaningful experiences.

5. An integrative experience provides the student with opportunities to recognize and cope with change according to personal, group, and community needs and values. Too often facts are presented and students are expected to remember and use them in solving their problems. If the society in which we live were stable, such learning of facts might be sufficient. This changing society brings continual imbalances within the individual, thus giving rise to new problems. Therefore, he must know how to interpret facts and generalizations and to utilize them in solving problems of daily living.

Values are relatively stable. Moberly maintained,

...there are basic and eternal verities that change but little over the endless run of the years. The long period of child dependency and parental responsibility and opportunities to lay down firm and enduring foundations upon which creative lives are built; love between the sexes... compassion for others, worthy ambition, the feeling of belonging, of self-worth, of security; the importance of social skills...the capacity and desire to communicate with others to the end that cooperative good will controls in all areas of human relations,...There are some values and principles which are indispensable to civilized existence; treat others as friends as long as they do not show themselves to be enemies.[41]

The movement, flexibility, and world-wide culture interchange in an adaptive society requires an education which provides the student with social and intellectual experiences which give him a feeling of belonging in the present and in the changing era ahead. Therefore, education should prepare the individual to effectively adapt to change and to uphold lasting values when solving personal and social problems.

6. An integrative experience provides the student with opportunities to communicate through various media. A student may communicate through the use of one or more of his sensory abilities. He may express himself in writing, speech, listening, facial expressions, gestures, and various combinations of these. The use of various communication media provides the student with the experience of expressing himself and tends to give him increased security in his own abilities. The conditions of society which require people to live and work together puts a corresponding responsibility on the teacher to provide opportunities for experiences through which a student can develop the skills of communication.

The influence of individual behavior is not limited to the community in which he lives. The whole world is increasingly affected by communication among more and more individuals. It seems obvious that

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[41]Sir Walter Moberly, The Crisis in the University (London, 1949), p. 128.

a need exists to improve communication skills in order to understand people and the problems which arise. The improvement of such skills can be accomplished most effectively through the use of many media of communication in the schools.

7. An integrative experience provides the student with opportunities to relate small parts of knowledge to total problems. Integration through problem solving makes it possible to bring experiences together into a whole. Effective learning depends on the ability of the individual to see details of his profession and of living as they relate to the total picture of life. French said, "Topics must hang together, one preparing for another, and one reflecting back to another; the whole framework must make sense."[42] Problems are usually conceived as wholes, but with the realization that details are necessary in order to solve the larger problems. Responding to wholes only, without distinguishing details and their relations, has limited value in experience. Yet the whole as conceived by students is really the place for planning to begin. It seems desirable then, that teachers organize learning situations so that the individual has opportunities to solve subproblems in relation to his concept of the total problem, his past experiences, and his anticipated needs for the future.

In attaining this relationship of parts to wholes, one must visualize education in terms of short-term objectives as means to long-term objectives. Each objective is a whole within itself. When the objective is reached, it provides a basis for and leads to other objectives.

Often individuals become impatient because they strive to reach a

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[42]Sidney J. French, Accent on Teaching (New York, 1954), p. 154.

high level of attainment and forget that an ultimate objective must be reached through a series of smaller attainable objectives. This is not only true of individuals, but is often true in the expectations of parents for their children and in teachers for their students. It is easy to forget that each new idea, skill, attitude, and action is a part of a continuous reorganization and reconstruction of the individual's total experience.

8. An integrative experience provides the student with opportunities to utilize principles from various disciplines in meeting the demands of problem situations. One extends and enriches his own knowledge through the use of relevant materials from many subject matter areas; the arts and the social, biological, and physical sciences. Many educators in professional areas are recognizing this as they plan professional curricula.

A homemaking teacher works with people of both sexes and all ages, individually and through groups. Therefore, she needs an understanding of ways people learn, how they react to various conditions, and how they can best be motivated to improve themselves as individuals and as members of families and of society. She works then, in areas concerned with both general and specialized skills.

The homemaking teacher needs basic understandings drawn from the various disciplines to provide effective learning experiences for students in areas concerned with individual, family, and community living. Much of her success as a homemaking teacher depends upon her ability to apply principles from many areas of learning to the solution of problems she encounters in daily living. Green, when speaking of education for pharmaceutical students, shared this viewpoint when he wrote,

Pharmaceutical education has problems peculiar to its own profession--- as well as those shared by other professions. Not the least of these is that of attempting to educate the "Whole man." The student is going to be a husband or wife, a father or mother, a citizen, a churchgoer, and many other things as well as a pharmacist. In both professional and pre-professional education, these facets of a man's life must not be lost sight of.[43]

Thus, education to meet an individual's needs in professional and personal living must be centered on problems relevant to the needs in these areas, and to be most effective, must be based upon past experiences.

9. The teachers An integrative experience provides the student with opportunities to develop and improve understandings, skills, habits, attitudes, and values applicable in a variety of situations and to interpret and apply them in school, in the home, and in the community. Youth of today will be the leaders of tomorrow. They will be working with people in many situations. Educators need to motivate young people to integrate knowledge to increase their understanding of, interest in, and responsibility to home and community problems. Spafford said, "...the manner in which the out-of-school situation is met,..., represents the final outcome of their learning."[44] Students should have opportunities and encouragement to apply their knowledge and skills "...in concrete situations."[45]

An individual will always solve problems by interacting with other individuals and with his culture. The same basic attitudes, skills,

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[43]Melvin W. Green, "Professional Education in Pharmacy," Journal of Higher Education, XXV, (1954), p. 262.

[44]Ivol Spafford, Fundamentals of Teaching Home Economics, (New York 1956), p. 226.

[45]Ibid., p. 79.

and understandings are useful to the individual in solving problems of both the present and the future. He will need to refer to past experiences as a basis for meaning and understanding, to apply knowledge in arriving at sound solutions to problems, and to evaluate results as a guide to further progress. When this is done repeatedly in many situations skills, habits, attitudes and values are firmly established. These then result in changed behavior.

Changing behavior is a slow evolving process. The results of efforts by any one educator are not always readily apparent. However, one may see evidence of some behavioral changes as they occur daily in the use of new skills, attitudes, and understandings in the development and execution of plans for solving the problems of daily living. Although over-all results are not immediately apparent, it seems reasonable that a definite effort should be made to influence youth to further develop integrative behaviors which are meaningful to them in daily living.

10. An integrative experience provides the student with opportunities to evaluate progress toward planned objectives for themselves and the group and use the results of their evaluations for further planning and self-direction. Evaluation is a continuous process. One must know what was learned yesterday in order to plan for effective learning experiences today; and one needs to know what is learned today in order to plan for effective learning experiences tomorrow. Williamson and Lyle reported,

> Continuous evaluation is necessary to satisfactory guidance of pupils; it needs to be planned at the same time that methods of teaching, the visual aids, and the class management are planned.[46]

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[46] Maude Williamson and Mary Lyle, Homemaking Education in the High School (New York, 1954), p. 289.

Just as one part of the body operates as a part of the total man, evaluation operates as a part of the total educational process. It is a continuous guide to aid in the self-direction of students toward unity in class objectives. As Alcorn, Houseman, and Schunert said, "...the primary purpose of evaluation is to facilitate and improve learning and instruction."[47] It is important that the individual be willing to evaluate what he is doing and to make needed changes in order to retain a desirable level of emotional, physical, and intellectual attainment.

One way the teacher can to gain unity toward educational objectives is to include students in planning evaluation procedures throughout the educational process. Dressel explained that, "...as an activity in which students also participate, it is possible that the thought and judgment required in the act of evaluation may be a highly integrative experience."[48] French assured his readers that some kind of evaluation should be present in any undertaking. He wrote,

> Only by continued willingness to reevaluate what we are doing, to make changes no matter how drastic, and to respond to new ideas can we keep the freshness and vitality which are the essence of liberal education.[49]

If students are given the opportunity to select meaningful objectives and to plan for relevant learning experiences, it seems reasonable to believe that, with careful planning and adequate assistance, they will also be able to evaluate their own progress to some extent.

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[47] Marvin D. Alcorn, Richard A. Houseman, and Jim R. Schunert, Better Teaching in Secondary Schools (New York, 1954), p. 361.

[48] Dressel, p. 19.

[49] French, p. 91.

Summary

Generalizations are products of interaction of the individual with other individuals and with the culture. They are gained through efforts of one to satisfy his needs and to deal with his surroundings. The integration of generalizations from various disciplines is necessary for developing understandings, values, attitudes, and skills needed in solving personal and professional problems.

Integration is a continuous process of reorganizing and reconstructing one's understandings, attitudes, and skills. The individual uses integration to solve daily problems, thereby tending to give a sense of security in his own ability to deal with future problems. Such experiences should be facilitated whenever possible.

Integration Facilitated Through Demonstrations

Most of what one learns is intended for application to real life situations.[50] The general consensus among educators is that learning can be transferred to new problem situations more readily when it has immediate use for the learner. Spafford reported that home economists have accepted the view that, "...general education is best acquired through learning to meet the problems of every day living, drawing on fields of knowledge as they are needed."[51] It is true that Spafford was speaking of general education, but this is also true for other kinds of education.

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[50] Bloom, p. 122.

[51] Ivol Spafford, ed., Home Economics in Higher Education (Washington, 1949), p. 37.

Home economics is based on subject matter from various disciplines, such as chemistry, art, and psychology as well as its own research. Teachers of home economics deal with problems representing a broad diversity of subject matter dealing with all aspects of individual and family living. In order for the teacher to develop desirable understandings, attitudes, and skills, knowledge from these disciplines must be assembled into a working unit.

Many prevelant problems in professional home economics education courses can be used to illustrate, interpret, and integrate key concepts from various fields of knowledge. Home economics education draws information and resources from many fields of knowledge, including home economics. Few other fields draw on such a wide variety and offer so many relevant opportunities for integrative experiences.

The Course, "Principles and Practices in Demonstrations," HEE 413, provides home economics majors at Oklahoma State University with a unique opportunity to further develop integrative behaviors. It is an elective course designed to provide opportunities for students to further develop and apply understandings, attitudes, and skills which have been learned in various general, specialized, and professional courses.

Students in the Course have opportunities to plan objectives and experiences in cooperation with teachers. When students participate in the formulating of objectives and planning of experiences, the problems selected for study are more likely to be relevant to their needs. From the wide variety of home economics subject matter it should be possible for students to select problems which are interesting and stimulating to a majority of the class members.

Duties & tasks

Students in the Course studied help to determine criteria for selecting problems to be solved through the planning and presenting of demonstrations. Although they are not in written form, the following are typical of the standards used in this selection. The problems presented through demonstrations should:

1. grow out of the interests and needs of students.
2. be common and recurrent in the lives of a large number of students.
3. provide a variety of experiences suitable to students of different abilities and needs.
4. contribute to a continuous growth of understandings which will enable students to cope successfully with problems of home economics education.
5. be such that materials and facilities are available for use.
6. permit a large degree of planning by the students as a group, by students with teachers, and by students working alone.
7. be suited to the maturational level of the audience for whom they are planned.
8. be suited to the maturational level of the students who are to develop them.
9. be of sufficient range and scope that they justify consideration by students and teachers.
10. be limited sufficiently so that they can be dealt with within the allotted time.
11. permit creative and student initiated work on the part of each individual.

These criteria allow students to work toward common objectives; however, they permit wide differences in the problems selected.

During the semester, each student usually plans and presents six demonstrations. These are varied so that several areas of home economics and other closely related subject matter fields are included by each student. Thus, a variety of problems of interest to homemaking teachers

is encouraged.

From each problem selected, several sub-problems evolve, such as, selecting topics of value to the group, locating accurate and reliable information, organizing plans in logical sequence, adapting information to the particular group for which the demonstration is planned, appearing before the group, staging the setting for most effective learning, planning for illustrative materials, synchronizing visual and auditory presentation, and evaluating. At the end of a demonstration, the class members may have a rather concise understanding of the problems involved. They are often ready to formulate individual and group generalizations.

Students in the Course have opportunities to solve problems which are relevant to their own needs and the needs of the group. Since home economics' most unique contribution is to the solution of problems of home and family living, it should be easy for home economics teachers to find problems common to most students, even though their needs and interests vary. Home economics offers a variety of opportunities for students to explore interesting and challenging problems since it is concerned with:

> ...the basic needs and wants of people---physiological, psychological, and social---for food, clothing, shelter, and for living together in the family and community. It is concerned with the relative utility and economy of various products and services that can satisfy these needs. It is concerned with acquiring the knowledge and skills needed for managing time, money, and other resources in such a way that the gap between present and desirable levels of living may be closed, or at least narrowed. It is concerned with problems of motivating people to adopt new concepts and practices that may contribute to improved family life for families.[52]

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[52]Hazel K. Stiebling, "The Role of Research in Obtaining the Social, Scientific, and Technical Information Required for Effective Home Economics Education" (College Park, Md., 1958), p. 1.

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in the group. Because the roles played vary greatly, students are helped to understand many age levels.

Students in the Course have opportunities to select and organize materials and information from many disciplines. It is important that prospective teachers understand basic principles of the social, physical, and biological sciences and the arts and that they be able to apply these principles in meeting daily problems. Principles used in solving many problems encountered by homemaking teachers are found in the content of these various disciplines. Hartman said,

> Apprehension of the whole is requisite before any detail can be properly interpreted...Most of the properties of things and persons that we encounter in our experiences and consider interesting and important are attributes of similar "extended wholes" rather than the qualities of a narrowly restricted and localized part.[53]

Many of the basic concepts from art, biology, economics, political science, psychology, and sociology can be organized in various ways and integrated with home economics and other subject matter to solve problems in the Course, thus fulfilling one of the basic purposes for its existence.

Students in the Course have opportunities to practice various teaching techniques. The demonstration method is an important teaching method; however, other methods are also important. Each student not only plans and gives demonstrations, but also serves as a hostess for several others. This responsibility affords experiences in introducing the demonstrator and the demonstration in an interesting and effective manner. The demonstrator gains experience in planning questions to guide the discussion

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[53]George W. Hartman, "The Field Theory in Learning and its Educational Consequences," The Psychology of Learning, National Society for the Study of Education, Forty-first Yearbook, Part II, (Bloomington, 1942), p. 176.

when he stated, "Knowledge of results serve as a guide to the learner in his subsequent practices and as such, functions as a basis of selection and elimination...a characteristic of most complex acts of learning."[54]

The hypotheses of this study were based upon the beliefs that (1) opportunities for learning as previously described are provided in the Course, and (2) they help to facilitate the development of integrative behaviors.

Summary

Effective learning situations in any profession should provide opportunities for students to integrate knowledge from many disciplines in order to solve everyday problems.

In solving problems one draws on cultural experiences and interacts with other individuals to develop meaningful understandings, skills, and attitudes. In solving problems, individuals should be able to see problems in parts and relate them to the whole.

Since an individual may develop in many directions, depending on the character of his experiences, it is essential that colleges and universities provide opportunities for the individual to have effective learning experiences. It is the responsibility of the teacher to guide individuals into experiences which are educative and which will result in meaningful experiences.

Home economics is a source of many relevant problems for educational

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[54]J. B. Stroud, "The Role of Practice in Learning," The Psychology of Learning, National Society for the Study of Education, Forty-first Yearbook, Part II, (Bloomington, 1942), pp. 369-370.

CHAPTER III

THE IDENTIFICATION OF INTEGRATIVE BEHAVIOR

Before the further development of integrative behaviors could be evaluated, it was necessary to determine whether or not integrative behavior actually occurs while students are enrolled in the Course. The purposes of this chapter are (1) to report the procedures used to identify integrative behaviors in the Course and (2) to present the results of some of the observations made.

The identification of integrative behaviors necessitated a preliminary selection of behaviors from literature, from objectives of the Course, and from personal observations.

The behaviors identified were studied carefully. Only those applicable to the Course were selected for further use. The selected behaviors were reviewed, restated, and reorganized according to the affective, manipulative, and cognitive aspects of integration.

It must be understood that many of the behaviors listed cannot be easily identified as affective, manipulative, or cognitive. They are probably a combination of two or all three of the elements, combined in such a way that various patterns of behavior occur. Hopkins said, "Unity is...a quality of experience. It appears when thinking and feeling and acting bear a consonant relation to each other; that is, when behavior is

integrative."[1] Thus, the behaviors can be identified according to the separate elements only for the purpose of study as was attempted in this thesis.

The behaviors selected as being applicable to the Course and integrative in nature are shown in the following list.

Affective Behavior

Evidence of growth in affective behaviors occur when a student shows progress in the following behaviors:

1. Considers needs and interests of class members when selecting demonstration topics.
2. Considers needs and interests of a particular audience and plans a demonstration to meet its needs.
3. Shows willingness to spend the time needed to develop complete and adequate plans.
4. Is receptive to teacher's suggestions for improving demonstration plans.
5. Shows eagerness to learn and persists in finding answers to questions which arise.
6. Shows willingness to spend the time needed in practice to develop the necessary skills.
7. Works calmly and easily before the group.
8. Appeals to the needs and interests of individual group members by offering suggestions for variety in materials, methods, and uses.
9. Handles unexpected situations calmly and easily.
10. Appreciates the demonstration method as a valuable teaching tool.

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[1] Hopkins, p. 33.

Manipulative Behavior

Evidences of growth in manipulative behaviors occur when a student shows progress in the following behaviors.

11. Adjusts work surfaces to comfortable heights.

12. Develops adequate skills in manipulative processes.

13. Selects and/or prepares adequate visual aids.

14. Arranges classroom facilities so all class members can see and hear.

15. Assembles and checks the needed equipment and materials before beginning a demonstration.

Cognitive Behavior

Evidences of growth in cognitive behaviors occur when a student shows progress in the following behaviors.

16. Recognizes the adaptability of ideas to the demonstration method.

17. Recognizes limitations of ideas and adapts them when necessary.

18. States clearly the major objectives in the introduction of the demonstration.

19. Organizes plans in logical order.

20. Selects materials and equipment which are appropriate for solving the problems.

21. Arranges materials and equipment to eliminate awkward and unnecessary motions.

22. Emphasizes points made through several planned media.

23. Uses accurate reasons to support actions and information.

24. Uses an adequate number of reasons to support actions and information.

25. Synchronizes speech and action.

26. Uses correct terms.

27. Pulls main ideas together into a concise, accurate, and meaningful summary, or draws relevant conclusions based on adequate evidence or tested experiences.

28. Gives directions for hostess that are complete, explanatory, and easily understood.

29. Evaluates others in terms of goals. Uses meaningful statements and offers constructive suggestions.

This reorganized list was used to formulate the progressive rating scale shown in Table I, pages 56 to 61. Not all of the listed behaviors were used in the rating scale, for example four was combined with three. Since the writer did not believe that number ten could be adequately measured by this method, it was not included. Thus, the numbers for behaviors used in the rating scale do not necessarily correspond to the numbers of the behaviors listed.

A score of ONE was used as the lowest level of performance on the scale. A score of FOUR was used as the highest level. No pilot study was conducted but the scale was revised several times before it was used to check the progress of selected students during the spring semester, 1960.

Two sections of the Course were offered during the semester. One was concentrated into one-half of the semester and blocked with the course in student teaching. The other section extended throughout the entire semester.

Three students were chosen from the blocked section and three students were selected from the regular section to get a representative sample for the exploratory study. In each case, the student with the lowest, the one with the highest, and the one with the middle accumulative grade point average was chosen. These six were approximately one-fourth of the twenty-five students enrolled in the two sections of the

TABLE I

GRAPHIC RATING SCALE FOR THE IDENTIFICATION OF CHANGE IN SELECTED INTEGRATIVE BEHAVIORS

	1	2	3	4
1.	Shows little or no consideration for needs and interests of class members when selecting topics.	Considers some of the needs of class members. Not much concerned with their interests.	Considers needs and some interest of class members.	Considers needs and interests of class members when selecting topics to demonstrate.
	1	2	3	3
2.	Makes plans without regard for needs and interests of audience.	Plans for a certain age group but makes no effort to discover their needs or interests.	Considers needs and interests of the audience but hesitates to change own ideas.	Adjusts plans or presentation to meet the needs of a particular group.
	1	2	3	4
3.	Lacks much of information and action in plans.	Lacks some of information and action in plan.	Lacks little of information and action.	Makes plans carefully and completely. Supplies needed information.
	1	2	3	4
4.	Seems content with what is already known (subject matter and procedures). Additional information expected from teacher.	Makes some effort to learn more than is already known.	Attempts to learn whys, hows, and so on, when planning. Uses more than a single source.	Persists in finding out how, why, and so on even after the demonstration if questions still exist.
	1	2	3	4
5.	Spends little time in laboratory in planning, discussing plans, practicing. Plans very late.	Spends some time in planning but little in practice. Plans late.	Spends some time in planning, looking for answers, discussing plans and practicing. Plans little late.	Spends much time in planning, looking for answers, discussing plans, practicing and so on. Plans on time.

TABLE I (Continued)

	1	2	3	4
6.	Works with much difficulty before the group. Rigid and sometimes immobile.	Shows a lot of tenseness. Voice trembles, hands shake, feet shift.	Shows some tenseness but has it under control. Works and talks easily before the group.	Works calmly and easily before the group. No indication of tenseness.
	1	2	3	4
7.	Presents ideas as an only way of procedure.	Presents own ideas as best way. Accepts other ways if pushed to do so.	Agrees to other ways of doing things when asked or suggested.	Suggests a variety of ways a particular thing can be done
	1	2	3	4
8.	Is upset by unexpected situations. Results in over-all confusion.	Upset to some extent by unexpected situations, but handles the situations in one way or another.	Handles unexpected situations with some assurance, yet some fear and hesitation.	Handles unexpected situations calmly and easily.
	1	2	3	4
9.	Works in cramped, uncomfortable, or awkward position. Stands on one foot, table too high or too low, stands when should sit, or vice versa.	Makes some adjustments of work surfaces, but needs more. Stands on one foot. Shifts weight often.	Adjusts work surfaces to comfortable position most of the time. Stands on both feet most of time. Sits when needed or profitable to do so.	Adjusts work surfaces to comfortable height. Sits when profitable to do so. Stands easily on both feet.
	1	2	3	4
10.	Leaves out important steps in a process or uses long processes that require too much time or duplicates processes unnecessarily.	Shows most of processes but involves some duplication or long processes.	Shows all important steps in a process in streamlined form with little duplication.	Shows all steps of a process in some way but streamlines and avoids long or duplicated processes.

TABLE I (Continued)

	1	2	3	4
11.	Shows no visual aid plans.	Plans few visual aids of little value. Does not emphasize or supplement demonstration.	Selects or makes adequate visual aids. Used to create interest or emphasize minor points of the demonstration.	Selects and/or prepares adequate visual aids. Emphasizes or supplements major points of the demonstration.
	1	2	3	4
12.	No plans for arrangement of demonstration area.	Arranges chairs for seating but disregards remainder of area.	Arranges room so audience can be comfortable and see and hear most of the time.	Arranges classroom facilities so all class members can be comfortable and see and hear easily.
	1	2	3	4
13.	Fails to check materials and equipment before demonstration. Misses many needed items.	Glances over plans for materials and equipment but does not check carefully. Several needed items missing.	Assembles and checks equipment and materials before demonstration. Misses few items or fails to obtain a substitute	Assembles and checks the needed equipment and materials before the demonstration. All materials needed on hand or good substitute provided.
	1	2	3	4
14.	Depends solely on teacher to pass judgment on adaptability of idea to demonstration technique.	Recognizes some ideas good for the demonstration technique. Some they believe good are not and vice versa.	Recognize ideas that have possibilities but require some assurance from teacher.	Usually recognizes adaptability of ideas to demonstration technique.

TABLE I (Continued)

	1	2	3	4
15.	Does not recognize limitations of various procedures and ideas.	Makes changes in planning when suggested by the teacher.	Recognizes some limitations of ideas and planning. Makes an effort to adapt them and uses suggestions of teacher when needed.	Recognizes limitations of ideas and planning and adapts them to the situation when needed.
	1	2	3	4
16.	Lacks statement of major objectives in introduction of demonstration.	Implies or vaguely suggests objectives of the demonstration.	States major objectives of the demonstration in the introduction but needs to be clarified.	States clearly the major objectives of the demonstration in the introduction.
	1	2	3	4
17.	Lacks organization. Parts broken by irrelevant ideas that go elsewhere or not at all.	Organizes plan in parts. Parts not planned in logical order but put together in logical order or vice versa.	Organizes plans well except needs to join ideas with transitional sentences.	Organizes plans in logical order. Uses good transitional sentences to join ideas into a whole.
	1	2	3	4
18.	Lists no materials or equipment.	Selects inappropriate materials and equipment in some cases. May also have too much or too little.	Selects most materials and equipment which are suitable for the problem. May have too much or too little.	Selects appropriate materials and equipment in needed amounts for solving the problem.
	1	2	3	4
19.	Arranges material and equipment so that work is awkwardly done. Many unnecessary motions.	Arranges materials and equipment in fair order but tall items in front of short items. Some unnecessary motions.	Arranges materials and equipment well but works in awkward manner part of the time. Few unnecessary motions.	Arranges materials and equipment to eliminate awkward and unnecessary motions.

TABLE I (Continued)

	1	2	3	4
20.	Fails to emphasize major points of the demonstration.	Emphasizes some major points in body of the demonstration only. Fails to summarize, conclude, or suggest, or to provide supplementary visual aids.	Emphasizes most major points in a planned summary or conclusions. No added emphasis.	Emphasizes major points made through several planned media; summary, conclusions, visual aids, and other sensory aids.
	1	2	3	4
21.	Gives incorrect reasons or no reasons at all for much of the information or action.	Gives some incorrect reasons to support actions and information. Many more correct ones needed.	Usually gives correct reasons to support information and actions, but number is insufficient.	Uses correct reasons to support information and actions.
	1	2	3	4
22.	Leaves action with little meaning. Lacks explanation and/or information.	Gives action some meaning. Lacks some explanation and information.	Makes action meaningful by information learned elsewhere. Explains well in most cases, but may leave some gaps, or may overemphasize.	Makes action meaningful by supplying sufficient information to challenge and interest the audience.
	1	2	3	4
23.	Fails to coordinate speech and action.	Stops working while talking or stops talking while working or both.	Keeps action and speech going but not well synchronized; one ahead of the other.	Synchronizes speech and action. Works and talks easily at the same time. Well coordinated.
	1	2	3	4
24.	Uses many incorrect terms and mispronounces common words.	Uses awkward terms occasionally. Pronounces some common words incorrectly.	Uses correct terms and pronounces most words correctly.	Uses correct terms and pronounces words correctly.

TABLE I (Continued)

	1	2	3	4
25.	Plans no summary or conclusions.	Lacks meaning in summary or conclusions. Does not emphasize major points of the demonstration.	Pulls main ideas together in a summary or conclusion but needs more generalizing. May be excessively long or include irrelevant statements.	Pulls main ideas together into a concise, accurate, and meaningful summary or conclusions.
	1	2	3	4
26.	Gives no directions for hostess.	Gives directions to hostess that are incomplete and vague.	Gives directions to hostess that are fairly complete and explanatory, but lack clarity.	Gives directions to hostess that are complete, explanatory and easily understood.
	1	2	3	4
27.	Evaluates with "yes" or "no" responses. Tends to criticize person rather than demonstration.	Evaluates with most of responses "yes" or "no". Uses some statements but lack meaning and no reference made to objectives. Some constructive criticism but no helpful suggestions.	Evaluates with some reference to objectives. Uses some meaningful statements and some "yes" or "no" statements. Few constructive suggestions.	Evaluates others in terms of objectives. Uses meaningful statements, offers constructive criticisms and suggestions.

Course.

During the semester, each demonstration plan and presentation by the six students was checked by the writer. Specific behaviors were checked for performance and were rated according to the figure designated by the descriptive phrases used in the rating scale, page 56 to 61.

The ratings made of student behaviors showed that performance changed in most cases. The results show that levels of performance changed many times during the semester. Some of the changes were progressive; others were regressive. Sometimes there was no change for several observations. These changes are referred to as regression, progression, and maintenance in the remainder of the study.

Because many behaviors are involved, a few specific ones representing the three areas; affective, manipulative, and cognitive are presented in this report. To include all of them would require lengthy graphic treatment, result in monotonous reading, and would add little if anything to the thesis proposed.

The nine selected behaviors are presented in profile form so the reader can easily see the patterns or lack of patterns in changes that occurred. Each of the profiles is presented in three parts according to the scholastic rank of the six students observed. This division was made to facilitate interpretation and duplication.

After the profiles were made, patterns of progress made by each student were analyzed. Few patterns were observed which involved more than two individuals. Results show thirty-two patterns of development from a possible fifty-four. Eighteen patterns were observed only once and ten patterns were observed in only two instances. Only four patterns

were observed more than twice. Two of the four were observed three times in the profile ratings. One of these is the pattern in which students showed regression-progression-maintenance and regression. An example of this pattern can be seen in profile IV, page 71, by student D. Two patterns of progress were observed in which five cases were noted. One pattern was of progression-regression-progression- and maintenance. Student C in profile I, page 65, is an example of this pattern. Other examples can be seen by examining the data, pages 65 to 81.

A total of only sixteen cases of the possible fifty-four were involved in patterns followed more than twice. Of the sixteen cases, fourteen were among students ranked in the low or middle scholastic group. Only two were ranked high. These results tend to indicate that most of the patterns were formed by students in the lower scholastic groups. However, when all of the patterns, including the ten represented by only two cases, were analyzed, it was found that the patterns were rather evenly distributed among the three scholastic classifications. This evidence was sufficient to dispel any idea that most of the patterns were formed by any one scholastic group.

Several patterns showed different students involved, although they may have represented the same scholastic rank. Patterns of behavior occurred at several different levels even among those who followed the same pattern several times. Students rated high scholastically seemed to perform at a slightly higher and more consistent level than students rated low scholastically. This observation is not always true, however. In fact, there are profiles, especially number VIII, page 79, in which the opposite is true. Sometimes the patterns fluctuate so much that one can hardly tell the difference in patterns and levels of performance for

students of different scholastic rank.

No one definite pattern of change was outstanding. Although some over-all progress was noted in almost every case, the way in which it occurred was unpredictable and inconsistent.

For further information the reader may refer to the nine profiles presented in the following pages. Profiles I and II represent specific affective behaviors; profiles III and IV represent specific manipulative behaviors; and the other five represent specific cognitive behaviors. More examples of cognitive behaviors were chosen because (1) educational institutions are specifically interested in the mental development of students and (2) the remainder of the study is concerned with the evaluation of cognitive behaviors. Only the outstanding features of each profile are pointed out.

Data in profile chart I, page 65, show that students observed began the semester with varying degrees of self-confidence. However, all seemed to reach a high performance level by the end of the semester.

Only one student, D, maintained the highest level of self-confidence throughout the semester. Student E seemed to perform at the third level at the beginning of the semester and moved on to the fourth level without regression. The other four students, two-thirds of the group, showed varying amounts of regression as well as progress. They appeared to be frightened in one situation and confident in another. The point at which regression or progression seemed to occur followed no definite pattern of development until after the fourth demonstration. Then each student seemed to progress to a higher level and either maintained it or progress the rest of the semester.

The most abrupt changes were observed in students A and C. Student

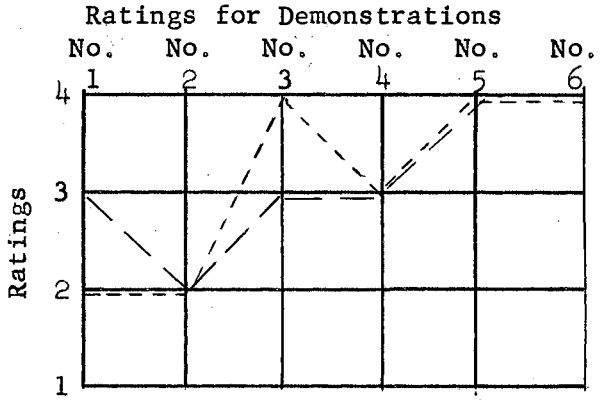
PROFILE CHART I

RATINGS IN DEVELOPMENT OF SELF-CONFIDENCE IN WORKING BEFORE THE GROUP

Low Scholastic Rank

-----Student A, Blocked Section

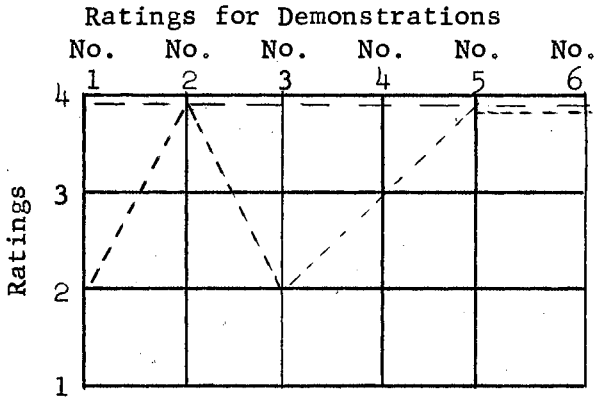
— — Student B, Regular Section (based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

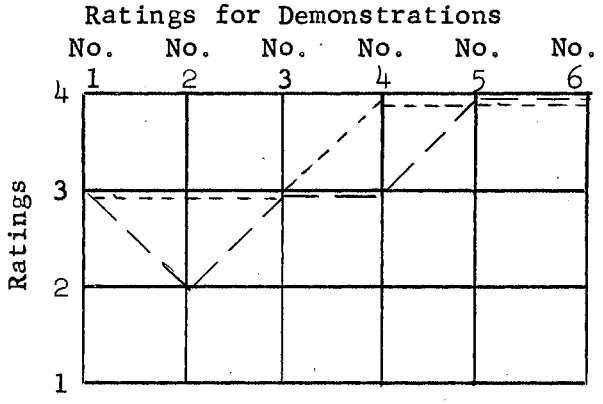
— — Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

__ __Student F, Regular Section



A seemed lacking in self-confidence in the first and second demonstrations. In the third demonstration she progressed to the fourth level but regressed to the third level in the fourth demonstration. In the fifth demonstration she seemed to regain self-confidence and maintain it in the sixth demonstration. Student C also seemed lacking in self-confidence in the first demonstration. In the second demonstration she seemed to gain confidence and was rated at the fourth level but seemed to regress to the second level for the third demonstration. After the third demonstration, progress appeared to be continual until the fourth level was reached in the fifth demonstration.

This profile seems to indicate a definite development of self-confidence in the students observed. All six reached the highest level of performance. On the other hand, no one definite pattern of progress in reaching this level was observed in any two of the six students.

Data in profile chart II, page 67, show that most of the students demonstrated little persistence in locating information and materials needed for their demonstrations at the beginning of the semester.

All but student C however, seemed to progress in putting forth the effort to locate needed information. Student C began the semester at the third level of performance. She moved back and forth between the second and third levels during the semester but seemed to end the semester at the third level, the same level at which she began.

All students except B and C achieved top rating at some time during the semester. Student B started the semester at the second level and student C started at the third level. Both finished the semester at the third level of performance. The other four students reached the top level of performance by the fourth or fifth demonstration but did not

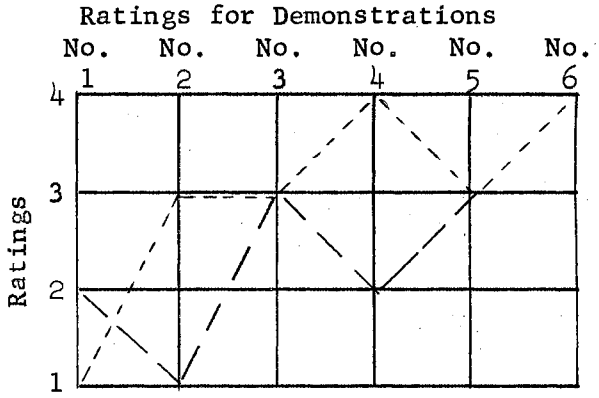
PROFILE CHART II

RATINGS ON PERSISTENCE IN FINDING ANSWERS TO QUESTIONS WHICH ARISE

Low Scholastic Rank

-----Student A, Blocked Section

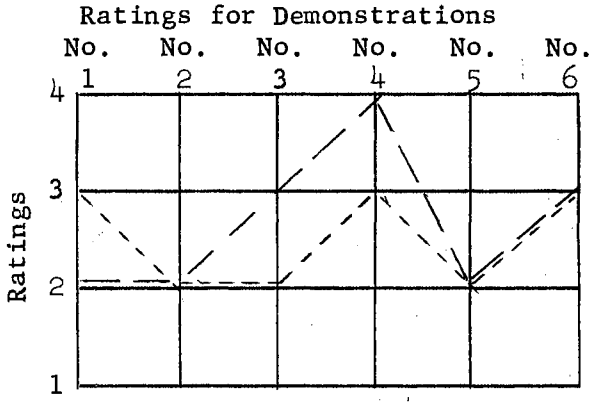
_ _Student B, Regular Section
(based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

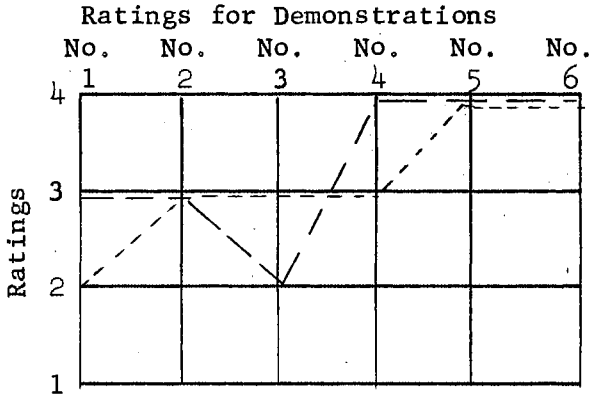
_ _Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

_ _Student F, Regular Section



always maintain it.

There seemed to be no specific pattern of development to indicate that students with high scholastic records were more persistent than those with low scholastic records. It was noted, however, that student F, one with a high scholastic rating, was one of the two who started the semester at the third level of performance. Only once during the semester, at the third demonstration, did she regress to the second level. After the regression she progressed to level four and maintained that level the rest of the semester. Student E began at the second level, progressed to the third level, and maintained it for three demonstrations. Then she progressed to the fourth level for the fifth and sixth demonstrations. She was the only one to show no regression at any point during the semester.

The profile shows an over-all progressive performance for the class as a whole and for most of the individuals. However, no specific pattern was observed by which behavior could be predicted with any assurance. In fact, no two students performed by the same pattern. Students rating high scholastically, however, did perform at a little higher level than students with lower scholastic ratings. Though no consistent patterns were observed, evidence was sufficient to show that changes were observed in the manner in which students located the information needed for their demonstrations.

Records shown in profile III, page 69, indicate that all six students performed rather well in adjusting work surfaces to a comfortable height. Two students, A and F, began the semester at level two but progressed to the highest level. Both regressed at times but never below the third level.

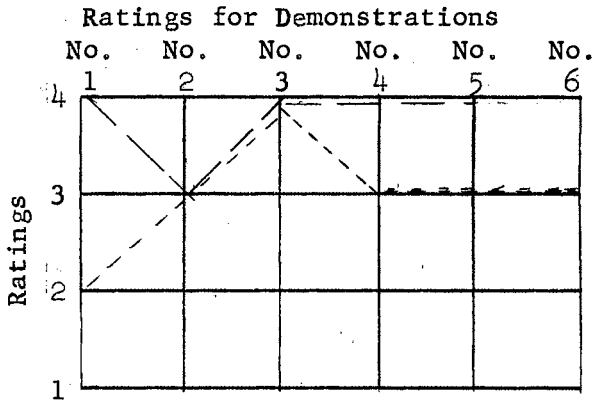
PROFILE CHART III

RATINGS ON THE ADJUSTMENT OF WORK SURFACES TO COMFORTABLE HEIGHTS

Low Scholastic Rank

-----Student A, Blocked Section

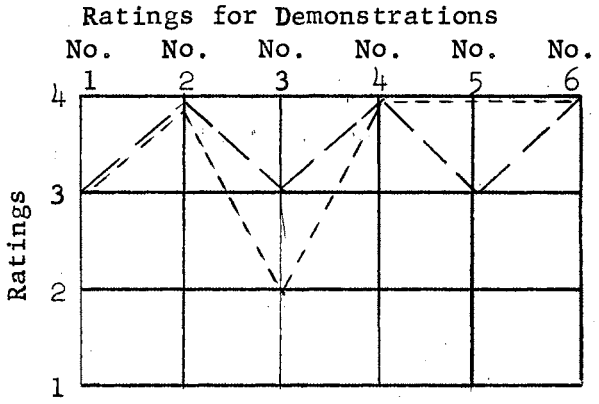
_ _Student B, Regular Section
(based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

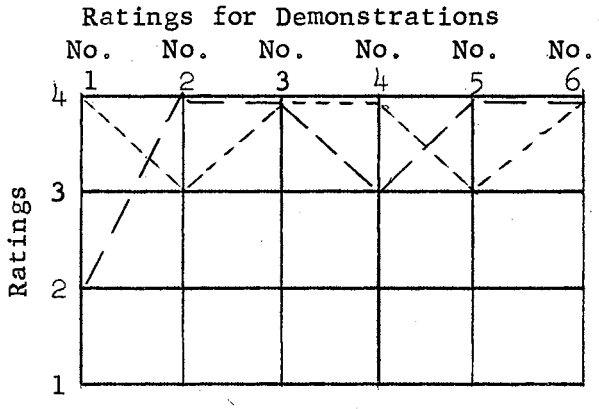
_ _Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

_ _Student F, Regular Section



Student C was the only one to show an abrupt regression that covered as much as two levels. Just as abruptly as she had regressed however, she progressed to the highest level and maintained it throughout the rest of the semester.

The class as a whole showed considerable fluctuation between the two top levels. At the end of the semester, however, all but student A was rated at the fourth level. Student A was rated at the third level.

No outstanding differences were noted that might be attributed to the scholastic rating of the students. One of those rated high and one of those rated low scholastically began the semester at the fourth level. One of those rated high and one of those rated low scholastically began the semester at the second level. Student F, rated high scholastically, ended the semester at the fourth level while A, rated low scholastically, ended the semester at the third level. The difference of only one level by only one student was not sufficient evidence to conclude that the scholastic rating made any significant difference in the performance level reached.

The many progressions and regressions and the overlapping of ratings by all six students also tend to support the idea that scholastic ratings made little difference.

Some progress was noted for the class as a whole by the end of the semester. Most of the students ended the semester at a higher performance level than they began. Although progress was noted, no definite patterns of progress were observed and no identical patterns of performance in adjusting the heights of work surfaces was observed in any two students.

Profile chart IV, page 71, shows no consistent pattern in the

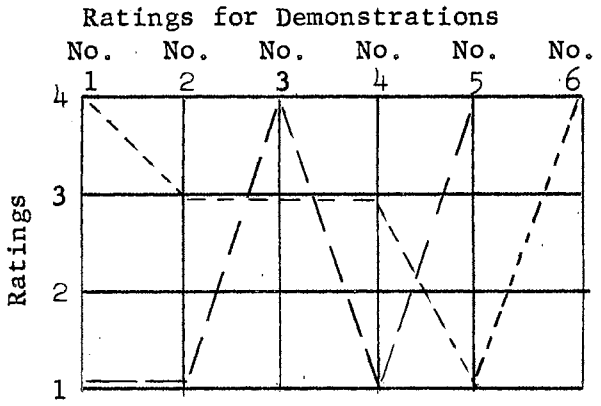
PROFILE CHART IV

RATINGS ON THE SELECTION AND/OR THE PREPARATION OF VISUAL AIDS

Low Scholastic Rank

-----Student A, Blocked Section

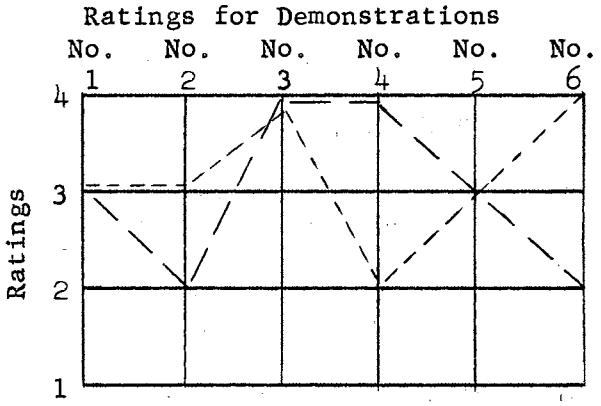
— —Student B, Regular Section
(based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

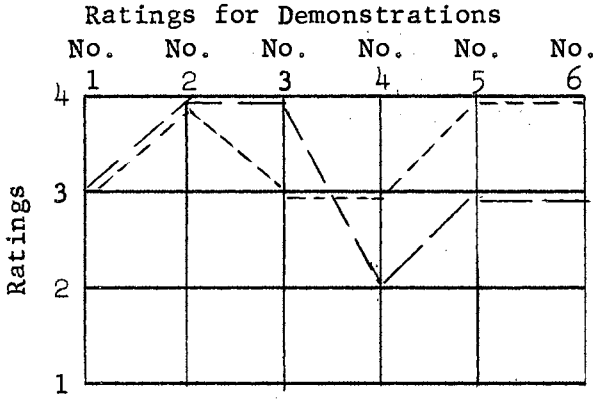
— —Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

— —Student F, Regular Section



progress of students in planning for visual aids. All six students progressed and regressed at various times throughout the semester. Most of the students reached higher levels of performance at the end of the semester, however, the abrupt changes from high ratings to low ratings and low ratings to high ratings make it extremely difficult to see any definite pattern that would be usable in predicting progress of a group or an individual.

It was noted, however, that students who rated low scholastically made the most abrupt changes during the semester. They are also the only ones who rated at the lowest level at any time during the semester. These students were rated at the first level four times during the semester. Three of these ratings were attributed to student B and one to student A.

Student E, who also rated high scholastically, was the only one rated at the third level or above throughout the semester.

It would be impossible to conclude from this profile that any definite pattern of progress occurred during the semester. The only identical patterns were those for students B and C. Although the patterns of progression and regression were the same, the levels at which performance was observed were different.

The group in general did make some progress. Two of the six students, A and F, ended the semester with the same rating they had in the beginning. Three students, B, C, and E, progressed during the semester and showed a higher rating at the end of the semester than at the beginning. Student D was the only one who ended the semester with a lower rating than she had had in the beginning. All six reached the highest level of performance at some time during the semester. No one retained

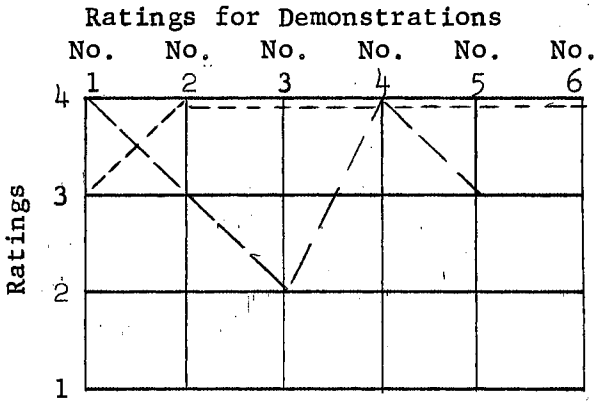
PROFILE CHART V

RATINGS ON THE SYNCHRONIZATION OF ACTION AND SPEECH

Low Scholastic Rank

-----Student A, Blocked Section

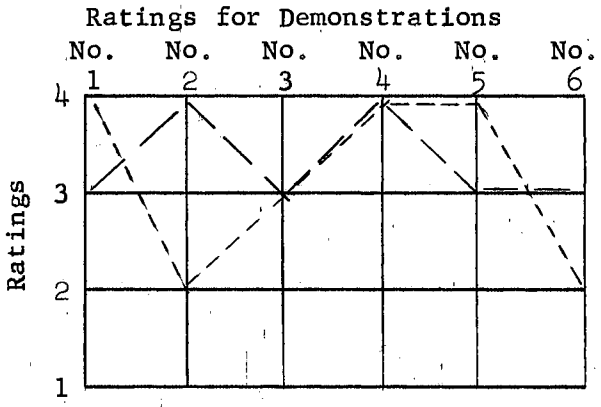
_____Student B, Regular Section
(based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

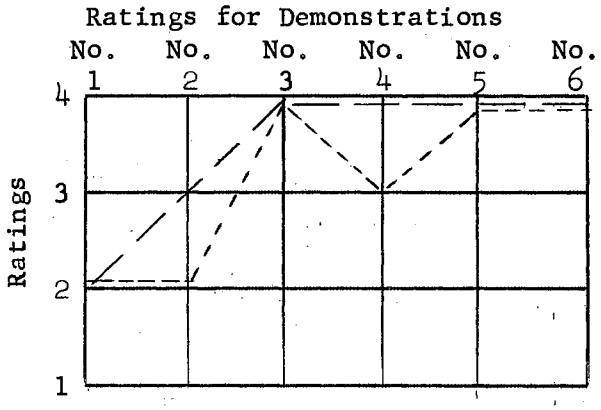
_ _ _Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

_____Student F, Regular Section



the same rating for more than three of the six demonstrations.

Although no one definite pattern of progress was observed, students who rated high scholastically seemed to perform at a higher level in planning for use of visual aids than did those who rated low scholastically.

For the group as a whole, evidences in profile chart V, page 73, show that much fluctuation in the early part of the semester gave way to more stable performance at a higher level during the last part of the semester. Most of the individuals showed some fluctuation during the semester but reached a high level rating by the end of the semester.

All six students showed progress during the semester but only students A and F progressed to the highest level and maintained it without regression at any point. These are also the only two who progressed on the same pattern, although performing at different levels on the first two demonstrations. Student C showed much fluctuation during the semester and was the only one to regress to the second level at the end of the semester.

The data show that students E and F, who rated high scholastically, began the semester at a lower level than any of the other students. They began at the second level while other students began at either the third or the fourth level. They showed more consistent progress however, than did those with lower scholastic ratings.

Although the group showed a number of fluctuations, the trend as a whole seemed to indicate progress. Only in the case of student C did the rating drop below the third level during the last three demonstrations.

There seemed to be no evidence in the data presented by which a

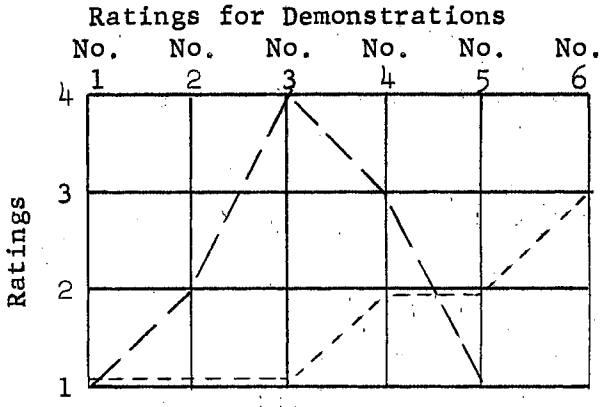
PROFILE CHART VI

RATINGS ON THE ORGANIZATION OF PLANS IN LOGICAL ORDER

Low Scholastic Rank

-----Student A, Blocked Section

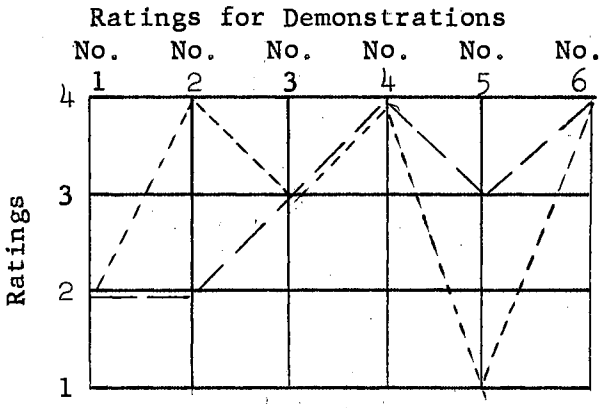
__ __Student B, Regular Section
(based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

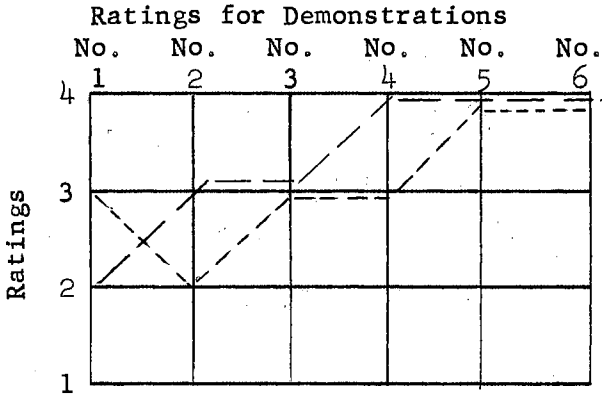
__ __Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

__ __Student F, Regular Section



definite pattern of development in the synchronization of speech and action could be identified. Neither was there evidence to indicate that the progression of students rated high scholastically is different from that of students ratel low scholastically. Students from each of the scholastic classifications showed regression as well as progression at various times during the semester.

Results of observations shown in profile VI, page 75, show that all six students began the semester with room for progress in the organization of plans. Except for the fifth demonstration, all showed a definite trend toward improvement although no definite pattern was observed. The most abrupt changes seemed to occur in the fifth demonstration presented by students B and C. The chart does not show what might have happened on B's sixth demonstration since she presented only five.

Students A and B began the semester with plans organized at the lowest level. Student A made rather slow but steady progress. B showed more rapid progress but also an extreme degree of regression near the end of the semester. Only students A and F showed continual progress with no regressions. Student A did not reach the level of organization that F reached but did approach a higher level by the end of the semester.

Although many fluctuations seemed to occur, the students with high scholastic ratings seemed to perform at a higher level than those with low scholastic ratings. All students except A reached the highest level of performance at some time during the semester. Students E and F, however, are the only two who maintained the high level during the last two demonstrations.

The profiles, in general, show that one student who rated high scholastically and one who rated low scholastically showed steady progress

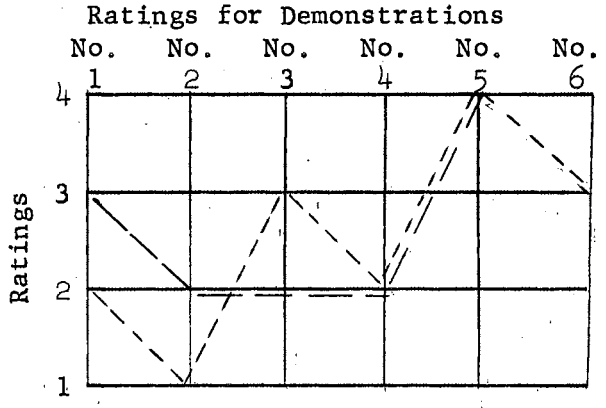
PROFILE CHART VII

RATINGS ON THE USE OF ACCURATE REASONS TO SUPPORT ACTION AND INFORMATION

Low Scholastic Rank

-----Student A, Blocked Section

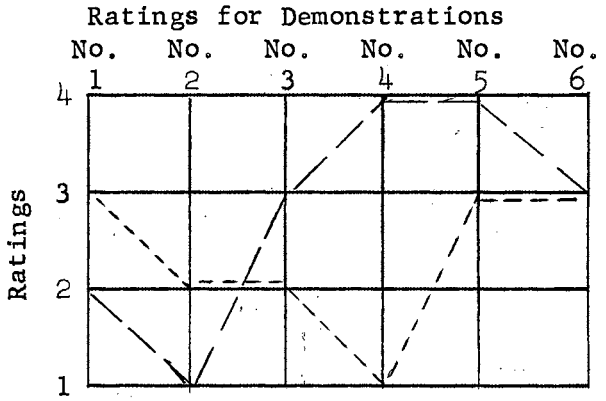
_ _ _ Student B, Regular Section
(based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

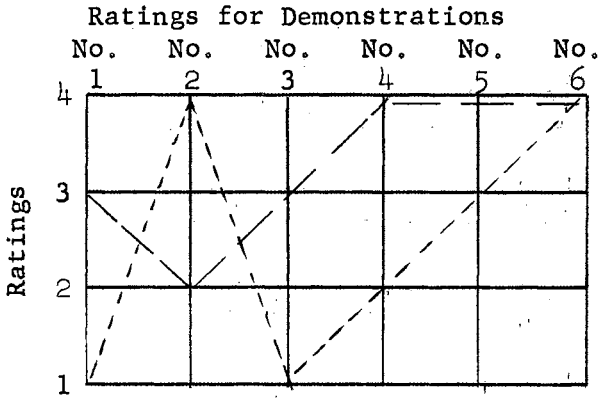
_ _ _ Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

_ _ _ Student F, Regular Section



during the semester without regression. The progress, however, occurred at different levels and followed similar but not identical patterns.

One of the students with high scholastic rating and one with a low scholastic rating regressed at some point during the semester. The amount of regression for the student with the low scholastic rating was more pronounced and to a lower level than for the student with a high scholastic rating. Student C, with a middle scholastic rating also regressed to the lowest level.

No one definite pattern of change seemed to exist. It was shown, however, that students who rate high scholastically seem to organize their plans at a higher level than do students with low scholastic ratings.

Profile chart VII, page 77, shows that all six students both progressed and regressed during the semester in the use of accurate reasons to support action and information used in demonstrations.

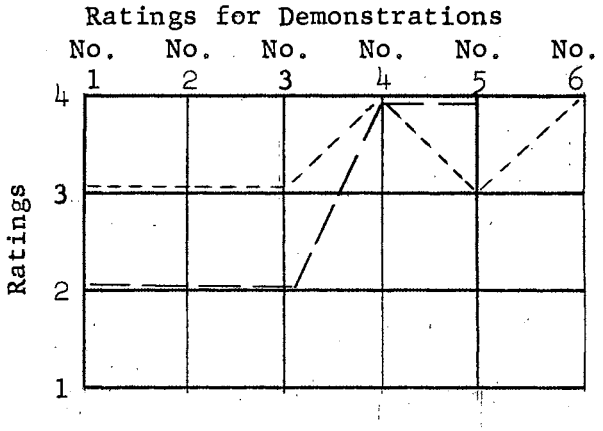
The total profile shows a progressive trend for the group as a whole. In addition, each individual except C, made progress during the semester. All six students began the semester at the third level or below but all six ended the semester at the third level or above.

Student C was the only one to remain equal to or below the rating received at the beginning of the semester. She showed both progressive and regressive change, but each time at or below the level of her first rating.

The most abrupt changes were shown by student E in the first three demonstrations, when the rating jumped from the first level to the fourth, and then back to the first level. After the third demonstration, progress was constant and continual from one level to another. Many other

PROFILE CHART VIII

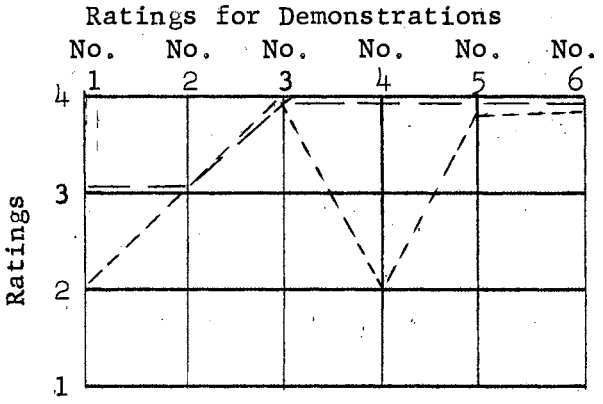
RATINGS ON THE SELECTION OF APPROPRIATE MATERIALS AND EQUIPMENT



Low Scholastic Rank

-----Student A, Blocked Section

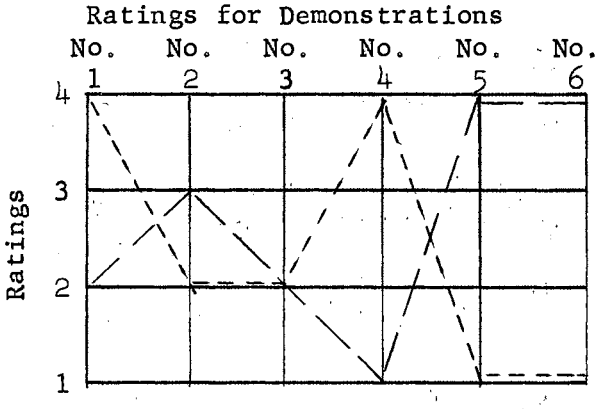
_ _Student B, Regular Section
(based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

_ _Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

_ _Student F, Regular Section

fluctuations occurred during the semester but they seemed to involve fewer levels in each change.

The two students rated high scholastically, E and F, ended the semester at the fourth level. However, student B, rated low scholastically, also ended the semester at the fourth level as indicated by her rating for the fifth demonstration. This observation, with other fluctuations shown, indicates that progress in the use of accurate reasons to support action and information does not occur according to scholastic ratings.

Even though progress seemed to occur, no one definite pattern of development was indicated. There seemed to be no evidence from which one might conclude that because one progressed in one demonstration, he would continue to progress consistently throughout the semester. On the other hand, there seems to be more evidence that a student is likely to regress as well as progress at almost any time during the semester in his use of accurate reasons to support his actions and the information used. However, the total profile shows that while there are many progressive and regressive changes during the semester, over-all progress was observed.

Results shown in profile VIII, page 79, indicate that much change occurred during the semester in the way students selected materials and equipment. Levels of performance ranged from the highest to the lowest, especially during the last half of the semester.

All of the students except B, who rated low scholastically, showed regression at some point during the semester and progression at other times. Student E began the semester at the highest levels of performance, fluctuated from one extreme level to the other during the semester, regressed to the lowest level for the fifth demonstration, and maintained

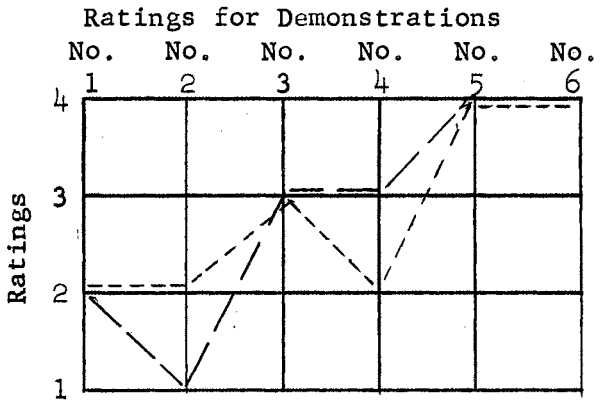
PROFILE CHART IX

RATINGS ON THE DRAWING OF RELEVANT CONCLUSIONS IN SUMMARY

Low Scholastic Rank

-----Student A, Blocked Section

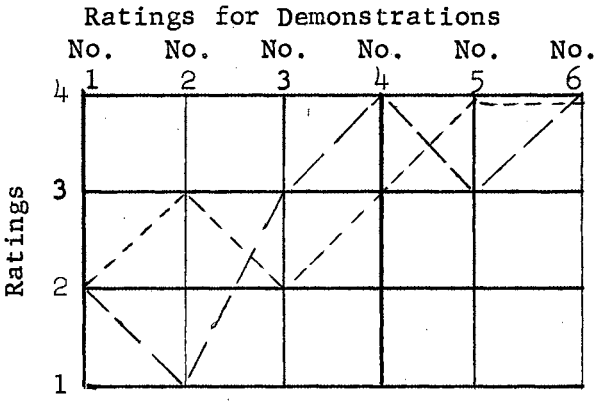
__ __Student B, Regular Section
(based on five demonstrations)



Middle Scholastic Rank

-----Student C, Blocked Section

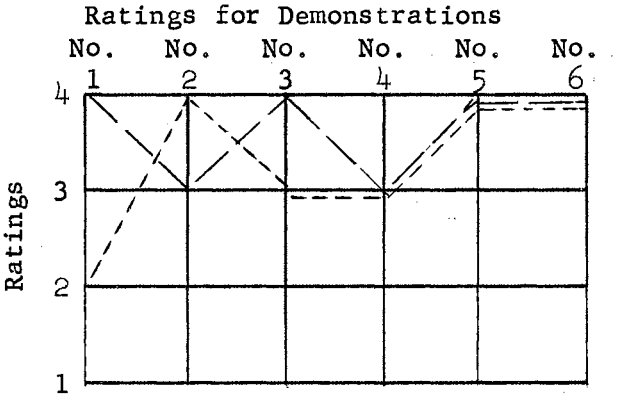
__ __Student D, Regular Section



High Scholastic Rank

-----Student E, Blocked Section

__ __Student F, Regular Section



that level for the sixth demonstration. Even more significant perhaps, is that E had a high scholastic rating.

Another result shows that students with low scholastic ratings performed at a higher level than did those with high scholastic ratings.

Although the over-all group change seems to be toward a higher level, no one outstanding pattern of development was observed. Students C and F were the only two students who performed by the same pattern. However, they performed at different levels and only the pattern followed was the same.

Data in profile IX, page 81, show that the six students observed varied in their performance in drawing conclusions throughout the semester. All six students however, seemed to reach the highest levels of performance, that of pulling main ideas together into a concise, accurate, and meaningful summary of conclusions, by the end of the semester.

All of the students except F began the semester at the second level of performance. Student F began the semester at the fourth level. She progressed and regressed throughout the semester but always seemed to perform at level three or four. She, too, ended the semester with the highest rating.

Regression as well as progression occurred in the record of each student. However, some changes were more abrupt than others.

Students with high scholastic ratings seemed to perform at the higher levels most of the semester while students with low scholastic ratings started at a lower level but also progressed to the highest level by the end of the semester.

Although all of the students observed showed progress to the highest level, those with high scholastic ratings reached the high levels of

performance more quickly than those with low scholastic ratings.

This profile chart seems to indicate progress for the class as a whole in drawing relevant conclusions. All six reached the highest level of performance for the sixth demonstration. The pattern of regression and progression showed no consistent pattern but did show a constant trend toward higher levels of performance.

Summary of Findings on Profile Charts

This section of the study was primarily concerned with the identification of specific integrative behaviors and patterns of progress which occur. While reading the report it would be well to remember that the development of integrative behavior is a personal process and is possible only within the individual. Therefore, it is possible only to identify behaviors which seem to indicate that integration is taking place. Some of the behaviors which seem to indicate this change were identified early in the chapter.

The observation of behavior showed that student performance did change in all but one of the cases observed. The reasons for change might be attributed to several factors which are beyond the scope of this study.

Students changed levels of performance many times during the semester. Some of the changes were progressive, some of them were regressive. No definite or consistent pattern of change was noted in most of the behaviors studied, although some over-all progress was noted in almost every case.

Scholastic rating seemed to have little or no influence on most of the changes observed. No differences in numbers of progress patterns

occurred among the students rated in the low, middle, and high scholastic ranks. It was also noted that students who ranked high scholastically were slightly more consistent in the patterns of behavior observed.

Although the causes for the changes noted and the extent to which they occur are unknown, the tendency toward over-all progress in most behaviors indicates that the observer was able to identify some specific behaviors which are believed to make up certain aspects of integrative behavior.

Although over-all progress is shown in this exploratory study it is not known whether or not the results would be the same in other situations.

CHAPTER IV

EVALUATION OF COGNITIVE INTEGRATIVE BEHAVIORS

To assess the value of class experiences in helping students to further develop integrative behaviors it was necessary to evaluate the performance of students as they conduct themselves in the classroom. The purpose of this chapter is to show the evaluation devices used, how they were developed, how they were used, and the results that occurred.

Delimitation

Four limitations seemed necessary at the beginning of the evaluation portion of this study.

First, evaluation was limited to selected phases of the cognitive aspect of integrative behavior. This limitation was not meant to imply that affective or manipulative behaviors are less important. It merely meant that time was limited. Therefore, the scope of the study had to be restricted in order to deal with the subject with any degree of accuracy. Since considerable emphasis in educational literature is being directed toward "thinking" and educators seem to express concern, the cognitive aspect was chosen for further evaluation.

Second, evaluation was limited to three objectives of cognitive behavior as used in the study and which seemed relevant to the Course selected. Specifically, these included the ability of students (1) to apply generalizations to everyday problems related to the teaching of

home economics, (2) to develop logical plans, and (3) to interpret data as it relates to the selection and use of relevant information and materials.

Third, the study was limited to an attempt to evaluate the progress of students toward selected integrative behaviors as a result of learning experiences provided in the Course.

Fourth, the evaluation was limited to those students enrolled in the Course during the fall semester, 1961.

General Methods

The first step in developing the evaluation part of the study was to identify the objectives to be evaluated. These objectives were first identified through literature and personal observations.

No evaluation instruments were located for the measurement of cognitive behaviors as they apply to the integration of various areas of home economics and related fields. However, a few instruments were found that dealt with specific areas of home economics. For example, Cozine[1] developed an Application of Principles Test in the area of foods and nutrition. The test was used to note progress from the freshman to the senior year in the ability of students to apply principles from foods, nutrition, and related areas to problems relevant to those areas. Cameron[2] developed an Application of Principles Test which dealt with

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[1] June Cozine, "An Evaluation of The Foods and Nutrition Courses in State Supported Schools in Missouri." Unpublished Doctor's Dissertation, (Chicago, 1949).

[2] Anna Margaret Cameron, "The Development of An Instrument to Evaluate the Ability of College Home Economics Students to Apply Home Management Generalizations and Facts in the Solution of Homemaking Problems." Unpublished Doctor's Dissertation, The Ohio State University, 1954.

application of principles from the area of home management and related areas to problems relevant to home management. Both of these tests were developed for use at the college level. Neither, however, was directed toward the variation of subject matter with which home economics education deals.

In order for the writer to evaluate students' progress in the further development of integrative behavior, it was necessary that three instruments be developed and used that would show various levels of achievement. The need for three instruments was based on the assumption that the cognitive aspect of integrative behavior can be identified in part, by three specific behaviors as stated earlier: (1) the ability to apply facts and generalizations to relevant problems, (2) the ability to develop logical plans, and (3) the ability to select relevant information and materials. It was further assumed that students who were able to achieve in these behaviors would also be able to carry through on the plans made so that overt action would result. Through the use of the rating scale described in chapter III, specific behaviors were identified as they were observed in the performance of students enrolled in the Course, in the spring of 1960. Although the identification, as described in chapter III included affective and manipulative as well as cognitive behaviors, only the cognitive area was selected for further evaluation.

The evaluation instruments constructed were, (1) an Application of Generalizations Test, (2) a Graphic Rating Scale for recording progress of students in the development of logical plans, and (3) a Graphic Rating Scale for recording progress of the ability of students to select and use relevant information.

Each evaluation instrument was used during the spring of 1961 as a pilot test to check clarity of statements, relevance to the problem, keying, method of scoring, directions to students, types of responses made by students, and the comparative difficulty of each form of the Application of Generalizations Test. Revisions were made in light of the results and the improved instruments, shown in Appendices D, E, and F were used in the fall of 1961 to collect data. Although the study was exploratory in nature, all students enrolled in the Course were included in this portion of the study.

Part I

Application of Generalizations Test

The application of generalizations has become increasingly important as knowledge has increased. It is one method through which students are able to transfer knowledge learned to new situations in the classroom or in daily living. The recognition of relationships among generalizations and situations leads to the reorganization and reconstruction of knowledge which in turn brings about new problems on a higher level of understanding. The continuation of this process leads to the further development of integrative behavior as described in this study.

The ability of students to apply generalizations to new problems was defined earlier as one of the cognitive behaviors that could be identified as integrative in nature. It was further identified as being an important aspect of the activities carried out in the Course.

Another reason the application of generalizations is relevant and important to this particular study is that most of the students in the Course are prospective teachers. As teachers, they will be expected to

taken. The following criteria were used in selecting the generalizations used in developing the evaluation instrument.

1. Generalizations must be general statements yet specific enough to have meaning.

2. Generalizations must have application to more than one problem.

3. Generalizations must be commonly referred to or implied in college textbooks or references that are used in courses the students are required to take.

4. Generalizations must show some kind of relationship.

5. Generalizations must come from a variety of areas.

6. Generalizations should be as equal in generality as possible.

Twenty-eight generalizations, four from each of seven areas, were selected for use in the application of generalizations test. The generalizations and the areas they represent are shown in Appendix C.

Step II. Developing the Problems. After the generalizations were selected, one problem was formulated for each generalization selected. Each problem was developed so that enough facts and descriptions were present that a conclusion could be reached. The conclusions were underlined at the end of each problem. The criteria used in developing the problems were:

1. Problems must be new in that they have not been an actual part of the student's class experience nor have they been used as specific examples of application of generalizations in the references used.

2. Problems must be representative of the kinds of problems used frequently in the Course and by homemaking teachers. They are such that they could easily become the basis for demonstrations.

3. Problems must have conclusions or predictions which are based on the generalization represented.

4. Problems must contain enough description or facts that solution is possible.

5. Problems must represent a variety of areas in home economics and closely related fields.

Problems developed and used are shown in the actual instrument in Appendix D.

Step III. The Selection of Reasons. After the problems were formulated, several types of reasons were chosen to support the conclusions drawn. Others were chosen which did not support the conclusions drawn. The kinds of statements used are as follows: Supporting statements included; true generalizations, true analogies, acceptable authorities, and acceptable practices. Non-supporting statements included; false generalizations, false analogies, assumed conclusions, unacceptable authorities, unacceptable practices, and irrelevant statements. The definitions for these statements are shown in Appendix B. In each problem, between seven and ten statements were provided as possible support for the conclusions drawn. The classification of each statement used in each form of the test are shown in Appendix A.

The problems with related statements were then divided into two sets. Each set had two problems from each of the seven areas. This division provided two forms, A and B, with fourteen problems in each.

The writer also constructed separate answer sheets to meet the needs of both forms of the test. Three columns were provided in which each statement could be checked. The Y column was to be checked when the student meant "Yes" this statement does support the conclusion. The N column was to be checked when the student answered "No" this statement does not support the conclusion. The U column was to be checked when the student was undecided as to the correct answer.

Form A of the test was given at the beginning of the semester in the fall of 1961 and Form B was given at the end of the semester, in January, 1962, to the eleven students enrolled in the Course. It was expected that students would progress during the semester in their ability

to select acceptable reasons and to reject unacceptable reasons to support conclusions. It was further expected that students would answer in a more positive way at the end of the semester than in the beginning. This meant that a student would mark fewer statements with "undecided" answers than they did early in the semester. It was assumed that when students marked a statement "undecided" they did not understand the relationships involved, or were prevented by some unseen force from taking a definite position regarding the statement. A high number of undecided responses were not believed desirable and would seem to indicate a need for further development of abilities to understand and apply generalizations. This kind of development would be necessary in attaining satisfactory progress toward this goal of selecting acceptable reasons to support conclusions.

The Application of Generalizations Test was scored by hand, using a punched key sheet for checking the responses. It was expected that students would be more accurate in selecting acceptable reasons, rejecting unacceptable reasons, and would be more certain of their answers at the end of the semester than they were at the beginning of the semester. The data in Table II show this to be true. Since the group studied was small and statistical methods of determining reliability not usable, only the totals and mean scores have been used for comparison. Table II presents a summary of the individual scores including correct responses, incorrect responses, and undecided responses to the Application of Generalizations Test. Columns 1 and 2 show the number of correct responses made to Form A and Form B of the test. Column 3 shows the increase or decrease of correct responses made by students at the end of the semester. Eight of the eleven students increased in correct responses made. The

greatest increase made was a plus 19, while the smallest increase made was a plus 2. One student made the same number of correct responses on both forms of the test and showed no change. Only two students decreased the number of correct responses made. One showed a decrease of eight while the other showed a decrease of seventeen.

TABLE II

COMPARISON OF STUDENT RESPONSES TO FORM A AND FORM B OF THE APPLICATION OF GENERALIZATIONS TEST

Student	Correct Responses			Incorrect Responses			Undecided Responses		
	Form A*	Form B*	Change	Form A*	Form B*	Change	Form A*	Form B*	Change
A	85	92	+7	35	28	-7	8	0	-8
B	81	92	+11	39	28	-11	12	0	-12
C	88	90	+2	32	30	-2	14	5	-9
D	88	92	+4	32	28	-4	1	4	+3
E	76	81	+5	44	39	-5	11	9	-2
F	88	80	-8	32	40	+8	14	20	+6
G	93	101	+8	27	19	-8	0	1	+1
H	84	84	0	36	36	0	1	3	+2
I	66	85	+19	54	35	-19	0	0	0
J	84	64	-20	36	56	+20	8	11	+3
K	89	93	+4	31	27	-4	3	1	-2
Totals	922	954	+32	398	366	-32	72	54	-17
Mean	84	87		36	33		6.5	4.9	

*Possible number of responses 120.

The total group score for correct responses to Form A was 922 while the total correct responses to Form B was 954. This change shows an increase of 32 correct responses for the group as a whole.

The mean score for correct responses to Form A was 84 while the mean score for correct responses to Form B was 87. This change represents an average increase of 3 correct responses for each individual.

The number of incorrect responses made to Form A and Form B of the Application of Generalizations Test may be found in columns 4 and 5.

Column 6 shows the increase or decrease of incorrect responses made. The scores shown in these columns are in direct but opposite proportions to the correct responses. For example, if student I increased her correct responses by 19, then she also decreased her incorrect responses by 19. Other comparisons can be seen in Table II.

A combination of the data for correct and incorrect responses show that students checked 70 percent of the statements right and 30 percent of the statements wrong in responding to Form A. They checked 72 percent of the statements right and 28 percent of the statements wrong in responding to Form B. The difference is an increase of 2 percent in correct answers and a decrease of 2 percent in incorrect answers. The evidence indicates that the writer was able to observe progress in the ability of students to select the supporting statements in the problems presented.

Columns 7 and 8 show the number of undecided responses made by students to Form A and Form B of the Application of Generalizations Test while column 9 shows the increase or decrease of undecided responses made. The greatest increase made was a plus 6. The smallest increase made was a plus 1. One student marked no undecided answers in either form and therefore showed no change. The other five students showed a decrease in number of undecided responses made. The largest decrease made was a minus 12 while the smallest decrease made was a minus 2.

The total group score for undecided responses to Form A was 72 while the total group score for undecided responses to Form B was 54. Although the number of students who decreased and those who increased in making undecided responses were equal, the total number of undecided answers decreased by 18 for the group as a whole.

The mean score for undecided responses to Form A was 6.5 while the mean score for undecided answers to Form B was 4.9. This change shows an average decrease of .145 undecided responses for each individual in the group. This decrease represents a change from 6.2 percent to 4.2 percent as a group mean. Although the change was small, the evidence seems to indicate that students as a group did reduce the number of undecided answers made by the end of the semester, resulting in more positive answers concerning the support of conclusions.

The evidence presented can be generally interpreted to mean that experiences provided in the Course had a positive effect on the further development of students' abilities to apply generalizations in problem situations. This is one of the hypotheses upon which the study was made.

Part II

Graphic Rating Scale for Developing Logical Written Plans

The second cognitive behavior defined for use was the ability of students to develop logical plans. Prospective teachers of home economics are expected to seek proficiency in the use of various techniques of presenting information to others. The writer believes that one of the most rewarding abilities that a teacher may have is that of effective planning. This implies that one knows what is needed to accomplish a purpose, selects information and materials that best meet the needs, and organizes the information and materials so they can be used effectively.

Ability in planning is usually best evaluated by noting the behavior in which the student is capable of performing and the quality of plans which result. From observation of such behaviors one may infer to some extent, the presence of cognitive understanding. It is expected in the

course studied that students follow a pattern of reasonable scientific thought in the organization of ideas from certain subject matter areas. It is expected too, that these patterns of thought result in logical plans that can be used in presenting demonstrations which meet the course assignments. Specific behaviors chosen to characterize progress toward the achievement of this objective are that the student

1. has major objectives of the demonstration well in mind.
2. plans in relation to needs and interests of a specific audience.
3. plans for and states clearly action to be taken.
4. supplies sufficient reasons to support statements and actions.
5. uses accurate information.
6. selects information and actions which are relevant to the problem.
7. organizes the plan in logical order.
8. plans smooth and interesting transition from one operation to the next.
9. synchronizes speech and action in plans.
10. estimates time rather accurately for proposed activities.
11. plans for appropriate materials and equipment.
12. plans for adequate amounts of materials and equipment.
13. plans for convenient arrangement of materials and equipment.
14. gives complete, explanatory, and clearly stated directions to the hostess.
15. plans visual aids to emphasize or supplement major points of the demonstration.
16. plans summary or conclusions with important generalizations drawn from the information given.

Evaluation efforts were directed toward the judging of these behaviors as they were presented in written plans for demonstrations to be given in class. It was expected that at the beginning of the semester a

picture of students' performances in terms of the selected behaviors could be observed. It was further expected that by the end of the semester a record of some change could be observed that would indicate progress in the students' abilities to develop logical plans as related to the specific behaviors observed.

Since the type of behaviors observed did not lend themselves to specific minute detail, a graphic rating scale was selected as the method of evaluation to be used. It was believed that a rating scale based on descriptive sentences would be the most usable in meeting the objectives proposed.

The first step in the construction of the graphic rating scale was to select the behaviors to be evaluated. Behaviors were selected which were relevant to the written plans used in the Course and which were identified early in the study. Twenty-two specific behaviors were used to construct the first rating scale on which progress could be recorded. Each behavior was described on a four point scale, ranging from a description of poor performance with a rating of ONE and progressing to a description of excellent performance with a rating of FOUR.

The second step toward the construction of the rating scale, was to try it out in the spring of 1961. The first, third, and fifth plans of each student enrolled were checked by the investigator and the results recorded on the rating scale. The ratings were then recorded in tables similar to the ones used in this report.

The pilot study was useful for identifying statements which were irrelevant, duplicated, or not clear. On the basis of these observations, some statements were eliminated, most were improved, and others were added. The final rating scale made use of the behaviors listed on pages

96 and can be seen in its completed form in Appendix E. The rating in the final form was developed on a scale of ONE to FIVE. A score of one was low while a score of five was high.

In each case, the first, third, and the fifth or the sixth demonstration plans were used as a basis for the evaluation. Each student was personally observed and rated by the writer. When ratings on one plan were made, they were not referred to again until all the ratings were complete. This procedure was used to obtain ratings which were as objective as possible and to eliminate influences of past ratings. When the ratings were completed, they were compiled in tables so that progress could be noted. Even then, it was recognized that the rating required a certain amount of subjective judgment which could not be avoided. They do, however, represent the writer's best estimate of the behaviors observed in these specific instances.

The results of individual rating observations for each behavior are shown in Appendix G. Each individual's mean rating for each behavior and the increase in mean rating between the first and the last ratings are shown in Table III. The data presented show that progress was observed in all sixteen behaviors during the semester. In eleven of the sixteen behaviors, continual progress was observed. The amount of progress and the rate at which it occurred, however, differed for most of the behaviors.

Mean ratings for the other five behaviors showed some regression on the second rating but then progression for an over-all gain on the last rating. Since the ratings for all behaviors showed progress by the end of the semester, the regression at the second rating was not considered when figuring the mean rating increase between the first and the last rating.

For the purposes of analysis, points were arbitrarily set at which

TABLE III

MEAN RATINGS ON BEHAVIORS CONCERNED WITH THE DEVELOPMENT OF LOGICAL PLANS

Behavior Rated	Mean Ratings for Plans 1	3	5 or 6	Increase in Mean Rating between first and last rating
Statement of major objectives in demonstration plans.	3.0	2.9	4.6	1.6
Visualizing audience needs and interests.	3.3	3.7	4.8	1.5
Plans for manipulative action.	3.8	3.7	4.3	.5
Statement of reasons.	2.7	2.4	4.0	1.3
Accuracy of information planned.	3.8	3.9	4.8	1.0
Relevance of information and action planned.	3.8	4.1	4.8	1.0
Organization of plans.	3.7	4.1	4.5	.8
Smoothness of transition.	2.5	2.9	4.0	1.5
Synchronization of speech and action.	4.2	4.1	4.4	.2
Judgment of time needed.	3.2	4.2	4.7	1.5
Selection of materials and equipment.	3.8	4.3	4.7	.9
Amounts of materials and equipment planned.	2.5	3.8	4.2	1.7
Arrangement of materials and equipment.	2.9	3.0	4.3	1.4
Directions planned for hostess.	1.2	2.9	4.3	2.1
Plans for visual aids.	2.7	2.8	4.1	1.7
Statement of generalizations in summary of conclusions.	3.4	2.8	4.1	.7

mean ratings were considered to be high, low, or middle. High, was used to identify mean ratings of 3.8 or above. Low was used to identify mean ratings of 2.4 or below. Mean ratings between 2.5 and 3.7 were referred to as middle ratings.

Behaviors which were rated high at the beginning of the semester generally showed the least progress by the end of the semester. None of these behaviors showed an increase of more than 1.0 points. The behavior, Synchronization of Speech and Action, showed an increase of only .2 points, the least for any behavior observed. It must be noted however, that it was the only behavior rated at 4.0 or above at the beginning of the semester. Thus, it had less margin for progress than any of the other behaviors.

The ratings on Directions Planned for Hostess were the only ones to show an increase of 2.0 or more on the last rating. However, this was the only behavior rated low for the first rating which resulted in more margin for progress than for any other behavior.

The major portion of the behaviors fell in the middle classification which includes 2.5 through 3.7. Data in column four seems to bear out the expected results that behaviors rated in the middle at the beginning of the semester would show mean increases which usually fell between the increases noted for those rated high or low. Some overlapping was observed in the Organization of Plans in the Statement of Generalizations in Summary or Conclusions, with behaviors ranked as high. It was also observed, however, that both of these behaviors were ranked near the top of the middle group which indicates that some overlapping could be expected. Mean increases for the remaining behaviors fall into a middle classification, closely related to the division of the first ratings.

These data indicate that students did progress in the abilities

observed and that they tend to make more progress in behaviors in which low levels of performance were first observed.

Table IV was prepared to provide a basis for comparing several factors believed to be closely related. These factors include: total ratings on the development of logical plans, scores made on both forms of the Application of Generalizations Test, accumulative grade point averages, and grades received in the Course. Grade point averages at Oklahoma State University are based on the following scale: four points for each semester credit hour of A, three points for each hour of B, two points for each hour of C, and one point for each hour of D. Grade point credit is not given for other grades.

TABLE IV

STUDENTS' TOTAL RATINGS FOR BEHAVIORS IN THE DEVELOPMENT OF LOGICAL PLANS COMPARED WITH OTHER SELECTED FACTORS

Student Rated	Total Student Ratings*1 Plan No. 1	Plan No. 3	Plan No. 5 or 6	Correct Responses on Application of Generalizations Test*2 Form A	Form B	Accumulative Grade Point Average	Grade Received in the Course
A	41	66	67	85	92	2.72	A
B	48	54	75	81	92	2.77	A
C	50	61	74	88	90	3.22	B
D	45	46	74	88	92	3.46	B
E	50	53	63	76	81	2.28	B
F	46	56	67	88	80	2.58	A
G	60	43	73	93	101	2.63	B
H	58	74	76	84	84	3.21	B
I	55	44	72	66	85	2.88	B
J	52	68	67	84	64	2.64	A
K	51	51	72	89	93	3.19	A

*1 Total possible score 80
*2 Total possible score 120

Grades received in the course were given by the teacher and were independent of the instruments used in the study. Although the writer was

consulted concerning grades, the teacher had full responsibility for the grades given. Grades received were expected to be above average since all of the students were seniors and had met academic requirements of the home economics department for upper division field experiences.

Data presented indicate that students began the semester with plans of varying quality. All eleven, however, seemed to progress by the end of the semester. Four patterns of progress were noted in the development of logical plans. First, seven students, about two-thirds of the class, showed continual progress during the semester. The rate at which progress occurred differed however, as well as the level of attainment reached. A second pattern of progress was observed in rating for students G and I. Both students showed regression at the second rating but then regained that lost and enough more to show over-all progress on the last rating. A third pattern was shown in ratings for student J who progressed on the second rating but regressed slightly on the third rating. A fourth pattern was shown in scores for student K. She retained the same level for the first two ratings but then progressed on the third rating.

In comparing the ratings on the development of logical plans with correct responses made to the Application of Generalizations Test, it was observed that one of the eight who progressed with no regression, made fewer correct responses to Form B than to Form A. It was also observed that one made the same score on both forms. Of the three students who showed regression at some point in the development of logical plans, two made more correct responses to Form B than to Form A. Only one made fewer correct responses to Form B than to Form A.

The inclusion of the accumulative grade point averages and grades received in the Course was for the purpose of noting similarities or

differences that might occur among the factors shown. In analyzing the data, there seemed to be little or no relationship involving grades that could be identified as important to this study. Both students who showed fewer correct responses to Form B in the Application of Generalizations Test, received high grades in the Course. One of these also showed regression in the development of logical plans. Only in the data for student K can an over-all similarity be seen. She progressed in the development of logical planning by the end of the semester, made more correct responses to Form B than to Form A of the Application of Generalizations Test, had an accumulative grade point average above 3.0, and received an A in the Course. The other grades show little or no relationship to the progress made in the behaviors observed.

Part III

Graphic Rating Scale with Emphasis on Selection and Use of Relevant Information and Materials in the Presentation of Demonstrations

A third cognitive behavior defined earlier and identified in the Course was the ability of students to interpret relevant data. Although many aspects might be described, the emphasis in this exploratory study was directed toward the selection of relevant information and materials and their use in carrying out the plans made.

It is easy to imagine what results might occur when a student plans a demonstration without proper information and materials. To perform at a satisfactory level requires that one search out information and materials that fit the specific need. It also requires that choices be made, that less useful materials be eliminated, that information be limited to that which is pertinent to the problem.

The writer believes that understanding can be demonstrated to some

extent in the ability of students to carry out plans they have made. Such performance for the purpose of this study would involve the students' ability to

1. select appropriate materials and equipment.
2. select adequate amounts of materials and equipment.
3. arrange materials and equipment conveniently.
4. use materials and equipment properly.
5. supply sufficient reasons to support statement and actions.
6. use accurate information.
7. use information and actions which are relevant to the problem.
8. summarize or conclude with important generalizations drawn from the information given.

It seems important to point out before proceeding that ratings made on the eight behaviors concerned with the actual presentations were expected to be high in comparison to those which dealt with the development of demonstration plans. This expected high degree of performance can be traced to many variables not considered in this study. After the plans were checked by the teacher, time was available for students to think, to study, to practice, and to revise their plans before actually presenting the demonstrations. During this time, help was often received from teachers or from fellow students. Actual practice often resulted in recognition of need for further study, for more or different materials and equipment, or for other helps of various kinds. Many small planning details appear that are not seen in the original plans. All of these and more could be called planning steps. All would probably show growth if records and means of evaluation were available for recording evidences. No teacher, however, can keep records of all things. Certain criteria must be selected upon which judgments are made, in this case, cognitive behaviors. Upon the basis of these considerations it was expected that

ratings for behaviors concerned with demonstration presentations would be high in comparison to ratings on behaviors concerned with the development of demonstration plans.

Except that the actual presentations were observed in order to obtain the data about the eight behaviors listed for this rating scale, the methods and procedures used were the same as for the written plans and will not be re-stated here.

The results of observations for individuals as they apply to each of the selected behaviors in actual demonstration presentations are shown in Appendix F. The mean ratings for individuals for each behavior and the increase in mean rating between the first and the last ratings are shown in Table V.

An examination of data presented shows that progress was observed in each of the eight behaviors during the semester. In seven of the eight behaviors, progress was shown without regression. In two of the seven cases, the same level was maintained for two ratings but no regression occurred. In the selection of materials and equipment the same level was maintained for the first two ratings. In the Relevance of Information and Action, the same level was maintained for the last two ratings. In both cases however, the ratings were high to begin with and left little room for progress. In only one case was regression shown at any point. In the second rating for the Accuracy of Information used, slight regression was observed. The change in this case, including progress as well as regression, was so slight that it hardly seemed important except to indicate over-all progress.

In analyzing the data, the same points arbitrarily set for Table III, were used to identify ratings as high, low, or middle. High was

used to identify ratings of 3.8 or above. Low was used to identify ratings of 2.4 or below. Mean ratings between 2.5 and 3.7 were referred to as middle ratings. Under this classification, six of the eight behaviors were rated high and two were rated as middle. Not one of the eight behaviors was rated as low in the classification.

TABLE V

MEAN RATINGS FOR BEHAVIORS CONCERNED WITH THE SELECTION AND USE OF RELEVANT INFORMATION AND MATERIALS

Behavior Rated	Mean Ratings for Presentations 1	3	5 or 6	Increase in Mean Rating between first and last ratings
Selection of materials and equipment.	4.6	4.6	5.0	.4
Amounts of materials and equipment selected.	3.9	4.5	4.8	.9
Arrangement of materials and equipment.	4.1	4.3	4.9	.8
Use of materials and equipment.	3.8	4.5	4.6	.8
Use of reasons.	3.5	4.1	4.7	1.2
Accuracy of information used.	4.7	4.6	4.8	.1
Relevance of information and action.	4.9	5.0	5.0	.1
Statement of generalizations in summary or conclusions.	3.7	3.9	4.4	.7

Behaviors rated high at the beginning of the semester showed progress of less than 1.0 points by the end of the semester. In most cases

the original ratings were high enough that little or no opportunity was left for progress. Only two of the eight behaviors were classified as middle. Mean ratings on the Use of Reasons were the only ones to show an increase of 1.0 or more by the end of the semester. This seems to indicate that more opportunity for progress was present than in other cases.

The Statement of Generalizations in Summary or Conclusions was also rated in the middle classification according to the first ratings. This behavior, however, was rated on the borderline and was very near the high classification. The increase shown is not so much as the behavior rated lowest, but not so little as some of the behaviors rated high. It was further observed that the Statement of Generalizations in Summary and Conclusions had the lowest mean rating among the eight behaviors on the last rating. This observation indicates that more possibility of progress was present than in any of the other behaviors.

Although scores overlap and the sample is small, the data in Table V show some evidence that students do progress in the abilities observed. They also show a tendency for students to make more progress in behaviors where more progress is possible.

A basis for comparing several factors believed to be closely related is provided in the data in Table VI. These factors include: total ratings on the Selection and Use of Relevant Information and Materials, scores made on both forms of the Application of Generalizations Test, accumulative grade point averages, and grades received in the Course. Grade point averages and course grades were included on the same basis as were those in Table IV on page 101.

Data presented indicate that students began the semester with

ratings at various levels. Since the highest possible score was 40, however, it is evident that all eleven students began the semester at a high level of performance. In addition, all eleven students ended the semester with high ratings but none attained a perfect score of 40.

TABLE VI

STUDENTS' TOTAL RATINGS ON BEHAVIORS IN THE SELECTION AND USE OF RELEVANT INFORMATION AND MATERIALS COMPARED WITH OTHER SELECTED FACTORS

Student Rated	Total Student Ratings*1 Presentation No. 1	3	5 or 6	Correct Responses on Application of Generalizations Test *2 Form A	Form B	Accumulative Grade Point Average	Grade Received in the Course
A	34	38	37	85	92	2.72	A
B	34	38	39	81	92	2.77	A
C	30	34	39	88	90	3.22	B
D	33	37	38	88	92	3.46	B
E	30	33	38	76	81	2.28	B
F	34	39	39	88	80	2.58	A
G	38	28	37	93	101	2.63	B
H	33	37	38	84	84	3.21	B
I	37	31	38	66	85	2.88	B
J	33	39	39	84	64	2.64	A
K	30	37	39	89	93	3.19	A

*1 Total possible score 40
*2 Total possible score 120

Analyses of the data show several patterns of progress in the Selection and Use of Relevant Information and Materials but only one that stands out above the others. Six, or more than one-half of the students, showed continual progress during the semester. However, the rate of progress varied, as did the levels of performance reached.

A second pattern of progress is shown by two students. Both

progressed at the second rating and maintained it for the last rating. Both students were rated at the same level for the second and third ratings but one began the semester with a rating one point above that of the other. Student A showed progress on the second rating but regressed slightly on the third rating. This rating showing slight regression, however, was sufficient to show over-all progress from the first to the last rating.

Student G was the only one to show over-all regression. Her scores show regression and then progress, but not enough progress to overcome the regression on the second rating. The over-all regression was slight however, representing only a one point drop from the first rating.

In analyzing the ratings on the Selection and Use of Information and Materials, comparisons were made with the correct responses made to both forms of the Application of Generalizations Test. It was observed that students F and G, who progressed at the second rating and maintained it for the third rating, were the only two who made fewer correct responses to Form B than to Form A of the test.

All three of the students who showed regression at some point in the Selection and Use of Relevant Information and Materials made more correct responses to Form B than to Form A of the Application of Generalizations Test. Student H was the only one of the six students who progressed continually in this behavior to make the same number of correct responses to both forms of the test.

In analyzing the data, there seems to be little or no relationship patterns involving student grades received that could be identified as important to this study. Both students who showed fewer correct

responses to Form B than to Form A of the Application of Generalizations Test, received high grades in the Course. Both also showed progress in the Selection and Use of Relevant Information and Materials at the second rating and then maintained it for the last rating. Student K was the only case in which an over-all similarity could be identified. She progressed in the Selection and Use of Relevant Information and Materials throughout the semester. She also made more correct responses to Form B than to Form A of the Application of Generalizations Test, had an over-all grade point average above 3.0, and received an A in the Course. Other grades seemed to show little or no relationship that could be termed patterns to the progress made in the behaviors listed.

Summary

The final results are derived from the way in which the students responded to all of the instruments used and the related factors considered. Results observed in the rating scales are similar to those observed in the profile charts. Students were not observed to follow outstanding patterns of progress in either case. However, progress was observed in both cases and in the Application of Generalizations Test.

All of the instruments used and the grades used in the comparison, lead one to conclude that students react as individuals and progress in their own individual patterns. Not only do they progress according to different patterns, but they also perform at different levels.

Integration is personal and is affected by many factors which act upon the inidividual in various ways. Therefore, the individual differences shown in the midst of over-all progress could be expected in the further development of integrative behavior.

This study has been of an exploratory nature and has been concerned with a very complex subject, integration. Therefore, the reader should remember that the evidence in this evaluation is presented for selected phases of cognitive behavior which are believed to be part of the integrative process. Thus, the study shows only a partial picture and is not intended to be a complete picture of the integrative process as it applies to home economics education.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

Educational institutions are constantly challenged to provide better opportunities for learning experiences that help students to "think" and to apply knowledge in attacking their problems. Needs for this study grew out of the growing awareness that these opportunities should be integrative in nature to equip the student to deal with changing conditions which confront him. To provide these opportunities, teachers must continually seek understanding about how the different aspects fit together and how integration can be most effectively facilitated.

Home and family are basic influences to all individuals. The fact that little or no research has been done in relation to integration as applied to home and family living gave added support to the need for this study.

The study was concerned with the problem of exploring possibilities that opportunities for integrative learning experiences are provided in the Course. It was based on the following assumptions: (1) changed behavior is the expected result of education, (2) integration is an organic process and involves many kinds of behavior, (3) appraisal of changes in behavior is referred to as evaluation, and (4) the further development of integrative behavior is, to some extent, the result of learning experiences the student has in the various courses he takes.

For this study, integration was considered to be the complex, continuous, and interactive process through which an individual (1) sees relationships among facts, ideas, and generalizations, (2) reconstructs values, goals, and attitudes, and (3) develops manipulative skills. The total process should result in increased ability of an individual to develop and execute plans of action which are guided by comprehensive knowledge and thought, by skills possessed, and by disciplined feelings.

The problem was undertaken to test the following hypotheses: (1) Integrative behaviors exist in students enrolled in the Course and can be identified in terms of specific behaviors, and (2) Opportunities for learning experiences provided in the Course contribute to the further development of integration.

To test the second hypothesis, three minor hypotheses were formulated: (a) Students enrolled in the Course progress in their ability to apply facts and generalizations from various areas of home economics and related fields to solve problems of home, family, and community living, (b) Students progress in their ability to develop logical plans, and (c) Students progress in their ability to select and use relevant information and materials.

Behaviors were tentatively identified from literature in the fields of home economics and education, personal observations, and available class records. Since integration is a personal process, it was possible only to identify some of the behaviors that seem to indicate that integration is taking place. Behaviors relevant to the Course were used to construct a four-point rating scale and descriptive phrases were used for identifying levels of performance.

The rating scale was used in the spring of 1960 with six students

selected on the bases of high, middle, and low scholastic ratings. Results from nine selected behaviors representing the affective, manipulative, and cognitive areas were recorded in profile form, according to the scholastic rank of the six students observed. While change was observed in all cases but one, many patterns of development and at various levels were observed.

Results show that students who ranked high scholastically were slightly more consistent in their levels of performance than students who ranked low or middle scholastically. However, scholastic rating seemed to have little or no influence on the direction of the changes observed or on the number of progress patterns which occurred among the students.

The causes for these changes and the extent to which they occur are beyond the scope of this study. However, the over-all progress in most behaviors indicate that the observer was able to identify some specific behaviors in students enrolled in the Course which are believed to indicate that integration is taking place.

Three evaluation instruments were constructed for determining the progress of students in further developing integrative behavior. The evaluation was limited to the cognitive area as explained in the minor hypotheses. All three instruments were used with six selected students during the spring of 1961. The results were used as a pilot study designed to point out inadequacies of the instruments. The instruments were revised during the summer and used with all students enrolled in the Course for the collecting of data during the fall of 1961.

An Application of Generalizations Test was constructed in two forms, A and B. Form A was administered at the beginning of the semester and

Form B was administered at the end of the semester to check progress of students' abilities to apply generalizations to problem situations from the beginning until the end of the semester. Eight of the eleven students observed increased in correct responses made to Form B over those made to Form A. The increase showed a two percent gain or an average of 3 correct responses for each individual. Undecided answers decreased from an average of 6.5 to 4.9 for each individual by the end of the semester.

Two five-point graphic rating scales were constructed, using descriptive phrases to describe levels of performance. One was designed to show student progress in developing logical plans. The other was designed to show student progress in selecting and using relevant information and materials. The results were similar to those of the rating scale used in the identification of behaviors. Almost all cases showed progress, however, many patterns of progress and various levels of performance were observed. In the rating scale for the development of logical plans, the increase in mean ratings for each behavior ranged from .2 to 2.1. Data in this rating scale show that all eleven students made progress by the end of the semester. In the rating scale for the selection and use of relevant information and materials the increase in mean ratings for each behavior ranged from .1 to 1.2. The ratings also show that all of the eleven students but one progressed by the end of the semester. The one who regressed however, was rated high at the beginning of the semester and regressed only one point by the end of the semester.

Progress was noted in all of the instruments used for identification and evaluation in this study. Although progress was noted, no outstanding progress patterns were observed.

Conclusions

The nature of integrative behavior and the limitations placed upon the study did not permit complete treatment of the subject to determine if all integrative behaviors could be identified or evaluated in students enrolled in the Course. From the results of the study undertaken, the following conclusions were drawn.

1. The results of observations for the behaviors selected and used in this study indicate that over-all progressive change occurred in most cases. The results also showed that levels of performance changed many times during the semester. Some of the changes were progressive, others were regressive. Sometimes there was no change at all for several observations. The patterns of change varied considerably and no one pattern of change was outstanding. The conclusion is therefore drawn that some specific integrative behaviors can be identified in students enrolled in the Course.

2. No differences in numbers of progress patterns were observed among students of the various scholastic ranks. However, the students who ranked high scholastically usually seemed to perform at a slightly higher and more consistent level than students who rated low scholastically. The evidence was not sufficient to indicate any specific relationship between the performance of students and their scholastic rank.

3. Apparently the experiences provided in the Course have a positive effect on the further development of students' abilities to apply generalizations in problem situations; for eight of the eleven students scored definite progress was shown in response to the test situation.

The increase averaged a gain of 3 correct responses for each individual student.

4. The relatively high drop from a total of 72 to 54 "undecided" responses to statements in the Application of Generalizations Test, suggests that students are more certain that they know the correct answers at the end of the semester than they were at the beginning.

5. The progress shown for each behavior listed in Table III, ranging from .2 to 2.1, seems to indicate that students progress in their abilities to develop logical plans. The data also support the conclusion that those who rate lowest in the beginning are likely to show the most progress by the end of the semester.

6. The evidence of progress for each behavior shown in Table V, ranging from .1 to 1.2, seems to support the hypothesis that students progress in their abilities to select and use relevant information and materials. Analysis of the data also leads one to conclude that most progress can be expected in behaviors in which low levels of performance were first observed.

7. The students' responses to the evaluation devices developed and used in this study show more relationship to each other than to course grades received or to the accumulative grade point averages.

8. Since the data show progress but no outstanding patterns, one may conclude that the behavior of individuals is complex. Consequently, progress cannot be evaluated effectively by a single instrument or by any one set of instruments. Many kinds are needed.

In addition to the specific conclusions drawn, certain over-all ones are implied by the kinds of questions the study raised. They may or may not be definite enough to make specific recommendations but may

be helpful in planning further studies. The following questions are typical.

1. Would the same type of progress in student behavior be shown in courses which do not emphasize methods of presentation?

2. Would greater progress be seen if students were observed over a longer period of time, if the students planned demonstrations in areas familiar to them-or new to them, if all of the plans and presentations were rated, or if a larger sample had been observed?

3. Would the same type and rate of progress be noted if other aspects of integrative behavior were included in the evaluation?

4. Were the instruments used adequate to evaluate progress in the behaviors observed?

Questions such as these led the writer to make the following recommendations.

Recommendations

Society is not stable and educational needs of man will probably continue to change with the development of new philosophies about what man is; the continual social, economic, and technological developments; and the increasing understanding about how man learns. Therefore, research related to the educational needs of man should be continued.

The cognitive area is only one isolated aspect of any behavioral performance. Affective behavior involves internal feelings, values, and attitudes, as well as external reactions. Since it is an important part of integrative behavior, some effort should be expended toward developing instruments to evaluate affective behaviors. Instruments developed could be used alone or in conjunction with those developed in this study, or

others of the user's choice.

Studies should also be instigated to show the relationship among the affective, manipulative, and cognitive areas of behavior as they relate to the learning experiences which students might have. This would be a very complex problem. The writer is not prepared to suggest ways in which this might be accomplished but does think that it might possibly contribute to a better understanding of the relationships existing among the three areas.

If the instruments used in this study are to be of most value, it is recommended that they be revised and analyzed through statistical measures to determine their reliability and validity. They might be correlated with other instruments which have been tested by experts, such as the Watson-Glaser Critical Thinking Appraisal Test.

The Application of Generalizations Test could be used as a basis for determining the kinds of reasons students use to explain or justify a conclusion. To do so, the statements checked by students could be analyzed according to designated types of supporting and non-supporting statements. This knowledge might prove of value to teachers who desire to help students improve their reasoning ability.

Related studies should be conducted to determine other ways in which integrative behaviors can be evaluated. These might include other paper and pencil tests, controlled experiments, and performance tests.

Additional studies could be conducted to determine the possibilities of using these or similar evaluation instruments in other courses or in departmental situations. For example, the tests could be administered when the student declares her major field of study and again before graduation. This procedure should show a wider range of progress than the

small sample represented by this class could possible show. If appropriately revised, it should also provide one method of evaluating a departmental program with respect to the specific behaviors involved.

If and when further studies are developed, they should not be considered as single, isolated areas of interest or need. It is recommended that they be considered in relation to the total complex process of integration as it affects the lives of individuals and groups.

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APPENDIX A

CLASSIFICATION OF STATEMENTS USED IN APPLICATION OF GENERALIZATIONS TEST

Classification of Statements Used in Application of Generalizations Test

Type of Statement	Form A Statement Numbers	Total	Form B Statement Numbers	Total
Supporting Statements				
True Generalizations	1,13,27,31,38,46,62, 64,72,87,95,100,104, 113	14	8,14,20,27,35,44,53, 63,72,81,87,95,107,115	14
True Analogy	5,15,26,29,39,53,56,66, 75,82,88,103,107,120	14	1,10,23,29,41,48,57, 62,69,79,91,99,109,118	14
Acceptable Authority	9,11,22,32,43,50,55,71, 79,80,90,96,110,118	14	4,18,24,33,40,45,56,60, 73,84,93,101,105,117	14
Acceptable Practice	2,10,17,20,35,37,52,59, 65,85,91,98,106,115	14	6,11,25,34,39,46,51,68, 75,77,90,97,111,120	14
Subtotal		56		56
Non-Supporting Statements	**Statement Numbers**	**Total**	**Statement Numbers**	**Total**
False Generalizations	4,16,24,30,41,51,54,63 78,86,92,102,105,119	14	7,13,22,28,38,43,58,67, 71,83,100,114	12
False Analogy	3,23,36,44,57,97,117	7	3,16,26,59,78,89,96, 112,119	9
Unacceptable Authority	8,12,33,40,49,58,68,74, 83,101,116	11	17,21,37,55,65,74,82, 92,104,106	10
Unacceptable Practice	19,25,70,77,89,111	6	9,19,31,36,47,66,94,102	8
Assumed Conclusion	7,14,21,34,45,47,61,69, 73,84,93,109,112	13	5,15,32,49,54,64,76,85, 86,103,110,113	12
Irrelevant	6,18,28,42,48,60,67,76, 81,94,99,108,114	13	2,12,30,42,50,52,61,70, 80,88,98,108,116	13
Subtotal		64		64
Total		120		120

APPENDIX B

DEFINITIONS OF KINDS OF STATEMENTS USED IN APPLICATION OF GENERALIZATIONS TEST

Definitions for kinds of statements used in Application of Generalization Tests

Statements used to support or not support the conclusions drawn were checked against the following definitions for types of reasoning used.

1. Supporting -

   a. True generalizations - A conclusion which is applicable to a number of situations and is based on reliable authority. The statement must be true and applicable to the problem at hand.

   b. True analogy - A statement which infers an identical or very similar relationship between the facts given in the problem and other known facts.[1] The relationship must be true and apply to the problem as presented.

   c. Acceptable authority - A statement supported by professional people in the field of home economics or closely related fields.

   d. Acceptable practice - A statement of rather common practice based upon reliable evidence and practice by professional people.

2. Non-supporting -

   a. False generalizations - A general conclusion which indicates that no relationship or an inverse relationship to the conclusion exists.

   b. False analogy - A statement which infers an identical or very similar relationship between the facts given in the problem and other known facts. The relationship may be false or the statement may not apply to the problem as presented.

   c. Assumed conclusion - A statement which may repeat the conclusion drawn by changing a few words, or it may be so positive that no provision is made for other variables that might influence the decision made.

   d. Unacceptable authority - A statement supported by people who are not professionals in either the field represented or in closely related fields.

   e. Unacceptable practice - A statement of rather common practice based upon accepted but unreliable evidence. These may include fads, supersitition, etc., practiced by people.

f. Irrelevant - A statement which may be true or false but which bears no relationship to the conclusion described in the problem.

APPENDIX C

GENERALIZATIONS USED FOR DEVELOPMENT OF PROBLEMS IN APPLICATION OF GENERALIZATIONS TEST

Generalizations Used for Development of Problems in Application of Generalizations Test

The following generalizations were used as a basis for the development of the problems in the Application of Generalizations Test. The generalizations are listed according to area of study represented and to the form in which they were used. They do not follow the organization of the test itself.

Form A

Housing

1. Proper care and repair of equipment will increase the years of satisfactory service. Problem I

2. Efficiently planned storage contributes to orderliness and ease in living. Problem XIV

Art

3. Balance is accomplished when an approximate equal distribution of weight is observed on either side of a central point. Problem XIII

4. An object gains importance when it is separated from the things around it and is given enough plain space for a background. Problem III

Psychology

5. Learning is increased in effectiveness when the individual learner takes an active part in the learning experience. Problem IV

6. Learning is stimulated when the problems encountered provide a variety of experiences suitable for students of different abilities and interests. Problem X

Clothing and Textiles

7. A temporary placement of all pattern pieces before cutting allows one to make the best use of the materials on hand. Problem IX

8. Reducing a pattern piece is easier than enlarging it, therefore, it is better to choose a larger size if the bust or hip measurement comes between two sizes of a dress, blouse, or skirt pattern. Problem II

Foods and Nutrition

9. When starch is mixed with a cold liquid the starch grains remain separated and gradually settle to the bottom of the container. Problem V.

10. A sugar solution becomes supersaturated and unstable as it cools and has a tendency for a large number of small crystals to form at one time. Problem XII

Child Development

11. Learning is more effective and easier when an individual is ready to learn what is taught. Problem VII

12. A baby, six months of age, is likely to move easily from one place to another when muscular strength and coordination have developed normally. Problem XI

Home Management

13. The maximum utilization of available resources may contribute to effective management. Problem VI

14. Thoughful pre-preparation can help one give demonstrations that could not be given if all steps had to be done within the class period. Problem VIII

Form B

Housing

1. Family life can be more satisfying when the living space in the home is arranged to accommodate the interests of each family member. Problem VII

2. Proper grouping of furniture pieces to be used together contribute to the convenience of a furniture arrangement. Problem XIII

Art

3. Dark colors absorb light and seem to decrease size. Problem XIV

4. An effect of height and slenderness is usually created when vertical lines are emphasized. Problem VI

Psychology

5. Learning which one enjoys is likely to stimulate more learning. Problem III

6. Learning is reinforced when two or more senses are used in the same experience. Problem IX

Clothing and Textiles

7. Bulky fabrics create an illusion that seems to increase the size of the figure. Problem X

8. Clothing requires proper care if it is to effectively serve the needs of the owner. Problem V

Food and Nutrition

9. For good nutrition, reducing diets need to include adequate amounts of foods rich in protein, minerals, and vitamins, but the amounts of foods rich in calories, fats, and carbohydrates need to be limited. Problem XII

10. The amount of evaporation that takes place in most foods is dependent upon the degree to which the food is protected from exposure to air. Problem IV

Child Development

11. Constructive play and creative ability are encouraged when materials from which things can be made are provided. Problem VIII

12. The interest span of young children is short, therefore, they need a variety of play materials. Problem I

Home Management

13. Adjusting the height of work surfaces to fit the individual reduces the energy spent in performing a given activity. Problem II

14. Pre-arrangement of materials and equipment contribute to efficient use of time and energy in the performance of work. Problem XI

APPENDIX D

APPLICATION OF GENERALIZATIONS TESTS, FORM A AND FORM B

APPLICATION OF GENERALIZATIONS TEST

INTRODUCTION TO STUDENTS -

This test is a part of a study being done toward a Doctor of Education degree. It has been designed to test students' ability to apply generalizations and to explain or justify conclusions when solving problems common in every day living.

Your cooperation will be a great help in the progress of the study and will be greatly appreciated.

GENERAL DIRECTIONS -

Write your name, the date, and other general information called for on the answer sheet. Do not leave any spaces blank.

Make sure your answer for each statement is recorded on the answer sheet in the appropriate column and space. If you make an error and wish to correct it, be sure that the first answer is well erased. Please check every statement.

SPECIFIC DIRECTIONS -

Read each problem carefully. The underlined statement at the end of each problem is assumed to be a correct answer.

A number of statements follow each problem. Read each statement carefully and decide: (1) whether it supports the underlined conclusion, (2) whether it does not support the underlined conclusion, or (3) you are undecided whether it supports the underlined conclusion. Place your answer in the proper space on the answer sheet. Do not write on the test sheets.

Check each statement by placing an (X)

In the Y column if you would use the statement to support the underlined conclusion, or yes this does support the conclusion.

In the N column if you would not use the statement to support the underlined conclusion, or no this does not support the conclusion.

In the U column if you do not know whether to use the statement in support of the underlined conclusion, or you are undecided as to whether or not it supports the conclusion.

SAMPLE PROBLEM -

Sue is planning to give a demonstration on various ways of preparing potatoes for family meals. One of the foods she plans to prepare is stuffed potatoes topped with grated cheese. How can Sue melt the cheese on the stuffed potatoes without it becoming stringy and tough? Place them in the oven at a moderate temperature just until the cheese is melted.

	Y	N	U
1.	X		
2.		X	

Statements

1. High temperatures and long cooking tend to result in toughness and stringiness in cooked cheese. (This statement is a true generalization, therefore it would be used to support the conclusion and would be checked in the yes column.)
2. The food value of one pound of American Cheddar cheese is about the same as a quart of milk. (This statement is irrelevant as well as false, therefore it would not be used to support the conclusion and would be checked in the no column.)

Form A

Problem I

Ella planned a demonstration that made use of the top burners of the range. The demonstration progressed well but the gas flame left a black carbon deposit on the pans. What could be done to prevent this kind of a situation in the future? The instructor could have a trained service man check the range at regular intervals and make necessary adjustments.

Statements

1. Equipment will last longer and give more satisfactory service when it is properly adjusted and repaired.

2. Since correct adjustment of range burners is of basic importance, trained service men are often called in to do the job.

3. Just as one can save time by using a pattern with which he is familiar, so one can cook a better meal on a range which is well adjusted.

4. When a gas range is no longer of satisfactory service, it leaves carbon deposits on the pans.

5. Just as an automobile operates better when the amount of fuel is properly supplied, so will a range operate better if it is well adjusted.

6. Modern electric ranges have built-in adjustments that do not need to be checked.

7. A service man is trained to adjust the burners to prevent carbon deposits.

8. Ella's father said that the burners could be adjusted by the girls themselves although there are times when it is desirable to call in trained help.

9. Authorities such as Peet and Thye imply that the finest kitchen range will give its best service when it is properly adjusted.

10. Satisfactory adjustment of range burners is sometimes difficult and is frequently left to a qualified service man in order to obtain the most satisfactory service.

Form A

Problem II

You are planning a demonstration on the selection of dress patterns. You want to select a pattern to use in the demonstration that will be useful to you later. Your hips measure 35 inches. The pattern you have selected is available only in sizes 34 and 36 inches. Which size will you buy to make adjustment easier? The size 36.

Statements

11. Erwin says that it is harder to increase the size of a pattern than to reduce it.

12. The clerk in the store mentioned that you may need to make larger darts if you buy the size 36.

13. It is easier to reduce a pattern piece than to enlarge it, therefore, one should buy the larger size.

14. If one buys a larger pattern size rather than a smaller one, adjustment will be easy.

15. Since it is easier to make a tuck than to add an insert, one may conclude that it is easier to reduce the size of a pattern piece than to increase it.

16. It is easier to enlarge a pattern piece than to reduce it, therefore, one should buy the smaller size.

17. Most home economists buy the next larger size when the exact size of pattern is not available.

18. Grain lines are easy to keep straight when a pattern is a larger size.

19. Some students cut the pattern off around the edges to make it fit.

Form A

Problem III

Martha is a married student and lives in a house which she and her husband own. Since their home needs to be redecorated, she chose to present a demonstration on the selection of wallpaper for the living room wall. The furniture is not outstanding, but attractive. They have two lovely lamps and a picture they would like to emphasize. What kind of wallpaper could be chosen that would help emphasize the desired objects? A plain, neutral colored paper.

Statements

20. Interior decorators often use plain, neutral wallpapers as backgrounds for interesting objects.

21. The lamps and picture will be emphasized by selecting a plain, neutral colored paper.

22. Interior decorators, such as Faulkner, point out that an object is more interesting when seen against a plain background.

23. Papering the living room walls with plain, neutral colored paper would produce the same effect on the occupants as enclosing a rabbit hutch with clear plastic.

24. Lamps and pictures are usually most attractive when placed against a background of a contrasting color.

25. Since most of Martha's friends have leaf or floral patterned wallpaper on their walls, she wanted something different.

26. Just as a colorful meal may be emphasized by serving it on a plain plate, an interesting object may be emphasized by displaying it against a plain background.

27. Objects of interest can be emphasized by displaying them against a plain background.

28. The newspaper ad reported a sale on plain wallpaper about the time Martha needed to buy the paper.

Form A

Problem IV

Sarah decided to show the demonstration class how to knead yeast breads for her third demonstration. There are many ways she might proceed but she wants to be sure that class members understand the principles involved in the kneading process. How could Sarah plan the demonstration to be most sure that they do understand the major principles involved? Have the class members participate in the kneading process.

Statements

29. Much the same way that one must practice to learn to swim, one must participate to learn how to knead yeast dough.

30. An individual is likely to learn as much by watching a demonstration as he is by taking an active part in it.

31. Kneading the yeast dough in class will cause class members to be active participants and thus, broaden the opportunities for increased learning.

32. Cronback, in his book, Educational Psychology, points out that individuals learn to the degree that they take an active part in the learning experiences provided.

33. One of the class members said that kneading bisquit dough is just like kneading yeast dough and is likely to produce the same learning in less time.

34. Class members will be able to make good yeast rolls if they participate in the activity.

35. Home economists frequently provide opportunity for active participation in the classes they teach.

36. Just as writing a word correctly 100 times always results in knowing how to spell that word, so would kneading many batches of bread result in knowing how to knead yeast breads.

Form A

Problem V

Mary Lou was planning ademonstration on how to prepare various milk dishes. She planned to use chocolate pudding as one of the foods to prepare. She planned to mix the cocoa, sugar, cornstarch, and salt with a little cold milk, add the remaining milk, and cook the mixture. What precaution should Mary Lou take to prevent the formation of lumps in the pudding? Stir constantly during the cooking process.

Statements

37. Home economists often keep puddings from becoming lumpy by keeping the starch grains in suspension during the cooking process.

38. Stirring a pudding while it cooks, prevents the starch grains from settling to the bottom, sticking together, and forming lumps.

39. Starch grains settle to the bottom of a container when mixed with a liquid in much the same way that grains of sand settle to the bottom of a container when mixed with water.

40. Students reported that their mothers often stir pudding mixtures while they cook.

41. Since starch grains remain in suspension during the cooking process, the pudding need not be stirred constantly.

42. Some puddings are instant and require no cooking.

43. Food specialists report that starch grains settle to the bottom in a solution and should, therefore, be stirred constantly during cooking.

44. Just as heat coagulates protein, so does heat coagulate the starch grains on the outside, forming lumps.

45. Starch grains will not swell, stick together, and form lumps if they are mixed with other ingredients before cooking and if they are constantly agitated during the cooking process.

Form A

Problem VI

Lena selected a demonstration on how to hang cafe curtains, to be presented to the demonstrations class. She would also like to have new curtains for her room in the dormitory. She knows there is not money for new curtains unless she uses some of the money set aside for educational materials. What could Lena do that would adequately meet her temporary needs and not be a financial problem? Dye an old sheet the desired color and use the strongest parts for the curtains.

Statements

46. Using materials that are often discarded may contribute to effective management.

47. Lena will be an efficient manager if she uses an old sheet which ordinarily might be discarded.

48. Curtains would last longer if made from new material rather than from an old sheet.

49. Lena's roommate objected and said that curtains are not attractive when made from old sheets.

50. Home economists have found that old sheets make effective curtains for short time use.

51. Curtains made from old sheets will reveal the low economic level of the family.

52. Experienced homemakers often get maximum value from sheets by using old ones for temporary curtains.

53. Effective management may result from making curtains from strong parts of an old sheet just as surely as from making trousers for a small boy from the good parts of his father's discarded suit.

Form A

Problem VII

Claudia planned a demonstration for a group of Girl Scouts fourteen years of age who had had very little experience in sewing. They wanted to learn how to make attractive buttonholes for some simple blouses they were making. Claudia could have shown them how to make handmade buttonholes, machine buttonholes, or bound buttonholes. Which of the three would be the most appropriate for fourteen year old girls? The machine buttonholes.

Statements

54. An individual can learn well whatever he is given to learn if he is given enough time.

55. Martin and Stendler seem to believe that efforts to push one through a task for which he is not ready may be largely wasted.

56. Just as an electric machine is easier to use than a treadle machine, machine buttonholes are easier to make than handmade or bound buttonholes.

57. Machine buttonholes are easiest to make in light weight garments, in much the same way that bound buttonholes are easiest to make in heavy garments.

58. Claudia's mother said that no fourteen year old girl could make a satisfactory handmade buttonhole.

59. Home economists frequently recommend the use of machine buttonholes for garments made at the high school level.

60. Bound buttonholes are often used in heavy garments.

61. Girls fourteen years of age can make machine buttonholes easily.

62. Girls fourteen years of age are usually mature enough to be successful in making machine buttonholes.

Form A

Problem VIII

Margaret planned a demonstration on the making of attractive bulletin boards with emphasis on the arrangement of the board. It was planned to be presented in 10-15 minutes. When she practiced, Margaret found that it took about fifteen minutes just to make the twenty lettern needed. In addition, she needed to select, cut out, and mount the pictures to be used. How could Margaret manage to present the demonstration within the 10-15 minute time schedule and still retain the essential points of the demonstration? Have the letters made; the pictures selected, cut out, and mounted; and the arrangements to be used well in mind before the demonstration begins.

Statements

63. Persons who cannot do all of the work needed for a demonstration within the allotted time should not give a demonstration on the subject of bulletin boards.

64. By careful planning and pre-preparation, a demonstration can show more in an allotted period of time.

65. Demonstrators often prepare parts of their demonstrations ahead of time.

66. Just as one can save motions during the preparation of a meal by assemblying the needed ingredients before beginning, one can save motions during a demonstration by preparing the letters and pictures ahead of time.

67. Class members can help cut out pictures and letters to reduce the time needed for the demonstration.

68. The janitor observed Margaret practice and remarked that the continuity in a demonstration is lost when one does one thing ahead of time and leaves it to be used at another time.

69. The demonstration can be completed in the time allotted by preparing the letters and pictures ahead of time.

70. Demonstrations often run overtime so the demonstrator can include all steps of a process.

71. In their book, Management for Modern Families, Gross and Crandall imply that carrying out an activity can often be simplified by careful pre-preparation.

Form A

Problem IX

Janet is giving a demonstration on how to lay pattern pieces on a piece of fabric. The design of the fabric will make it impossible for her to use the suggested pattern layout. The pattern has several small pieces that are to be cut on the fold. What can Janet do to show the class how to get maximum value from a piece of material? Lay all of the pieces on the fabric before cutting any pieces.

Statements

72. One is more likely to be sure she has enough material and to use it most effectively if a temporary placement of all pattern pieces is made before cutting any of the pieces.

73. If she makes a temporary placement of pattern pieces before cutting, Janet will use the material she has effectively.

74. Janet's aunt suggested that she purchase more material than the pattern calls for to be sure she has enough.

75. Just as one would plan to use sugar but not waste it in a particular recipe, so one should plan to use the material needed with a minimum of waste in cutting out a garment.

76. Dotted lines on a pattern layout indicate which pieces must be placed on a single thickness of the material.

77. Some homemakers cut each piece out as it is laid on the fabric, starting with the largest pieces.

78. When making a temporary layout, the placement of all the large pieces will give an adequate basis for the final layout and cutting plan.

79. Homemaking teachers recommend that all pieces of a pattern be laid on the fabric before cutting any pieces to avoid as much waste as possible.

Form A

Problem X

Suppose you are planning a demonstration for a group of Junior High School girls. You are going to show them how to make attractive sugar cookies in a variety of shapes. You plan to have most of the cookies baked before the demonstration begins. During the demonstration you plan to roll out the few remaining cookies, cut them into various shapes, and bake them. The major emphasis will be to show the girls some simple techniques in using decorations effectively. How could you plan the demonstration so that all of the girls might participate in the activity? Plan and set up trays for a variety of decorations. Let the girls choose a few decorations and use them in decorating some of the baked cookies.

Statements

80. Educators, such as Williamson and Lyle, recommended that a variety of opportunities be provided in a situation when it is possible to do so.

81. Junior High School girls often participate in other class activities when the opportunity is provided.

82. Just as individuals enjoy and learn more from different kinds of music, they also enjoy and learn more from making various cookie decorations.

83. Individuals who have visited at the Junior High School report that to participate in the cookie decorating would add interesting variety to the daily routine of the girls.

84. Junior High School girls are fond of all kinds of cookies and will learn just as much regardless of the decorations used.

85. Teachers usually make a definite effort to provide a variety of experiences suitable for students of various abilities and interests.

86. The girls are likely to learn more if they decorate their cookies like the teacher demonstrated.

87. An individual is likely to learn more when he can chose that in which he is interested and in which he is able to be fairly successful.

Form A

Problem XI

Ruth is a married student and has a baby six months old. She is interested in children and plans to give a demonstration on how to bathe her own baby. The total procedure including the undressing, bathing, and dressing will be shown in the demonstration. Her plans include; having the room at a warm temperature, supplying the clothing and materials needed, and adjusting the table to a comfortable height. What other important practice should Ruth observe as she completes plans for the demonstration? To arrange all of the materials to be used within easy reach so she will not have to leave the baby unattended for a moment.

Statements

88. It is just as important to protect a baby from falling as it is to see that he is properly fed.

89. Mothers frequently leave six month old babies alone on a bed for their naps.

90. Authors of books on child development report that a baby six months of age can usually move about from one place to another by several means.

91. Ruth always arranges the needed materials within easy reach so the danger of the baby falling from the table will be lessened.

92. A normal six month old baby can sit alone but could not move about enough to fall from the table.

93. A normally developed, six month old baby is active enough that he will fall from a table if left alone momentarily.

94. Development of muscle control comes partly as a result of maturation and partly from learning.

95. As a rule, accidents, such as a baby falling from a table, are the result of someone's carelessness.

Form A

Problem XII

The class in demonstration techniques meets daily for a two hour laboratory session. Sandy's second short demonstration was scheduled near the end of the two hour session. She planned to show the class how to beat fudge frosting and apply it to a cake which had been baked earlier. What pre-planning was needed so that Sandy could show the process and have a creamy frosting to apply to the cake within the allotted time? Make a recipe of frosting during the first part of the class period or before so the fudge mixture would have time to cool to the desired temperature before being beaten and applied to the cake.

Statements

96. Sweetman and McKellar say that crystals tend to be small when a large number of them form almost simultaneously.

97. Since crystals are prevented from forming when too much glucose is added to a fudge mixture, we can also say that crystals will be prevented from forming if the mixture is beaten while it is hot.

98. Sandy usually allows a fudge mixture to cool before beating since a large number of small crystals are more likely to form simultaneously.

99. Glucose can be added in proportions great enough that no crystals are deposited from a supersaturated glucose solution.

100. A fudge mixture which is allowed to cool before beating forms crystals quickly and is likely to be smooth and creamy.

101. Sandy's grandmother said that a fudge mixture should always be cooled before beating.

102. It makes no real difference if a fudge mixture is beaten while it is hot.

103. Just as fondant candies tend to form smaller crystals when allowed to cool before beating, fudge mixtures also tend to form smaller crystals when allowed to cool before beating.

Form A

Problem XIII

Mary is planning a demonstration on making an attractive mantle arrangement. She is using an arrangement of dried leaves, nuts, and winter gourds on one side. On the other side she is using a piece of pottery which is lighter in apparent weight than the leaves, nuts, and gourds. What can Mary do to create balance in the arrangement? Move the leaves, nuts, and gourds nearer the center of the arrangement.

Statements

104. When observed weight is equally distributed on each side of a central point balance is achieved.

105. Pottery is heavy and should be placed nearer the center of the arrangement.

106. Artists often use dried leaves, nuts, and gourds, in attractive combinations with pottery but place whichever appears heavier nearer the center of the setting.

107. Just as a heavy boy on a see-saw is moved nearer the center to make the see-saw balance, so the dried leaves, nuts, and gourds are moved nearer the center of the mantle to create balance in the arrangement.

108. Pottery and dried leaves, nuts, and gourds are well suited as elements of a common arrangement.

109. Balance in the arrangement will be achieved by moving the leaves, nuts, and gourds nearer the center of the arrangement.

110. Mary read in her home economics book that in order to create balance, one should place items an equal distance from a central point according to their apparent weight.

111. In order to create a feeling of restfulness and balance some people use colorful dried leaves in all arrangements.

Form A

Problem XIV

Della presented a demonstration on the improvement of bedroom storage. During the demonstration she showed various ways that college girls could arrange their clothing and accessories in drawers to facilitate orderly and effective use of drawer space. What other simple item might Della have shown the girls to help them increase the orderliness of the limited drawer space they usually have? Dividers for the drawers in their rooms.

Statements

112. College girls who have drawer dividers keep their drawers neater than those who do not have drawer dividers.

113. Living is easier and more orderly when storage facilities are well planned and used.

114. When drawers are shared by two or more members of the family, a considerable amount of planning is necessary if the space is to be used equitably and all users are to be satisfied.

115. College girls sometimes make and use simple storage accessories to make their rooms orderly and easy to live in.

116. Housekeepers in the dormitories report that college girls need to be more orderly.

117. Storage units, effectively planned, contribute to orderliness and ease in living in the same way that well planned menus contribute to the health of individuals.

118. Home economists report that where storage is well planned and convenient, each article is more likely to be kept in place.

119. The making and use of drawer dividers is not likely to affect the orderliness and ease of living in the life of a college girl.

120. Just as dividers in the cabinets in the kitchen contribute to orderliness, drawer dividers in a chest of drawers contribute to orderliness in the bedroom.

Form A

Answer Sheet
Application of Generalization Test

Name_____ Date_____ Class_____

(Not to be filled in by the studend) Score: R___ W___ U___

Problem I

	Y	N	U
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Problem II

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Problem III

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Problem IV

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Problem V

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Problem VI

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Problem VII

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Problem VIII

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Problem IX

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Problem X

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Problem XI

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Problem XII

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Problem XIII

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Problem XIV

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APPLICATION OF GENERALIZATIONS TEST

INTRODUCTION TO STUDENTS -

This test is a part of a study being done toward a Doctor of Education degree. It has been designed to test students' ability to apply generalizations and to explain or justify conclusions when solving problems common in every day living.

Your cooperation will be a great help in the progress of the study and will be greatly appreciated.

GENERAL DIRECTIONS -

Write your name, the date, and other general information called for on the answer sheet. Do not leave any spaces blank.

Make sure your answer for each statement is recorded on the answer sheet in the appropriate column and space. If you make an error and wish to correct it, be sure that the first answer is well erased. Please check every statement.

SPECIFIC DIRECTIONS -

Read each problem carefully. The underlined statement at the end of each problem is assumed to be a correct answer.

A number of statements follow each problem. Read each statement carefully and decide: (1) whether it supports the underlined conclusion, (2) whether it does not support the underlined conclusion, or (3) you are undecided whether it supports the underlined conclusion. Place your answer in the proper space on the answer sheet. Do not write on the test sheets.

Check each statement by placing an (X)

In the Y column if you would use the statement to support the underlined conclusion, or yes this does support the conclusion.

In the N column if you would not use the statement to support the underlined conclusion, or no this does not support the conclusion.

In the U column if you do not know whether to use the statement in support of the underlined conclusion, or you are undecided as to whether or not it supports the conclusion.

SAMPLE PROBLEM -

Sue is planning to give a demonstration on various ways of preparing potatoes for family meals. One of the foods she plans to prepare is stuffed potatoes topped with grated cheese. How can Sue melt the cheese on the stuffed potatoes without it becoming stringy and tough? Place them in the oven at a moderate temperature just until the cheese is melted.

	Y	N	U
1.	X		
2.		X	

Statements

1. High temperatures and long cooking tend to result in toughness and stringiness in cooked cheese. (This statement is a true generalization, therefore it would be used to support the conclusion and would be checked in the yes column.)
2. The food value of one pound of American Cheddar cheese is about the same as a quart of milk. (This statement is irrelevant as well as false, therefore it would not be used to support the conclusion and would be checked in the no column.)

Form B

Problem I

Pat planned a demonstration to show how pre-shcool children might be kept happy on a rainy day. She showed the group how to make and play a bean bag game. How could Pat have changed the demonstration to show that she had a good understanding of pre-school children? By emphasizing a variety of simple play things in addition to the bean bag game, all of which could be played for short periods of time if desired.

Statements

1. Just as a child profits by playing with many children, he also profits from many kinds of play.

2. To learn their A B C's or to recognize words are not important in the training of pre-school children.

3. Just as pre-school children are not able to read the daily newspaper, neither are they able to entertain themselves.

4. Breckenridge and Murphy, authors of a child development book, believe that a variety of play activities for young children should be encouraged.

5. The child that has a variety of play materials is interested in what he is doing.

6. Because pre-school children have a short attention span, a variety of playthings is often provided.

7. There is no important relationship between the interest span of young children and the variety of play materials they need.

8. Providing a young child with materials and opportunities to have a variety of experiences is desirable in his over-all development.

9. Some parents allow children to become careless and destructive when a variety of toys is provided.

Form B

Problem II

Polly gave a demonstration recently on the cleaning of silver. She gave the demonstration at the counter so that she could wash the silver in the near by sink. After the demonstration, class members said that she stooped and used unnecessary energy while standing at the counter. If the demonstration were to be repeated, how would you suggest she plan the work area to conserve her energy and to eliminate the problem of stooping? She could use a stool and sit at the breadboard located near the sink. The breadboard would need to be covered.

Statements

10. For much the same reason that one builds cabinets in a house the height to fit an individual, the breadboard and kitchen stool could be used to adjust the height of work surfaces in Polly's demonstration.

11. Experienced demonstrators sometimes sit on a kitchen stool while presenting demonstrations in order to obtain the best working height and to conserve energy.

12. Less time is required for a demonstrator to give a demonstration on a subject with which she is familiar.

13. Demonstrators are expected to stand when presenting a demonstration, regardless of the energy required.

14. As a rule, less energy is required when an individual sits to perform a task than when one stands to do the same task.

15. Effective management results when one gleans maximum use from all available energy.

16. Just as standing on a ladder will cause one to be higher, sitting on the kitchen stool will also cause one to be higher.

17. The carpenter who made the breadboard said that it could be used for this purpose.

18. Management specialists say that adjusting the height of work surfaces to fit the individual reduces the energy needed to perform an activity.

Form B

Problem III

Rita planned a demonstration about textile painting in which class members were to participate. She planned to provide paint, brushes, and designs for each group to use. In the past, when similar demonstrations have been given, she observed that class members made the designs as instructed but were not particularly interested in continuing the process. How could Rita plan the demonstration so that additional learning is likely to be stimulated? First, she should be sure that the class members would like to textile paint. Keen awareness of the activity might then be focused by means of attractive posters and displays of interesting finished products. She might also plan so that individuals could textile paint on articles of their own.

Statements

19. In many classrooms, examples of a product is limited to that described in a textbook so that students may learn it more effectively.

20. Individuals usually learn more when they enjoy their work and take pride in it.

21. The salesman who sold the materials to Rita said that people are likely to learn more when they have an opportunity to do what they enjoy.

22. The enjoyment of what one learns has little or nothing to do with the stimulation of more learning.

23. Just as a child's interest is stimulated by a variety of toys, the learning of class members is stimulated by providing opportunities for individuals to enjoy their activities.

24. Williamson and Lyle imply that people are likely to learn more when they enjoy a process.

25. Attractive posters and displays of interesting and attractive finished products are often used successfully by teachers to stimulate the desire to learn.

Form B

Problem IV

Janis planned a demonstration on the packaging of foods to be stored in the refrigerator. In her demonstration she plans to package stewed apricots in the following ways; in a refrigerator dish, in a dish covered with cellophane, in a moisture-proof cardboard container, and in a glass jar. What precautions can Janis take if she is to prove to the class that the moist quality of the apricots can be preserved over a period of several days? Be sure the containers are air tight.

Statements

26. In much the same way that cold temperatures decrease evaporation, so does the air tight storage of stewed apricots prevent the loss of moisture.

27. Air tight containers tend to prevent the circulation of air about the foods stored in them and lessens evaporation.

28. The evaporation of moisture is not affected when foods are stored in air tight containers.

29. Just as moisture evaporated from a body of water, so moisture evaporates from stewed apricots.

30. Micro-organisms grow rapidly in foods kept at warm temperatures.

31. Foods are often kept uncovered in a refrigerator for days without air tight containers.

32. The use of air tight containers will prevent evaporation of moisture from the apricots.

33. Physicists say that when the air moves, evaporation takes place more rapidly and hastens evaporation.

34. Professional home economists have stored stewed fruit successfully in air tight containers for many years.

Form B

Problem V

Monica planned and presented a demonstration on the care of sweaters and coats. She used the class as one example when she said, "girls come to class and toss their coats on a near by table or over the back of a chair." What could Monica suggest they do in order to help increase the service of their coats? Hang them on hangers in the closet.

Statements

35. Clothing requires proper care if it is to serve the owner well.

36. Many campus classrooms do not have places for students to hang their coats, therefore, students form a habit of tossing them over the backs of chairs.

37. Students say that they are going out again in two hours and need not take time to hang up their coats.

38. There is no point in hanging coats in a closet which is small and crowded.

39. Some members of the demonstrations class hang their coats on hangers in the closet when they first enter the classroom.

40. According to Elizabeth Todd, hanging coats on suitable hangers in a closet between wearings does much to keep them neat and clean with a minimum of effort.

41. Just as a nice dress needs to be properly hung to give its best service, a coat also needs to be properly hung to give its best service to the owner.

42. Occasional pressing cannot undo the damage done to a wool garment by careless handling.

Form B

Problem VI

Karen is presenting a demonstration on the selection of curtains for a bedroom. The illustration she has chosen to represent the bedroom has windows that are short and wide. She would like to use a window treatment that would improve the appearance of these windows. What type of treatment would you recommend to increase the apparent height of the windows? Straight hanging curtains at the side of the window with no cornice board.

Statements

43. Full gathered curtains across the lower half of the windows would make them look taller because only the upper part of the window would show.

44. Up and down lines usually create an illusion of height and slenderness and are likely to cause the windows to appear taller.

45. The homemaking teacher pointed out that straight lines would be in harmony with the way Karen wanted the room to look.

46. Interior decorators often use curtains at the sides of a window and without cornice boards.

47. Some homemakers always use a cornice board to hide the curtain rods used on the windows.

48. Just as lengthwise lines in a dress usually make one look taller, so vertical lines in curtains usually make a window look taller.

49. Straight curtains at the sides of the window and without cornice boards would cause the window to look taller and more pleasing in appearance

50. The straight hanging curtains without the cornice board will let in more light.

Form B

Problem VII

Sally is planning a demonstration on how to make the living space in a house accomodate the needs and interests of the people who live in it. The family for whom she is planning the house has a boy of twelve who collects rocks for a hobby. How could Sally suggest that the rocks collected be included as a part of the house arrangement? Plan a display shelf or nook in his room and display a few interesting rocks in the living room.

Statements

51. Professional house designers often consider the interests of family members when planning a house arrangement.

52. Rocks might be used to make an attractive rock garden when interesting ones are available.

53. The living room in the average home is the center of most family activity and is, therefore a good place to display a few interesting rocks from the collection.

54. Individuals enjoy living in a home when interesting hobbies of the family are displayed.

55. Sally's friends told her that it is acceptable to display rocks in the living room when they are of interest to the family.

56. In their book, The Complete Book of Interior Decorating, Mary Derieux and Isabelle Stevenson imply that if a boy really enjoys rock collecting, it should be provided for in the living space of the home.

57. Just as a housewife is proud of an attractive garment, and likes to have it admired, a twelve year old boy is proud of his rock collection and likes for it to be admired by family members.

58. The arrangement of furniture and hobby objects in the home has little or no effect upon the satisfactions of family living, especially for boys.

59. For much the same reason that a merchant needs to display his goods, a twelve year old boy needs to display his rock collection.

Form B

Problem VIII

Just before Christmas, Mabel planned a demonstration for a class of sophmore girls on the selection of play equipment for children around five and six years of age. She planned to have the class members participate by pretending they were children and by making whatever they could think of from the few simple materials which were provided. She expected to show that many different end products result when a number of individuals are asked to make things from a variety of simple materials. What kinds of material might Mabel have provided to encourage creativeness in each individual? Clay, blunt pointed scissors, fingerpaints, crayons, paste, wrapping paper, colorful old magazines, and a few clothespins.

Statements

60. Katherine Read, author of the book, The Nursery School, reports that materials such as those suggested allow for a great deal of valuable, spontaneous expression.

61. When a child plays, he should be allowed to try out his ideas without unnecessary interference and without set patterns to imitate.

62. Young children like to make things in much the same way that ten year old boys like to explore caves and the like.

63. Creative ability is thought to be unique for each individual and can be provided for in a variety of versatile play materials.

64. Young children will be creative and constructive when paper, paste, scissors, and similar materials are provided for their play.

65. Mothers often report that children like to display creative ability with the pinking shears while the mothers sew.

66. Baby sitters sometimes allow children to get paste, crayons, and fingerpaints on the walls and furniture when these kinds of playthings are available.

67. Children are so much alike that when one makes something you can be fairly sure the rest will make exactly the same thing.

68. Mothers are sensitive to the creative needs of children and often provide them with materials from which things can be made.

Form B

Problem IX

Peggy gave a demonstration to the High School Sophomore class on the making of cinnamon rolls. One pan of rolls, made earlier, was in the oven baking and permeating the air with the odor of freshly baked cinnamon rolls when class members arrived. In addition, she displayed a poster showing various menu combinations in which cinnamon rolls were used. What else might Peggy have done to strengthen the learning involved in this demonstration? Serve small samples for class members to taste.

Statements

69. In much the same way that one learns more about animals by observing, listening, and touching them, individuals are likely to learn more about making cinnamon rolls when several means of communication are used in the presentation of the demonstration.

70. Sometimes one does not serve samples of food because it is too expensive.

71. One learns just as well by seeing how something is done as he does by a variety of means.

72. Students are likely to learn more about how to make cinnamon rolls if they are allowed to taste the finished product.

73. Cronback, in his book, Educational Psychology, implies that one learns more by touching, smelling, seeing, hearing, and tasting, than through any combination of fewer senses.

74. One of the class members suggested that television would be as an effective means of learning how to make cinnamon rolls as a class demonstration.

75. Experienced demonstrators frequently strengthen learning by serving finished food products to their audiences.

76. Students like to sample foods and learning will be reinforced when they are allowed to do so.

Form B

Problem X

Joan is planning to give a demonstration on television next Tuesday. Being thin, she wants to wear a dress that will not emphasize her thinness. She has two dresses that are similarly styled from which to choose. One is corduroy and the other is jersey. Using texture as a basis for your choice, which dress is most likely to give Joan the appearance of increased size? The corduroy dress.

Statements

77. Thin people often wear corduroy when they appear on television to create an illusion of increased size.

78. Soft, clinging fabrics reveal the figure in much the same way that thin nylon reveals the figure.

79. Corduroy will make one look larger because it is bulky just as knits will make one look slimmer because they cling.

80. Crisp fabrics make one look heavier because they stand out from the body.

81. Bulky fabrics tend to make a figure look larger.

82. Corduroy has been widely advertised in the newspapers this season, therefore, it is sure to be a good choice.

83. Clinging fabrics emphasize the shape and size of the figure and would likely cause Joan to appear larger.

84. It is emphasized in clothing classes that bulky fabrics create an illusion of increased weight.

85. Joan will look larger for her television appearance if she wears the corduroy dress.

Form B

Problem XI

In carrying out her plans for the textile painting demonstration, Sarah, arranged the room so that class members could sit in groups around tables. She planned to have each class member participate during the demonstration. How could Sarah arrange to get the needed materials to the class members with the least confusion? Have them pre-arranged for each group before the demonstration begins.

Statements

86. By arranging the materials at each place before the demonstration, time and energy will be effectively used.

87. Confusion is often avoided when materials are placed early in the place where they are to be used.

88. Good management involves the ability to stick to a plan for material and equipment arrangement even when it needs changing.

89. Just as the plan for expenditures insures more effective use, the pre-arrangement of materials and equipment insures one of a successful demonstration.

90. Professional demonstrators often avoid confusion and use their time and energy effectively by pre-arranging materials where they are to be used.

91. Just as it is more effective to set the table before a meal, it is more effective to have materials placed where they will be needed before a demonstration begins.

92. Theater managers point out that arranging materials and equipment ahead of time contributes to the efficiency of one's work and allows more time for leisure.

93. Class members have learned from Cross and Crandall that the pre-arrangement of materials where they are needed contributes to the effective use of time and energy.

94. Students sometimes sacrifice efficiency in basic planning in order to have time to pre-arrange materials and equipment.

Form B

Problem XII

Marilyn is a little overweight. Since she wanted to reduce, she planned a demonstration on the planning and preparing of a reducing diet. The basic menu she chose for illustration was the following; broiled chicken, mashed potatoes, gravy, peas, hot rolls, apple salad, and milk. Which of these foods could Marilyn omit completely and still have an adequate diet? The gravy and hot rolls.

Statements

95. Reducing diets should include adequate foods rich in proteins, vitamins, and minerals but foods rich in calories, fats, and carbohydrates need to be limited.

96. Just as inches on a measuring stick show how tall one is, the body weight indicates whether one is eating the amount of food that is needed each day.

97. Skim milk sometimes is used in a reducing diet in place of some whole milk.

98. Liquids which one drinks are usually heavy in comparison to other foods.

99. Just as a home needs less heat in warm weather, a person usually needs fewer calories when overweight.

100. For good nutrition, reducing diets should eliminate all fats and sugars.

101. Such authorities as Sweetman and McKellar recommend that all diets contain adequate amounts of the essential food nutrients.

102. Some people eat only grapefruit, poached eggs, and dry toast for a week or so in order to reduce their weight.

103. Marilyn will be successful in reducing if she is careful to omit very rich foods such as gravy and hot rolls.

104. Popular magazines recommend that potatoes also be eliminated from a reducing diet.

Form B

Problem XIII

Connie gave a demonstration on the arrangement of furniture in a living room. One very attractive living room was shown that looked wonderful for family entertaining. The room was lighted attractively, the colors were lovely, and the furniture was comfortable. But Connie pointed out that there was no place where one could read comfortably. What could Connie do to provide a comfortable place for reading? She could group a comfortable chair, a good reading lamp, and an end table together.

Statements

105. Interior Decorators, such as Faulkner, imply that the finest furniture will not make a convenient room unless pieces that need to be used together are properly grouped together.

106. Connie's friend told her that since one can read in almost any room in the house, it is not necessary to arrange a reading place in the living room.

107. A furniture arrangement is most convenient when pieces to be used together are grouped together in a suitable manner.

108. When Connie selects the table and chair for the reading corner, she will need to be sure they are constructed of the same kind of wood.

109. Just as study is best accomplished in a quiet atmosphere, reading is most effective when privacy and isolation in a convenient place is available to the reader.

110. If a chair, light, and table are grouped together, a convenient reading center will result.

111. Interior decorators arrange furniture in order to provide convenient reading centers in many modern homes.

112. For much the same reason that a table is important in a dining room, it is also important in a reading group.

Form B

Problem XIV

Grace wants to present a demonstration on the selection of appropriate colors for dresses to flatter the figure. The girl that she plans to use as her demonstration model is twenty years of age and slightly over-weight. What suggestion could you give her that would probably make the model look smaller? Emphasize dresses of dark colors.

Statements

113. If Grace selects a dark dress, the model will look slimmer.

114. The wearing of dark or light clothing has little or no effect on the apparent size of an individual.

115. When dark colors are used they absorb light and seem to decrease the size of an object.

116. Plaids tend to make people look larger.

117. Grace's homemaking teacher told her that a dark dress would help an over-weight person look smaller.

118. Just as one usually appears larger in a light color, one usually looks smaller in a dark color.

119. Dark colors are for old people for much the same reason that high heeled shoes are for young people.

120. Professionally trained salesladies often wear dark colored dresses in preference to light colored ones.

Form B

Answer Sheet
Application of Generalization Test

Name_____ Date_____ Class_____

(Not to be filled in by the student) Score: R___ W___ U___

Problem I

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Problem II

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Problem III

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Problem XI

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Problem XII

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Problem XIII

	Y	N	U
105			
106			
107			
108			
109			
110			
111			
112			

Problem XIV

	Y	N	U
113			
114			
115			
116			
117			
118			
119			
120			

APPENDIX E

GRAPHIC RATING SCALE FOR WRITTEN PLANS WITH EMPHASIS ON THE DEVELOPMENT OF LOGICAL PLANS

GRAPHIC RATING SCALE FOR WRITTEN DEMONSTRATION PLANS WITH EMPHASIS ON THE DEVELOPMENT OF LOGICAL PLANS

Student_____

Demonstration Number_____

	1	2	3	4	5
1.	No indication is given in the introduction of what is to be accomplished in the demonstration.		Objectives of the demonstration are suggested in the introduction but are not clearly stated.		Major objectives of the demonstration are clearly stated in the introduction.
2.	No particular audience is planned for.		Specific audience is planned for. Plans do not meet needs and interests characteristic of the audience.		Demonstration is planned in relation to the needs and interests of a specific audience.
3.	Action to be taken during the demonstration is not planned.		Some of the action to be taken is indicated in the plans but is incomplete or ambiguous.		Action to be taken is clearly stated in the plans.
4.	Few reasons are given to support statements and actions.		Some reasons are given to support statements and actions.		Sufficient reasons are given to support statements and actions.
5.	Much of information is inaccurate.		Most of information is accurate.		Information is accurate.
6.	Much of information and action is irrelevant to the problem.		Most of information and action is relevant to the problem.		Information and action are relevant to the problem.
7.	Many steps of the plan are out of logical order.		Parts of the plan are well organized but parts are not in logical order or vice versa.		Steps of the plan are organized in logical order.
8.	Choppy transition from part to part. Jumps from one idea to another.		Transition from one part to another shows some relationship but needs to be more complete, interesting, or both.		Transition from one operation to the next is smooth and interesting. It relates part to part and parts to whole.

	1	2	3	4	5
9.	Speech and action are poorly synchronized in plans.		Speech and action are partially synchronized in plans.		Action and speech are well synchronized in plans.
10.	Time is poorly estimated for the activities proposed.		Time estimate is fair for the activities proposed.		Time is well estimated for proposed activities.
11.	Inappropriate materials and equipment are planned.		Most materials and equipment planned are appropriate.		Appropriate materials and equipment are planned.
12.	Amounts of material and equipment are inadequate.		Amounts of materials and equipment are fairly adequate.		Amounts of materials and equipment are adequate.
13.	Materials and equipment are inconveniently arranged in plans.		Most materials and equipment are conveniently arranged in plans.		Materials and equipment are conveniently arranged in plans.
14.	Directions to the hostess are lacking, incomplete, or vague.		Directions to the hostess are fairly complete and explanatory but lack clarity.		Directions to the hostess are complete, explanatory, and clearly stated.
15.	No visual aids planned or they are of no value to the demonstration.		Visual aids planned to create interest or to emphasize minor points of the demonstration.		Visual aids are planned to emphasize or supplement major points of the demonstration.
16.	No summary or conclusions. False or meaningless statements are used to end the demonstration.		Summary or conclusions are drawn from information presented. Includes some irrelevant or insignificant statements.		Summary or conclusions include important generalizations drawn from the information given. Statements are concise and to the point.

APPENDIX F

GRAPHIC RATING SCALE FOR DEMONSTRATION PRESENTATIONS WITH EMPHASIS ON SELECTION AND USE OF INFORMATION AND MATERIALS

GRAPHIC RATING SCALE FOR DEMONSTRATION PRESENTATIONS WITH EMPHASIS ON SELECTION AND USE OF INFORMATION AND MATERIALS

Student _____

Demonstration Number _____

	1	2	3	4	5
1.	Inappropriate materials and equipment were selected.		Most materials and equipment were appropriate.		Appropriate materials and equipment were selected.
2.	Amounts of materials and equipment were inadequate.		Amounts of materials and equipment were fairly adequate.		Amounts of materials and equipment were adequate.
3.	Materials and equipment were inconveniently arranged.		Most materials and equipment were conveniently arranged.		Materials and equipment were conveniently arranged.
4.	Materials and equipment were improperly used.		Materials and equipment were properly used most of the time.		Materials and equipment were properly used.
5.	Few reasons were given to support statements and actions.		Some reasons were given to support statements and actions.		Sufficient reasons were given to support statements and actions.
6.	Much of information was inaccurate.		Most of information was accurate.		Information was accurate.
7.	Much of information and action was irrelevant to the problem.		Most of information and action was relevant to the problem.		Information and action were relevant to the problem.
8.	No summary or conclusions. False or meaningless statements used to end the demonstration.		Summary or conclusions drawn from information presented. Includes some irrelevant or insignificant statements.		Summary or conclusions include important generalizations drawn from the information given. Statements are concise and to the point.

APPENDIX G

TOTAL AND MEAN RATINGS OF INDIVIDUALS FOR EACH BEHAVIOR IN THE RATING SCALE FOR WRITTEN PLANS

TABLE VII

RATINGS ON STATEMENTS OF MAJOR OBJECTIVES IN DEMONSTRATION PLANS

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	3	4	4
B	3	3	4
C	3	3	5
D	3	5	5
E	3	2	5
F	2	4	5
G	3	2	5
H	3	5	4
I	4	2	5
J	3	1	5
K	3	1	4
Total	33	32	51
Mean	3.0	2.9	4.6

TABLE VIII

RATINGS ON VISUALIZING AUDIENCE NEEDS AND INTERESTS

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	5	4	5
B	4	5	5
C	3	4	5
D	1	4	5
E	2	3	4
F	2	5	5
G	4	2	4
H	4	5	5
I	5	3	5
J	3	3	5
K	3	3	5
Total	36	41	53
Mean	3.3	3.7	4.8

TABLE IX

RATINGS ON PLANS FOR MANIPULATIVE ACTION

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	3	4	5
B	5	3	5
C	4	5	5
D	5	5	5
E	3	3	3
F	3	3	4
G	3	3	4
H	5	4	5
I	4	3	5
J	3	5	2
K	4	3	4
Total	42	41	47
Mean	3.8	3.7	4.3

TABLE X

RATINGS ON STATEMENT OF REASONS

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	3	3	4
B	2	3	5
C	2	2	4
D	4	1	5
E	1	2	4
F	1	3	3
G	3	1	4
H	4	4	4
I	4	2	4
J	3	4	4
K	3	1	3
Total	30	26	44
Mean	2.7	2.4	4.0

TABLE XI

RATINGS ON THE ACCURACY OF INFORMATION PLANNED

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	4	5	4
B	3	4	5
C	3	4	5
D	4	2	5
E	3	4	4
F	4	5	5
G	4	3	5
H	4	5	5
I	5	3	5
J	4	5	5
K	4	3	5
Total	42	43	53
Mean	3.8	3.9	4.8

TABLE XII

RATINGS ON THE RELEVANCE OF INFORMATION AND ACTION PLANNED

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	3	5	5
B	3	5	5
C	4	5	5
D	2	2	5
E	4	4	5
F	3	5	5
G	5	3	5
H	5	5	4
I	5	3	4
J	4	5	5
K	4	3	5
Total	42	45	53
Mean	3.8	4.1	4.8

TABLE XIII

RATINGS ON THE ORGANIZATION OF PLANS

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	2	4	5
B	2	4	3
C	5	4	5
D	4	3	5
E	4	4	3
F	4	5	4
G	5	4	5
H	3	5	5
I	5	3	5
J	4	5	5
K	3	4	5
Total	41	45	50
Mean	3.7	4.1	4.5

TABLE XIV

RATINGS ON SMOOTHNESS OF TRANSITION

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	3	4	4
B	1	3	4
C	3	4	4
D	1	1	4
E	1	2	4
F	3	3	3
G	5	3	4
H	3	4	5
I	3	2	3
J	3	3	4
K	2	3	5
Total	28	32	44
Mean	2.5	2.9	4.0

TABLE XV

RATINGS ON PLANS FOR SYNCHRONIZATION OF ACTION AND SPEECH

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	3	5	4
B	5	3	5
C	4	5	5
D	5	5	5
E	4	4	3
F	5	2	4
G	3	4	5
H	5	5	5
I	4	3	5
J	4	5	2
K	4	4	5
Total	46	45	48
Mean	4.2	4.1	4.4

TABLE XVI

RATINGS ON JUDGMENT OF TIME NEEDED

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	4	5	5
B	3	4	5
C	1	4	5
D	3	4	5
E	4	4	4
F	4	4	5
G	3	3	5
H	4	5	5
I	3	4	5
J	5	5	5
K	3	4	3
Total	35	46	52
Mean	3.2	4.2	4.7

TABLE XVII

RATINGS ON PLANS FOR SELECTION OF MATERIALS AND EQUIPMENT

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	1	4	5
B	4	5	5
C	5	4	5
D	4	4	4
E	5	4	5
F	2	4	4
G	5	3	5
H	4	5	5
I	5	5	5
J	4	4	5
K	3	5	4
Total	42	47	52
Mean	3.8	4.3	4.7

TABLE XVIII

RATINGS ON AMOUNTS OF MATERIAL AND EQUIPMENT PLANNED

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	1	5	4
B	1	1	5
C	3	3	5
D	1	4	5
E	5	3	3
F	2	3	3
G	5	5	4
H	4	5	5
I	1	4	5
J	1	5	3
K	3	4	4
Total	27	42	46
Mean	2.5	3.8	4.2

TABLE XIX

RATINGS ON PLANS FOR ARRANGING MATERIALS AND EQUIPMENT

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	1	1	3
B	3	1	4
C	3	5	5
D	2	1	5
E	5	4	4
F	3	4	4
G	5	1	4
H	3	5	4
I	1	2	4
J	3	5	5
K	3	4	5
Total	32	33	47
Mean	2.9	3.0	4.3

TABLE XX

RATINGS ON DIRECTIONS PLANNED FOR HOSTESS

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	1	3	1
B	1	4	5
C	1	4	5
D	1	1	3
E	2	4	4
F	1	2	5
G	1	1	5
H	1	4	5
I	1	2	5
J	2	4	4
K	1	3	5
Total	13	32	47
Mean	1.2	2.9	4.3

TABLE XXI

RATINGS ON PLANS FOR VISUAL AIDS

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	1	5	4
B	4	3	5
C	3	1	5
D	2	1	5
E	2	2	4
F	4	2	4
G	3	4	5
H	3	5	5
I	1	2	2
J	3	5	4
K	4	5	5
Total	30	35	48
Mean	2.7	3.2	4.4

TABLE XXII

RATINGS ON PLANNED STATEMENTS OF GENERALIZATIONS
IN SUMMARY OR CONCLUSIONS

Student	Ratings on Demonstration Plans		
	Plan No. 1	Plan No. 3	Plan No. 5 or 6
A	5	5	5
B	4	3	5
C	3	4	1
D	3	3	3
E	2	4	4
F	3	2	4
G	3	1	4
H	3	3	5
I	4	1	5
J	3	4	4
K	4	1	5
Total	37	31	45
Mean	3.4	2.8	4.1

APPENDIX H

TOTAL AND MEAN RATINGS OF INDIVIDUALS FOR EACH BEHAVIOR ON THE RATING SCALE FOR PRESENTATIONS

TABLE XXIII

RATINGS ON SELECTION OF MATERIALS AND EQUIPMENT

Student	Ratings on Demonstration Presentations		
	Presentation No. 1	No. 3	No. 5 or 6
A	5	5	5
B	5	5	5
C	4	5	5
D	4	4	5
E	5	5	5
F	5	5	5
G	5	3	5
H	4	5	5
I	5	4	5
J	5	5	5
K	4	5	5
Total	51	51	55
Mean	4.6	4.6	5.0

TABLE XXIV

RATINGS ON AMOUNTS OF MATERIALS AND EQUIPMENT SELECTED

Student	Ratings on Demonstration Presentations		
	Presentation No. 1	No. 3	No. 5 or 6
A	5	5	5
B	4	5	5
C	3	3	5
D	3	4	4
E	3	5	5
F	3	5	5
G	4	5	4
H	4	5	5
I	5	4	5
J	5	5	5
K	4	4	5
Total	43	50	53
Mean	3.9	4.5	4.8

TABLE XXV

RATINGS ON ARRANGEMENT OF MATERIALS AND EQUIPMENT

Student	Ratings on Demonstration Presentations		
	Presentation No. 1	No. 3	No. 5 or 6
A	4	4	5
B	5	4	5
C	3	4	5
D	3	5	5
E	5	3	5
F	4	5	4
G	5	4	5
H	4	4	5
I	4	4	5
J	5	5	5
K	3	5	5
Total	45	47	54
Mean	4.1	4.3	4.9

TABLE XXVI

RATINGS ON USE OF MATERIALS AND EQUIPMENT

Student	Ratings on Demonstration Presentations		
	Presentation No. 1	No. 3	No. 5 or 6
A	4	5	4
B	4	5	4
C	3	4	5
D	4	5	5
E	3	4	4
F	5	5	5
G	5	3	5
H	4	4	5
I	4	4	5
J	3	5	5
K	3	5	4
Total	42	49	51
Mean	3.8	4.5	4.6

TABLE XXVII

RATINGS ON USE OF REASONS

Student	Ratings on Demonstration Presentations		
	Presentation No. 1	No. 3	No. 5 or 6
A	3	5	4
B	3	5	5
C	3	4	5
D	4	4	5
E	3	3	5
F	4	4	5
G	4	3	4
H	4	4	5
I	4	3	4
J	3	5	5
K	3	4	5
Total	38	45	52
Mean	3.5	4.1	4.7

TABLE XXVIII

RATINGS ON ACCURACY OF INFORMATION

Student	Ratings on Demonstration Presentations		
	Presentation No. 1	No. 3	No. 5 or 6
A	4	5	5
B	5	5	5
C	5	5	5
D	5	5	4
E	4	4	5
F	5	5	5
G	5	3	5
H	5	5	4
I	5	4	5
J	4	5	5
K	5	5	5
Total	52	51	53
Mean	4.7	4.6	4.8

TABLE XXIX

RATINGS ON RELEVANCE OF INFORMATION AND ACTION

Student	Ratings on Demonstration Presentations		
	Presentation No. 1	No. 3	No. 5 or 6
A	5	5	5
B	5	5	5
C	5	5	5
D	5	5	5
E	5	5	5
F	5	5	5
G	5	5	5
H	5	5	5
I	5	5	5
J	4	5	5
K	5	5	5
Total	54	55	55
Mean	4.9	5.0	5.0

TABLE XXX

RATINGS ON STATEMENTS OF GENERALIZATIONS IN SUMMARY OR CONCLUSIONS

Student	Ratings on Demonstration Presentations		
	Presentation No. 1	No. 3	No. 5 or 6
A	4	4	4
B	3	4	5
C	4	4	4
D	5	5	5
E	2	4	4
F	3	4	5
G	5	2	4
H	3	5	4
I	5	3	4
J	4	4	4
K	3	4	5
Total	41	43	48
Mean	3.7	3.9	4.4

VITA

Lora Belle Cacy

Candidate for the Degree of

Doctor of Education

Thesis: IDENTIFICATION AND EVALUATION OF SELECTED INTEGRATIVE BEHAVIORS AS RELATED TO HOME ECONOMICS EDUCATION

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Biographical:

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