INDEPENDENT STUDY APPROACH TO A BASIC COURSE IN HOUSING AND INTERIOR DESIGN

By

ELLA LOUISE WENMAN

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Oklahoma State University

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INDEPENDENT STUDY APPROACH TO A BASIC COURSE IN HOUSING AND INTERIOR DESIGN

Thesis Approved:

L Kay Stewart
Thesis Adviser

Christine J. Salmon

Elaine Jorgenson

N N Durham
Dean of the Graduate College

PREFACE

This study is concerned with the idea of allowing the college student the opportunity to advance at his own rate in his studies. Interest in this study began when the writer was an "older student" returning to college to complete her undergraduate study. It is hoped that the recommendations from this study will bring about the use of some independent study for the students in Housing and Interior Design at Oklahoma State University.

Without the cooperation and friendship of the faculty in Housing and Interior Design this study could not have been completed. To Dr. Kay Stewart, my advisor and friend, I wish to express a special gratitude for her unselfish giving of time, suggestions, support, and humor. I also wish to thank Dr. Elaine Jorgenson for her guidance, time, suggestions, and encouragement throughout my graduate study.

To a very special friend and my supervising instructor, Mrs. Christine Salmon, I wish to express my appreciation for her guidance and friendship. Also, I wish to thank Dr. Florence McKinney for having faith in me and allowing me to develop an independent study for the students.

I wish to express thanks to my friends and family for all the support and unfailing confidence they offered. A special thanks to my husband, Roger, and my children Greg, Mindy, and Susan. My final thanks goes to Dr. Pat Murphy, Dr. William Warde, and the students participating in this study.

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CHAPTER I

INTRODUCTION

Students are entering our colleges and universities today with more knowledgeable backgrounds than entering students before them have ever possessed. The institutions of higher education are receiving a different type of student than they received twenty to forty years ago, due to the vast opportunities and high school training available to youth of today. Colleges and universities must meet the needs of these new kinds of students if they are to contribute significantly to the process of education.

Has higher education changed to meet the needs of the changing student? To answer this question let's go back in time forty years and visit a typical college classroom of the 1930's. Here we see a person in the front of the room speaking to a group of students who are sitting at desks taking notes. The instructor is speaking to the students about a certain subject which he himself has studied; in other words, he is a specialist in his field (Mayhew, 1967). Now make a mental comparison of this classroom with one of the 1970's. How much has changed besides the building, the desks, the clothing, and hair styles? Has college education changed with time? If not, why not?

Having observed the unrest and boredom of some students enrolled in her freshman level courses, the author has concerned herself with teaching methods that break with the traditional lecture approach.

Education must meet the needs of today's students and offer them new, exciting and motivating types of learning. Change comes slowly as it is man's nature to resist change, but society has changed; so have its people. Change in education should not take place simply for the sake of change, but it should be an improvement over previous methods.

Statement of the Problem

A variety of innovative teaching approaches have become accepted methods of presenting college students with material necessary to complete some college courses. The Housing and Interior Design Department at Oklahoma State University has not developed an advanced standing examination nor an innovative teaching method for its basic required course. An independent study approach could permit students with a knowledgeable background in this field to advance at their own rate and not be held back by the student with little or no background in the field.

One problem could be that students required to take the basic course have varied backgrounds and experiences in housing and interior design, therefore some can advance at a much faster rate than others. Students who already have a basic knowledge of housing and interior design can become bored and develop a negative attitude towards the course. Such an attitude can cause other students to become negative about the course. The instructor is confronted with the problem of whether to cover the material at a pace pleasing to the fast student or the slower student. An independent study approach to specific units could allow each student to cover the material at his desired pace.

Purpose of the Study

This study examines the change from pre-test to post-test scores of students participating in an independent study while enrolled in Housing and Interior Design 2113 at Oklahoma State University during the spring semester 1974. Specifically, evidence was sought regarding the change from the pre-test to post-test for students participating in the independent study units. The improvement of the students in the independent study group was compared to the improvement of the students receiving the same material by the lecture method.

Independent study packets were developed for the test group. The study packets were developed from the course objectives and unit objectives for the two units, (1) Major Elements of a House, and (2) Materials. The students were permitted to complete the material independently at their own pace. Students were required to answer and turn in evaluation questions which were graded and returned to the students.

To determine the students most capable of working independently, a personality test was administered to both groups. The Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) was the instrument used to classify students according to their ability to work independently.

The purpose of the study was to see if the independent teaching method affected the student's change from the pre-test to post-test scores. An analysis of covariance was performed to analyze the effects of group membership (control or test), FIRO-B classification, and interaction of FIRO-B while controlling for student's GPA and pre-test score.

Justification

This study was undertaken as a result of:

1. interest shown by the College of Home Economics at Oklahoma State University in innovative study;

2. the endorsement of innovative study by the Board of Regents and Administration at Oklahoma State University;

3. faculty members within the College of Home Economics and the Housing and Interior Design Department having indicated a need for change in teaching many of the introductory courses;

4. student interest in non-lecture type courses;

5. the author's interest in a program of learning in which the students with varied backgrounds and experiences may progress at his or her own rate; and

6. student unrest in lecture courses as observed by the author.

Procedure

The procedure of this study was as follows:

Objective 1: Select the innovative study method best suited for the course to be studied.

Procedure: Literature concerning innovative teaching was reviewed.

Objective 2: Develop independent study programs for the two units of study, (a) Major Elements of a House, and (b) Materials.

Procedure: An independent study packet was developed for the test group to use. The study was developed by using the course objectives, unit objectives, and advice from the supervising instructor.

Objective 3: Select the sample for the study.

Procedure: Two groups were needed for the study. The sample was selected from the students enrolled in two Housing and Interior Design Courses. Housing and Interior Design 2113, "Housing for Contemporary Living," is the basic course for all Home Economics majors. Students enrolled in this course were selected as the test group and participated in the independent study. Housing and Interior Design 1122, "Design in the Home," is the basic course for non Home Economics majors. Students enrolled in this course were selected as the control group and received the material by the lecture method. Both groups had the same instructor. The material included in the two independent study units for the test group was also included in the lecture and readings for the control group.

Objective 4: Determine students' knowledge of the material to be studied.

Procedure: A pre-test, based upon the overall course objectives and specific objectives for the two units, was developed and administered to the sample before the material was introduced.

Objective 5: Classify students according to their ability to work independently.

Procedure: Interviews were conducted with persons in the field of testing and counseling, and instruments designed to determine personality types and behavior were reviewed. The FIRO-B was selected as the instrument to be used and was administered to both the test group and the control group before any material was presented.

Objective 6: Measure comprehension of students' knowledge of the material after the material was covered.

Procedure: A post-test was administered to both groups upon completion of the units. The pre-test and post-test were identical.

Objective 7: To determine the differences in scores of the students from pre-test to post-test controlling for GPA and FIRO-B.

Procedure: An analysis of covariance was performed on the improvement of the two groups controlling for FIRO-B and GPA.

Hypothesis

There will be no significant difference in degree of change from pre-test to post-test scores for students participating in independent study and students who receive material by the traditional lecture method.

Definition of Terms

The following definitions will explain how certain terms were used in this study.

Pre-test is an examination instrument administered to the students before the material was introduced.

Post-test is the evaluation instrument administered to the student after he completed his study of the subject matter.

Change is the amount of change in the student's score from pre-test to post-test as measured by the evaluation instrument.

Independent study is a unit of study which enables the student to complete the study independently and at his own pace within a given time.

Innovative teaching is a break from the traditional teaching methods which will create interest.

Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) is an instrument for measuring interpersonal relationships. It was used in this study to determine students' ability to accept responsibility and work independently.

Lecture is a teaching approach in which the instructor presents the material and conducts discussion in the classroom.

Limitations of the Study

The limitations of this study are as follows:

1. The evaluation instrument used for pre-test and post-test may not be "sensitive" enough.

2. The composition of the two classes chosen as the sample was different. One course H&ID 1122 was elective, and the other course H&ID 2113 was required.

3. Results apply only to the independent study units developed for the basic Housing and Interior Design course at Oklahoma State University.

4. The test group continued to attend lab sessions while the control group did not have a laboratory.

5. The sample was selected.

6. Minimal controls were used. No controls for:

   (a) age;

   (b) sex;

   (c) previous experience with independent study;

   (d) classification of the students; and

   (e) previous experience with the subject matter.

CHAPTER II

REVIEW OF LITERATURE

During the 1960's some college and university campuses experienced unrest and rioting by the students. One of the many reasons for this unrest could be the fact that the students were no longer willing to accept outdated educational methods; the students had changed and so had their needs and interests (Mayhew, 1967). The students enrolling in our institutions of higher education during the 1960's and 70's come to the university with a diversity of backgrounds. The early years of education had only to be concerned with students from the middle class or upper class families, but higher education today must meet the needs of a wide variety of students ranging from the disadvantaged black to the son or daughter of the city bank president.

A goal or purpose of education is to "develop highly competent citizens and to provide a strong educational program for all children and youth" (Russell, 1965, p. 21). If this goal is to be realized, the system must change to meet the needs of the changing student body.

Why has the college and university not changed? Lewis B. Mayhew gives reasons why change in teaching methods in higher education has been difficult to bring about:

1. It is simply too difficult to change; it is much easier for a professor to use an already prepared lecture than to contrive new approaches.

2. There are difficulties with the way in which the reward system operates in higher education. Rewards are not given on teaching ability but rather on books and articles published, offices held, and community service.

3. Little is really known about successful teaching. It is really a matter of opinion and there is no evidence of what makes a good teacher.

4. There is a conflict of roles between the role of research and the role of teaching. Should a teacher do only one of these or both?

5. Other changes such as increased enrollment have come about very rapidly. These changes have taken priority over the change in teaching.

6. Breakdown of communications within the institutions has increased as the universities have grown and the existing channels have become clogged.

7. Teaching is the academic conscience, as we find a vein of Calvinism in most college professors (Mayhew, 1967).

> What is teaching?
>
> Teaching is when a person is mediating between another person and his world. To mediate is to be instrumental in another person's experiencing of his world and in his search for meaning. Thus teaching is participating at the actual point of another's experience. It takes the form of helping the individual to gain access to cultural material pointing to a world to be experienced, cultural material which consists of all the facts and the artifacts, the modes of feeling and the values, the skills, and the processes, the theories, the questions, and the ways of developing new knowledge that humanity has found useful enough to carry forward to the present (Miel, 1961, p. 4).

Teaching then helps the individual to take the experiences and organize the parts into meaningful wholes. Well meaning teachers often confuse the transmission of knowledge with indoctrination. The teacher

must transmit knowledge, but the most important aspect should be to encourage and awaken interest, and help the student to enjoy the process of gaining knowledge (McKeachie, 1967).

Teaching is only one aspect of the process called education; the other specialized functions of education are administration, supervision, guidance, and curriculum development. A staff member will find himself participating in three to five of these areas of education, as very few teachers if any will find themselves active in only one process of the profession called education (Mayhew, 1967). Since teaching involves so many different responsibilities the individual instructor has very little time to initiate change.

Innovative Teaching

The author would like to survey teaching methods, other than lecture, which are used on the college level and focus some attention on creative teaching. According to Miel (1961), creative teaching is relating previously unrelated things, and it should be a nonrepetitive process. To relate previously unrelated things in a nonrepetitive process will bring about uncertainty; therefore a teacher or instructor should not try to teach creatively all the time, but the teacher must decide for himself how much uncertainty he can tolerate and plan his activities accordingly. To be a creative teacher the instructor must respect his students and be more than just a specialist in his field; he must be able to relate to the student and be able to help the student integrate his course into the whole curriculum. The product of creative teaching is offering individuals and groups the opportunity to experience and learn (Miel, 1961).

The teacher should allow the student to think for himself, and the instructor should be a resource that the student can draw upon when needed. The instructor must decide when to stop and let the student become more instrumental in his own educational process; and the student should be allowed to focus his experience through the application of a learning situation (Miel, 1961).

The old traditional lecture type of teaching has been over used throughout the years. Dr. Johnson says, "Lectures were once useful, but now when all can read and books are so numerous, lectures are no longer necessary" (Cartter, 1967, p. 155). Technology has advanced us to the point where teaching methods other than lecturing can be advantageous to both the student and the university. Hale of Great Britain believes, "Over-indulgence in lectures should be classed as a drug addition on the part of both the giver and the receiver" (Cartter, 1967, p. 155).

Lecture should not be eliminated from college teaching, as there is a place in education for it, but there should be balance between lecture, discussion, and innovative study. A lecture should add to the reading material; the lecturer can pose questions, interpret the assigned materials, and be of help to the student. A lecture type classroom offers the possibility of more personal contact, but the size of many of today's classes has made it difficult to have much personal contact and flexibility (McKeachie, 1967).

A good teacher can successfully combine lecture, discussion, application, and problem solving in his teaching. No one method is the best for teaching all students and all subject matter; therefore, a combination of methods should reach all interested students. For

example, a student could conduct a telephone interview with a guest, and this may bring about more learning than a lecture, as student participation lends itself to learning (McKeachie, 1967).

According to Cartter (1967) those concerned with undergraduate programs are recognizing that:

1. Student enrollment has been up.
2. We are accepting the fact that in the large institution the student may suffer a loss of identity.
3. We are rediscovering that living is a learning experience.
4. Residence experience is a part of learning.
5. Students can learn on their own quite successfully.
6. Curriculum reform is a high order of reform.
7. More and more students are attending graduate school.

The university campus has structured itself into many separate little departments, each functioning somewhat independently trying to meet the needs of the students. Today more emphasis is being placed on interdisciplinary study. If this trend continues, departments will become less structured and more emphasis will be placed on meeting the needs of the student rather than meeting the criteria of the department (McKeachie, 1967).

Cartter (1967) believes the new popularity of the junior or community college is due to the size and impersonal feeling of the large university. Individual assistance has become impossible at the large university due to the ratio of students to faculty. Instructors need time to prepare and present lectures, have conferences with students, attend committee meetings, and do research and publications. Many universities require professors to be professionally productive,

and by productive they do not mean producing good students or even interesting learning experiences. The administrators want something that will bring recognition to the university. Sometimes it appears as though the student and his needs have been forgotten.

At the university level of education we have become aware of innovative teaching, which is simply a break with the old traditional lecture. Supporters of innovative study discovered that students do not need to be in a classroom to learn, that learning can and does take place in all types of surroundings. Innovative study is also a reaction to the over-simplified idea that all students need the same amount of time on a subject. There are many methods of innovative study available for use by the college professor, and following is a brief description of but a few methods of study.

Independent Study

Independent study is study planned by one or more learned persons in the field. The student takes the planned material and completes the unit on his own, and there is a person the student may go to for help and assistance if needed. The student is allowed to work at his own rate on the materials, and is therefore not rushed or slowed down by the others enrolled in the course.

Television Study

Television study can take many forms. The student may watch the material on closed circuit TV in a classroom or viewed off campus in a specific viewing area. If the student participates in the course off campus it is possible that the student only be on the campus twice -

once to enroll and once to take the final examination.

Tapes, Filmstrips, Motion Pictures, and Slides

This type of teaching has great potential, and it is possible for students on ten different universities to hear the same lesson and by a special linking process the students can communicate with the instructor or person in charge. This type of learning can also take place with the use of television.

Tapes, filmstrips, motion pictures, and slides can give the student visual and oral learning. He may visit a learning center designed for independent study. The student may view the slides, et cetera, as many times as he feels is necessary.

Correspondence Study

This type of study is often completed off campus without the assistance of an instructor. Programmed material is completed by the student and turned in to the university or college for grading. After an assignment is graded, it is returned to the student. When the program is completed, the student visits the institution and is administered an examination over the material covered.

Independent Study

Independent study offers the student the opportunity to learn for himself and hopefully increase his ability and desire to continue his learning before and/or after his formal education has stopped. Continuing education is a goal of higher education. Independent study allows the student the opportunity to learn and explore on his own, and

hopefully de-emphasizes the idea that one has to be in a classroom to learn. There are many subject matters that lend themselves to learning outside the classroom; to a student of the arts a week's visit to the Louvre in Paris would offer more learning than a semester of lecturing on the art work contained in the Louvre. The above example is an obvious one, but there are others.

Independent study as a method of learning is not a new idea in education. According to Ford (1965) the use of independent study can be traced to the ancient Greeks. A very old program of independent study, the tutorial system, is still in operation at Oxford in England.

The independent study program of learning was not widespread in the United States until the 1950's and then only about 26 percent of the colleges and universities studied had available to their students some type of independent study (Eckert, 1960). In 1956, grants from the Fund for the Advancement of Education aided in the funding of sixteen institutions of higher learning to experiment with independent study (Sisler, 1971). Interest in independent study spread during the late 1950's and early 1960's. By 1963 Felder (1964) found in his survey of 445 colleges and universities that 68 per cent of those surveyed were using some type of independent study in their educational approach.

Students

> Independent study should not be a device or pedagogical exercise; it should take a student outside the orbit of being only a received of knowledge and educate him to the only kind of study that matters to a mature and thinking person. He may never become one, but we ought to give him his chances (Raushenbush, 1967, p. 199).

Independent study can be beneficial to both the superior student and the slower student. Early studies of independent study were constructed for the superior student. Hatch and Bennett (1960) confirm in their findings "(a) That independent study should be open to most if not all students, and (b) that this type of study should begin in the freshman year" (Hatch and Bennett, 1960, pp. 8-10).

Many college students have never been given the opportunity to learn prescribed subject matter outside of the classroom or independently. Education has been such a structured process that many students have never explored the opportunity of self education. If a person has not experienced independent learning by the time he is twenty-one he has missed an important discipline of education (McKeachie, 1967).

The college freshman is beginning a new experience in his life and he expects to be introduced to something new, so independent study can be a new and exciting endeavor for the new college student. To wait until a student's senior year to introduce independent study is too late to motivate most (Raushenbush, 1967). Not all students will achieve their best in independent study since not all students are well-suited for independent study. The type of student best suited for independent study has not been solved. Research is being conducted to see what type of student does best in independent study (Sisler, 1971).

The independent study program for the college student involves many different approaches to cover the required material. This type of innovative study can be constructed in such a manner that there is no top on the amount of learning that can take place. The ambitious student can accomplish whatever he desires; however, there may be disadvantages for the student who is unable to work on his own without

direct guidance and direction. The latter student may lose interest and get too far behind to complete the course within the given time. One must learn to continue to learn and seek knowledge independently, and if a person cannot discipline himself to work independently by the time he is of college age he may not be motivated to ever do so.

Structure of Independent Study

Independent study is a very controlled and supervised type of learning. It is not an easy out for the instructor as it takes time to prepare, execute, and evaluate the individual study program; plus the student who has not had previous experience with independent study must be helped to know how to use it. Independent study may involve more time spent on the subject by the student than the lecture method would, as many students depend on the lecture for all the information they receive.

The role of the instructor is very important in independent study. According to Sisler:

> The instructor's work is not eliminated, but changed, becoming at times more difficult, but at the same time, more challenging. The instructor becomes a director of learning rather than a storehouse of information. He works to bring about the best climate for learning while leaving the major responsibility for learning with the student (Sisler, 1971, p. 12).

Independent study can take on many forms and formats for the participating students. It may present the students with learning situations which allow them the freedom to explore beyond the classroom and discover that they are capable of learning on their own. Independent study should set up learning situations which allow the student the opportunity to develop personal competencies through experiences.

These experiences may be done independently or through interactions with others. Independent study is a freedom from constant supervision (Beggs, 1965).

Independent study can be structured in any of the following ways:

1. Students may be instructed to complete various readings and assignments from a packet with little or no help from an instructor. An instructor may administer a final examination to evaluate the student's work.

2. An instructor may be available to help the student work independently from an instruction packet or syllabus.

3. Students may work in teams or groups to complete the necessary material which may consist of readings and/or visual aids.

4. Learning may be expected to take place off campus under the supervision and approval of an instructor.

5. A combination of various methods suggested in 1 through 4.

6. Usually the students are excused from attending a formal class session and the setting may be very casual (Sisler, 1971).

In 1928 Seashore did an independent study experiment with written reports, and the final exam scores showed no difference between those taught by the lecture method and those who did the written reports (Russell, 1965). That was almost fifty years ago and technology has advanced us to the point we do not need to depend on written reports for independent study. With the technology we have today the independent study can be structured in such a manner that the student can receive a portion or all of the material by such means as video tape, or some by slides with a corresponding tape, etc. When the student has completed one unit of study he can then proceed to the next, or if

he feels he needs to replay a portion of the tape he is free to do so.

Discussion sessions can be set up so students needing or wanting additional input can attend, and for many college freshmen the discussion type of learning may be another new experience. With the discussion type of structure the student has the opportunity to learn for himself, from programmed materials, and from other students (Miel, 1961). The opportunity to share experiences with each other can be very rewarding to the students.

Independent study can take place on the campus, in the local community, the state, or even abroad. There is no limit to the possibilities that it can offer the student; in other words, it can be a learning situation in the form of field study. There are those who hasten to say that field experience can be wasted. This is true, but we must also admit that sitting in lecture can also be wasted time. Independent study as well as lecture will only have meaning if it is incorporated into the total design of a student's formal education (McKeachie, 1967).

Independent study is one method of innovative teaching that can allow the student the opportunity and experience of establishing his own learning pace. It allows the advanced student to move at his own rate, as it does the slow student. The student can be exposed to the world and not just the classroom, and the instructor will not be limited to the classroom in planning the course outline. Independent study should not be an "extra" in education but a part of the total design to encourage students to seek knowledge independently for their entire life.

Development of Independent Study

An independent study program must be well planned if it is to be effective. In the early phases of development the independent study may be very costly in time, effort and materials to the instructor, as it may take months or years to develop a good program of learning. The program should be tested or tried and then evaluated for effectiveness, and if necessary revisions should be made.

The following considerations should be made when developing independent study programs:

1. The instructor should identify the concepts, skills and goals to be accomplished and identify the behavioral or learning objectives. Students should be aware of the levels of performance and achievement expected of them. Since students may be on different levels at different times, it is necessary to write out the objectives for the students.

2. Students learn in different ways and by different means; therefore, a variety of learning methods should be included in the independent study.

3. There should be some measure of progress so the student will know when he has accomplished one unit and is ready to move forward.

4. Problems should be introduced so as to stimulate the student to explore, research, and investigate on his own (Kapfer and Ovard, 1971).

The independent study material should be easily understood as the student is on his own and should not need to ask for an explanation. The instructions should be explicit, brief, and inclusive. If the packet is not easily understood the student may become discouraged before he begins.

Independent study should offer the student a "sequence of experiences, leading to proficiency, in terms of stimulus-response relationships" (Espich and Williams, 1967, p. v). The study should assist the student through experiences that will cause the student to participate in his learning process. Through experience the student should become proficient in the identified skills and accomplish the identified objectives.

Student Evaluation

Student evaluation is a tool used by the instructor "(1) to help the teacher determine the degree to which educational objectives have been achieved, and (a) to help the teacher know his pupils as individuals" (Ahmann and Glock, 1971, p. 8). Evaluation should not be a tool used solely to "grade" the pupil, but a method of evaluating educational objectives.

Examinations should be learning experiences for both the student and the instructor. The instrument should be carefully written, easily understood, and cover the major ideas. If the examination is to measure the educational objectives it must be concerned with these objectives. An effective evaluation instrument of achievement will measure the degree of educational change by the student.

Educational objectives for the unit to be evaluated should be clearly stated, and a table of specifications set up. A table of specifications is simply a two-way table with one dimension being subject matter and the other behavioral changes. The behavioral changes usually are the six levels of the cognitive domain (Ahmann and Glock, 1971). When the instructor is writing the evaluation instrument

he can refer to the table of specifications and easily determine the material to be covered and the type of questions to be asked. Student achievement can be classified into three domains: cognitive, effective, and psychomotor. The cognitive domain deals with "recall or recognition of knowledge and the development of intellectual abilities and skills" (Bloom, 1956, p. 7). The effective domain deals with the development of personal-social adjustment (Krathwohl, 1956). The third domain, psychomotor, deals with the development of motor skills. To evaluate student achievement in these domains one can readily see that each may require a different type of examination. It would not be feasible to evaluate psychomotor skills by the use of a true-false type of examination. The instructor must decide what he wants to evaluate and then carefully determine how it will be measured.

There are six levels in the cognitive domain: recall, comprehension, application, analysis, synthesis, and evaluation. It is not unusual for the classroom teacher to use less than six of the levels when testing students. Testing for knowledge of a subject can be done by various methods depending on the educational objectives. Recall, comprehension, and application are the levels most commonly used when testing for knowledge. Recall is a process often used, and it is simply asking the student to recall a pattern, name or idea covered while studying the unit. Comprehension is when a student understands what is being communicated well enough to put it to use. Application is using an abstract idea in a particular and concrete situation (Krathwohl, 1956).

To test for recall, comprehension, or application of the cognitive domain one may use objective tests such as true-false, completion,

multiple choice, matching, short answer, and essay. Students achieve differently on different types of tests, so one should include a combination of question types on the instrument and not use only one type of question (Ahmann and Glock, 1971).

When developing an evaluation instrument the instructor must keep in mind the level of difficulty. The level of difficulty will vary depending on the type of testing being administered. The instructor may have to depend on his own subjective judgement in determining the level of difficulty (Ahmann and Glock, 1971). The ideal situation is to pre-test the instrument on a similar group, then tabulate and analyze the results. One can see that this method is often impossible.

The evaluation instrument should have discriminating power, which is the ability to discriminate between the high achievers and the low achievers. If the question can discriminate between the upper students and lower students in the positive sense, it is said to be a discriminating question (Ahmann and Glock, 1971).

An effective student evaluation instrument must be carefully written by following the educational objectives. A table of specifications will be of help to the instructor in writing instruments to be used in student evaluation. The instrument should be easily understood and should test for the levels of learning expected. The instrument should have the ability to discriminate between the high achievers and low achievers, and whenever possible the instrument should be pre-tested to check for difficulty level.

CHAPTER III

PROCEDURE

This study involved the evaluation of two methods for teaching two units of a Housing and Interior Design course at Oklahoma State University. The basic course had previously been taught by a lecture-laboratory approach.

From the review of literature concerning innovative teaching, it was decided that independent study would be a potentially effective alternative method for teaching the course. Student improvement was measured and compared for each teaching method.

Sample

The sample for this study was composed of students enrolled in Housing and Interior Design 1122 and one section of 2113 at Oklahoma State University in the spring semester 1974. The thirty-two students enrolled in Housing and Interior Design 1122, "Design in the Home" for non-Home Economics majors, served as the control group. This course is a study of design and principles as they apply to the home. H&ID 1122 is an elective course and is not required for any student.

The control group met class twice a week for fifty-minute sessions and the lecturer followed the course outline which was developed from the course objectives. The students covered the assigned material by reading in the text and attending lecture. The control group did not

have a corresponding laboratory session. A post-test was administered to the students immediately upon completion of the material in the two above mentioned units involved in this study.

The test group consisted of forty-eight students enrolled in Housing and Interior Design 2113, "Housing for Contemporary Living." This course is a study of "the house as a space for living, including the aesthetic, social and economic aspect of the housing environment in relation to needs, values, and goals of individuals and families" (The Undergraduate Handbook, 1974-75, p. 127A). All of the students enrolled in H&ID 2113 were Home Economics majors and this course is required. The same instructor was responsible for presenting the material to both groups. Housing and Interior Design 1122 and 2113 at Oklahoma State University have basically the same content; both classes use the same textbook and learning materials for lecture. This study did not include the entire course content. Only two units, (1) Major Elements of a House and (2) Materials, were involved. The educational objectives for the two units covered in this study are the same for both classes.

Development of Independent Study

During the first ten weeks of the semester classroom activities for both the test and control groups included lecture and discussion. In addition, the test group participated in assigned readings, group activities in the classroom, and individual assignments outside of class. These group and individual assignments were designed to introduce the students to independent study.

The independent study packets (see Appendix B) were developed by the author from the course objectives, textbook, lecture outline and advice from the supervising instructor. The study packets included all the material and information necessary to complete the units:

(a) course description

(b) overall objectives

(c) name of the text

(d) outline of major topics

(e) instructions for use

(f) due dates

(g) grading scale

(h) units of study

(i) evaluation questions.

At the end of 10 weeks, the test group was dismissed from meeting scheduled lectures, and permitted to complete the independent study at their own pace within a given period of time. The control group continued with the lecture-discussion format. The instructor was available to the test group for consultation during the scheduled lecture time. The test group was enrolled in a corresponding laboratory, and they were expected to attend the laboratory session.

The independent study packets contained evaluation questions which the students were to complete and turn in to the instructor for grading. The evaluation questions were accepted any time before the given due date, but were not accepted after the given date. The questions were graded and returned to the students.

The post-test was administered to the test group at the final examination period.

Development of Pre-Test

After the independent study packet was developed the author with the help of two full-time instructors in the Housing and Interior Design Department identified the important elements for testing the two course content areas: (1) Major Elements of a House, and (2) Materials. These two units are studied by both Housing and Interior Design 1122 and 2113. A pre-test was developed to measure students' previous knowledge about the items considered to be of major importance in the two units.

The pre-test was then administered to another section of H&ID 2113 to check for clarity, and a few of the questions were reworded to make them more clearly understood. After the revision of the test items by the author the pre-test was then approved by an instructor in the department. The pre-test was administered to both the control group and the test group before they were introduced to the material.

Fundamental Interpersonal Relations Orientation-Behavior

The educational background of most students does not include much experience in working independently. The educational system in the United States has been based on the traditional lecture approach where the teacher or person in charge explains the material and the student is not faced with the responsibility of developing self discipline needed for independent study. Since some students might be more predisposed to work independently than are others, some measure of ability to accept responsibility was desired in order to control for this variable.

After careful examination of personality instruments and interviews with persons in the field of testing, the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) was selected as the instrument to be used for measuring the student's ability to accept responsibility necessary for independent study.

The FIRO-B was administered to both the test group and the control group. The instrument was scored and careful attention was given to the "expressed control score" and the "want control score" for the individual students. The students were grouped in five classes according to their FIRO-B control scores. The five classes were as follows:

(1) high expressed want score and low want score;

(2) moderate expressed want score and moderate want score;

(3) low expressed score and high want score;

(4) low expressed score and low want score;

(5) high expressed score and high want score.

Statistical Analysis

A table consisting of each student's group membership, FIRO-B classification, GPA and pre-test score, and post-test score was constructed. The information from the table was punched on computer cards. With the help of a statistician a computer program was constructed and placed in the computer along with the student information cards.

The computer print out gave the means for GPA, pre-test and improvement score for both groups. To further test the results of this study it was necessary to find the improvement means of each group adjusting the GPA and pre-test scores. This would do away with any

difference in improvement that might be due to GPA and pre-test score. The computer was programmed to do the adjustment of GPA and pre-test.

The computer program also gave the mean GPA, pre-test score, and improvement score for the five FIRO-B classes. With this information a comparison was made of the mean improvement score for the FIRO-B classes in the test and control groups. The computer was programmed to find the mean improvement score for the five FIRO-B classes adjusting for the GPA and pre-test.

An analysis of covariance was performed to analyze the effects of group membership, FIRO-B, and the interaction of FIRO-B within the group while controlling for GPA and pre-test. Tables and graphs of the results were constructed to show the statistical analysis of the study.

Student Evaluation of Independent Study

The test group was given an opportunity to evaluate the independent study units. The students were asked to rate the effectiveness of each teaching method on a scale of 1 to 9, with 1 being a more negative response and 9 being a more positive response, and give a brief statement to support the assigned rating. The students participating in the independent study were also asked to compare the effectiveness of the two independent study units.

CHAPTER IV

ANALYSIS OF DATA

The purpose of this study was to examine the change from pre-test to post-test scores for two groups of students. The control group was conducted in a traditional lecture-discussion method while the test group participated in an independent study. This chapter will explain the results of the analysis and compare the changes of the test group and control group. Change is defined as post-test score minus pre-test score of the students. (See Appendix A for pre-test instrument.)

Analysis

The test group and control group varied somewhat in composition: mean grade point average, mean pre-test score and mean change. Table I shows the means for the two groups.

TABLE I

GROUP MEANS FOR GPA, PRE-TEST, POST-TEST AND CHANGE

Group	No. of Students	GPA	Pre-test	Post-test	Change From Pre to Post*
Test	48	2.8375	63.6083	97.7750	34.1667
Control	32	2.8625	66.6250	97.8125	31.1875

*Mean number of points change in students' test scores from pre-test to post-test.

Table I shows that the mean GPA's are very similar for both groups. It should be noted that there were sixteen more students in the test group than in the control group.

The mean pre-test score for the two groups differed by 2.9167 with the control group having the higher pre-test mean score. The control group was enrolled in Housing and Interior Design as an elective course which was not required for any student. It may be assumed that the students in the control group expressed a personal interest in design for the home by electing to take the course. This interest could be from their past experiences and/or basic knowledge of the subject matter. Several members of the control group were majoring in areas relating to the arts and this might explain their higher mean pre-test score.

The mean post-test score differs by 2.0702 but is higher for the test group. Since the test group's mean pre-test score was lower and its mean post-test score was higher, this might indicate that the test group made greater improvement than the control group. Table I indicates that on mean scores the independent study group improved an average of 34.1667 points from pre-test to post-test while the control group improved an average of 31.1875 points.

The students' GPA and/or pre-test score might have an effect on the degree of change from pre- to post-test scores. The adjusted mean change score was determined by controlling for influences of the GPA and pre-test scores. Table II gives the adjusted means for change controlling for GPA and pre-test scores.

TABLE II

ADJUSTED GROUP MEANS FOR CHANGE CONTROLLING FOR GPA AND PRE-TEST SCORES

Group	No. of Students	Change From Pre to Post*
Test	48	33.5014
Control	32	32.1854

*Mean change in students' scores from pre-test to post-test while controlling for GPA and pre-test scores.

Table II shows that the GPA and pre-test scores account for quite a bit of difference in change between the two groups. After controlling for GPA and pre-test the adjusted mean for change now differs by only 1.3160. It is interesting to note that even with these controls the improvement score for the test group is still slightly higher. This change of 1.3160 is not substantially higher, but it does indicate a slight change or improvement.

Fundamental Interpersonal Relations Orientation-Behavior

The Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) instrument was administered to the two groups for the purpose of identifying the students most capable of working independently. The scores on the "control" section of the FIRO-B were used for this purpose. The control score indicates a person's ability to accept

responsibility, while a low expressed control score suggests the person may not accept responsibility or make decisions. A high want control score suggests that the person wants to be controlled by others, and a low want control score indicates he does not want to be controlled by others. The students were grouped into five FIRO-B classes according to their "expressed" and "want" control scores on the instrument. The five classes of control scores were:

(1) high expressed score and low want score;

(2) moderate expressed score and moderate want score;

(3) low expressed score and high want score;

(4) low expressed score and low want score;

(5) high expressed score and high want score.

A FIRO-B class one student would be expected to improve more on the independent study because of the high expressed control score and the low want control score. He would be more likely to make decisions and accept responsibilities. "His self-concept is one of confidence and adequacy" (Ryan, 1970, p. 7).

A student in class two with a moderate expressed control score and a moderate want control score is capable of making decisions and taking on responsibility, but he desires reassurance and would rather share responsibility. This student could work independently but would be more comfortable with some guidance from an instructor (Ryan, 1970).

Class three of the FIRO-B classes is composed of students scoring low expressed control score and high want control score. A person in this class would be more dependent and would possibly show greater improvement in a learning situation where he is "spoon fed." The female in this group could be an exception as her score may not

indicate her true feelings but an expression of what society expects of her (Ryan, 1970).

The fourth FIRO-B class is composed of students scoring both a low expressed control score and low want control score. These people avoid making decisions and taking on responsibility, and they may doubt their own abilities (Ryan, 1970).

The fifth and last of the FIRO-B is a group with a very small sample size in this study. It was expected that the number of students in this classification would be small. This class scored high expressed control score and high want score. These persons are capable of taking on large amounts of responsibility, but at the same time need recognition. This group is labeled "Dependent-Independent Conflict" (Ryan, 1970).

Table III gives the mean GPA, pre-test and change scores of the five FIRO-B classes. This table does not separate the FIRO-B classes by their membership in either the test or control group.

Table III shows a considerable difference in means. FIRO-B classes one and two have a higher GPA mean and a slightly higher pre-test mean. There is quite a difference in the change means of the five classes, the maximum difference of change means being 7.1250. The change means of FIRO-B classes 1, 2, 3, and 5 were not substantially different in this table which combines students from both the test and control groups. Class four of the FIRO-B is the group scoring low expressed control and low want control scores; they are the students who avoid responsibility and see an authority-figure as a threat (Ryan, 1970). It could be expected that these students would change less by

either learning methods. Table III shows that FIRO-B class four had the lowest mean change score of all classes.

TABLE III

MEAN GPA, PRE-TEST SCORE AND CHANGE SCORE FOR THE FIVE FIRO-B CLASSES

FIRO-B Class	No. of Students	GPA	Pre-Test	Change From Pre to Post*
1	14	3.0500	67.2143	35.0000
2	9	3.1556	66.7778	34.8889
3	21	2.8905	61.5238	35.1905
4	32	2.6781	66.5938	29.6250
5	5	2.5750	56.2500	36.7500

*Change is the change in the student's score from pre-test to post-test.

A further test was performed to see if the FIRO-B played a role in explaining some differences in the students' ability to accept responsibility in a learning situation. Table IV separates the test group and control group and shows mean change for the five FIRO-B classifications within the two groups.

A comparison of mean change score for FIRO-B class one in the test group (40.67) with the mean change score for the same class in the control groups (30.75) reveals a substantial difference. It was

expected that FIRO-B class one would perform better in an independent learning situation. The data in Table IV support this idea and suggest that, given the opportunity for independent study, FIRO-B class one students can excell.

TABLE IV

MEAN CHANGE FOR FIRO-B CLASSIFICATIONS WITHIN TEST AND CONTROL GROUPS

Group	FIRO-B Class	Change From Pre to Post*
Test	1	40.6667
	2	34.4000
	3	34.2000
	4	30.8421
	5	41.6667
Control	1	30.7500
	2	35.5000
	3	37.6667
	4	27.8462
	5	22.0000

*Change is the change in the students' score from pre-test to post-test.

The interaction between FIRO-B class and group membership can be seen more clearly in Figure 1. Table IV and Figure 1 indicate that there is an interaction among the FIRO-B classifications and group membership. The effect of group membership seems small for FIRO-B classes 2, 3, and 4, while for classes 1 and 5 the test groups have improved considerably over the control group.

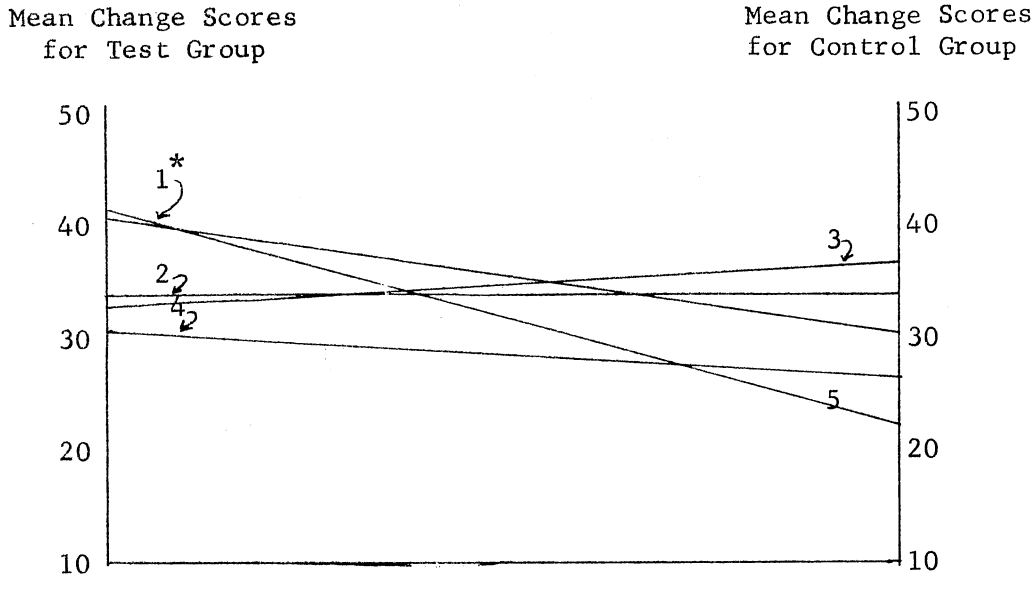

Figure 1. Comparison of Mean Change Score for FIRO-B Classifications in Test and Control Groups

*FIRO-B Class.

FIRO-B class five is an unusual group composed of individuals who can accept responsibility but desire recognition. This class has a

very small sample size and therefore very little emphasis should be placed on the results in FIRO-B class 5.

The FIRO-B class three improved more in the control group, the group receiving the material by the lecture method, than those participating in independent study. The author anticipated this reaction as FIRO-B class three is made up of students scoring low expressed control and high want control. It would appear that the students in class three need more control than they received in the independent study situation.

The mean change score was similar for both the test and control group students in the FIRO-B class two. This would be expected as these students were classified by the FIRO-B as persons who could work independently but might be more comfortable with some guidance.

FIRO-B class 4 had a low mean change score for both groups. This would be expected as class 4 is the group less likely to work independently but yet resists guidance.

As explained earlier FIRO-B class 5 has such a small sample size in the control group that its conclusion could be misleading. However, the test group FIRO-B class 5 did improve more than any class, so possibly independent study could be very satisfactory for this type of student.

Figure 2 is a comparison of mean change scores for FIRO-B classifications within test and control groups but adjusted to control for the influences of GPA and pre-test scores. The apparent interaction between the FIRO-B and group was reduced considerably when the GPA and pre-test were controlled. However, FIRO-B classes 1 and 3 appear to behave differently from the other groups.

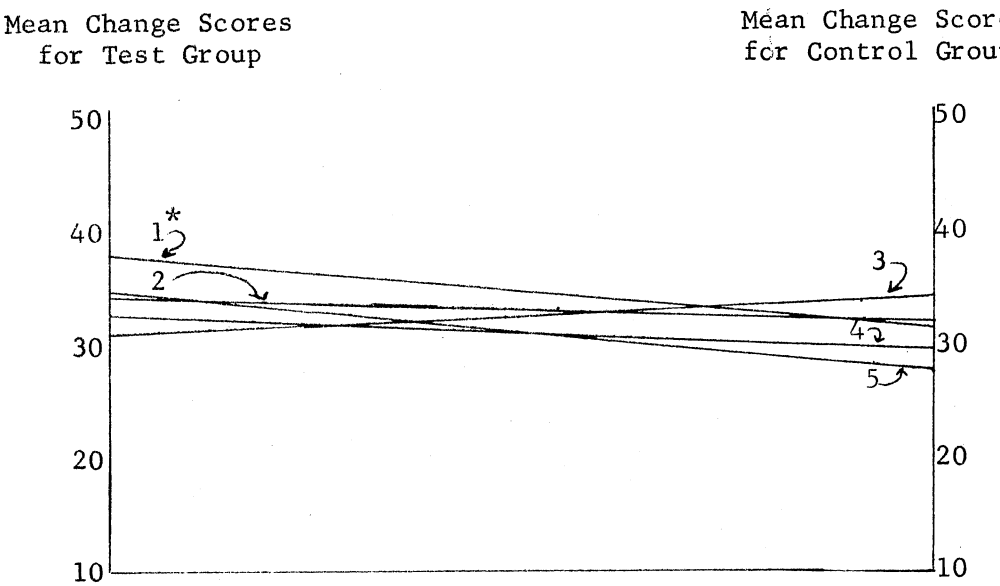

Figure 2. Comparison of Mean Change Score for FIRO-B Classifications in Test and Control Groups Adjusted for GPA and Pre-test

*FIRO-B Class.

An analysis of covariance was performed in order to analyze the simultaneous effects of group, FIRO-B, and the interaction of FIRO-B with group while controlling for GPA and pre-test scores. The model stated that change is a function of (a) the group the students are in; (b) the students' ability to accept responsibility; (c) interaction between group and FIRO-B; with covariates being the students' GPA and pre-test scores. The model was testing to see if the group they were in made a significant contribution to their improvement from pre- to post-test scores. Table V shows the analysis of covariance for this model.

TABLE V

ANALYSIS OF COVARIANCE TABLE

Source	Degrees of Freedom	Sum of Squares	Mean Square	F	Signif-icance
Covariates	2	5101.0799			
Group	1	46.5876	46.5876	.7547	N.S.
FIRO-B	4	145.1953	36.2988	.5880	N.S.
Interaction	4	163.6541	40.9135	.6628	N.S.
Error	68	4197.4331	61.7270		
Total	79	9653.950			

Table V shows no significant effect of groups, FIRO-B class or of their interaction. Although there was not a significant difference in change or improvement between the two groups, the analysis of the mean change scores between the groups with controls for FIRO-B, GPA, and Pre-test scores showed that students did not lose in the independent study.

Student Evaluation of Independent Study

Students participating in the independent study were asked to evaluate the effectiveness of independent study by responding to the following questions: (1) Was the independent study approach an effective way to cover the material on major elements of a house and materials? (2) Would the more traditional method of lecture have

been a more effective method to receive the information? (3) Which of the two independent study units did you feel was the more effective unit? They rated the effectiveness of the method of learning on a scale from 1 to 9 with one being the more negative response and nine being the more positive response. Table VI gives the response of the students. It appears as though the students participating in the independent study felt that the independent study was more effective for the two units studied (see Appendix C).

TABLE VI

STUDENTS' RESPONSE TO EFFECTIVENESS OF INDEPENDENT STUDY

Method	Mean Effectiveness Score
Independent Study	6.66
Lecture	4.48

The students were asked to support their responses with a brief discussion. Comments made by the students were very enlightening. These comments about independent study included both positive and negative reactions such as:

(a) involvement - apply to own situation;

(b) student reaponsible for learning;

(c) not pressured for time;

(d) work at your own convenience;

(e) move at one's own pace;

(f) students not adjusted to independent study;

(g) better than attending class;

(h) difficult to get incentive;

(i) forget to work on it;

(j) hard to know what is expected on the test.

Student discussion on the lecture method covered comments such as:

(a) only memorization;

(b) lecture often boring;

(c) easier to attend class than to work on units;

(d) lectures can bring out important points.

Many of the students' negative responses were concerned only with their grade and not with learning. Some students suggested attending a limited number of class sessions or discussion periods as well as working out the units.

In education we are striving for student involvement and the desire to continue to learn; therefore, students' response to the learning method should be considered. McKeachie (1967) notes that many researchers in the field of independent study have reached the conclusion that students participating in independent study develop a greater interest and sense of involvement in the subject matter than students learning by the lecture method.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary and Conclusions

Educators accept the belief that not all students need the same amount of time to complete a course. Students in our institutions of higher education have varied backgrounds and experiences, therefore some may require less time than others to complete a basic course. The purpose of this study was to evaluate change from pre-test to post-test made by students participating in an independent study program. The change in scores by the students participating in independent study was compared with that of students receiving the same material by the traditional lecture method.

After reviewing the literature, the author chose the independent study approach as the innovative teaching method to be used for this study. Independent study would allow the advanced student the opportunity to complete the units at his own pace and not be held back by the less knowledgeable student. The slower student could spend as much time as needed on the units and not be rushed by the advanced student.

Two classes were chosen for the study. Both classes were basic housing and interior design courses, taught by the same instructor, and each course covered the two units used in this study. One course is offered for non Home Economics majors and the other course is required

for all Home Economics majors. A pre-test was developed and administered to both classes before the material was introduced.

Accepting the belief that not all students would perform the same in the independent study, the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) instrument was used to classify the students according to their ability to accept the responsibility of independent study. The FIRO-B was administered to both groups and the students were classified into five classifications of FIRO-B.

The test group completed the independent study by using packets developed for this study by the author. The control group received the identical material by the lecture method. Both sections were given a post-test upon completion of the material.

The data showed that the test group improved slightly more than the control group from the pre-test to post-test. A statistical analysis of the data revealed that there was no significant difference in the improvement of the test and control groups when the GPA and pre-test scores were controlled.

The improvement of the FIRO-B classes showed that the students in the test group who were classified as being most capable of accepting responsibility improved more from pre- to post-test scores than the same class of students in the control group. This may indicate that some students may improve more when they are given the opportunity for independent study as opposed to the lecture method. The students who were classified as desiring more control or supervision improved more in the lecture situation than in independent study.

The statistical data showed the improvement made by the test group did not differ significantly from the improvement of the control group.

The students in independent study did improve slightly more, which indicated that students did not lose by the independent study approach.

The students' response to the evaluation of the independent study showed that more students favored this method over the lecture method. From the students' reactions to the independent study it appears that those who favored the lecture method lack readiness for independent study.

The conclusions from this study were that some students did improve more with independent study than they did with lecture approach. The students who desired to accept responsibility were the most likely to respond to independent study. Students could be offered the choice of independent study or lecture method for the basic housing and interior design course, since students perform differently and some may prefer the independent study and some the lecture method of learning.

Recommendations

The author would like to recommend that the study be repeated. A more "sensitive" evaluation instrument should be developed and administered. A better sampling method would be the use of two sections of the same course. Controls for age and sex could be added to the study.

The author would like to recommend that an independent study be developed for use in the basic housing and interior design course. Since students may respond favorably to some variety in teaching/learning method, it would be well to consider combining the lecture/discussion method on some units with independent study for other units. The students could select either the independent study or the lecture

discussion approach for learning. Students would not be required to participate in either the independent study or lecture, but they should be offered the opportunity to complete the course by the method of study they prefer.

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APPENDIX A

PRE-TEST AND DISCRIMINATION FACTOR

Name_____

Walls; Ceilings; Windows; & Doors
Define the Following: (You may draw diagrams to help explain your answer)

1. Masonry Wall

2. Double-pitched or cathedral ceiling

3. Acoustical tile

4. Window wall

5. Walls are more than just space dividers. List three functional purposes for <u>each</u> interior and exterior walls.

   Interior

   Exterior

6. You are building a house and you are undecided whether to use a masonry wall in the living room. Explain two major advantages and two major disadvantages of a masonry wall.

7. Describe or draw a diagram of a wood frame (2 x 4 stud) wall. What major advantage does this type of wall construction have over a masonry wall?

8. Why is it important to consider the relationship between lighting and ceiling color?

9. Double pitched or cathedral ceilings can be an important design feature in a room. Explain the affect a double pitched ceiling can have in the apparent volume of a room.

10. Suppose that the ceiling in your living space is acoustical tile. Explain how this would affect your selection of furniture.

11. Identify the following doors.

    A.

    B.

    C.

    D.

12. Select two of the above named doors and explain two advantages of using each door.

13. When might it be a disadvantage to have the two doors you identified in question 12? Explain your answer.

14. Name the type of window and explain how each operates.

A.

B.

C.

D.

E.

15. Explain two major advantages and two major disadvantages of the following type of windows.

A.

B.

16. What relationship do you see between the materials used in window frames (e.g. aluminum, wood, etc.) and the total housing costs?

Directions: True and False questions. Circle T if the statement is true; circle F if the statement is false.

T F 17. Forms, colors, and materials used to create a room or house do not affect cleaning and maintenance.

T F 18. A dull finish reflects more light than a glossy finish.

T F 19. The character of wood is hidden when an opaque finish is applied.

T F 20. A glossy finish on wood shows more blemishes than a dull finish.

T F 21. A finish is applied to wood in order to protect the surface from absorbing dirt and stains.

T F 22. A disadvantage of using wood for making furniture is its lack of beauty and warmth.

T F 23. The use of glass can expand a room visually and may be worth the added expense to the owner.

T F 24. The texture of a carpet does not affect its maintenance.

Directions: Circle the correct answer or <u>answers</u> for the following statements. Do not guess as wrong answers will be counted wrong.

25. There are three major types of ceramics. They are:
(a) Stoneware, porcelain, delft
(b) Earthenware, stoneware, and lenox
(c) Porcelain, earthenware, and stoneware
(d) Earthenware, lead free ware, and porcelain

26. An example of integrity of material is:
    (a) Plastic flowers
    (b) Plastic table that looks like plastic
    (c) Plastic table that looks like wood
    (d) All of the above

Directions: Name five materials used to construct a house or building. Name a property of each material that makes it an advantage and one property that makes it a disadvantage in construction, explain briefly why it is an advantage or disadvantage.

28. Material:

29. Disadvantage of this material:

30. Advantage of this material:

31. Material:

32. Disadvantage of this material:

33. Advantage of this material:

34. Material:

35. Disadvantage of this material:

36. Advantage of this material:

37. Material:

38. Disadvantage of this material:

39. Advantage of this material:

40. Material:

41. Disadvantage of this material:

42. Advantage of this material:

43. Name three advantages that veneered wood has over solid wood for use in a cabinet or table.

44. Name four materials (frequently used in home building) that are inorganic and thus do not burn, rot, or decay.

45. Fiberglass is frequently used to cover window walls in commercial establishments, but it is not so popular for home use. Name three properties of fiberglass which make it more appropriate for commercial use than for residential use.

46. Suppose you are planning to place a glass curtain (sheer) behind your draperies on a window that faces south. You have seen samples of nylon, rayon, silk, and dacron; which of these four fibers would NOT be a good choice. Give two reasons why the fiber would not be a good choice.

47. What are three major properties of clay that make it a good material from which to make pottery and china?

48. Suppose you are building a house and the only view on your site is to the north, so you want a window wall on the north side of your house.
    (a) Specify the type of glass you would have the builder use and why?
    (b) What special treatment would you give the window wall? Give the reasons for your choices.

49. Suppose you are planning to rent a house in Dallas, and you have located two houses which would suit your needs. You have determined that one house (which we will call house A) has only the roof or ceiling insulated and house B has only insulation in the walls. Which house would you select and why?

50. Suppose your mother is going to replace her living room carpet, and she has asked for your suggestions. She is trying to decide between a wool carpet and an acrylic carpet of approximately the same color. Which carpet fiber would you recommend and why?

TABLE VII

COMPARISON OF DISCRIMINATION FACTOR FOR TEST ITEMS ON THE PRE-TEST AND POST-TEST, TEST GROUP

Item No.	Discrimination Factor Pre-Test	Post-Test	Item No.	Discrimination Factor Pre-Test	Post-Test
1	.37	.25	23	--	.00
2	.31	.25	24	.06	.00
3	.43	.18	25	.00	.12
4	--	.06	26	.18	.31
5A1	.31	.00	28	.00	.06
2	.31	.00	29	.25	.12
3	.43	.25	30	.56	--
5B1	.37	.12	31	.06	.12
2	.50	.06	32	.62	.12
3	.56	.12	33	.37	.12
6A	.37	.18	34	--	.06
B	.43	.25	35	.37	.18
7A	.25	.75	36	.37	.31
B	.37	.62	37	.25	.25
8A	--	.12	38	.37	.12
B	.06	.43	39	.37	.12
9	.12	.25	40	.37	.06
10	.00	.43	41	.56	.25
11A	.06	.12	42	.50	.31
B	.12	.06	43A	.06	.31
C	.31	.00	43B	.12	.25
D	.12	.00	43C	.12	.25
12A	.50	.06	44A	.12	.00
B	.31	.12	44B	.06	.06
13A	.12	.12	44C	.31	.06
B	.31	.25	44D	.12	.06
14A1	.00	.18	45A	.31	.43
A2	.25	.18	45B	.12	.56
B1	.00	.12	45C	.12	.37
B2	.31	.18	46A	.25	.37
C1	.06	.06	46B	.43	.37
C2	.43	.06	46C	.43	.12
D1	.06	.06	47A	.37	.18
D2	.25	.12	47B	.43	.31
E1	.12	.12	47C	--	.37
E2	.37	.18	48A	.37	--
17	.00	.00	48B	.43	.50
18	.06	.06	48C	.18	.43
19	.25	.12	49A	.18	.25
20	.25	.18	49B	.18	.25
21	.00	.18	50	.25	.37
22	.06	.00			

TABLE VIII

COMPARISON OF DISCRIMINATION FACTOR FOR TEST ITEMS ON THE PRE-TEST AND POST-TEST, CONTROL GROUP

Item No.	Discrimination Factor Pre-Test	Post-Test	Item No.	Discrimination Factor Pre-Test	Post-Test
1	.27	.18	23	.00	.18
2	.27	.18	24	--	.09
3	.63	.18	25	.36	.27
4	.09	.09	26	.27	.36
5A1	.18	.18	28	.09	.00
5A2	.18	.09	29	.45	.00
5A3	.00	.09	30	.00	.18
5B1	.36	.09	31	.27	.00
5B2	.27	.27	32	.09	.18
5B3	.36	.36	33	.45	.45
6A	.36	.18	34	.09	.09
6B	.36	.18	35	.45	.27
7A	.27	.45	36	.27	.09
7B	.18	.36	37	.27	.09
8A	.54	.27	38	.54	.27
8B	--	.36	39	.72	.27
9	.00	.09	40	.45	.09
10	.27	.63	41	.63	.45
11A	--	.09	42	.45	.27
11B	.09	.00	43A	.18	.18
11C	.09	.00	43B	.18	.00
11D	.18	.00	43C	.09	.18
12A	.54	.36	44A	.36	.09
12B	.36	.00	44B	.18	.09
13A	.36	.36	44C	.18	.09
13B	.45	.27	44D	.18	.09
14A1	--	.27	45A	.27	.36
14A2	.45	.00	45B	.18	.54
14B1	.09	.09	45C	.18	.45
14B2	.18	.09	46A	.18	.27
14C1	.00	.00	46B	.45	.27
14C2	.00	.00	46C	.36	.45
14D1	.00	.36	47A	.36	.27
14D2	.18	.00	47B	.45	.09
14E1	.45	.09	47C	.45	.36
14E2	.27	.09	48A	.27	.72
17	.00	.09	48B	.18	.63
18	.09	.09	48C	.27	.54
19	--	.54	49A	.36	.36
20	--	.00	49B	.36	.36
21	.09	.09	50	.27	.27
22	.00	.09			

APPENDIX B

INDEPENDENT STUDY PACKET

H&ID 2113 - HOUSING FOR CONTEMPORARY LIVING

Course Description: The house as a space for living, including the aesthetic, social and economic aspects of the housing environment in relation to needs, values and goals of individuals and families.

Overall Objectives:

1. To increase understandings of the relation between housing and individual or family needs, values, and goals.
2. To develop understanding and appreciation of the contribution housing can make to human relationships, to individual well-being, and family life.
3. To develop ability to formulate and/or select solutions to meet specific family housing needs and consumer problems.
4. To grow in appreciation of the aesthetic aspects of housing.
5. To grow in becoming an informed and responsible participant in action concerning housing on the local and national levels.
6. To develop a philosophy to which one subscribes when choosing housing furnishings and available services.
7. To increase enjoyment gained through finding solutions to specific housing problems.

Text: Inside Today's Home by Ray Faulkner and Sarah Faulkner

Major Topics:

Unit I - Major Elements

A. Wall

B. Fireplaces

C. Windows

D. Doors

E. Ceilings

Unit II - Materials

A. Wood

B. Masonry

C. Ceramics, Glass, Metal, and Plastics

D. Fabrics

Instruction For Use

Units I and II of this course, H&ID 2113 Housing for Contemporary Living, are designed for independent study. This means you can work at your own pace and complete the course early if you wish to do so. Included in this booklet are:

1. The course description, objectives, and major topics.

2. Reading Assignments.

3. Study questions designed to be applied to a situation after you have read the assigned material.

4. Special evaluation assignments to be completed and handed in to your instructor on or before the due dates. Assignments will not be returned. (Late assignments will receive only partial credit.)

5. A schedule of due dates for assignments and for the final exam.

Study the assigned material in the text "Inside Today's Home" by Faulkner and Faulkner before you attempt to answer the questions. The evaluation assignments should indicate to your instructor that you have developed an understanding of the material.

This packet is divided into two units. As soon as you have completed a unit, you may turn in your assignment and go to the next unit. The examination over the units will be covered in the final examination.

NOTE: Your score on your two evaluation assignments will be equivalent to one exam.

Due Dates

Unit I - due on April 12 by 2:20 P.M. will be accepted but considered late April 15 - 19.

Unit II - due on April 26, 1974 by 2:20 P.M. will be accepted but considered late April 29 - May 3, 1974.

Make-up day for any assignments which you have missed during the semester is May 1, 1974. Time 1:30 to 2:20 in NEW 429.

Final Exam - Thursday - May 9, 1974 7:30 to 9:20
HEW 429 A.M.

All assignments must be turned in to Mrs. Wenman, HEW 441 from 11:00 a.m. to 12:00 Monday through Thursday or 1:30 to 2:30 p.m. Monday and Wednesday. Mrs. Wenman will be available for discussion Monday and Wednesday at 1:30 to 2:20 in HEW 441.

Grade scale for the course: 93-100% is an A; 85-92% is a B:

77-84% is a C; 69-76% is a D;

68% or less is an F.

UNIT I: MAJOR ELEMENTS OF A HOUSE

Walls; Windows; Doors; Fireplaces; and Ceilings

Your text "Inside Today's Home" by Faulkner and Faulkner refers to walls, fireplaces, windows, doors, and ceilings as major elements. These elements effect the character, maintenance, cost, privacy, comfort and design of your house; so they should be carefully considered when building, buying, or renting a house.

Read the following Chapters: 11, 12, & 13 - of "Inside Today's Home" and then answer the unit questions. You may need to explore your community (the local lumber yard) to answer some of the questions. When you have completed the unit study questions answer the evaluation questions and turn in the evaluation assignment to Mrs. Wenman HEW 441. When you have completed this you may proceed to Unit II.

UNIT I QUESTIONS

1. How do walls help to create the character of interior space?

2. Suppose you are remodeling an older house and you want to remove a wall between two bedrooms to make one large space. What information would you need before you could make the final decision about removing the wall?

3. Suppose you are building a new home and your annual income is $12,000, and the house you are building costs $26,000. You are considering a fireplace in the family room, and the builder explained the cost of the fireplace will be $1200 more. Give your justification for and against including the fireplace in your plans.

4. What contributions can be made to an interior space by using a skylight?

5. Suppose that you live in a climate that does not require air conditioning, so you enjoy the fresh air during the summer months. You have a lovely view from the dining area which looks out on the patio through one small window. Select the type of window you will install in this wall and describe your selection including reasons why you did not choose the other window types. (You may draw if you want.)

6. Suppose you are planning to build a house in Oklahoma, and you noticed the plans you selected specify a window wall on the west. Study the proposed window arrangement of Plan A and discuss pros and cons for such an arrangement.

7. The current energy shortage has caused us to look for new sources of energy. Solar energy is a possible source of heat for houses. Careful orientation of the windows in a house can help save on the heating and air-conditioning bill. Using house plan B indicate the best window orientation and state your reasons for choosing that orientation.

8. Suppose you live in an older two-story house and you want to brighten the dark hallway and create a cheery atmosphere in the bedroom area. At the present time there are 5 doors which open off the hall, and all of these doors are of natural wood stain to match the wood paneling on the walls of the hall. Explain how you could brighten the hallway by re-decorating <u>only</u> the doors. (You may do a ½" scale drawing to explain your answer.)

Unit 1 Questions

9. Suppose your grandmother lives alone in an older house. Due to her arthritis her hands have become crippled; therefore, new hardware is needed on all her hinged doors. Describe the proper hardware needed and explain your selection. (You may draw your hardware selection.)

10. The usual practice is to have doors swing into the room. In actual application we sometimes find it is better to arrange for doors to swing into the hall - especially bathroom doors. Why might this be particularly true in planning housing for the handicapped or elderly?

11. Why is it often an advantage to have doorways without doors or a sliding pocket door?

12. Do you see any relationship between:

    (a) door placement and traffic flow?
    (b) door placement and furniture arrangement?
    (c) door placement and usable space?

13. Suppose you live in a house that has a combination living-dining room which has 9 ft. ceilings. You want to visually separate the dining room from the living room by altering only the ceiling. Explain how you will achieve this visual separation.

14. Ceilings can help determine the character of your room, and therefore, influence your furniture selection. Support this statement by giving examples.

15. Ceilings, like walls and floors, protect us from the elements of weather. Ceilings are commonplace in a house, but they need not be common in their design. Explain four different ceiling finishes and give one advantage and one disadvantage of each.

16. Materials used in window frames effect the total cost of your house. Total cost meaning construction, maintenance, and cost of utilities. What is the relationship between aluminum frames and wood frames of windows and housing costs.

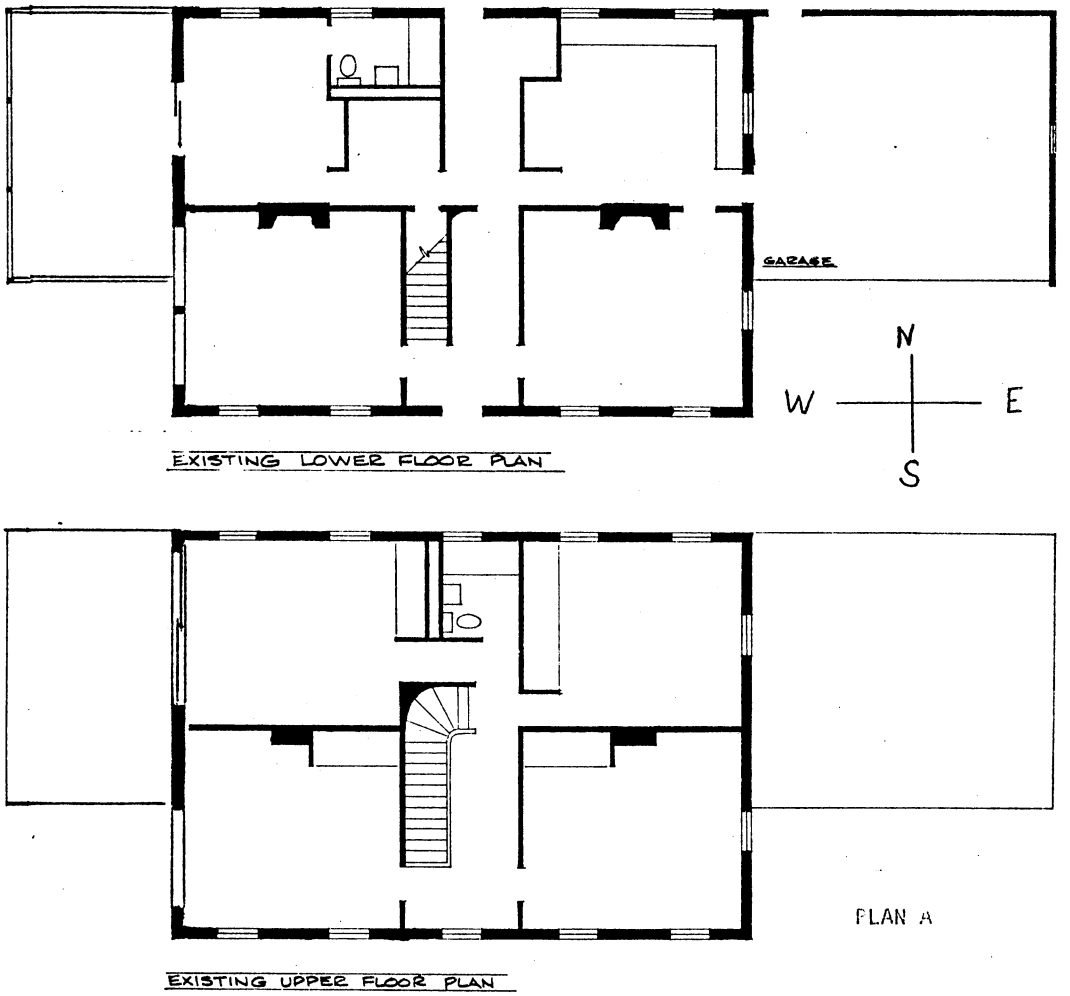
EVALUATION QUESTIONS

1. Using Plan C and either a furniture template to ¼" scale or the furniture cut outs in your black folder do a furniture arrangement for the living room. You may refer to your answers to question #12.

2. Using Plan C, #2 create a better solution to the same room by re-designing the doors. (You may change door placement and door type.)

3. Turn in your written answers for the following questions of Unit I:

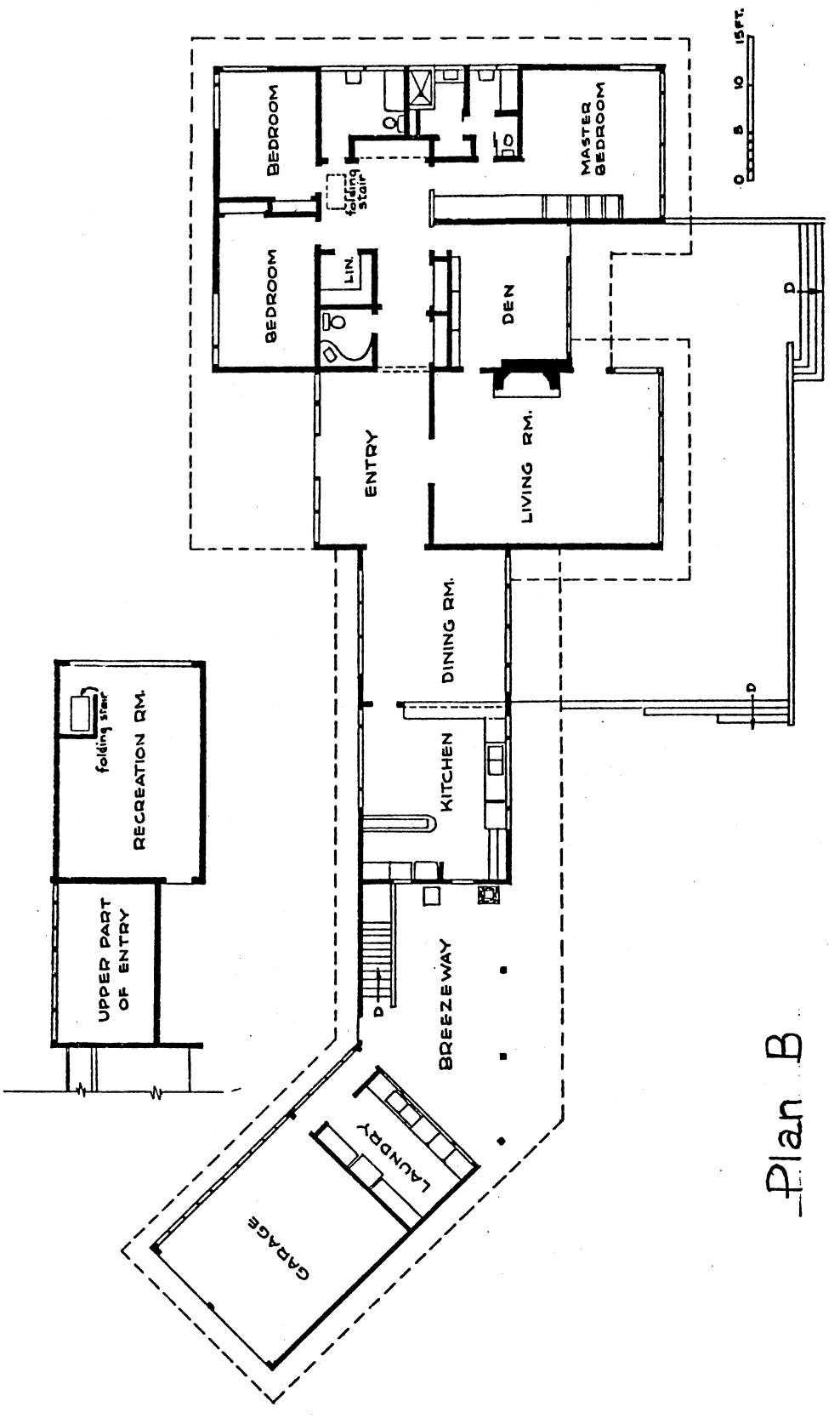
   Questions: No. 3; 6; 8; and choice of either No. 9 or 10.



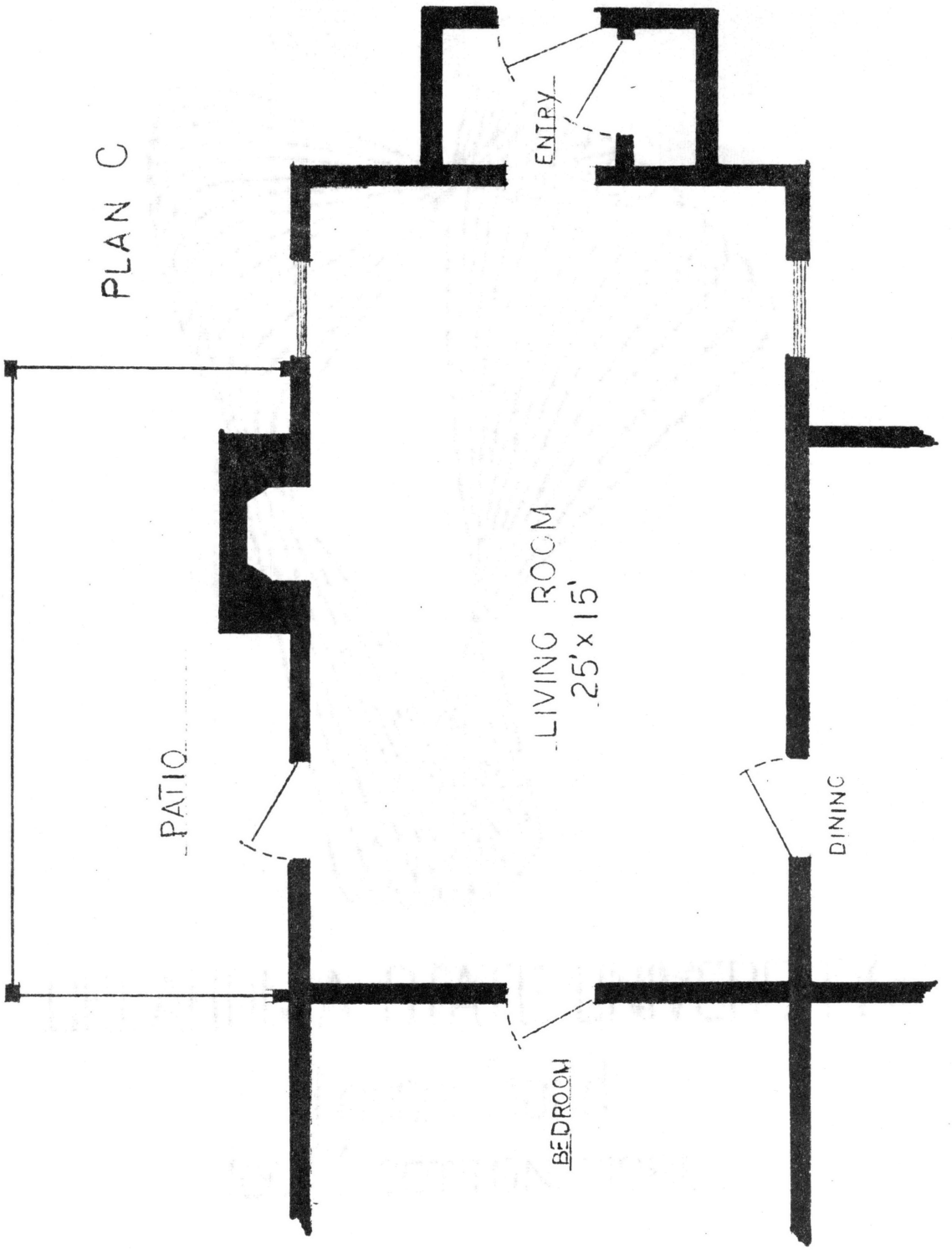
4–2 Existing upper- and lower-floor plans of house shown in Fig. 4–1.

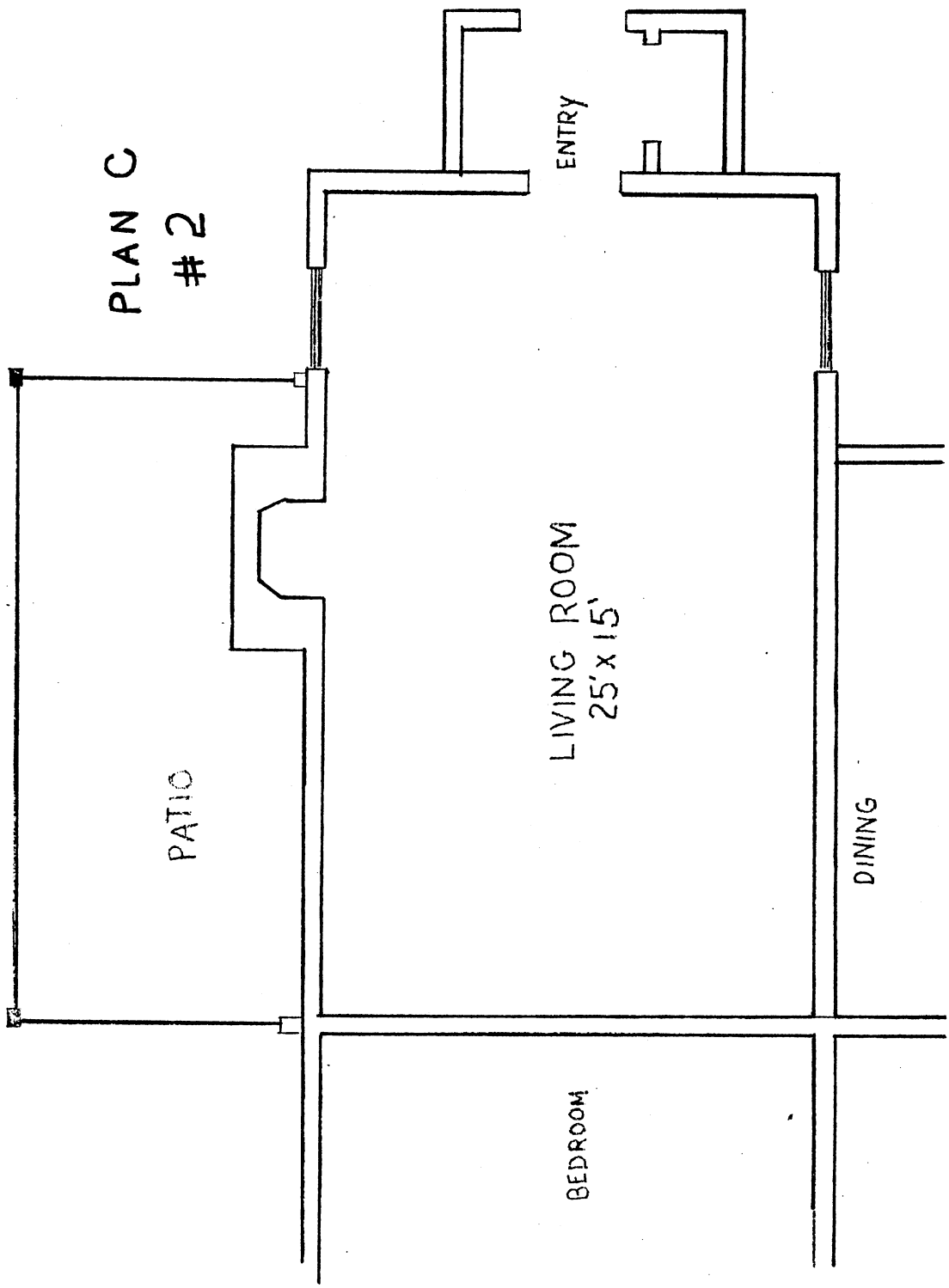
C. Sleeping

1. Master bedroom with own bath and dressing room
2. Two additional bedrooms (sharing one bath)
3. Access to hall without need to pass through living room
4. Built-in storage, with drawers and shelves
5. Walk-in closets
6. Lighting for reading
7. Desk units
8. Ventilation and temperature control


0 5 10 15 FT.
BEDROOM
folding stair
MASTER BEDROOM
BEDROOM
LIN.
DEN
ENTRY
LIVING RM.
DINING RM.
KITCHEN
BREEZEWAY
RECREATION RM.
folding stair
UPPER PART OF ENTRY
LAUNDRY
GARAGE
D
D
D

Plan B


PLAN C
ENTRY
LIVING ROOM
25' x 15'
PATIO
DINING
BEDROOM


PLAN C
#2
ENTRY
LIVING ROOM
25'x15'
PATIO
DINING
BEDROOM

UNIT II: MATERIALS

Reading Assignment: Inside Today's Home, Chapters 8, 9, and 10.

Materials Included: Wood; masonry; ceramics; glass; metal; plastics; and fabrics (fibers).

Numerous materials are used in the construction of our homes. The success of the design of a home could depend upon one's wise selection and use of various materials. Unit II consists of a study of materials and their properties.

UNIT II QUESTIONS

1. Wood is a popular building material because of its unique properties. Name and explain five properties of wood which make it one of the most frequently used materials for home building.

2. Wood not only has advantages but it also has disadvantages in the building of homes. Identify three limitations of wood and explain how modern techniques have helped to minimize these limitations.

3. Wood is normally classified into two categories hard and soft. What are the best uses for soft wood?

4. Suppose you are building a new house and you prefer to have a wood floor in the dining room. Would you select fir; ash; oak; or pine for your floor? Explain your choice.

5. Explain and/or diagram the construction of veneer wood and plywood.

6. Suppose you are shopping for a new dining table and you have located two tables which you like very much. Both of the tables measure 30" by 60", one table top is made of solid oak and the other table has an oak veneer top. Give the pros and cons for both of the tables.

7. What are the purposes for applying a finish to wood?

8. What are five limitations of a masonry wall in today's homes?

9. Suppose you are building a new house and you want to create a casual and rustic, but yet distinctive character in your living room. You might create this character by selecting a special material for one wall of the living room. What material would you use for this purpose? Explain how this material would create the desired character.

10. What are two unique properties of concrete that makes it s popular material in construction?

11. Identify the four types of ceramics and discuss their major differences.

12. What is a ceramic glaze and why are glazes used?

Unit II Questions

13. Briefly respond to the following about glass:

    a. ingredients
    b. methods of making (shaping) glassware
    c. two ways to color glass
    d. compare the methods of constructing inexpensive window pane and plate glass.

14. Insulation is a must in most houses we build today. What type of material is used most often for insulation in walls and roofs of homes?

15. Metal has many characteristics and unique qualities. Name six properties of metal that makes it a functional material for house construction.

16. Explain the meaning of "integrity of use of materials."

17. Why should a designer keep the integrity of the material in mind when designing with a certain material?

18. Fabrics do many things for an interior space. They add color and texture, shut out light, insulate, and create character. Read your text and think about the above statement before answering question #1 of your evaluation.

EVALUATION

UNIT II: MATERIALS

1. Using plan D select the appropriate fabric and fiber content for the given furnishings that will give the space a very formal atmosphere. Label and name the fabric samples you have chosen to correspond with the plan (Ex: A - Brocade). You may furnish your own samples or you may select samples from th H&ID lab room 435 HEW.

   Give the reasons for each of your choices. Discuss the ways in which the color, texture and properties of the fabric will create the formal atmosphere.

2. Repeat question #1 of evaluation choosing samples to create a casual or informal rather than formal atmosphere.

3. Turn in your written answer for question #6 of your study questions.

4. Choose <u>one</u> of the materials you studied either wood; metal; glass; plastic; ceramics; fabric; or yarn and make an item to be used in a home. The item may be a functional one or a decorative one. Turn in the project along with a list of characteristics of the material that made the project possible plus the limiting characteristics of the material.

APPENDIX C

STUDENT EVALUATION OF INDEPENDENT STUDY

H&ID 2113

On a scale of 1 to 9 - 1 being a negative response and 9 a positive response - rate the following questions.

1. Was the independent study approach an effective way to cover the material on major elements of a house and materials.

   Not Effective 1 2 3 4 5 6 7 8 9 Very Effective

   Why? Discuss.

2. Would the more traditional method of lecture have been a more effective method to receive the information.

   Less Effective 1 2 3 4 5 6 7 8 9 More Effective

   Why?

3. Which of the two independent study units did you feel was the more effective unit?

   Unit 1: Elements of a House
   Unit 2: Materials

   Why do you say that?

VITA

Ella Louise Wenman

Candidate for the Degree of

Master of Science

Thesis: INDEPENDENT STUDY APPROACH TO A BASIC COURSE IN HOUSING AND INTERIOR DESIGN

Major Field: Housing and Interior Design

Biographical:

Personal Data: Born in Hunnewell, Kansas, May 17, 1939, the daughter of J. Leonard Hembree and Frances Brown Hembree.

Education: Graduated from Blackwell Senior High School, Blackwell, Oklahoma in May, 1957; received Bachelor of Science degree in Housing and Interior Design from Oklahoma State University in July, 1972; completed requirements for the Master of Science degree at Oklahoma State University in December, 1974.

Professional Experience: Graduate teaching assistant, Department of Housing and Interior Design, Oklahoma State University, 1972-1974; Co-owner and Interior Designer of Knob Alley, Stillwater, Oklahoma.

Professional Organizations: Phi Kappa Phi; Omicron Nu; Phi Upsilon Omicron.