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A PROCEDURE FOR IDENTIFYING ADULT LEARNERS' EXPECTATIONS FOR CURRICULUM IN A SPECIFIC CONTINUING EDUCATION PROGRAM

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A PROCEDURE FOR IDENTIFYING ADULT LEARNERS' EXPECTATIONS FOR CURRICULUM IN A SPECIFIC CONTINUING EDUCATION PROGRAM

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ABSTRACT

A PROCEDURE FOR IDENTIFYING ADULT LEARNERS' EXPECTATIONS FOR CURRICULUM IN A SPECIFIC CONTINUING EDUCATION PROGRAM

By

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The purpose of this research was to develop a better understanding of a unique population of adult learners with regard to several key learner variables in order to make recommendations for curriculum development for that group. This study examined seven areas: (1) what level of formality was preferred, (2) what kind of learning experience was preferred, (3) what instructional setting was preferred, (4) what content statements were ranked highest, (5) what content statements were rated higher on a learning competency scale, (6) what interrelationships exist between the areas one through five above, and (7) what kind of relationships exist between the areas one through five above and years of formal schooling, major in school, years of experience in property management and age.

Data was gathered from 320 property managers in ten cities. Three instruments gathered data on expectations concerning kind of learning experience, level of formality and instructional setting and judgments concerning the importance of course content and the necessary level of competence for each course content.

The results of the study showed that subjects considered low formality settings more conducive for learning. For kind of learning experiences, subjects preferred sharing, with input next, then self-awareness. The preferred instructional setting for this particular course content was

equipment room, over small group and classroom. Course content and necessary levels of understanding had distinct ranks.

Subjects in this study preferred low formal learning situations with sharing, equipment room and small group instructional settings. Preference for high formal learning situations was related to classroom as an instructional setting.

There was a high positive correlation between ratings of content importance and subjects ratings of the level of competence necessary for effective property management. Adult learners with no engineering preferred the equipment room as an instructional setting while those with both business and engineering preferred a small group. Younger subjects in the study preferred sharing as a kind of learning experience and equipment room as an instructional setting.

Recommendations were made on how to better prepare instructors to respond to the needs, interests and motives of adult learners, and for further development of instructor training materials and student materials.

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THE PROBLEM

Adult education is an expanding field. It is important today when one hears the words "adult education" that one asks, "What kind of adult education?" This curriculum research is in the context of a particular type of adult continuing education. Within the general field of adult education a sub-species is beginning to grow like a wild weed in a domestic garden. The sub-species is generically identified as continuing education for professionals. Growth the last ten years in the field of professional education has been widespread. The standard in the field of adult education, Handbook of Adult Education, included in its 1970 edition an entire chapter on the growing phenomena of education for professionals. Charters, in his chapter of the Handbook, opens with this statement, "The great ferment in contemporary society is reflected in the field of continuing education for the professions. Profound social changes are imposing great pressure on the adult to continue his education" (Charters, p. 487).

Recognizing that such a sub-species of adult education exists is not enough. How is it set apart from other interests in adult education? Charters (Charters, p. 489-490) identifies five characteristics of continuing education for professionals:

1) There are frequently no legal or professional requirements to be met after certification or licensing.

2) Continuing education is increasingly considered not a luxury, fringe or supplement, but an integral part of the education of the professional.

3) Professional needs are studied as a basis for planning learning activities.

4) It is very important to make the continuing education relevant.

5) A variety in programming of continuing education for professionals is very important.

The research relates primarily to the last three of these five characteristics. The research inquires into the needs and expectations of a particular profession. Understanding these needs and expectations enables the continuing education program established for that profession to exhibit the variety and relevancy needed to serve the profession meaningfully.

Questions of meaningfulness and relevancy for a particular learning situation are curriculum questions. Answers to such questions can begin to be found by inquiring into certain relationships between the learner, the learning activities, and the content to be learned.

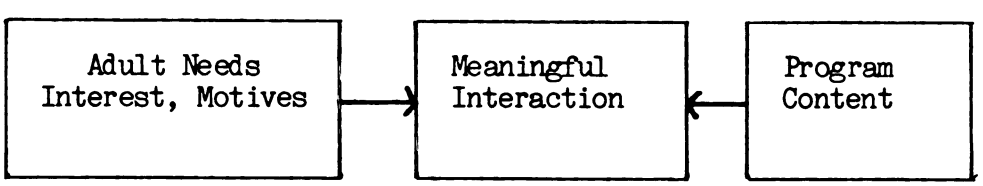
Purpose

The purpose of the study is to develop a better understanding of a unique population of adult learners with regard to several key learner variables in order that more precise recommendations can be made concerning the development of a professional certification program for that unique population. Key relationships among the variables are explored to better understand certain pedagogical expectations this particular population of adult learners has that when met, contribute to an overall perception of the courses in the professional development

program as being relevant for meeting perceived educational needs, interests and motives.

Peters and Boshier (1976) present a model which describes the interplay of the learner, learning activities and content to be learned. The model will be explained more in depth in the literature review section. For the purpose of more clearly identifying the problem a brief summary will be presented. In the author's own words, "The model assumes that a learning experience presented to volunteer adult learners must have a content congruent with their needs, interests and motives" (p.199). This study inquires into some important learner expectations as those expectations relate to a particular curricular content. Knowing content expectations will provide information to make the program more meaningful. Using the Peters and Boshier model as a framework, one can see how information about adult needs, interests and motives and information concerning program content can contribute to "meaningful interaction" for the adults in the learning experience. This research is designed to study factors both on the side of needs, interests and motives and also on the side of program content in order to inquire into what would seem to be meaningful to the particular adult population represented by the study.

The model can be diagrammed as follows:



Peters and Boshier make the following general comment about the model.

> ". . . the interaction between the adults' needs, interests, motives and the program content becomes meaningful only to the extent that the learner increases knowledge, develops a skill or shapes attitudes to the mutual satisfaction of the adult and the sponsoring organization" (Peters and Boshier, p. 199).

The ultimate question which this research begins to answer is how a curriculum can be put together to more precisely increase knowledge and develop skills and shape attitudes in accordance with learners' expectations that have been shaped by the past. Specifically, the study inquires into the expectations concerning certain variables and the relationship between those variables. These variables are the adult learner's pedagogical expectations concerning level of formality, kind of learning experience, instructional setting, rating of content importance and necessary level of understanding. For the purposes of this study the variables will collectively be called expectation variables. The study also explores relationships between the five expectation variables mentioned above and three learner's variables, years of formal schooling, years in property management, and major in school.

The problem is focused on <u>five</u> major related variables because the content variable has two aspects.

1. What adult learners in this particular population perceive to be valid <u>expectations concerning levels of formality</u>, when "levels of formality" refer to how structured, teacher-controlled and authority-oriented an instructional setting is.
2. What adult learners in this particular population perceive to be valid <u>kinds of learning experiences</u> when "kinds of learning experiences" refer to a particular parsimonious speciation of learning activities people are to engage in (<u>input</u>, <u>self-awareness</u> and <u>sharing</u>).

3. What adult learners in this particular population perceive to be the most productive educational setting when setting is defined as an identifiable location for instruction and a specific seating arrangement for students.
4. What adult learners in this particular population perceive to be important curricular outcomes when curricular outcomes are defined in terms of the perceived importance of specific course contents.
5. What adult learners in this particular population perceive to be important curricular outcomes when curricular outcomes are defined in terms of levels of understanding a person is required to have of a specific content.

Research Questions and Hypotheses

The research questions and hypotheses serve to organize an orderly search into expectations that adult learners have regarding the five expectation variables. The study will also examine relationships between the five expectation variables. Lastly, the study will examine relationships between the five expectation variables and the learner variables of years in property management, major in school, and years of formal schooling.

The three learner variables were chosen for specific reasons. Major in school was chosen to explore relationship that may be present because of a particular perspective a person's major in school may give to his or her preference for level of formality, kind of learning experience, instructional setting or his or her ratings of content importance and level of understanding necessary for specific contents.

Years of formal schooling was selected as a variable because of previous research that has explored the issue of whether or not a person's previous experience with formal schooling has had any effect on his or her preferences for level of formality and of learning experience and instructional setting.

The number of years a person has spent in property management was selected to explore the relationship between professional experience and the ratings of content importance and levels of understanding necessary for competent mastery of a particular content. If years of experience in property management is shown to be related to ratings of content importance and level of understanding, this information would prove very valuable in further curriculum construction efforts.

The relationship of age to the five expectation variables will be reported on under the section headed "Other Findings." Although it was not a main part of the study, findings about the relationship of age to the expectations variables might prove to be significant in certain areas.

The organization of the study revolves around three major areas. First, the expections adult learners have regarding the five expectation variables are studied. Second, relationships between the five expectation variables are studied. Third, relationships between the five expectation variables and learner variables are studied.

A. Pedagogical expectations of the entire sample toward levels of formality, kinds of learning experiences, curricular outcomes and instructional setting will be identified.

   1. Do adult learners perceive one level of formality as providing more productive learning than any other level of formality?
   2. Do adult learners perceive any one kind of learning experience as more preferable than any other kind of learning experience?

3. Do adult learners perceive any one educational setting to be more productive for learning than any other educational setting?
4. Do adult learners perceive any one content statement of the twelve as more important than any other content?
5. Do adult learners perceive any one level of understanding as more important than any other level of understanding?

B. Relationships between the five expectation variables will be explored in order to better understand student preferences relating to needs, motives and interests.

1. Is there a relationship between level of formality and kind of learning experience?
2. Is there a relationship between level of formality and content importance?
3. Is there a relationship between level of formality and level of understanding?
4. Is there a relationship between level of formality and setting?
5. Is there a relationship between kind of learning experience and content importance?
6. Is there a relationship between kind of learning experience and necessary level of understanding?
7. Is there a relationship between kind of learning experience and setting?
8. Is there a relationship between content importance and level of understanding?
9. Is there a relationship between content importance and setting?

10. Is there a relationship between level of understanding and setting?

C. Relationships between selected learner variables and the expectation variables consisting of level of formality, kind of learning experiences, importance of content, level of understanding and educational setting are explored to discover to what degree, if any, these learner variables may influence the adult learners' expectations.

1. Is there a relationship between his/her major in school and an adult learner's expectations concerning level of formality?
2. Is there a relationship between his/her major in school and an adult learner's expectations concerning kind of learning experience?
3. Is there a relationship between his/her major in school and an adult learner's expectations concerning content importance?
4. Is there a relationship between his/her major in school and expectations concerning the level of understanding?
5. Is there a relationship between his/her major in school and expectations concerning the instructional setting?
6. Is there a relationship between his/her years of formal schooling and the adult learner's expectations concerning level of formality?
7. Is there a relationship between his/her years of formal schooling and the adult learner's expectations concerning the instructional setting?
8. Is there a relationship between his/her years of employment in property management and the adult learner's expectations concerning content importance?

9. Is there a relationship between his/her years of employment in property management and the adult learner's expectations concerning level of understanding?

The following hypotheses guide the investigation:

H_1 A lower level of formality will be preferred over a higher level of formality.

H_2 Subjects will show a definite preference for sharing over other kinds of learning experiences.

H_3 Subjects will show a definite preference for which instructional setting they think is more productive for learning.

H_4 Subjects will make definite rank order judgments in their perceptions regarding the importance of course content.

H_5 Subjects' judgment of which level of understanding is necessary for relevant learning will be different for each content statement.

H_6 Subjects' preferences regarding level of formality are related to their preferences regarding kind of learning experience.

H_7 Subjects' preferences regarding level of formality are related to their judgments regarding importance of content.

H_8 Subjects' preferences regarding level of formality are significantly related to their judgments regarding necessary level of understanding.

H_9 Subjects' preferences regarding level of formality are significantly related to their preferences regarding instructional setting.

H_{10} Subjects' preferences regarding kind of learning experience are significantly related to judgments regarding content importance.

H_{11} Subjects' preferences regarding kind of learning experience are significantly related to judgments regarding the necessary level of understanding for a relevant learning experience.

H_{12} Subjects' preferences regarding kind of learning experience are significantly related to preferences regarding instructional setting.

H_{13} Subjects' judgments regarding content importance are positively related to judgments regarding the necessary level of understanding for a relevant learning exprience.

H_{14} Subjects' judgments regarding content importance are significantly related to preferences regarding instructional setting.

H_{15} Subjects' preferences regarding level of understanding are significantly related to preferences regarding instructional setting.

H_{16} Subjects' majors in school are significantly related to preferences regarding level of formality.

H_{17} Subjects' majors in school are significantly related to preferences regarding kind of learning experience.

H_{18} Subjects' majors in school are significantly related to judgments regarding content importance.

H_{19} Subjects' majors in school are significantly related to judgments regarding necessary level of understanding.

H_{20} Subjects' majors in school are significantly related to preferences regarding instructional setting.

H_{21} Subjects' years of formal schooling are significantly related to preferences regarding levels of formality.

H_{22} Subjects' years of formal schooling are significantly related to preferences regarding instructional setting.

H_{23} Subjects' years of employment in property management are significantly related to judgments regarding content importance.

H_{24} Subjects' years of employment in property management are significantly related to judgments regarding necessary levels of understanding.

Situational Background

The sponsoring organization that relates to the adult learners participating in this study is the Building Owners and Managers Institute (BOMI). BOMI's program must appeal to volunteer adult participants who chose to participate because they find the learning activities meaningful and capable of meeting their needs and interests.

The curriculum within BOMI is a seven-course program for professional managers of commercial property. Each course is a college-level semester length course.

Course One deals with the structural engineering of a high-rise building, the design and maintenance of mechanical systems and plumbing systems and the design and maintenance of elevators and escalators.

Course Two deals with the design and maintenance of electrical systems and lighting, cleaning maintenance of all building space, roof maintenance, and building security.

Course Three is an overview of managerial accounting. The course emphasizes the basic accounting principles necessary to make wise managerial decisions in the field of property management.

Course Four highlights the important areas of risk management for commercial property. The course covers risk management concerns for both persons and property.

Course Five covers legal principles which are important to commercial property management. (A separate law course exists for Canada because of the difference in that country with legal matters.)

Course Six concerns real estate finance and economics. Basic principles of finance and property valuation are covered as they relate to the management of property.

Course Seven is a basic course in the principles of management as it applies to managing people, tasks and the building.

BOMI has been in existence for eleven years. At this present time approximately five hundred students have completed the entire curriculum and obtained the Real Property Administrator designation (RPA). The need for such a curriculum exists because of the unique nature of the property administrator's job. The job calls for a generalist. To this date there are no formal academic programs that have constructed a curriculum to prepare a person with the breadth of knowledge needed to be effective and efficient in the management of real property. Thus, the Institute is fulfilling a specific need in this field with its RPA designation, given when a person has completed the seven courses.

This research fits into the larger context of the curriculum revision project now underway in the Building Owners and Managers Institute (BOMI). The researcher is presently responsible for the supervision of this curriculum revision project. The research is designed to provide information on certain dimensions of learner needs and expectations. Information about expectations will be very important if the new

curriculum is going to display a high degree of congruence between the learner participant need and the content goals of the Institute. Peters and Boshier point out why the kind of information this study is seeking is important for congruence:

> A programmer can facilitate participant/institution congruence by obtaining accurate information concerning participant needs, interests, preferred learning styles, motives, and expectations and then insure that instructors create congruent learning environments, methods and techniques (Peters and Boshier, 1976, p. 201).

Importance

It has already been pointed out that one of the major areas of growth in adult education today is continuing education for professionals. In this sub-species of adult education a major contradiction is emerging. A contradiction between the voluntary nature of adult education in general and the increased tendency of professional continuing education for adults to be compulsory. (Stern, 1976) Not only is the compulsory nature of adult professional education a problem in itself, but there is little agreement on what should be done to solve the problem. Rockhill in her article "The Mystique of Certification, Education and Professionalism: In the Service of Whom?", discusses the public policy issues and sociological implications of professional certifications. In addition to these implications of professional certification she observes,

> Today, with the trend toward mandatory study as a part of relicensure requirements, we face a new threat: compulsory life-long education and with it the demise of adult education as a fluid, open, voluntary field of educational endeavor" (Rockhill, 1973, p. 367).

Taken to an extreme, compulsory education for professionals can radically alter the character of adult education as it is conceived today. However, licensing, relicensing and recertification are here to stay.

The compulsory nature of professional education puts adult educators working with those programs in a difficult position. The motivation for study in their programs can be in direct opposition or contradiction to why adults normally continue learning. Given that certification is here to stay what does one do who has the responsibility for making a certification program for professionals as meaningful as possible?

To begin to solve the problem of compulsory education and lessen the impact of the dilemma, those responsible for professional education programs for adults should make every effort to construct their programs to meet the specific needs, interests and motives of those participating.

This study is important because it illustrates a first step that can be taken to obtain information concerning learner expectations for a specific professional continuing education program. The compulsory nature of adult professional continuing education will not be eliminated. But, such education can be structured so it is consistent with needs, interests, motives and expectations of participants if data can be made available to guide such structure.

This study is aimed specifically at providing some initial information about the needs, interests, motives and expectations of a specific group of adults involved in a professional educational program or that have the potential to be involved. This information will then be used to guide decisions that need to be made in the curriculum construction process.

The primary purpose of this study is to inquire into certain relationships within the Peters and Boshier paradigm which should provide direction for curriculum construction efforts. Peters and Boshier have identified a useful paradigm to guide research but have not dealt fully

with how to research these issues. Other sources must be used to provide a framework for the research itself.

Generalizability

This study has two levels of generalizability with which to contend. First, the question of generalizability from this group of professionals to all professionals must be considered. The study is targeted to a specific group of professionals in property management. It has limited generalizability outside of that particular profession.

A second level of generalizability is within the group itself. An important issue to bear in mind is how representative the sample is of property managers within the field of membership of the Building Owners and Managers Association. The findings have limited generalizability to similar students with similar profiles of learner characteristics and employment characteristics.

Assumptions

Five primary assumptions guide this study. First, the researcher assumes that it is important to identify and understand property managers' preferences regarding levels of formality, kinds of learning experiences, instructional setting and judgments concerning the importance of content and levels of understanding required so that curriculum designs and teaching methodologies can be more effective.

Second, it is assumed that the data gathering technique of viewing pictures and subsequent responses accurately measures a person's response to levels of formality, and type of learning experience, and instructional setting.

Third, it is assumed that the taxonomy of cognitive objectives (levels of learning) will be a meaningful framework for conceptualizing possible expectations concerning curricular outcomes.

A fourth assumption is that the three kinds of learning experiences (input, self-awareness, and sharing) are necessary components for a meaningful learning environment.

A fifth assumption is that a person's pedagogical expectations include judgments which anticipate particular content and intentions to learn this content to specific levels of usefullness.

Limitations

Several limitations affect the generalizability of this study. First, the sample will be a limitation because it will be a convenience sample taken from a specific population. Thus, the findings should be generalized with caution.

Second, the study will not establish direct cause and effect relationships but only compare different perception factors that relate to the expectations of a specific group of adult learners. Because this is a correlational study, the variables chosen may show relationships with one another but not necessarily explain the complexity involved in a person's perceptual preferences for levels of formality, kinds of learning experiences and instructional settings.

Third, the study is using new instruments to gather data. The instruments should be seen as tentative and until they can be refined further, care must be taken in the conclusion reached with any study which utilizes them.

Fourth, suggestions can be given on the basis of the study for curriculum construction. However, these suggestions must still be viewed

as quite tentative. This study gives basic descriptive information about learner expectations but final questions about curriculum design will still have to wait to be answered by experimental studies.

Definitions of Terms

Ethnopedagogy is a term coined by Berger (1968) that combines an anthropological concern for cultural differences with a concern for educational practice. It refers to the need to adapt teaching activities to the cultural viewpoints and experiences of the learners.

Expectations refer to those conscious and unconscious evaluations which a person forms of another or of oneself, which leads one to treat others in such a manner as though the assessment were correct. Expectations are estimates of reality and imply the anticipation of the behavior most likely to actually occur if certain circumstances are created and put into action (Finn, 1972, p. 390).

Pedagogical expectations are what a learner expects to be the sociology (roles of teacher and learners), content, and procedures of an educational activity. The idea is based on the work in ethnopedagogy.

Level of formality refers to how formal, structured, or ritualized an instructional setting is perceived to be. Instruments in this study use pictures of instructional activities that represent two broad levels of formality. One level is very informal, and the other one is very formal. They will be labeled Low and High levels of formality.

Amount of formal schooling refers to the number of years each student completed in public or private school.

Kinds of learning experiences refers to experiences in which the learner is engaged. Based on Ward's model, three kinds of learning

experiences will be represented in the instrumentation: input, self-awareness and sharing. All three are considered necessary for effective learning.

> Input experiences involve learners in receiving or coming into contact with some new information. Self-awareness learning experiences involve the learner in reflecting upon one's current situation. Sharing learning experiences involves learners in putting into one's own words or acting upon some new information, ideas, insights. It is believed that all three types of experiences are necessary for effective learning . . . (McKean, 1977, p. 18, 19).

Instructional Setting refers to a specific locus of instruction which has unique identifying features such as seating arrangement for students and identifiable teaching resources for instructors. The three instructional settings pertinent to this study are classroom, small group and equipment room (on-site). For this study, equipment room refers to the location in a building of the large heating, cooling and ventilating equipment. The equipment room in a large commercial building is the nerve center that provides for the smooth and efficient operation of the entire building.

Curriculum Outcomes refers to what a learner expects to gain from participating in a learning experience.

This study looks at two dimensions of curricular outcomes, importance of content and level of understanding. Importance of content is a judgment regarding the significance of a particular content to job performance. Level of understanding is a judgment regarding the significance of a particular level of content application to job performance.

Overview

In Chapter 2 the literature related to learner expectations and adult professional education is reviewed. In Chapter 3 the methods used to

investigate learner expectations for and relationships between level of formality, kind of learning experience, rating of content importance, rating of necessary level of understanding and preference for instructional setting are discussed. Methods used to investigate relationships between the expectation variables listed above and other learner variables of major in school, number of years in property management, and number of years of formal schooling are also discussed.

The research design, research questions and hypotheses are outlined. The instrumentation and procedures used in data collection and analysis are identified.

In Chapter 4 the findings are presented. The research hypotheses tested are restated and accompanied by the findings to each.

Chapter 5 contains a brief summary of the material in the previous chapters. The findings are discussed, conclusions reached and implications and recommendations suggested.

In summary, this research inquires into the pedagogical expectations members of a professional association have about their professional education program. It seeks to determine whether or not there is a significant relationship between these expectations and certain adult learner characteristics. These characteristics are both personal--major in school and years of formal schooling, and professional--years of employment in property management. In the "other findings" section, the relationship of age to the expectation variables is also explored to isolate any possible significance that might exist.

CHAPTER 2

REVIEW OF THE LITERATURE

The purpose of this research is to develop a better understanding of a unique population of adult learners with regard to several key learner variables in order that more precise recommendations can be made concerning the development of a professional certification program for that unique population. Key background areas for a review of the literature relating to the purpose of the study encompass three major areas of concern: studies and theoretical literature having to do with learners' pedagogical expectations concerning level of formality, kind of learning experiences, instructional setting and curricular outcomes; studies and theoretical literature that identify the effect that adult learner characteristics have on adults' participation in educational programs; and studies and theoretical literature that discuss the relationship of adult education and curriculum development for adult education.

The review of literature will proceed with the last issue listed above, the relationship of adult education as a field and curriculum development, will then move to a review of adult learner characteristics that impact their participation in continuing education and finish with a review of the literature dealing with pedagogical expectations.

Adult Education and Curriculum Development

The product of this research will hopefully be additional insights into curriculum development directions for the educational programs of The

Building Owners and Managers Institute (BOMI). Being concerned that curriculum is relevant is one thing, but doing the work with instructors and materials to make it relevant takes a much stronger commitment.

Theoretical Foundations. One of the major frustrations of making such a commitment is the wide variety of potential directions that can be taken in the quest for the development of a "relevant" curriculum. These potential directions are varied because the field of adult education itself is so rich in diversity.

Houle, in his book, The Design of Education, confirms this observation of the current situation in adult education when he says,

> Consequently, beginning in the 1930's, efforts were made to find better and deeper ways of conceptualizing programs. Generalized plans and methodologies, such as group dynamics, change theory, community development, and systems analysis, were proposed. Each was accepted by some people and rejected by others. At least a few of the latter, restive at being called conservative or traditional because they would not expose the new techniques, looked more deeply than before at their work and developed theories of process which made explicit what had hitherto been implicit in, for example, independent study, tutorial teaching, and the creative use of the advancement of new systems and the better understanding of old ones, the level of discussion deepened and a more mature thoughtful sense of common identity began to emerge.
>
> As yet, however, it cannot be said that most of the work in the field is guided by any of these systems or even by the desire to follow a systematic theory. The typical career worker in adult education is still concerned only with an instructional pattern of service or a methodology, seldom or never catching a glimpse of the total terrain of which he is cultivating one corner, and content to be, for example, a farm or home advisor, museum curator, public librarian, or industrial trainer. While such people are adult educators, they do not know or do not wish to believe that they are. The winning of their attention and support must be a major aim of anyone who hopes to enlarge and strengthen the field.
>
> Those who do identify themselves with adult education hold widely varying views about its essential nature. Most such people have worked out a guiding credo--a sample statement of belief which channels and directs their ordinary practices.

> Others have put forward organized systems to achieve a basic coherence of process which the field does not at present possess (Houle, 1972, pp. 5,6).

Comprehending the diversity in the field, understanding the impliations of that diversity for curriculum development and, thus, making meaningful curriculum decisions is crucial if the findings of this research are to be turned into a practical program for implimentation.

In an attempt to show the relationship of the major concerns in the field of adult education to curriculum development, Houle has classified the diversity by summerizing six basic credos that motivate adult educators' efforts and six systems that direct those efforts. The six credos are listed below:

1. One credo which has been consistently avowed since the earliest days of the organized field and is still staunchly supported by many people is the belief that adult education should be a movement unified by a common effort to achieve a single all-encompassing goal.

2. A second credo is based on the belief that since men and women know what they need to learn, the task of the educator of adults is to discover what it is and provide it for them.

3. A third credo is centered on the idea that the education of adults should adopt the aims and methods of other forms of schooling to fit the requrements of men and women.

4. A fourth credo emphasizes the importance of powerful and creative leaders in various roles.

5. A fifth credo is based on the improvement of generalized instutional processes. The most evident fact about adult education is its multiple sponsorship and all who administer programs have common concerns arising from an effort to master the fundamentals of management. . . .

6. A sixth credo, not widely held, perhaps, but expresses often enough to deserve mention, is given its impetus by a desire to subvert formalism so that energies may be creatively released. (Houle, 1972, pp. 7-30).

How do these credos function to give meaning and direction to the field of adult education? Houle observes that,

> While the thoughts of at least a few people seem to be wholly encompassed by each of these credos or others like them, most educators of adults are not thus confined. They may express one belief at one time, another at another. They may accept one credo as dominant, subordinating one or more of the others to it. They may even espouse several at the same time. But some of the credos directly contradict one another; for example, the first is inconsistent with the second and the fifth with the sixth. Therefore, while each credo has provided some unifying force in the field, more of them is stable or profound enough to synthesize all practice (Houle, 1972, p. 9).

However, Houle goes on to point out that the credos are not really enough to provide a comprehensive understanding of the field of adult education in relation to curriculum development.

> The need for a deeper conception than could be provided by the credos has been the chief reason why so many systems of thought have been proposed, each of them designed to provide a theoretical basis for educational programming (Houle, 1972, p. 10).

Houle makes it clear that some of these systems overlap each other but he also maintains that each has a distinctiveness that warrants discussing them individually. A summary of the systems is presented below.

1. Systems Based on Dewey's Thought. Dewey's concerns are best summarized in a quote from one of his own books, Experience and Education.

> To imposition from above is opposed expression and cultivation of individuality; to external discipline is opposed free activity; to learning from tests and teachers, learning through experience; to acquisition of isolated skills and techiques by drill is opposed acquisition of them as means of attaining ends which make direct vital appeal; to preparation for a more or less remote future is opposed making the most of the opportunities of present life; to static aims and materials is opposed acquaintance with a changing world (Dewey, 1938, pp. 5,6).

As Houle points out, Dewey's words were like a "call to arms" for a large number of adult educators. These educators felt that Dewey was speaking directly for them by expressing much of what they felt themselves. It was natural that the congruence between adult educators' feelings and Dewey's expression of those feelings would result in many

adult educators looking to Dewey's pragmatic approach as the underpinning for programming. Houle sums up the result of response to Dewey as follows:

> His (Dewey) insistence that education be related to all experience made it possible to consider the work not merely of established institutions of formal schooling but also of such other organizations as libraries and museums and of such forms of activity as community development, independent study, supervision and travel. The specific goals of learning, he argues, are constantly changing and evolving, the sole principles of process are the continuity of experience and the interaction of the learner with his environment, and the central distinction between education and miseducation, is that the former enlarges the capacity of the individual or society for richer experiences in the future while the latter arrests, diminishes, or distorts it (Houle, 1972, p. 11).

Houle also observed that Dewey's contribution, in addition to creating a focus for program development based on his own concerns for education, was the impetus for many systems that developed later and provided further theoretical underpinnings for curriculum in adult education. The future systems, however, set forth a more explicit process of program-development and in the process violated, to a certain extent, the openess and fluidity characteristic of Dewey's work.

The fluidity of Dewey's approach and the more explicit process of program development were certain to clash. Clash they did and the eventual outcome was a new synthesis by Ralph W. Tyler with the publication of his Basic Principles of Curriculum and Instruction in 1949.

2. Systems Based on Tyler's Thought. Houle makes the following observation about the genesis of Tyler's work:

> In cases of direct confrontation between defenders of traditional values and proponents of radical change, victory went now to one side, now to another, but it soon became clear that some new conception of curriculum building would have to be devised to secure as a systhesis between old and new. Many leaders of education turned their attention to this task, but the major contribution proved to be that made by Ralph W. Tyler.

Tyler's curriculum rationale can be summarized briefly. In any curriculum formulation the first step is to define purposes by considering studies of learners, of contemporary life, and of suggestions of subject specialists. The data derived from these studies are screened by the findings of educational and social philosophy of the curriculum builder, and by findings of the psychology of learning so that specific objectives can be produced to guide instruction. These objectives are stated so they can be used to select learning experiences and guide teaching. The learning experiences are chosen according to certain principles and in conformity with various categories of goals. Lastly, processes of evaluation are designed in order to measure the degree to which objectives are achieved and such knowledge is then used in future planning (Tyler, 1949).

What is the status of the Tyler rationale currently? Houle makes the following observation in answer to that question:

> . . . even with all this amplification and disagreement, the fundamental way of thought which Tyler suggested still remains intact, underlying the dicussion and practice of most education today. In this process, the old debates between the progressives and the reactionaries have been lessened as both parties have found an acceptable method of designing and conducting educaton (Houle, 1972, p. 15).

3. Systems Based on Lewin's Thought. In response to needs for unique program building methodologies in adult education, two systems found their roots in Lewin's field theory. The first goes under the umbrella term "group dynamics." As Houle points out:

> This designation was always inappropriate, for if the term had a literal meaning at all, it referred to that subfield of social psychology which deals with the objective study of the nature of small groups and their influence on the actions of their members. To those engaged in such study, however, it soon became clear that the theoretical knowledge they discovered could have major practical consequences. Many new concepts and techniques were devised (among them feedback,

> role playing, buzy groups, hidden agenda, special forms of nondirective leadership, reactor panels, listening teams, problem census, and involvement) which were to become part of the colloquial speech of eduators of adults. Somehow the term "group dynamics" came to be used as a collective term to describe such practices and their theoretical foundations (Houle, 1972, p. 16).

As with many other "good" practices and theories the strong proponents of "group dynamics" as the central methodology of adult education eventually met with resistance.

The opposition was so strong in certain cases that "some of the wounds inflicted in ensuing battles have still not healed" (Houle, p. 17).

Over times the "group dynamics" emphasis shifted from an emphasis on means to ends with the advent of the formalized training group (T-group). The T-Group application eventually became a very specialized program area which had fairly universal usefulness but so specialized that it could not be considered as part of broader practices in planning and analysis for adult education programs.

Was "group dymanics" important to the curriculum planning efforts of adult education? There is no question about its importance because:

> . . . group dynamics did make significant positive contributions to adult education by stressing the importance of treating every socialized learning situation as a group. Teachers, leaders, and administrators of even the most formal kinds of activities strive much harder than they did in earlier days to take advantage of the reinforcement which fellow learners can offer one another. And learners themselves are likely to suggest or even insist upon a group approach for an awareness of sensitivity training in one or another of its countless forms has now entered into the common culture and become an accepted part of human association (Houle, 1972, p. 18).

The second system for program design (curriculum) which found its roots in Lewin's work is called change theory. The formulation and application of change theory is very complex. A brief explanation

hardly does it justice but the core of it. . . "rest on the idea that in any defined social situation, the present level of accomplishment is supported by some forces and held back by others" (Houle, 1972, p. 18). To operationalize the theory in a particular setting, two key questions must always be asked.

> What forces are at work to increase the level of performance? What forces operate to keep it from rising higher?
>
> Anyone seeking to improve practice in any situation must begin by answering these questions and then go on to ask two others. How can the positive forces be reinforced? How can the negative ones by weakened? The operative task becomes one of identifying a present performance level, "unfreezing" it by straightening positive influences and weakening negative ones, establishing as high a new level of operation as desirable, and then "refreezing" it so that it will not step back again. In this process, two major roles are involved: the client or client system, who is helped to improve, and the change agent, a single person or group who uses both technical expertise and skill in human interaction to bring about the desired change by entering into a helping relationship (Houle, 1972, p. 18).

Although the utilization of change theory is extremely complex and specialized there is no question that it still provides a significant organizing principle around which adult education learning activities can be planned. Some concerned with the planning of adult education have gone so far as to utilize change theory as their central strategy (Verner, 1964, p. 32).

4. Systems Based on Community Development. Houle describes the major thrust of program development based on community improvement in these terms:

> . . . residents in a community (which may be variously defined in geographic or social terms) should be helped to act collectively to solve some problem which effects the lives of all of them. In planning and undertaking this task they achieve tangible results, but if the process is skillfully handled, they also learn how to attack other

> problems and are motivated to do so by their feelings of success in their initial efforts. Thus, a community may be transformed from a traditional way of life which has few satisfactions for any of its members to one which offers tangible rewards and hopes for all of them (Houle, 1972, p. 21).

5. Systems Analysis Systems. Houle observes that a systems analyst.

> . . .is interested in how a process can be conceptualized, usually in a diagram, so that its essential components are identified and put into a proper sequential order to facilitate action and decision making. He therefore works at a higher level of abstraction. . . for his system building has to do with the nature of systems themselves (Houle, 1972, p. 22).

The systems approach is often used in administering institutions, and in structuring learning experiences for computer assisted instruction or programmed instruction. The approach can also be used to organize large-scale enterprises like a national literary campaign or major convention or conference. However, one would criticise the system approach as too simplistic for the treatment of complex problems.

6. Misapplied systems. Houle uses this expression to describe a situation where

> . . . adult education is accepted as being subordinate or identical to some related function and a way of work which is appropriate to it is accepted as being the fundamental system to be used to guide learning or teaching (Houle, 1972, p. 25).

He goes on to mention such functions which are listed here with no elaboration.

a) Public Relations
b) Service
c) Recreation
d) Asthetic Appreciation
e) Fraternization
f) Welfare
g) Therapy (Houle, 1972, pp. 25-30)

In summing up the issue of the relationship between these functions and adult education, Houle says:

> The best corrective against confusing other functions with adult education is to develop and use a system of practice based wholly on learning and with sufficient strength not to be overwhelmed by systems used in allied but essentially different fields of human activity. (Houle, 1972, p. 25)

A System for Curriculum Construction. Houle's definition of adult education lays the groundwork for his own system which uses elements of what has been summarized above but maintains its own uniqueness.

> Adult education is the process by which men and women (alone, in groups or in instructional settings) seek to improve themselves or their society by increasing their skill, knowledge, or sensitiveness; or it is any process by which individuals, groups or institutions try to help men and women improve in these ways. The fundamental system of practice of the field, if it has one, must be discerned by probing beneath many different surface relatives to identify a basic unity of process (Houle, 1972, p. 32).

Houle's system rests on seven assumptions:

1. Any episode of learning occurs in a specific situation and is profoundly influenced by that fact.

2. The analysis or planning of educational activities must be based on the realities of human experience and upon their constant change.

3. Education is a practical art.

4. Education is a cooperative rather than an operative art.

5. The planning or analysis of an educational activity is usually undertaken in terms of some period which the mind abstracts for analytical purposes from complicated reality.

6. The planning or analysis of an educational activity may be undertaken by an educator, a learner, an independent analyst, or some combination of the three.

7. Any design of education can best be understood as a complex of interacting elements, not as a sequence of events (Houle, 1972, pp. 32-39).

These assumptions undergird a system of programming and analysis for adult education that, in the opinion of the writer, is one of the most comprehensive, sensible and realistic explanations of the relationship

between the "field" of adult education and curriculum development or asthe adult educators prefer to call it, program development (Verner, 1964; Broshier, 1976).

An overview summary of the field of adult education as developed by Houle has been presented above. This summary, along with the assumptions listed above, form the backdrop for the presentation of Houle's approach to the relationship between the adult education as a disciple and the practice curriculum development (program development). Houle's system, as he puts it:

> . . . requires two complementary actions: the examination of the situation in which the learning activity occurs to determine the basic category to which it belongs and the application to that situation, in ways which are profoundly influenced by its category of a basic framework or model in order to produce a design or program (Houle, 1972, p. 40).

Houle's approach is refreshing, comprehensive and realistic. He says, "If overall harmony of process is to be achieved in adult education, it is apparently necessary to have some typology of categories into which learning and teaching situations can be fitted (Houle, 1972, p. 41). Realistically, many adult educators will still maintain the supremacy of one over another put most likely to their detriment. As Houle so eloquently sums up, the most significant and germain question for successful curriculum development:

> . . . Those who seek to make sense of the field as a whole (as it is and not merely as they wish it to be) or who hope to broaden their range of personal competence to include a mastery of various categories of process, will find it useful to look speculatively at each of them, understanding its form and assessing its relative utility. The central question is not "Is Category A better than Category B?" but "In what circumstances is Category A better than Category B?"
>
> Anyone who tries to answer this question must look beneath the surface of the formal settings in which learning and teaching occur. The essential distinction among categories

> is not to be found in their outward form. On that basis, it is often hard to distinguish a class from a group or either of them from a conference. The inner reality lies in the source of authority and direction so far as planning and control are concerned. In the class, it is the teacher; in the group, its own members; and in the conference, a committee. Each of these forms can use a great variety of methods and resources (Houle, 1972, p. 42).

Table 2.1 is a summary of Houle's eleven educational planning categories. Notice that the eleven categories are organized into four sets that relate to the central focus of the category.

TABLE 2.1

MAJOR CATEGORIES OF EDUCATIONAL DESIGN SITUATIONS

	INDIVIDUAL
C-1	An individual designs an activity for himself
C-2	An individual or a group designs an activity for another individual
	GROUP
C-3	A group (with or without a continuing leader) designs an activity for itself
C-4	A teacher or group of teachers designs an activity for, and often with, a group of students
C-5	A committee designs an activity for a larger group
C-6	Two or more groups design an activity which will enhance their combined progams of service
	INSTITUTION
C-7	A new institution is designed
C-8	An institution designs an activity in a new format
C-9	An institution designs a new activity in an established format
C-10	Two or more institutions design an activity which will enhance their combined programs of service
C-11	An individual, group, or institution designs an activity for a mass audience

The second element of Houle's two-fold approach is a framework of interrelated components which compose the design of an activity. It is important to recognize that these components are a complex of interacting elements, but not a logical sequence of steps. In utilizing the framework one can begin with any component and proceed to others in any order. Figure 2.1 diagrams the decision points and components of an adult educational framework. Houle sums up the use of the system as follows:

> All the components of the system must be kept in balance. Each depends upon all the others; the change of one influences the rest. For example, effective social reinforcement should be considered separately, but it is also a product of decisions made about leadership, resources, individualization, clarity of design, and other elements. If any is given undue stress, such as finance, schedule, or measurement, is fixed, all the others must be considered in terms of it. Otherwise, the system loses its equilibrium and therefore its fullest effectiveness (Houle, 1972, p. 56).

In summary, an important pragmatic goal of this research is to provide information that will give further direction to the curriculum development project of the Building Owners and Managers Institute. A reviewing of much of the literature in the area of adult education and curriculum development (program development) points to a rich diversity of theoretical underpinnings and program implementation. Attention here has been primarily focused primarily on a major source, The Design of Education, (Houle, 1972) because it makes sense, in a very comprehensive way, of the interrelationship of adult education as a field of study and the process of curriculum development. In this section of literature review the foundations and sources of adult education were reviewed, Houle's assumptions for organizing a meaningful educational experience were summarized and his system for operationalizing (curricularizing) a given educational problem was presented. Where appropriate and necessary, supporting references were cited from primary sources.

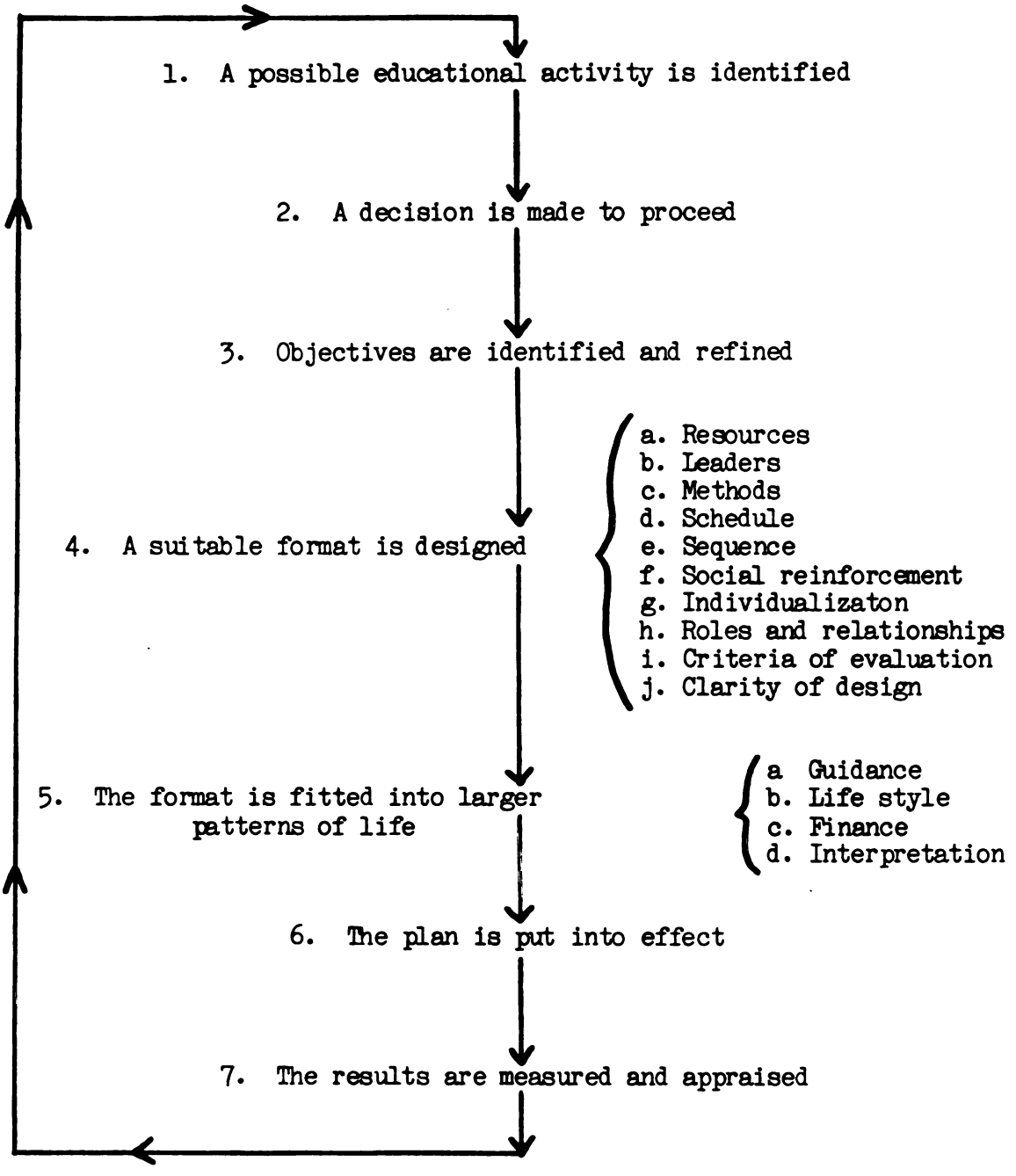


FIGURE 2.1
DECISION POINTS AND COMPONENTS OF AN ADULT EDUCATIONAL FRAMEWORK

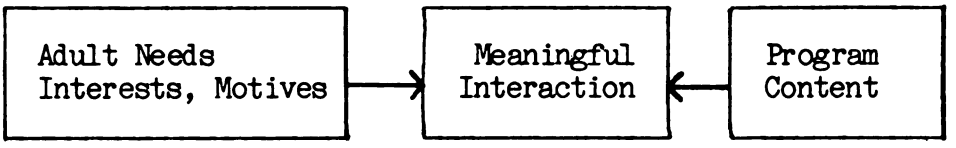
Adult Learner Characteristics

Understanding adult learners better gives the developer of curriculum for adults a head start on insuring the meaningfulness of the learning experience. As pointed out by Peters and Broshier, "Continuing education programs usually arise from an interaction between preconceptions held by a programmer and the perceived needs, interests, and motives of the adult learner" (Peters and Broshier, 1976, p. 197).

Why is understanding the adult learner so important? To a certain extent, adult learners choose to participate in continuing education. For various reasons the choice is sometimes made for them, but assume for discussion purposes that adult learners do still, in fact, have a certain degree of individual choice available to them. What will gain and keep adult learners' participation?

> Needs and interest lie at the root of forces which motivate the adult to approach or avoid further educational experiences. Unless the intended outcomes of the program conform to the adults needs and interests, belief system, and concepts of reality, it is unlikely that the potential learner will accept and make use of its content. The educational organization can be overly presumptuous if it ignores the idiosyncrasies of the adult participant and offers a traditional "curriculum" more suited to a captive group of adolescent learners. It is equally presumptuous if it offers courses that merely reflect the interested and traditional concerns of programmers (Peters and Broshier, 1976, p. 199).

It behooves the educational planner then to understand the audience, the content he/she is charged with communicating and the interrelationship between the two. "The programmer assumes that volunteer adult learners will choose programs congruent with their needs, interests and motives" (Peters and Broshier, 1976, p. 199). The assumption is diagramed as follows:



(From Peters & Broshier, 1976)

"Non-participation in adult education can thus be understood as a function of a perceived participant/institution "incongruence" (Peters & Broshier, 1976, p. 200).

Having established the basic framework for adult participation or non-participation, the importance of understanding the adult learner is obvious. Two strands of theory and research will assist in the further understanding of ways to increase the likelihood of an adult learner's participation in a continuing education program: One strand is an exploration of basic internal determinants referred to in general terms as needs and interests. "Adults participate in education for a variety of reasons but research has shown motivational orientations associated with participation to be reasonably stable through time and space" (Peters & Broshier, 1976, p. 201). A second strand is an understanding of the developmental stages adults go through. It is very important not to view the two strands separately. Linking the developmental stages of adults with motives we can see why adults, at certain stages of their lives, generally tend to be prompted by certain motives more than others. For this reason it is necessary to deal with motivations as seen from the individual's life cycle. An individual's needs, interests, and motives must be seen in the context of the life cycle at various levels.

Motives for Participation. Houle's book, The Inquiring Mind, suggested a typology of three different kinds of adult education

participants; goal, learning and activity oriented (Houle, 1961, pp. 15,16). Studies since this first attempt to classify why people participate in adult education have demonstrated that Houle's initial suggestion was somewhat oversimplified (Broshier, 1976, pp. 24-47). Recent studies on motives for participation have clustered people into the following factors:

1. Escape/Stimulation -- To get relief from boredom, to remedy deficiencies in social life and educational background.

2. Professional Advancement -- To gain knowledge, attitudes, and skills which will facilitate job advancement.

3. Social Welfare -- To acquire knowledge, attitudes, and skills which can be applied in achieving social or community objectives.

4. Social Contact -- To meet new friends, remedy deficiencies in social life, and enjoy group activities.

5. External Expectations -- To carry out the expectations of some person with "authority" such as a priest, friend, social worker, employer, or physician.

6. Cognitive Interest -- To learn for the sake of learning -- not tied to any particular goal -- just for the inherent joy of participation and learning (Broshier, 1977, pp. 89-114).

In addition to being able to cluster reasons for participation, Boshier has also postulated that adult education participants can be classified as "deficency" or "growth" motivated (Boshier, 1971, pp. 3-26).

> Growth or life-space oriented people participate in adult education for <u>expression</u> rather than in an attempt to <u>cope</u> with some aspect of their life. Life chance oriented people participate because of the <u>need</u> to acquire utilitarian knowledge, attitudes, or skills (Peters and Broshier, 1976, p. 202).

Figure 2.2 from Broshier, (1971) demonstrates the relationship that Broshier postulates exist between the life-space participants, life-chance participants and Maslow's hierarchy.

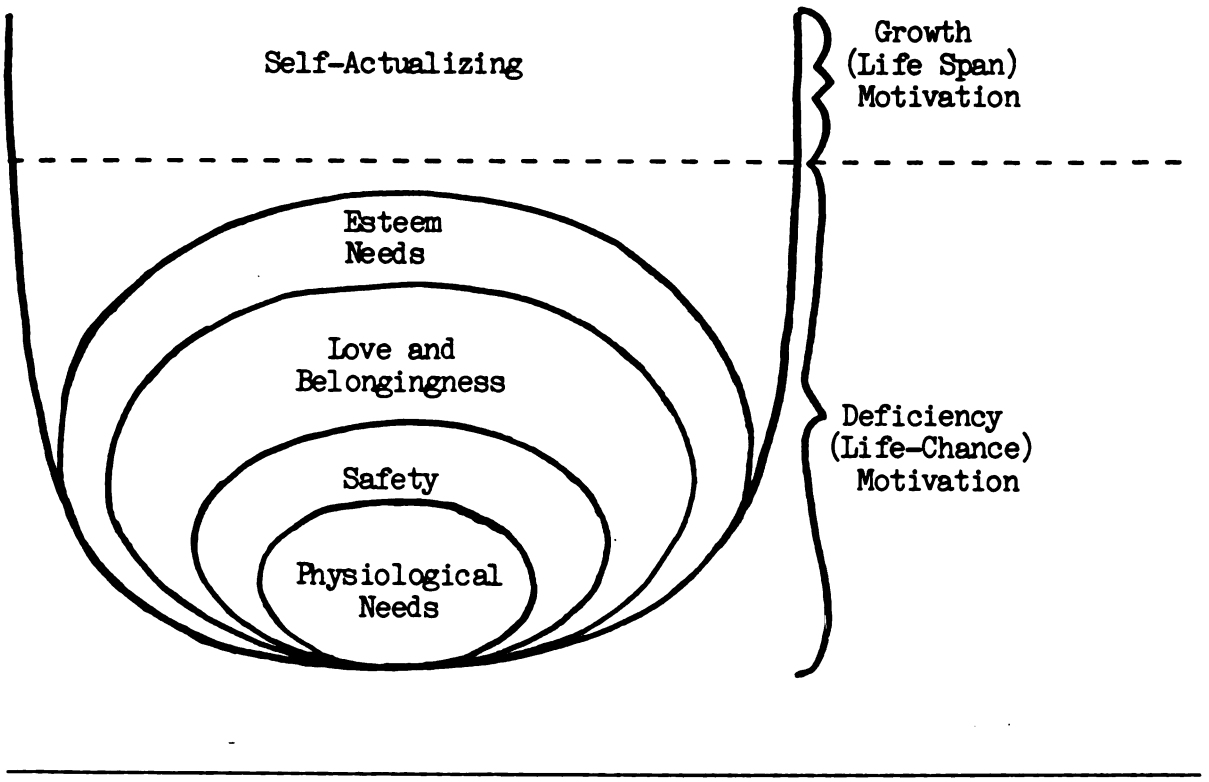


FIGURE 2.2
HYPOTHESIZED RELATIONSHIP BETWEEN PSYCHOLOGICAL FACTORS AND MOTIVES FOR PARTICIPATION IN ADULT EDUCATION

The motivational orientations are meaningfully related to other social and psychological variables (Boshier, 1977).

> Boshier correlated motivation orientation factor scores with age, indicies of social-economic status, previous participation in adult education, and social participation. Of the orientations listed above, Escape/Stimulation, Professional Advancement, and External Expectations were assumed to be indicative of life-chance motivation, while Social Welfare and Cognitive Interest were labeled life-space factors. Examination of correlations in this study which involved night school participants in Richmond, British Columbia, showed that life-chance motivated participants when compared to life space participants tended to be young, of low occupational status, and income and to have a history of spasmodic (as opposed to continuous) participation in adult education. Figure 2.3 diagrams the relationships.

	LIFE-CHANCE MOTIVATION		LIFE-SPACE MOTIVATION
Age	Young	→	Old
Occupational Status	Low	→	High
Income	Low	→	High
Educational Attainment	Low	→	High
Previous Participation in Adult Education	Low (Spasmodic)	→	High (Continuous)

FIGURE 2.3
HYPOTHESIZED RELATIONSHIPS BETWEEN SOME SOCIAL VARIABLES AND MOTIVE(S) FOR PARTICIPATION IN ADULT EDUCATION

Haag correlated Eysenck and Eysenck's neuroticism scale and Shostrom's Personal Orientation Inventory , "self-actualizaton" scores with motivational orientations similar to those listed above (Haag, 1976). Haag administered the Educational Participation Scale (EPS) to 240 participants in Vancouver night classes. EPS motivated orientations purported to top life-chance and life-space motivations were significantly correlated to the psychological measures. There were statistically significant relationships between neuroticism and social welfare, Escape/Stimulation and External Expectation scores in directions suggested by the need-hierarchy model shown above. Shostrom's self-actualization scores were significantly related to EPS Social Welfare, Escape/Stimulation and Cognitive Interest scores in the manner suggested in the model.

Research has thus enabled us to argue that motives and needs which impel people into continuing education do not exist in some isolated way but are embedded in, and meaningfully related to, other aspects of the person's life. Motives vary as a function of socio-economic status and, as shown by the Haag study, are significantly related to the psychological infrastructure of the participant. Motives for participation appear to be surface manifestations of psychological states which are in turn related to developmental tasks and psycho-social conditions that characterize various age and social-economic groups (Peters and Broshier, 1976). Attention will now be turned to exploring more in depth how an understanding of developmental tasks and the adult life cycle relates to motivation and in turn participation.

Developmental Stages of Adulthood. Research conducted by Neugarten (Neugarten, 1964) revealed that adults, having lived longer and having a greater apperceptive mass of past experiences, are not only much more complex than children, but they are also much more differentiated and less dependent on immediate influences of the environment. At the same time, however, it should be possible to predict the principle events, pre-occupations, and motivations of adults during each major period in their lives within a mutable society. At the most general level, adults pass through certain age cycles, or as Havighurst describes them, "Periods of dominant concerns" (Havighurst, 1949) during which at a given point of physical and mental maturation they expect themselves to behave in a certain manner. Three of the most important life-cycle scholars, Robert Gould, Daniel Levinson, and Bernice Neugarten, have gone far beyond the gross mapping of life states as done by Erickson and Havighurst, to reach some remarkably similar conclusions about stages of adult development.

Generally, they have agreed that adult development implies a kind of growth schedule for all individuals. While the content of one's life may vary because of unique heredity, special environment, and personal interaction with the environment, everyone's development consists of the same stages encountered at about the same time. The typology of adulthood that they mapped includes:

1. The early adult transition (18-22 years of age). There are two developmental tasks to be accomplished during this period. The first task is to begin moving out of the adolescent world. This involves the modification or termination of existing relationships with important persons, groups, and institutions. The second task is to make a preliminary step into the adult world: to explore its possibilities, to imagine oneself as a participant in it, and to test and make some preliminary choices for adult living. In this period, the individual is on the boundary between adolescence and adulthood.
2. Entering the adult world (23-28 years of age). During this phase, the individual shifts the center of his life from the family of his origin to the establishment of a home base of his own. The individual, during this time, makes and tests a variety of initial choices regarding occupations, love relationships, peers, and values. The individual has two primary antithetical tasks: (a) He or she needs to explore the possibilities for adult living: to keep his options open, avoid strong commitments and

maximize the alternatives. Levinson (1978) noted that this task is reflected in a sense of adventure and wonderment. (b) The contrasting task is to create a stable life structure; become more responsible with plans to make something of his life. Finding a balance between these two tasks is not easy. If the first predominates, life has an extremely transient and routeless quality. If the second predominates, there is a danger of committing oneself too early to a structure, without sufficient exploration of alternatives.

3. The age 30 transaction (28-32 years of age). About 28, Levinson noted (1978), the provisional quality of the twenties is ending and life is becoming more serious, more "for real". The task of this period is to work on the flaws and limitations of the first adult life structure. It is usually a time of reform, not revolution. At this time an idividual may make important new choices, or may re-affirm old ones with regard to his occupation and lifestyle.

The first three periods, the early adult transition, entering the adult world, and the age 30 transaction, generally last about fifteen years. Together they constitute the preparatory or motive phase of early adulthood.

4. Settling down state (33-40 years of age). The second life structure takes shape at the end of the age 30 transition and persists until about age 40. This

structure is the vehicle for the culmination of early adulthood. Levinson (1978) noted that individuals seek to invest themselves in the major components of the structure: work, family, friendships, leisure, community, whatever is most important to them and to realize their useful aspirations and goals.

A person has two major tasks during this period; (a) the individual needs to try to establish a niche in society, to anchor his life more firmly, and develop competence in his chosen field. (b) A person works at "making it" during this period, striving to advance and progress on a timetable. Levinson (1978) uses the term "making it" broadly to include all efforts to build a better life for oneself and to be affirmed by the tribe.

This can be a fateful time in one's life. Attaining seniority and approaching the top rung of the ladder are signs that the person is truly an adult. Although the process brings new rewards, it also brings additional responsibilities and pressures. It means that the person must give up more of the child that is within him, an internal figure who is never completely outgrown, and certainly not in early adulthood.

5. Mid-life transition (40-45 years of age). The life structure again comes into question. It becomes important to ask: "What have I done with my life? What do I really get and give to my family, children,

community, self? What is it I truly want for myself and others?" Levinson (1978) noted that for the great majority of people, this is a time of moderate or severe crisis. It is a period of great struggle within the self and with the external world. Neugarten (1964) pointed out that the reassessment of the self is a prevailing theme of this time and that reflection is a striking characteristic of the mental life of middle-aged persons. People question nearly every aspect of their lives and feel that they cannot go on as before. They will need several years to form a new path or modify an existing one.

6. Entering middle adulthood (45-50 years of age). The structure that emerges in the middle forties varies greatly in its satisfaction, that is, its suitability for the self and its workability in the world. Levinson (1978) reported that some individuals have suffered such irreparable defeats in childhood or early adulthood that they have been so little able to work on the tasks of their mid-life transition, that they lack the inner and outer resources for creating a minimally adequate response at this point in their lives. These people face a middle adulthood of restriction and decline. Others form a structure that is reasonably viable in the world but poorly connected to the self. Although they do their bit for themselves and others, their lives are lacking in inner excitement and meaning. Still others have

started a middle adulthood that will have its own special satisfactions and fulfillments. For these people, middle adulthood is often the fullest and most creative season in the life cycle. They are less tyranized by the ambitions, passions, and illusions of youth. They can be more deeply attached to others and yet more separate, more centered in the self. Neugarten (1964) noted that persons in this stage of life pay greater attention to their feelings, experiences, and cognitive processes. There is a decreasing attachment to the material things in life and for them, according to Levinson (1978), the season passes in its best and most satisfying rhythm.

7. Middle adulthood (50-plus years of age). During this time people usually become less competitive and more inner-directed. Life seems to settle and there is a sense that we are whoever we are going to be. This does not mean that we will be immune from the hazards of life after we hit 50. Sickness, divorce, physical deterioration, death of many close friends and family members, and forced retirement begin to pile up after 50. Gould (1975) noted that people in this stage were able to face these hazards of later life with greater strength because of their greater knowledge they had of themselves.

Psychological orientations of people reflect the needs, cognitive style, and personality states that mediate their perception of opportunities fortheir participation in various adult educational activities. Knox ("Adult Education and the Adult Life Cycle", 1963, pp. 102-122)

reminds us that throughout the adult life cycle subjective orientations toward participation in adult education operate within the objective organizations of behaviorial settings contained in an individual's life space. Writers have suggested that participation in adult education can be explained as a function of maturation, or as Havighurst (1948) describes it, the need to resolve developmental tasks.
Individuals have to respond to critical cycle social needs stages in their lives, which may be resolved through participation in adult education and, as Boshier (1976) explained, the motives for that participation change as a function of age.

Adult Learners Pedagogical Expectations

In the previous section of the literature review, attention has been given to the social, psychological and intrapersonal determinants of adult learners' expectations. Attention is now turned to another source, cultural determinants. Such a division of determinants is recognized by Zintz:

1. The Psychological Approach. Here, the teacher assumes that behavior is the individual's response in coping with problems. These responses are patterned in the mental, the physical, and spiritual as well as other growths and developments, which are predicated and continuous. In other words, the personality of the individual encompasses his total experience.

2. Sociological Level. Here, the teacher assumes that behavior is determined by the role that the individual plays in a social group. This role affects the basic social institutions: family, religion, education and government. Individuals have multiple roles, and in turn, these roles pressure conformity to the institution's expectations.

3. The teacher may assume the level of cultural anthropology or enthnology. To this extent, the behavior is considered rooted in group's culture. This culture established the

> manners, customs, and peculiarities of the group, as well as legislates a set of values to which the group adheres. All of us are subject to all levels -- the individual (psychological), the class (sociological), and the cultural (anthropological). (Zintz, 1963, p. 122).

When a student is responding because of preprogrammed cultural bias that response grows out of a pattern of behavior built up over a long period of time. This process is known as enculturation. Berger points out (1968), that ". . . enculturation includes both formal schooling and all informal learning, such as casual observation of adults."

Cultural Determinants. Berger cites an excellent example of the interrelationship between adult learning and culture (1968, p. 33). The example, reported by Foster in Traditional Cultures and the Impact of Technological Changes described an attempt in Chile to persuade pregnant women to be instructed in prenatal care. Because that culture equated education with childishness, the women refused to attend class. The solution was an easy one of fitting cultural values: Women in Chile placed great prestige on social clubs and club life, since this was associated with only the upper middle and the upper classes. Consequently, leaders in the public health center simply arranged to have classes held not in schools, but in private homes. The staff of health bureau provided tea and cakes (quite a change from textbooks!). And immediately the women gladly began coming to "classes."

In commenting on this example above, Berger makes a basic point which highlights the significance of considering the cultural determanents of adult expectations as well as psychological and sociological.

"From such success, we are reminded that classroom lecturing need be but a part of enculturation. Adopting the teaching made to the age and status of the student is especially important in alluring the adults . . ." (Berger, 1978, p. 33). Berger makes another observation

about the limitations of schooling and the relationship of schooling to culture.

"Since formal schooling is only a fraction of life, it must adopt the rewards and patterns of the society, and cannot expect society to adopt its rewards!" (Berger, 1968, p. 19).

This perspective is the "anthropologists" contribution to helping the concerned curriculum developer to further understand how a particular program aimed at a particular population can be designed to be as "relevant" as possible.

One researcher, Finn, has purposed an entire network of expectations (1972, p. 395). His model, shown in Figure 2.4, illustrates the interrelations of the psychological, sociological and anthropological on learner expectations. Although he is viewing the issue from a younger student's point of view, his model is certainly valid to demonstrate interdependencies of the cultural, social and psychological on the formulation of expectations.

Finn's diagram not only shows the interrelationships of the source of expectations but also reinforces the potential long term pact of the "schooling experience" on adult learners. This experience is one of the major sources of expectations that adult learners will be bringing with them to their continuing education experience.

Schooling as a Culture. What are some of the important characteristics of schooling that impact an adult learner's expectations? One source for such descriptions comes from a sociological perspective by delineating teacher-learner roles. Roles are elaborate sets of rules, built up over time, which govern expression. These rules define how the person of a certain status position ought to behave (Sarbin, 1954, 1964, Merton, 1957, Goffman, 1959, Newcomb, 1951).

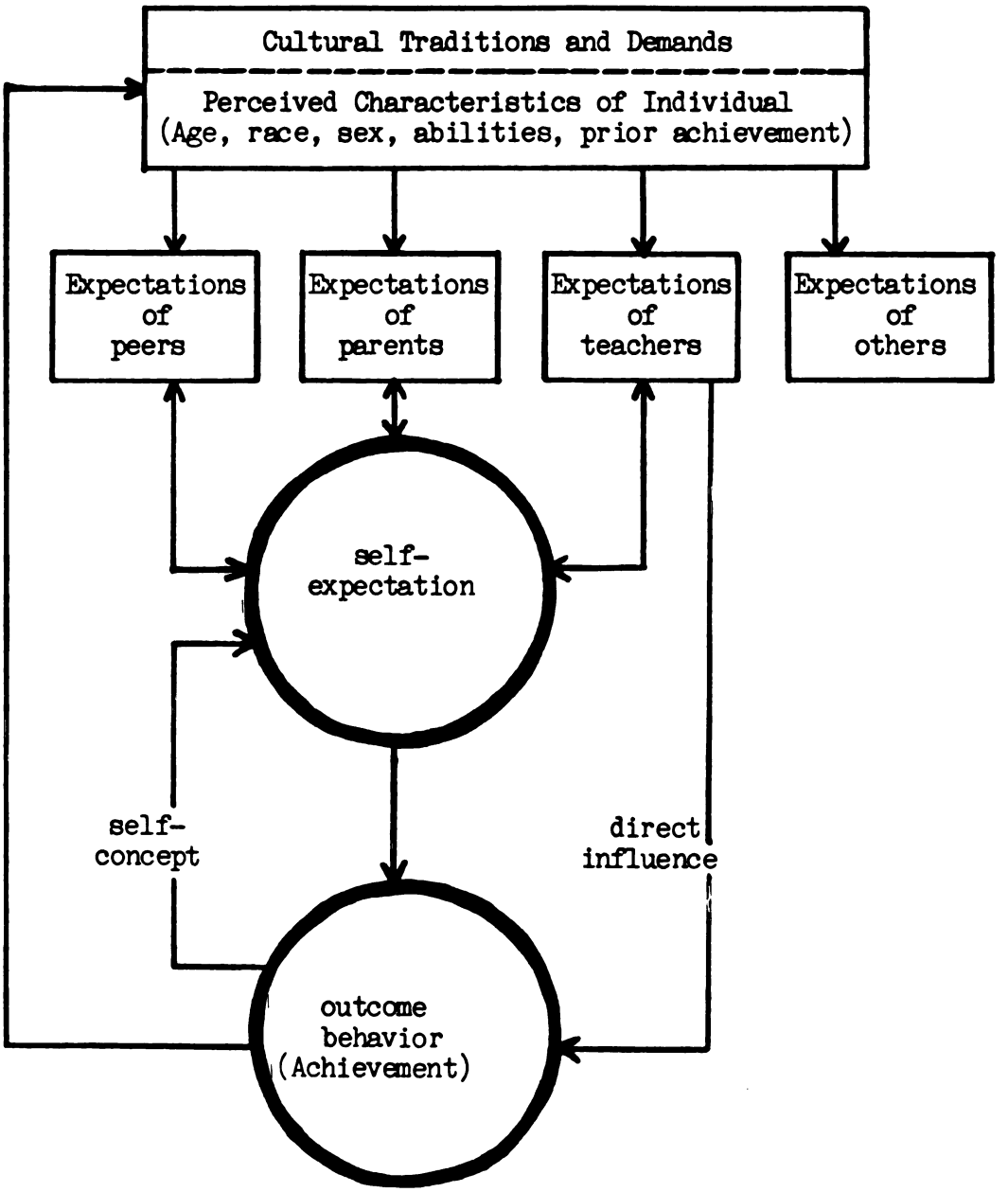


FIGURE 2.4
FINN'S NETWORK OF EXPECTATIONS

From their past experiences of school adult learners will carry the "cultural baggage" of certain teacher-learner roles. Freire describes the formal schooling teacher-learner role as follows:

1. the teacher teaches and the students are taught
2. the teacher knows everything and the student knows nothing
3. the teacher thinks and the students are thought about
4. the teacher talks and the students listen--meekly
5. the teacher disciplines and the students are disciplined
6. the teacher chooses and inforces his choice, and the students comply
7. the teacher acts and the students have the illusion of acting through the actions of the teacher
8. the teacher chooses the program content, and the students (who were not consulted) adapt to it
9. the teacher confuses the authority of knowledge with his own professional authority, which he sets in oppostition to the freedom of the students
10. the teacher is the subject of the learning process, while the pupils are mere objects (Freire, 1970, p. 59).

Further elaboration of the potential cultural impact of past schooling experiences is listed by Ward as he outlines sources of weakness in the schooling approach to education.

1. All learners are assumed to be similar in terms of needs, interests and abilities.
2. Conforming behavior is preferred over divergent and nonconforming behavior.
3. Learners are increasingly made more competitive at the price of cooperation.
4. Learners are expected to be receptors of learning rather than communicators.
5. The learner's part in decision-making is minimal and tends to be steadily reduced.

6. The responsibility for attitudes and feelings about content and about learning itself is attributed to the student.

7. The content to be learned is justified in terms of future needs of the learner.

8. Schooling's major justification is preparation (mostly expressed in terms of eligibility for more schooling).

9. Evaluation is concerned almost exclusively with cognitive learning (knowledge of information and processes) and skills.

10. Learning experiences are designed or selected on the basis of values of the adult and established world.

11. Abstractions of experience (in the form of language and symbols) are substituted for realities.

12. Rewards are symbolic more than real. Even the satisfactions of seeing oneself develop are subordinated to imposed systems of rewards.

13. Punishment is assumed to increase learning.

14. Punishment is a virtually soverign right of the teacher.

15. The teacher is ascribed authority, thus creating a hierachy based on unearned status.

16. The social distance that separates teachers from learners is increased by according different sets of rights and expectations to each.

17. Learning experiences are designed (and limited) to fit time blocks.

18. Learning experiences are designed (and limited) to fit standard locations and space.

19. Testing is the criterion of success.

20. Success is the surpassing value (Ward, 1974, pp. 4, 5).

Both of these lists provide operational descriptions of a variety of expectations that adult learners could have regarding the level of formality a class should have, the kinds of learning experiences that should be provided or the instructional setting in which they might

expect the teaching/learning to occur. It does appear that a network of expectations does exist and that adult learners' exposure to these expectations plays a part in forming their own expectations when they participate in continuing education experiences.

Expectancy Phenomena. The source of these expectations has been discussed, but what about their effect on learning experiences? Most of the research in this area has been done on the effect that teacher expectations have on student performance. Also, the context for such studies has been primarly the formal school setting but there is a recognition of the need to carry on research on the expectancy effect in out-of-school adult education settings (Kidd, 1977, p. 28) To date, little has been done and it is hoped that this research can be a beginning at identifying some important adult learner expectations and relationships among those expectations.

In spite of the limitations and applicability of the current research in the area of expectations, the mainstream of the direction will be reported briefly because the expectancy phenomena has received wide attention over the last decade. Exploration of the expectations phenomena began with Pygmalion in the Classroom (Rosenthal and Jacobson, 1968). Rosenthal and Jacobson claimed that by creating higher teacher expectations for students, it was possible to improve student performance.

Considerable research activity has resulted, some controversy over the original Rosenthal and Jacobson study (Thorndike 1968, Snow 1969, Gephart and Antonopolos 1969, Elashoff and Snow 1971, Jones 1977). The major points of the controversy are listed by Kester & Letchworth (1972, p. 51):

1. Questions about validity of the IQ measurement instrument used (Thorndike, 1968).
2. Questions about the statistical analysis of the data (Snow, 1969).

3. Some difficulty in replicating the research findings (i.e. Claiborn, 1969).

4. A question of the pervasiveness of the teacher expectation effect (Brophy and Good, 1974).

Growing out of the controversy, refinements of the original research have included more detailed observation of classroom behavior (Good, 1968, 1970). Good asked first-grade teachers to rank their students according to their academic achievement. Then he observed the teachers interaction patterns with several students who were either high or low on teacher ranking lists. The results demonstrated that these particular teachers provided more response opportunities to high-achieving students than to low-achieving students. Further research has clarified these findings even more to the point where specific teacher behaviors have been isolated in association with low-achievers and high-achievers (Good and Brophy, 1978, 1980).

Good, in a recent review of the literature on this whole phenomena, points out that some research is finally being done on how student expectations effect teacher behavior. (Good, 1982) One such study by Feldman and Prohaska (1979) indicates that teacher behavior can be influenced by student actions stemming from certain expectations. Also, some have started to explore the interaction effect of student expectations and teacher expectations (Zanna, Sheras and Cooper, 1975). These three researchers found that the combined effect of teacher expectancy and student expectancy results in an interaction in terms of performance. Also, they found in the absence of any particular teacher expectancy, students given a positive expectancy of their own performance did better than students with no such expectancy. Second, it was found that in the absence of any positive student expectancy, students whose

teachers were given positive expectancies of their performance did better than students whose teachers were given no such expectancy.

In summary, expectations do exist as a determinant of educational outcomes. However, the complexity of the relationships defy any simple explanation. Research is progressing on several fronts such as Finn's work in sources of expectations (Finn, 1972) and the variables related to expectations (Adams and Cohen, 1976, 1974; Cooper, Baron and Lowe, 1975; Brophy and Good, 1970; Braun, 1976, Dunkin and Biddle, 1974; Good, T., Cooper, H. and Blakey, X,, 1980). New expectancy models are being developed to further the conceptual framework needed to systematically research the expectancy effect as a determinant of educational outcomes. (Brophy and Good, 1974; Braun, 1976; Good, 1982).

Applicable Research Studies

Several studies have been done that provide both methodological and conceptual precedent for this research. These studies are reviewd in the following section.

The McKean Study. McKean's (1977) study established some methodological precedents for this study. McKean studied what adult learners expect to be important learning experiences. He utilized a photo instrument with 225 adults from various adult education programs in southern, lower Michigan and found that his particular sample considered low and medium formality settings more valid than high formality settings. He also found that the subjects considered sharing and self-awareness experiences more valid than input learning experiences. In addition, when correlating amount of schooling with levels of formality, the adults considered valid, he found an apparent trend away from high formality settings for those who had more schooling. McKean also found that in

medium formality settings, sharing experiences were considered most valid and in high formality settings, input was considered least valid (pp. 51-69).

One issue is not clear in the McKean study. Photos used by McKean showed adult teachers interacting with adult learners. McKean did explore whether the subjects were making their judgments about each photo from the viewpoint of the learner or the teacher. Therefore, just whose expectations are represented in the data, the subject or "others", is not clear.

The Wilson Study. Wilson (1978) studied what a specific set of volunteer leaders believed were important learning experiences for others and why. A photo instrument depicting three levels of formality (low, medium, and high) and three kinds of learning experiences (input, self-awareness, and sharing) was used with 51 Girl Scout leaders on Oahu, Hawaii. In each learning situation the same question was asked, "Do you think these people are learning something important?" Probe interviews were given after the instrument was administered to determine why the subjects responded the way they did.

The results showed that subjects considered low formality settings most valid, followed by medium and high formality situations. The subjects judged input learning experiences as providing the most learning, followed by sharing and self-awareness.

Leaders preferred medium levels of formality with sharing experiences. Least preferred were low formality/sharing experiences. With input experiences, leaders preferred low formality settings. The least preferred was high formality/input experiences. With self-awareness experiences, leaders preferred low formality settings. Least preferred were high formality/self-awareness settings. Medium levels of formality,

sharing experiences, input/low formality, self-awareness/low and medium formality, learning situations were all judged as more valid by leaders with less schooling then by leaders with more schooling (pp. 62-112).

Other Studies. Blackburn (1967) explored methods that adults preferred for participation in an educational behavior in seven subject areas. Methods were categorized as group or individual and a subjects' orientation to one or the other was derived from respondents' expressed preferences of methods to study topics indicated in three hypothetical cases within each subject area. Significant differences were found in method orientations within each subject area. Group method orientations were favored by the majority of respondents. The proportion of group method orientations tended to increase with increased formal education and family income, but decreased with advancing age. Past experience with methods tended to be positively related to method orientations.

Elder (1968) found that individuals given learning material by the mode of their choice learn better than those given the material in a mode unlike their choice.

Several studies (Brunner, 1959; Verner, 1959; Johnstone and Rivera, 1965; Knox, 1965; Carp, Peterson and Roelfs, 1972, 1974; Okes, 1974) have indicated a high relationship between the amount of formal schooling and amount of adult education participation. Brunner (1959) summarizes other studies that the lower the educational status of participants in a program, the greater their desire for demonstrations or case materials teaching, regardless of type (p. 146). Johnstone and Rivera (1965) reported that there was little variation in the educational level of persons using different study methods (p. 84). But, when asking peoples' preference of method for learning something new (a foreign language) some differences were found. Adults in higher socio-economic positions were

more likely to mention both formal and informal methods of learning. Persons in the middle socio-economic class were the most likely to prefer the formal classroom, while persons in low socio-economic status were least likely to prefer formal methods (p. 208-212). Without the subject matter bias, Johnstone and Rivera found that "older adults and adults of lower socio-economic status are considerably less likely to prefer the classroom for learning" (p. 214).

Carp, Peterson, and Roelfs (1972) found that the use of classes and lectures increased with educational level, with twenty percent of learners with only elementary school using lectures and classes but forty-one percent of the college graduates doing so. College graduates rated on-the-job training less than most of the sample, and those with only elementary schooling rated discussion groups lower than most of the sample. Preference for lecture and classes by would-be learners followed a similar distribution as the learners (pp. 70-72).

In summary, the variety of studies cited point to relationships between years of formal schooling and preferences for kind of learning experiences and preferences for instructional settings. The studies also indicate that there are few clear trends in these relationships because there are a number of other factors which could influence preferences such as subject matter being studieds, and socio-economic class. These mixed results call for proceeded with the interpretation of the results of this current research with caution because of the great complexity of relationships that exist between years of formal schooling, preference for kind of learning experience, preference for instructional setting and judgments regarding the importance of content.

Summary

The review of literature has examined at three major theoretical concerns for this study and specific studies that are germain to this particular research. First, the relationship of adult education as a discipline and curriculum development was summarized. Next, the relevance of factors such as individual motivation and adult developmental stages as determinant for participation in adult continuing education was explored. Third, the possible influence of cultural patterns on present participation and current research in the area of expectations was reviewed. The review was concluded with brief summaries of important studies that dealt with some of the relationships among specific variables that this research explores.

CHAPTER 3

RESEARCH METHODOLOGY

In chapter three the methods used to identify relationships between expectations concerning level of formality, kind of learning experience and instructional setting with judgments about importance of content and the necessary levels of learning are discussed. Methods used to identify relationships between the expectation variables listed above and learner variables of years in property management, years of formal schooling and major in school are also discussed. The research design, research questions and hypotheses are outlined. Instrumentation and procedures used in data collection and analysis are identified.

Description of Methodology

This is primarily a descriptive study. The study identifies the expectations concerning level of formality, type of learning experience, and instructional setting and compares them to judgments concerning intended curricular outcomes for participants and potential participants in a specific professional continuing education program. The study also inquires into associations between the expectation variables listed above and the learner variables of major in school, years of experience in property management and years of formal schooling.

In this particular study, both the participants in the educational program of the Building Owners and Managers Institute (BOMI) and

non-participants have had varying levels of formal education to prepare them to manage property. In addition to the various levels of formal education, those participating in property management as a profession come from a wide variety of academic backgrounds. These events, level of formal schooling and type of academic background,have occurred in the past and provide the background for the data that this study collected on pedagogical expectations for level of formality, type of learning experience and judgments concerning intended curricular outcomes of a particular educational program. The statistical analysis used were measures of correlation. Borg and Gall (1971) indicate that correlational studies are used when individual differences are expected to be present which will manifest themselves as variations in scores. It is the factors related to the variations in the scores which can possibly shed light on adult learners' perceptions of relevancy. The researcher is primarily interested in understanding what adult learners perceive as relevant so curriculum construction decisions can be made in a more intelligent manner.

Research Design

This study is essentially a "one shot case study" (Isaac and Michael, 1971, p. 36) justified on grounds that the study is non-experimental. Three instruments were administered one time to each subject. Responses to the instruments were analyzed.

One instrument measured the expectation concerning level of formality in learning experience. A second instrument measured the expectations concerning type of learning experience and instructional setting. A third instrument measured the expectations concerning curricular outcomes of one

course in the Real Property Administrator (RPA) curriculum. All three instruments were administered at one setting to large assembled groups. Pertinent descriptive data were gathered by questionnaire at the same time the instruments were administered. These data included years of formal schooling, extent of participation and type of participation in the Building Owners and Managers Institute (BOMI) program, sex, major in previous schooling, age, other adult professional continuing education experience, and number of years in property management.

The explanatory variables in this study were years of formal schooling, major in school and years in property management and, therefore, the independent variables.

The variables explained in light of the independent variables were expectations concerning level of formality, kind of learning experience and instructional setting and judgments concerning curriculum outcomes as defined by importance of content and level of understanding. Expectations covering level of formality, kind of learning experience and instuctional setting and judgments concerning curricular outcomes as defined by importance of content and level of understanding are, therefore, the dependent variables.

Independent Variables. Years of formal schooling was one independent variable. Subjects were asked how many years of school they had completed.

A second independent variable was years of experience in property management. Subjects were asked how many years they had been employed as a property manager.

The third independent variable was major in school. Subjects were asked to list their major in trade school, their undergraduate and graduate major. The information was tabulated in such a way as to create four

categories of major. The first category was "neither a business or engineering major." Examples of majors in this category included various science majors, humanities, such as theater, and education, and various social science majors. A second category was made up of majors exclusively related to business. A third category was made up of majors exclusively related to engineering. A fourth category was established for subjects who had a combination of business and engineering majors.

Dependent Variables. The expectation concerning level of formality was one of the dependent variables. Level of formality of an instructional activity refers to how structured, authority-oriented and controlled a learning setting is perceived to be by an adult learner. Formality was measured in two levels, high and low.

The expectation concerning kind of learning experience was a second dependent variable. Kind of learning experiences provided by an instructional activity refers to the nature of experience that the learner expects would be meaningful to him. The literature suggests three basic kinds. These kinds have been discussed by McKean as follows:

> Input: the learner is involved in receiving or coming into contact with some new information;
>
> Self-awareness: the learner is involved in reflecting upon his or her current situation including abilities, interests, feelings, knowledge, and limitations; and
>
> Sharing: the learner is involved in putting his/her own words or acting upon some new information, idea, insights (1977, p. 34).

A third dependent variable is instructional setting. Instructional setting is the location where instruction is taking place. For purposes of this study three settings were utilized; (1) a formal classroom with chairs in straight rows and students all facing the front (labeled classroom); (2) a small group discussion with chairs in a circle and students facing one

another (labeled small group); (3) an equipment room location with students in close proximity to the kinds of equipment discussed in course material being studied (labeled equipment room).

A fourth dependent variable is adult learners' judgments concerning curricular outcomes. The instrument was designed so subjects were asked to make a judgment on two dimensions of curricular outcomes, importance of content and the level of understanding necessary for relevant learning.

The importance of content dimension was a score on a Lickert-type scale from one to five which asked the subject to rate a descriptive statement of a course content as to its importance for the properly trained property manager.

The level of understanding dimension utilized Bloom's taxonomy of cognitive objectives to create a scale with six possible levels of understanding or competencies. Each subject was asked to choose the minimum level of understanding or competency necessary that should be required for a particular area of content if a person were to be "professionally" certified. A rating from one to six could be obtained with one being the lowest level on Bloom's taxonomy. In keeping with Bloom's framework, the levels of understanding are actually the levels of cognitive competencies in Bloom's hierachy of objectives. (Bloom, et al, 1956).

Hypotheses. Figure 3.1 diagrams the basic organization of the study. Block A is the first section of the study, block B the second section of the study, and block C the third. Each small square represents a hypothesis and is numbered to correspond with the list of the hypotheses following. If there is an X in the box there was no research hypothesis for that variable or variable relationship.

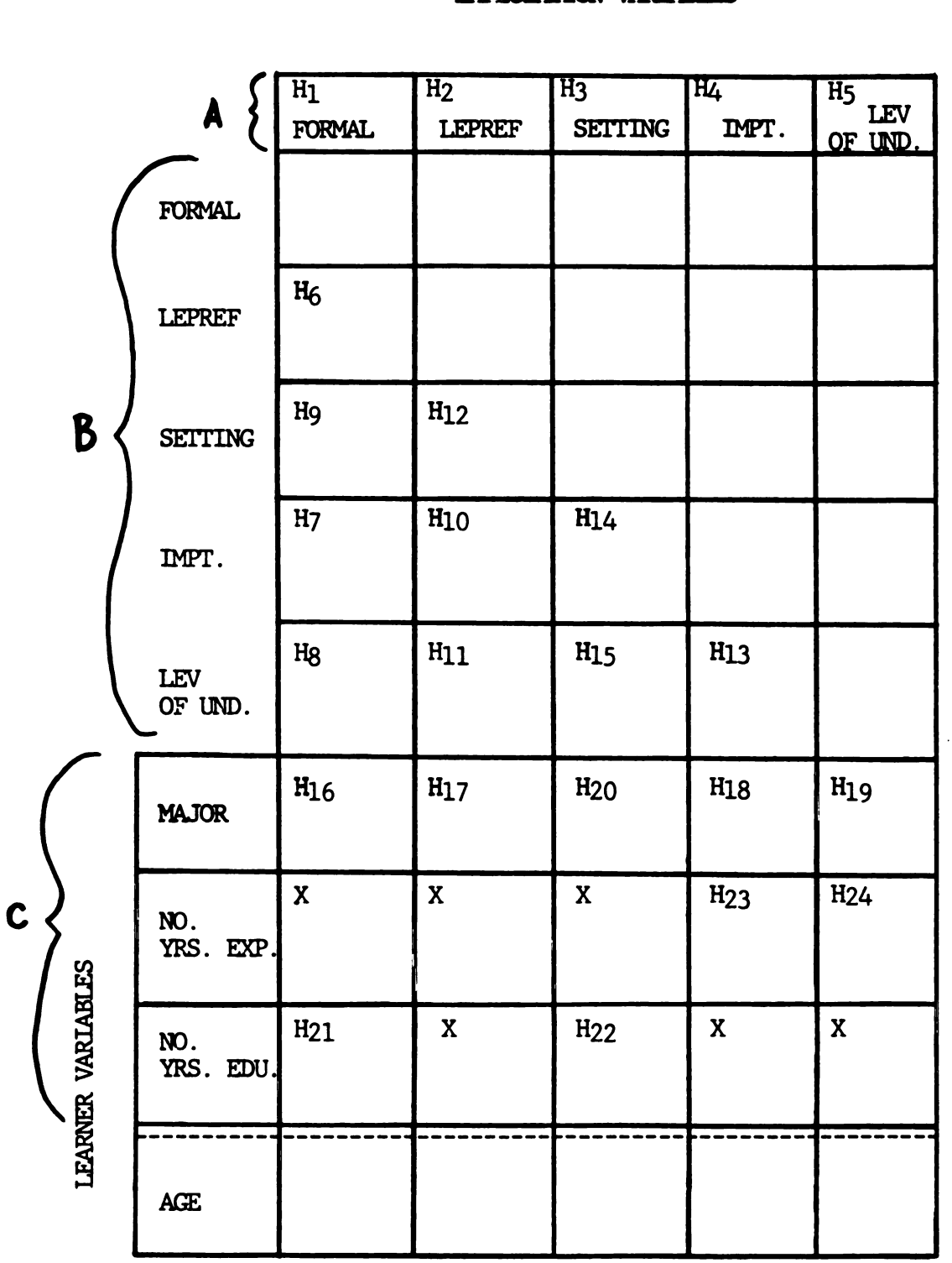


FIGURE 3.1

RESEARCH STUDY ORGANIZATION

The following hypotheses identify the relationships which were tested for among the independent and dependent variables..

H_1 A lower level of formality will be preferred over a higher level of formality.

H_2 Subjects will show a definite preference for sharing over other kinds of learning experiences.

H_3 Subjects will show a definite preference for which instructional setting they think is more productive for learning.

H_4 Subjects will make definite rank order judgments in their perceptions regarding the importance of course content.

H_5 Subjects' judgment of which level of understanding is necessary for relevant learning will be different for each content statement.

H_6 Subjects' preferences regarding level of formality are related to their preferences regarding kind of learning experience.

H_7 Subjects' preferences regarding level of formality are related to their judgments regarding importance of content.

H_8 Subjects' preferences regarding level of formality are significantly related to their judgments regarding necessary level of understanding.

H_9 Subjects' preferences regarding level of formality are significantly related to their preferences regarding instructional setting.

H_{10} Subjects' preferences regarding kind of learning experience are significantly related to judgments regarding content importance.

H_{11} Subjects' preferences regarding kind of learning experience are significantly related to judgments regarding the necessary level of understanding for a relevant learning experience.

H_{12} Subjects' preferences regarding kind of learning experience are significantly related to preferences regarding instructional setting.

H_{13} Subjects' judgments regarding content importance are positively related to judgments regarding the necessary level of understanding for a relevant learning exprience.

H_{14} Subjects' judgments regarding content importance are significantly related to preferences regarding instructional setting.

H_{15} Subjects' preferences regarding level of understanding are significantly related to preferences regarding instructional setting.

H_{16} Subjects' majors in school are significantly related to preferences regarding level of formality.

H_{17} Subjects' majors in school are significantly related to preferences regarding kind of learning experience.

H_{18} Subjects' majors in school are significantly related to judgments regarding content importance.

H_{19} Subjects' majors in school are significantly related to judgments regarding level of understanding.

H_{20} Subjects' majors in school are significantly related to judgments regarding instructional setting.

H_{21} Subjects' years of formal schooling are significantly related to judgments regarding levels of formality.

H_{22} Subjects' years of formal schooling are significantly related to judgments regarding instructional setting.

H_{23} Subjects' years of employment in property management are significantly related to judgments regarding content importance.

H_{24} Subjects' years of employment in property management are significantly related to judgments regarding levels of understanding.

Sample

The sample for this study was taken from current students of the Building Owners and Managers Institute and members of the Building Owners and Managers Association, International. The sample is a convenience sample taken in eight United States cities and one Canadian city at both association meetings and BOMI classes. The cities represented in the sample were Los Angeles, Dallas, Houston, Atlanta, Chicago, Pittsburgh, Philadelphia, New York and Toronto.

In the spring of 1981 the researcher traveled to the various cities listed above and administered the instruments to various group situations. The largest single group numbered seventy-five and the smallest numbered nine. There was a total of 349 questionnaries completed in the nine cities. Twenty-nine questionnaires were eliminated from use because they were incomplete for one reason or another. This left a sample size of 320 the purpose of this study.

Some questions were asked on the questionnaire so that a demographic profile of the sample could be developed. The subjects' profile is presented in chapter four.

Instrumentation

Kind of Learning Experience. The study used three instruments, all three were designed specifically for the study. The Kind of Learning Experience instrument consists of three sets of cartoon line drawings depicting different settings combined with brief dialogs contrasting preferences for kinds of learning experiences (input, self-awareness, and sharing). Each possible preference is paired in each of the three settings. Therefore, there is a total of nine cartoons and statements presented for a choice. Subjects were asked to choose between one of the two in each pair (Appendix A).

The instrument was administered by playing a tape recording of the brief dialogue which presented the two alternating types of learning experiences from which to choose. See Appendix B for the script of the dialogue.

The subjects' choices were recorded by circling the letter beside the statement of their choice under each line drawing. Each statement was descriptive of one of the kinds of learning experiences so that when a subject made a choice in each situation, he/she was showing a preference for one kind of learning experience over another. The possible combinations are shown in Table 3.1.

The question responded to for situation one was, "Which student's statement is most like something you might say about a course you have attended?" In situation two the question was, "Which statement is most like something you might want to do in class?" The question for situation three was, "Which of the following statements are you most likely to say?"

Each question represents a specific setting in which learning could occur. The difference for each of the three questions is due primarily to the unique nature of each setting which the question represents.

TABLE 3.1
POSSIBLE CHOICES FOR KIND
OF LEARNING EXPERIENCE

	Letter	Kind of Learning Experience
Situation One	A	Input
	B	Self-Awareness
	C	Self-Awareness
	D	Sharing
	E	Input
	F	Sharing
Situation Two	G	Input
	H	Self-awareness
	I	Self-awareness
	J	Sharing
	K	Input
	L	Sharing
Situation Three	M	Input
	N	Self-awareness
	O	Self-awareness
	P	Sharing
	Q	Input
	R	Sharing

To obtain a score on the kind of learning experience instrument the subject made a choice from each pair, that particular choice was assigned a value of one and the other statement in the pair was assigned a value of zero. The highest possible score for one kind of learning experience would be six if a person consistently choose the same kind of learning experience in each pair of each situation.

Validity Test. To insure the content validity of the Kind of Learning Experience instrument, a panel of five people was given the definitions of the types of learning experiences found in the definition section of chapter one. The panel consisted of five college graduates who are on the staff of the Building Owners and Managers Institute. The researcher made sure that each person understood clearly what the three kinds of learning experiences were, then each panel member was asked to independently label each one of the eighteen statements as to whether it represented input, self-awareness or sharing. There was 91% agreement between how the researcher labeled each statement and how the panel labeled each statement.

Reliability Test. The Kind of Learning Experience instrument is attempting to measure the expectations that subjects have with regard to the three kinds of learning experiences. To insure that the instrument elicited the same responses over time (stability validity) and was not vulnerable to changes in the subjects' mood, situation or environment, the instrument was administered to ten people at one time and then re-administered to the same group one week later. There was a test-retest reliability of .82. Thus, the instrument was considered stable over time.

To insure that the instrument was internally consistent, correlations between the choices in each one of the three situations were calculated for the ten people in the pilot project. The subjects in the pilot project were property managers who have similar responsibilities and similar

backgrounds as the sample for the research. Correlations between choices of kind of learning experience in situation one and situation two were .78. Correlations between choices of kind of learning experience in situation one and situation three were .84. Correlations between choices of kind of learning experience in situation two and situation three were .87.

Level of Formality. The second instrument used in the study measured expectations concerning the level of formality and instructional setting. This instrument consists of nine pairs of pictures with one picture in each pair representing a low-formal setting and one picture representing a high-formal setting. There are three different settings represented so each individual picture of a low-formal and a high-formal setting is matched against every other low-formal and high-formal from other settings. This matching low-formal against high-formal from each setting provides the nine pairs viewed by the subject (Appendix C).

The photos portrayed three distinct instructional settings, classic classroom, small group and equipment room. Care was taken to make sure that the subjects in the picture would be perceived as generally representative of the subjects for the study. The pictures were staged in such a way that the formality issue was focused primarily on the activity role of the instructor in the picture. For a high-formal situation, the instructor was clearly in control of the learning situation as seen via his posture and activity. For a low-formal situation, the instructor was still a part of the activity, but it is obvious that the instructor control factor is diffused in a major way.

At the top of each page on which the pair of pictures were presented the same question appears, "In which of the following situations do you think people are learning the most?" Each picture in the pair was labeled

with a letter of the alphabet and the subject was asked to place an "X" in the box which represented the choice between the two pictures.

The possible combinations of pairs are shown in the table 3.2.

TABLE 3.2
POSSIBLE CHOICES FOR LEVEL
OF FORMALITY AND SETTING

Pair	Letter	Setting	Level of Formality
1	A	Equipment Room	High
	B	Equipment Room	Low
2	C	Small Group	Low
	D	Classroom	High
3	E	Small Group	High
	F	Classroom	Low
4	G	Equipment Room	Low
	H	Small Group	High
5	I	Classroom	High
	J	Classroom	Low
6	K	Classroom	Low
	L	Equipment Room	High
7	M	Equipment Room	High
	N	Small Group	Low
8	O	Small Group	Low
	P	Small Group	High
9	Q	Classroom	High
	R	Equipment Room	Low

Two scores were obtained from the instrument. Subjects' choices among each one of three pairs of learning situations where setting was constant, (See Table 3.2, pair 1, 5, and 8) were used to calculate a preference for level of formality. To obtain a score for level of formality, a preference

for high formality in each pair was assigned a value of two and a choice for low formality assigned a value of one. A consistant preference for a high level of formality would be a score of six. A score of three indicates a preference for low formality.

Validity Test. To insure the content validity of the Level of Formality instrument, a panel of five people was given the definition of "formal" used for this research in chapter one. The researcher made sure that each person understood clearly how level of formality was being defined.

First, each member of the panel was presented with the six pictures used to make up the nine pairs in the instrument. They were asked to label the picture by itself as to whether it represented a high formal situation or a low formal situation.

The percentage of agreement among all five panel members was 80%. There was an 80% agreement between the researcher and the panel members. Then each panel member was asked to independently label each one of the eighteen pictures as to whether it was a high formal situation or a low formal situation. There was a 73% agreement between how the researcher labeled each picture and how the panel labeled them.

Reliability Test. The Level of Formality instrument is attempting to measure the expectations that subjects have with regard to the level of formality. To insure that the instrument elicited the same responses over time (stability validity) and was not vulnerable to changes in the subjects' mood, situation, or environment the instrument was administered to ten people at one time and then re-administered to the same group one week later. There was a test-retest reliability of .84. Thus, the instrument was considered stable over time.

Instructional Setting. The instructional setting component of the

instrument utilized the pairs numbered 2 ,3, 4, 6, 7 and 9 shown in Table 3.2 on page 70. Each one of these pairs matched one setting against another setting so the subject was forced to make a choice between settings. The question asked was, "In which of the following situations do you think people are learning the most?" To obtain a score for preference for instructional setting, each time a particular setting was chosen a score of one was recorded. Out of the six pairs a setting could be chosen a maximum of four times for a total score of four.

Validity Test. To insure the content validity of the Instructional Setting instrument, a panel of five people was given the definition of instructional setting used for this research in chapter one. The researcher made sure that each person understood clearly how instructional setting was being defined.

Each member of the panel was presented with the six pictures used to make up the nine pairs of the instrument. They were asked to label each picture as to what instructional setting they felt it represented.

The percentage of agreement among all five panel members was 100%. There was a 100% agreement between the researcher and the panel member.

Reliability Test. The Instructional Setting instrument is attempting to measure the expectations that subjects have with regard to the preference for instructional setting. To insure that the instrument elicited the same responses over time (stability validity) and was not vulnerable to changes in the subjects mood, situation, or environment, the instrument was administered to ten people at one time and then re-administered to the same group one week later. There was a test-retest reliability of .73. Thus, the instrument was considered stable over time.

Curricular Outcomes. The third instrument used was to determine a subject's judgment concerning Curriculum Outcomes. As explained earlier,

the curriculum outcomes variable was sub-divided into two dimensions -- Importance of Content Ratings and Level of Understanding Ratings (Appendix D). The two dimensions are being treated as two separate but related facits of an adult learner's judgment concerning curriculum outcomes.

Importance of Content. In the importance of content rating, the subjects were presented with twelve statements that describe a very specific and recognizable subject that is of concern to a well-informed and professional property manager. Each subject was asked to make a judgment as to the degree of importance that each separate content area had for the properly trained property manager. Each content statement was then rated on a scale from five to one with five being the most essential and one being no help at all. The subjects were asked to circle one number on the five point Likert-type scale that best represented their opinion on the importance of the content. There were twelve content areas in all that were presented. Each statement represents a major content area of course one "The Design, Operation and Maintenance of Building Systems" in the RPA program.

Level of Understanding. Next, subjects were presented with six levels of competence that a person could have with regard to a particular content. The first level recall, as defined in chapter one, is the lowest level of understanding or acceptable competency for a particular content. The sixth level, ability to evaluate, is the highest. The subjects were asked to check what they felt the minimum acceptable level of competence was for each content statement. The scale is treated as a hierarchy, if the four is checked, every level before so that is assumed in that level so the response is given a straight rating of four for scoring purposes. Separate scores were tabulated for each subject on the importance of content dimension and the level of understanding dimension.

Validity Test. The issue of validity does not apply to the importance of content and level of understanding instrument. It is not applicable because that particular instrument is recording an opinion response to specific content statements. The recording of this opinion response is tabulating a pre-existent judgment of content importance and necessary level of understanding for a meaningful learning experience.

Reliability Test. To insure that the rating of content importance and the rating of the necessary level of understanding elicited the same responses over time (stability validity) and was not vulnerable to changes in the subjects' mood, situation, or environment, the instrument was administered to ten people at one time and then re-administered to the same group one week later. There was a test-retest reliability of .83 for content importance and a test-retest reliability of .79 for necessary level of understanding. Thus, the instrument was considered stable over time.

Research Procedure and Data Collection

The research data were gathered by a questionnaire and instruments that took approximately thirty minutes to administer. The data were gathered from participants in the regional meetings of the Building Owners and Managers Association, local luncheon meetings and BOMI classes during the spring of 1981.

Prior to Data Collection. A pilot of the instrumentation was run with eighteen subjects in January of 1981. The first version of the instruments was administered, then interviews were held with the subjects to determine the clarity of the research instruments. No major problems with the instruments were uncovered. Minor changes were made in the wording of some questions in the curricular outcomes instrument to clear up small ambiguities pointed out by the pilot group.

The pilot test allowed the researcher to also test the directions for administering the instruments and the overall questionnaire administration procedures. This pilot test provided a necessary step in making the data gathering phase as efficient and as accurate as possible.

During the time the instrument was being perfected, a schedule of data gathering sites was arranged. The final schedule included ten cities, nine in the United States and one in Canada. Arrangement was made at each site for thirty minutes to give the directions and collect the data. At each data gathering site, the instructions and questionnaire administration was personally carried out by the researcher. For the sites where classes were involved, the data was collected at the beginning of class.

During Data Collection. Data gathering booklets that contained all three instruments described above and a demographic questionnaire were prepared (See Appendix E). The detailed step-by-step procedure for gathering the data is as follows:

1) Sealed data gathering booklet distributed before meeting.
2) Introduction and statement of purpose of research (Appendix F).
3) Subjects were asked to open sealed questionnaire and follow as directions were given verbally for the overall data gathering process.
4) Gave directions and administered the Expectations of Type of Learning instrument.
5) Gave directions and administered the Expectation of Level of Formality instrument.
6) Gave directions and administered the Curricular Outcomes instrument and the demographic questionnaire.
7) The data gathering instruments were collected, put into a box

labeled with the city of origin and sealed to protect against loss and prevent confusion.

All three instruments were designed so that the responses and answers were recorded on the data questionnaires themselves. The demographic questions were recorded on the last page of the questionnaire. Great care was taken to make sure that the last page was never separated from the remainder of the data gathering instruments.

After Data Collection. To assure complete anonymity the data questionnaires were not coded with identification numbers until after completion. Each questionnaire was numbered on the front cover and the last page. A code number to identify the city source was also put on the front and back page. Each questionnaire was checked to make sure it was complete.

Those that were unusable were eliminated from the study. A total of nine questionnaires fell into this category.

In addition to the identification process described above, the demographic questionnaire was coded with numbers where needed. When this coding was complete, the responses and information were transferred from the questionnaire to IBM punch cards for processing.

Data Analysis

The Statistical Package for the Social Sciences was used to analyze the data. The data were measured using various correlational measurements and analysis of variance. The level of significance was accepted at the .05 level. The descriptive statistics for the demographic data were also tabulated.

The dependent and independent variables are listed below showing the combinations of correlations done to test for main effects and relationships among variables.

combinations of correlations done to test for main effects and relationships among variables.

The first level of analysis was to determine if there was any difference among the subjects with regard to the five expectation variables listed below. Appropriate statistical analyses were performed depending on the type of each variable. The list below indicates the five expectation variables tested for main effects.

Tests for Main Effects

1. Level of Formality
2. Kind of Learning Experience
3. Setting
4. Curricular Outcome (Importance of Content)
5. Curricular Outcome (Level of Understanding)

Tests for Correlations and Associations

1. Level of Formality X Kind of Learning Experience
2. Level of Formality X Importance of Content
3. Level of Formality X Level of Understanding
4. Level of Formality X Setting
5. Kind of Learning Experience X Importance of Content
6. Kind of Learning Experience X Level of Understanding
7. Kind of Learning Experience X Setting
8. Importance of Content X Level of Understanding
9. Importance of Content X Setting
10. Level of Understanding X Setting
11. Major in School X Level of Formality
12. Major in School X Kind of Learning Experience
13. Major in School X Importance of Content
14. Major in School X Level of Understanding
15. Major in School X Setting
16. Years of Formal Schooling X Level of Formality
17. Years of Formal Schooling X Setting
18. Years of Employment X Importance of Content
19. Years of Employment X Levels of Understanding

Methodological Assumptions

The research is based on the assumption that the construct, kinds of learning experiences, can be accurately represented by descriptive

statements for each kind of learning experience. In addition, the researcher assumes that preferences the adult learners have for kinds of learning experiences can be measured by asking them to make a forced choice between two possible kinds of learning experiences represented by the descriptive statements.

Second, the researcher assumes that pictures of learning settings can represent different levels of formality and that levels can be distinguished when a subject is asked to make a choice between levels represented by two pictures. Further, it is assumed that by asking the question, "In which situation do you think people are learning the most?" the subject's attention is focused primarily on the issues in the picture that are relevant for meaningful learning to be taking place.

Third, the researcher assumes that Bloom's taxonomy of educational objectives is hierarchical and that the lowest level on the taxonomy must be understood and mastered before one could develop skills at the next level. Therefore, if a choice of the fourth level is made, then the researcher assumes that everything below the level chosen is understood to also be important to the learner.

Limitations

This exploratory research attempted to identify how an adult learner's expectations concerning level of formality and kind of learning experience relate to a judgment concerning curricular outcomes as defined by both an importance of content dimension and a level of understanding dimension. The research also explored relationships between the variables described above and three learner variables, years of formal schooling, years in property management, and major in school.

Conclusions from studying the relationships between the variables

described above must be very tentative. Direct cause and effect relationships are not able to be established even though meaningful relationships are described that may give insights into the curriculum construction process. Further studies need to follow to establish more clarity.

The subjects in the study belong to a discrete population of adult learners. Also the sample taken from that population was a convenience sample with no possibility for randomization. These two conditions tightly limit the generalizability of the study.

The study used new instruments to gather data. The instruments are developmental in nature. With such new instrumentation, the study is limited to what adult learners verbalized as preferences regarding level of formality, kind of learning experience, instructional setting, and curricular outcomes. Care must be taken in drawing conclusions from this preference-type research. Asking learners for preferences does not necessarily mean that the learners' response regarding preference is what ought to be done to structure a productive learning experience. Merely giving learners their choice does not insure that the choice is going to be good for them. Further, the reader cannot assume that because the subjects of the study say that certain settings and levels of formality provide more important learning; because they say that certain kinds of learning are more preferred than other kinds; or because they judge certain contents and levels of understanding more important than others, that in practice they use these levels, kinds of learning experiences or judgments concerning content importance or levels of understanding. The links between what one believes, says, and does are very complex and at times seemingly contradictory. A vast number of studies need to be conducted in order to provide more clarity concerning the differences, correlations and cause-effect relationships among believing, saying and behaving.

Summary

Chapter three described the methods used to investigate the relationship among expectations concerning level of formality, kind of learning experience, instructional setting, judgments concerning content importance, level of understanding (dependent variables) and major in school, years of formal schooling and years in property management (independent variables) of 320 property managers in the United States and Canada.

The research design, research questions and hypotheses, instrumentation and procedures for data collection and analysis were identified.

CHAPTER 4

FINDINGS

The data are presented in this chapter. Each of the twenty-four hypotheses are restated and accompanied by the statistical findings. The chapter concludes with a summary of the major findings.

Overview

The focus of this study examines a specific group of adult learners' (a) expectations regarding level of formality, kind of learning experiences, instructional setting and judgments concerning importance of content, and level of understanding of content and (b) factors that might influence those expectations such as amount of formal schooling, major in school, years of experience in property management and age.

The purpose of the study is to provide some possible direction for the ongoing curriculum construction project of the Building Owners and Managers Institute (BOMI). The ongoing success of a voluntary adult education program depends on the program being perceived by the participants as relevant to their needs, motives and interest. Understanding the relationships between the variables above contributes to what is perceived as relevant which hopefully can be translated into a better informed curriculum construction effort.

In order to better explain the general context of the study, a profile of the sample follows. Demographic data were collected along with the research data. The following profile is constructed from the demographic data.

Sample Profile

The total useable sample after partial questionnaires are discarded is 320. Eighty percent (253) of the sample are male and twenty percent (63) are female. The total is less than 320 because four subjects did not indicate gender. There are subjects from ages twenty-two (2) to the age of eighty (1). Fifty-three percent of the subjects are under forty and 47% over forty. There is a fifteen year gap in ages at the "old" end of the range with one subject at age 80 and the next closest age of 65 with five subjects. When the sample is divided into five year increments between age twenty-five and sixty-five, the age category with the most subjects is the group between the ages of thirty and thirty-four inclusive with 68 subjects. Five subjects decline to identify their age. The mean age is 40.7; the median is 38.7, while the mode is 30. Figure 4.1 illustates the range of ages for the entire sample.

FIGURE 4.1
AGE OF SUBJECTS WITH A FREQUENCY DISTRIBUTION IN FIVE YEAR INCREMENTS

Age Range	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 85
No. In Each Category	12	38	68	44	36	29	50	25	12	5	--	--	1

Three different educational levels are identified beyond high school, trade school, college, and graduate school. Twenty-seven subjects have trade school experience, 279 do not and 13 do not answer the question. One hundred and ninety have attended college with 104 showing a completion of

college degrees. Eighty-eight have no college and 42 do not answer the question. Fifty-one indicate some type of graduate education with 264 answering none and 5 not answering.

A wide variety of majors is represented at all three levels of education. The following tables (4.1, 4.2, 4.3) for each one of the three levels provides a complete picture of the variety of majors represented.

TABLE 4.1

TRADE SCHOOL MAJORS REPRESENTED IN THE SAMPLE

MAJOR	NUMBER	% OF TOTAL
None	279	87.2
HVAC (Htg. vent. & Air Conditioning)	9	2.8
Electrical	4	1.2
Electronics	3	.9
Mechanical Drafting	3	.9
Computer Programmer	2	.6
Master Plumber	1	.3
Mechanics	1	.3
Accounting	1	.3
Steam Plant Operator	1	.3
Steam Fitting	1	.3
Business Administration	1	.3
Construction	1	.3
No Answer	13	4.1

N = 320

TABLE 4.2
DERGRADUATE MAJOR REPRESENTED IN THE SAMPLE

MAJOR	NUMBER	% OF TOTAL
None (Not College Graduate)	88	27.5
Business Administration	52	16.2
Accounting	16	5.0
Economics	14	4.4
English	10	3.1
Engineering	9	2.8
Mechanical Engineering	8	2.5
Political Science	5	1.6
History	5	1.6
Real Estate	5	1.6
Education	5	1.6
Sociology	4	1.2
Biology	4	1.2
Industrial Management	4	1.2
Finance	4	1.2
Civil Engineering Technology	4	1.2
Psychology	4	1.2
Electrical Engineering	3	.9
Science	2	.6
Construction Technician	2	.6
Agriculture	2	.6

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TABLE 4.2
(CONTINUED)
UNDERGRADUATE MAJOR REPRESENTED IN THE SAMPLE

MAJOR	NUMBER	% OF TOTAL
Physical Education	2	.6
Architecture	2	.6
Art	2	.6
Physics	2	.6
Humanities	2	.6
Personal Management	2	.6
Law	2	.6
Theater	1	.3
Industrial Electronics	1	.3
Geography	1	.3
Film and Television	1	.3
Modern Language	1	.3
Marine Engineering	1	.3
Philosophy	1	.3
Photography	1	.3
Petroleum Engineering	1	.3
Public Administration	1	.3
Marketing	1	.3
Criminal Justice	1	.3
Math	1	.3
Aero Engineering	1	.3
No Answer	42	13.1

N = 320

TABLE 4.3
GRADUATE SCHOOL MAJOR REPRESENTED IN THE SAMPLE

MAJOR	NUMBER	% OF TOTAL
None (No Graduate Degree)	264	82.5
MBA	8	2.5
Law	5	1.6
Finance	5	1.6
Business	5	1.6
Accounting	3	.9
Real Estate	3	.9
Engineering	3	.9
Marketing	2	.6
Urban Planning	2	.6
Sociology	1	.3
Geography	1	.3
Taxation	1	.3
Sanitary Engineering	1	.3
Management	1	.3
Personal Management	1	.3
Banking	1	.3
Industrial Relations	1	.3
Theology	1	.3
Agriculture	1	.3
Economics	1	.3
Electrical Engineering	1	.3

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TABLE 4.3
(CONTINUED)
GRADUATE SCHOOL MAJOR REPRESENTED IN THE SAMPLE

MAJOR	NUMBER	% OF TOTAL
Education	1	.3
Political Science	1	.3
Meterology	1	.3
No Answer	5	1.6

N = 320

With regard to years of formal schooling, one subject in the sample did not finish high school; forty-two subjects did finish high school. Ninety-seven subjects have from one to three years of college and one hundred and four indicate four years of college. Seventy-two subjects indicate schooling beyond a standard four-year college experience. Twenty-two went one year beyond at the low end and four went seven years beyond at the high end. The mean for years of school is 15.4 years; the median is 15.6 years, while the mode is 16 years.

Subjects are also asked how long they have been in property management. Almost half of the sample, 47.5%, have been in property management for five years or less. An additional 25% of the sample have been in property management between six and ten years. Ten percent of the sample have been in between 11 and 15 years. The balance of the subjects in the sample have from 16 years of experience (N = 4) to 47 years of experience (N = 1). These upper years of experience account for the remaining 15% of the sample. Nineteen subjects did not answer this question. The mean years of experience in property management is 8.5. The median years of experience is 6, while the mode is 1.

The sample was almost evenly split between those who were enrolled in the Real Property Administrator program and those who were not enrolled. Enrollment in the program is the first step that participants take when they begin the study of the seven courses leading to attainment of the RPA designation. One hundred fifty-three were enrolled and one hundred fifty-four were not enrolled. Thirteen did not answer the question.

Data Analysis Method

The data analysis uses a combination of descriptive statistics, measures of association and in some cases some inferential statistics. There are no assumptions made about the distribution of scores within the sample compared to its parent distribution.

Three data analysis methods are used depending on the specific classifications of variables being analyzed. Correlation is used when both variables are interval (Pearson) or ordinal (Spearman). In most cases when correlation methods are utilized, Spearman's formula is used because of the small range of the scale for the variables being analyzed.

When one variable is categorical and the other is interval, analysis of variance is used. For a single dependent variable, a common analysis of variance is used. In certain cases, a multivariate analysis of variance is used when a set of dependent variables is presented. The analysis of variance determines whether or not there is a significant difference in means between categories of variables.

When two categorical variables are analyzed, a Chi-square analysis is used. All tests for significance were accepted at the .05 level.

Levels of Formality

Research Question: Do adult learners perceive one level of formality as providing more productive learning than any other level of formality?

Research Hypothesis: A lower level of formality will be preferred over a higher level of formality.

Statistical Hypothesis: Preferences of subjects for a particular level of formality will not differ.

Table 4.4 presents the frequency distribution of the scores for the level of formality. There are four possible scores for level of formality, low, moderately low, moderately high and high.

TABLE 4.4
FREQUENCY DISTRIBUTION FOR LEVEL OF FORMALITY

Raw Score	Level of Formality	Total Responses	%
3	Low	46	14.4
4	Moderately Low	127	39.6
5	Moderately High	126	39.4
6	High	21	6.6
Total Responses		320	
Total % of Low Formality			54.0
Total % of High Formality			46.0
Overall Mean Level of Formality			4.381

Subjects were asked to indicate in which of two pictures students were learning the most. The setting was held constant and judgments were made in three different settings. A score of one was assigned for low

formality and a score of two for high formality. If a subject was consistent in choosing low formality, a score of three results and if subjects were consistent in choosing high formality, a score of six results. A score of four is two low choices and one high and a score of five is two high choices and one low.

Table 4.4 indicates that 54% of the subjects thought that more effective learning was associated with low or moderately low formality while 46% thought that more effective learning was associated with high formality or moderately high formality. The overall mean level of formality is 4.381.

However, the results indicate that there is an extremely small difference between preference for low formality and preference for high formality. The statistical difference is very weak but there does remain a slight difference between subjects' preference for level of formality.

Kind of Learning Experience

Research Question: Do adult learners perceive any one kind of learning experience as more preferable than any other kind of learning experience?

Research Hypothesis: Subjects will show a definite preference for sharing over other kinds of learning experiences.

Statistical Hypothesis: Subjects do not differ in their preferences regarding kinds of learning experiences.

Table 4.5 and 4.6 presents the frequency distributions for the preference for kinds of learning experiences broken into four categories and seven categories. Both Tables are presented for reasons discussed below.

TABLE 4.5
FREQUENCY DISTRIBUTION FOR PREFERENCE
FOR KIND OF LEARNING EXPERIENCE
(SEVEN CATEGORIES)

Category	Total Responses	%
Input	48	15.0
Self-Awareness	33	10.3
Sharing	200	62.5
Input and Self-Awareness (equally)	5	1.6
Input and Sharing (equally)	7	2.2
Sharing and Self-Awareness (equally)	13	4.1
All Three Equally	14	4.4

N = 320

TABLE 4.6
FREQUENCY DISTRIBUTION FOR PREFERENCE
FOR KIND OF LEARNING EXPERIENCE
(FOUR CATEGORIES)

Category	Total Responses	%
Input	48	15.0
Self-Awareness	33	10.3
Sharing	200	62.5
All Others Combined (No Clear Preference)	39	12.2

N = 320

In the kind of learning experience instrument, a total of nine pairs of statements representing the three kinds of learning experiences were presented. Table 3.1 on page 68 lays out the choices. The frequency tables which follow lay out the total number of times each kind of learning experience was chosen by itself or in some combination with another kind of learning experience. This is a calculated variable from the raw score choices labeled "learning preference" for the purpose of data analysis. Learning preference is calculated by taking each individual choice made by each subject and adding all scores for the individual choices within the various combinations to get the totals.

The total scores were isolated for each kind of learning experience by asking the question "Did a subject have a higher score on input versus the other two, or sharing versus the other two, or self-awareness versus the other two?" If they did have a higher score on one kind than any other kind, they then were counted as having a preference for that kind of learning experience. If the subjects had higher and equal scores on a combination of two kinds when compared with a third, they were put into the category with a combination of kinds of learning experience. If the scores were equal on all three kinds of learning experience another category was created labeled, "all three scores equal."

The table of four choices is a shortened version of all possible seven choices. The table of four is made up of the three types chosen individually each time and all the combination of choices collapsed into a fourth category. Later analysis for relationships between kinds of learning experiences (learning preference) and other variables will sometimes use just the four category version and other times use the seven category version. The choice between the two versions is dictated by a compromise between simplicity and accuracy. When no accuracy is lost in

the analysis by using the four category breakdown, it is used. However, if there is ever any question concerning possible findings that could be hidden by collapsing the data into four categories, the seven category version is used.

Table 4.5 indicates that 15.0% of the subjects always preferred input kind of learning experiences, with only 10.3% of the subjects always showing a preference for self-awareness kind of learning experiences. A total of 62.5% of the subjects always preferred sharing type learning experiences.

In combination 1.6% of the subjects preferred both input and self-awareness, 2.2% preferred both input and sharing, 4.1% preferred both sharing and self-awareness with 4.4% preferring all three kinds of learning experiences equally. In table 4.6 when the last four categories are collapsed into one category, the total preference for all combined is 12.2%.

Therefore, when ranked according to strength of preference for kind of learning experience, there is a clear preference for sharing followed by input then self-awareness. In addition, the percentage totals indicate that the preference for sharing is almost twice as prevalent as the preferences for all other choices individually and in combination with one another.

Further analysis was necessary to clarify the relationship between sharing, input and self-awareness. Table 4.7 presents the frequency distribution of the raw scores for each kind of learning experience plus the mean raw scores.

TABLE 4.7
FREQUENCY DISTRIBUTION OF SCORES ON
PREFERENCES FOR KIND OF LEARNING EXPERIENCES
WITH MEAN SCORES

Number of Times Chosen	Input		Self-Awareness		Sharing	
	Total Responses	%	Total Responses	%	Total Responses	%
0	58	18.1	12	3.7	1	.3
1	84	26.2	52	16.2	17	5.3
2	59	18.4	88	27.5	26	6.1
3	56	17.5	101	31.6	42	13.1
4	32	10.0	47	14.7	64	20.0
5	21	6.6	16	5.0	77	24.1
6	10	3.1	4	1.2	93	29.1
Mean Number of Times Chosen	2.072		2.572		4.356	

Table 4.7 indicates that when the total of individual scores is considered, 18.1% of the subjects never chose input, while only 3.1% chose input all the time. The mean number of times input was chosen is 2.072. For self-awareness, 3.7% of the subjects never chose it, while 1.2% chose it all of the time. The mean number of times self-awareness was chosen is 2.572. In contrast, only .3% of the subjects never chose sharing, but 29.1% of the subjects always chose sharing. The mean number of times sharing was chosen is 4.356.

Using the means from Table 4.7, Table 4.8 shows a univariate analysis

of variance of repeated measures for sharing versus self-awareness and self-awareness versus input. The analysis of variance was used to test for differences between means within the variable learning preference with each kind of learning experience being considered an individual variable within the entire set of three variables.

TABLE 4.8
UNIVARIATE ANALYSIS OF VARIANCE FOR THE DIFFERENCE BETWEEN MEANS FOR SHARING VS. SELF AWARENESS AND SELF AWARENESS VS. INPUT

Variable Pair	F	Significance of F
Sharing vs. Self-Awareness	205.17	.00001*
Self-Awareness vs. Input	13.05	.00035*

*Significant at the .05 level.

Table 4.8 shows that there is a significant difference between the mean scores on sharing and self-awareness and on self-awareness and input. Subjects in expressing their preference for kind of learning experience ranked sharing ahead of self-awareness and self-awareness ahead of input.

Therefore, based on the frequency distribution data, and the analysis of variance, the null hypothesis is rejected. The subjects in this sample do differ significantly in the preferences for one kind of learning experience. The data analyzed show that sharing is the preferred kind of learning experience followed by self-awareness with input third. (See Note below).

Note: Table 4.5 shows input with a higher individual frequency of choice when compared with self-awareness. However, when the strength of preference is considered, self-awareness has a larger mean than input. In 4.5, the subjects' preference is shown as one of the three (input, sharing, self-awareness). In 4.7, the subjects' six preferences are all taken into account. The results of 4.7 give self-awareness a higher mean for number of times chosen. The final results in chapter five are reported from Tables 4.7 and 4.8.

Instructional Setting

Research Question: Do adult learners perceive any one educational setting to be more producive for learning than any other educational setting?

Research Hypothesis: Subjects will show a definite preference for which instructional setting they think is more productive for learning.

Statistical Hypothesis: Subjects do not differ in their judgment regarding the instructional settings which they regard as more productive for learning.

Table 4.9 and 4.10 present the frequency distributions for the learning productivity of instructional settings. As with the kind of learning experience, the data for instructional setting are presented in four categories and seven categories for the same reasons previously discussed.

TABLE 4.9
FREQUENCY DISTRIBUTION FOR PREFERENCE
FOR INSTRUCTIONAL SETTING
(SEVEN CATEGORIES)

Category	Total Responses	%
Equipment Room	192	60.0
Small Group	23	7.2
Classroom	9	2.8
Equipment Room and Small Group	71	22.2
Equipment Room and Classroom	14	4.4
Small Group and Classroom	2	.6
All Three Equally	9	2.8

N = 320

TABLE 4.10
FREQUENCY DISTRIBUTION FOR PREFERENCE
FOR INSTRUCTIONAL SETTING
(FOUR CATEGORIES)

Category	Total Responses	%
Equipment Room	192	60.0
Small Group	23	7.2
Classroom	9	2.8
All Others Combined	96	30.0

N = 320

The variable of instructional setting surfaced as an important factor after the data were collected and analysis had begun. The variable was originally a part of the level of formality instrument where high and low formality situations were presented in three different settings. When each pair of pictures is removed which hold setting constant, six pairs remain. For the total of the six pairs, the range of choices for setting go from never choosing a particular setting to choosing one four times. The actual number of choices of the subject is the preference score for setting for that subject.

Again, as in the situation with kind of learning experience, the actual assignment to a category for setting is calculated by looking at the actual scores and placing those subjects with scores highest for a particular category in that category. A total of seven categories is created by tabulating the data in this manner.

Table 4.9 indicates that 60.0% of the subjects preferred equipment room as the most productive educational setting, with only 7.2% showing a

preference for small group setting by itself and 2.8% a preference for classroom by itself.

In combination 22.2% showed an equal preference for equipment room and small group over classroom. An equal preference for equipment room and classroom was shown by 4.4% of the sample; while only .6% showed a preference for small group and classroom. All three instructional settings were chosen equally by 28%.

In Table 4.10 when the last four categories are collapsed into one category, the total preference for all the combined instructional settings is 30.0%. Because of the sizeable number of subjects choosing small group and equipment room over classroom, analysis between setting and other variables will utilize the calculation with seven categories rather than four to avoid missing any important relationships that may surface.

Therefore, when ranked according to preference for instructional setting there is a clear preference for equipment room followed by small group and classroom. In addition, more people chose the equal combination of equipment room and small group than both small group and classroom individually. Also the combination of equipment room and classroom ranks ahead of classroom; all three chosen equally has an equal rating with classroom only. The preferences for the individual category of equipment room plus the combination categories show a very strong preference for the equipment room setting.

Further analysis is necessary to classify the relationship between the various instructional settings. Table 4.11 presents the frequency distribution of the raw scores along with the mean for each setting.

TABLE 4.11
FREQUENCY DISTRIBUTION OF SCORES ON
PREFERENCE FOR INSTRUCTIONAL SETTING WITH MEAN SCORES

Number of Times Chosen	Equipment Room		Small Group		Classroom	
	Total	%	Total	%	Total	%
0	3	.9	46	14.4	195	60.9
1	9	2.8	42	13.1	50	15.6
2	31	3.1	136	42.5	50	15.6
3	103	32.2	84	26.2	20	6.3
4	176	54.4	12	3.7	5	1.6
Mean Number of Times Chosen	3.362		1.919		.719	

Table 4.11 indicates that when the total of individual scores is considered, .9% of the subjects never chose equipment room while 54.4% chose equipment room all the time. The mean number of times equipment room was chosen was 3.362.

For the small group instructional setting 14.4% never chose it while 3.7% chose it all the time. The mean number of times small group was chosen was 1.919.

For classroom 60.9% never chose classroom while 1.6% always chose it. The mean number of times classroom was chosen is .719.

Using the means from Table 4.11, Table 4.12 shows the results of a univariate analysis of variance of repeated measurees for equipment room versus small group and small group versus classroom. The analysis of variance was used to test for the differences between means within the

variable setting with preference for each individual setting being considered a separate variable.

TABLE 4.12
UNIVARIATE ANALYSIS OF VARIANCE FOR THE DIFFERENCE BETWEEN MEANS FOR EQUIPMENT ROOM VS. SMALL GROUP AND SMALL GROUP VS. CLASSROOM

Variable Pair	F	Significance of F
Equipment Room versus Small Group	259.80	.00001*
Small Group versus Classroom	125.08	.00001*

*Significant at .05 level.

Table 4.12 shows that there is a significant difference between the mean scores on equipment room and small group and on small group and classroom. Subjects, in expressing their preference for kind of learning experience, ranked equipment room ahead of small group and small group ahead of classroom.

Therefore, based on the frequency distribution data and the analysis of variance, the null hypothesis is rejected. The subjects in this sample do differ significantly in the preferences for an instructional setting. The data analyzed show that equipment room is the preferred kind of setting followed by small group with the classroom setting third for this particular type of course material.

Content Importance

Research Question: Do adult learners perceive any one content statement of the twelve as more important than any other content?

Research Hypothesis: Subjects will make definite rank order judgments in their perceptions regarding the importance of course content.

Statistical Hypothesis: Subjects do not differ in their judgments regarding the importance of individual course contents.

Table 4.13 presents the frequency distribution for judgment regarding the importance of content and the mean ratings for those judgments. The data for importance of content rating come from the subjects recording their rating of importance on a five-point Likert-type scale, with one being the least importand and five being the most important. Altogether, the subjects rated twelve content areas from one course, "The Design, Operation and Maintenance of Building Systems."

Table 4.13 indicates a definite rank order for the subjects' rating of content importance. To understand more precisely what the mean rank order of content importance means, a repeated measures analysis of variance was performed on means ordered from highest to lowest. The results of this analysis are presented in Table 4.14.

Table 4.14 presents the result of the F-test for the difference between mean ranks of content importance. Notice first that contents 5 and 12 have the same means. In addition, there is a significant difference between the mean rating of content number 12 and 2; number 2 and 7; number 7 and 3; number 9 and 10; and number 6 and 1. When tabulated, the eleven paired comparisons result in six separate rankings. A new rank is assigned each time there is a significant difference between mean rating scores. Each change in ranking is separated by a dotted line in the table.

TABLE 4.13
FREQUENCY DISTRIBUTION OF IMPORTANCE OF CONTENTS WITH MEAN RATINGS OF CONTENT IMPORTANCE

Content Description	Judgment Of Content Importance										
	No Help At All		Helpful To A Small Degree		Helpful To A Certain Degree		Extremely Helpful		Could Not Work Without It		Mean Judgment of Importance
	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	
1. Load Factors in Building Design	2	.6	71	22.2	173	54.1	63	19.7	11	3.4	3.031
2. Basic Engineering Principles for Cooling & Heating Systems	0	0	80	25.0	80	25.0	191	59.7	43	13.4	3.847
3. Factors Responsible for Placing Heat Loads on a Building's Cooling System	4	1.2	29	9.1	134	41.9	131	40.9	22	6.9	3.431
4. Sealing Material Necessary for the Best Performance of Windows and/or Curtain Walls	2	.6	71	22.2	173	54.1	69	21.6	5	1.6	3.012
5. Energy Management Programs	0	0	3	.9	31	9.7	219	68.4	67	20.9	4.094
6. Design and Maintenance of Plumbing Systems	2	.6	52	16.2	167	52.2	88	27.5	11	3.4	3.169

TABLE 4.13 (CONT.)
FREQUENCY DISTRIBUTION OF IMPORTANCE OF CONTENTS WITH
MEAN RATINGS OF CONTENT IMPORTANCE

Content Description	Judgment Of Content Importance										
	No Help At All		Helpful To A Small Degree		Helpful To A Certain Degree		Extremely Helpful		Could Not Work Without It		Mean Judgment of Importance
	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	
7. Roles and Relationships of Owners, Architects and Contractors in Development and Construction	0	0	35	10.9	91	28.4	136	42.5	59	18.1	3.678
8. Basic Building Materials Used in Building Construction	1	.3	40	12.5	136	42.5	112	35.0	31	9.7	3.412
9. Roofs and Roof Maintenance	1	.3	44	13.7	145	45.3	111	34.7	19	5.9	3.322
10. Water Treatment for Boilers and Cooling Water	2	.6	57	17.8	151	47.2	97	30.0	13	4.1	3.194
11. Design and Maintenance of Automatic Control Systems for Building Equipment	4	1.2	38	11.9	143	44.7	118	36.9	17	5.3	3.331
12. Basic Codes and Regulations that Impact Property Management	0	0	10	3.1	49	15.3	162	50.6	99	30.0	4.094

N = 320

TABLE 4.14
MEAN RANKINGS FOR CONTENT
IMPORTANCE RATING WITH TESTS FOR SIGNIFICANT
DIFFERENCE BETWEEN ADJACENT MEANS

Paired Contrasts of Content Importance (CI)	Mean	Rank of Mean	F	Significance of F
CI-5	4.094	1		
with CI-12	4.094	1	.0000	1.000
CI-12 with CI-2	3.847	2	18.544	.0002*
CI-2 with CI-7	3.678	3	6.97	.00868*
CI-7 with CI-3	3.431	4	12.92	.00038*
CI-3 with CI-8	3.412	4	.090	.7647
CI-8 with CI-11	3.331	4	2.093	.14890
CI-11 with CI-9	3.322	4	.031	.860
CI-9 with CI-10	3.194	5	6.709	.01*
CI-10 with CI-6	3.169	5	.301	.5835
CI-6 with CI-1	3.031	6	6.565	.01*
CI-1 with CI-4	3.012	6	.132	.7166

*Significant at the .05 level.

Therefore, when the mean scores of content importance are ranked on the basis of significant differences between means, the result is a significant difference in importance rating for six sets of the following contents. "Energy Management Programs" (CI-5) and "Basic Codes and Regulations That Impact Property Management" (CI-12) are both significantly different from "Basic Engineering Principles for Cooling and Heating Systems"(CI-2). "Basic Engineering Principles for Cooling and Heating Systems" (CI-2) is significantly different from "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" (CI-7). "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" (CI-7) is significantly different from "Factors Responsible for Placing Heat Loads on a Building's

Cooling System" (CI-3); "Basic Materials Used in Building Construction" (CI-8); "Design and Maintenance of Automatic Control Systems for Building Equipment" (CI-11) and "Roofs and Roof Maintenance" (CI-9). "Roofs and Roof Maintenance" (CI-9) is significantly different from "Water Treatment for Boilers and Cooling Water" (CI-10) and "Design and Maintenance of Plumbing Systems" (CI-6). "Design and Maintenance of Plumbing Systems" (CI-6) is significantly different from "Load Functions in Building Design" (CI-1). "Load Functions in Building Design" (CI-1) is significantly different from "Sealing Materials Necessary for the Best Performance of Windows and/or Curtain Walls" (CI-4).

On the basis of the above analysis, the null hypothesis is rejected. Subjects do significantly differ in their perceptions regarding which course contents are important.

Levels of Understanding

Research Question: Do adult learners perceive any one necessary level of understanding as more important than any other level of understanding?

Research Hypothesis: Subjects' judgment of which level of understanding is necessary for revelant learning will be different for each content statement.

Statistical Hypothesis: Subjects do not differ in their judgments regarding the importance of necessary level of understanding.

Table 4.15 presents the frequency distribution for subjects' judgment regarding how many levels of understanding are necessary for relevant learning to occur. The score for the level of understanding rating comes from subjects recording their estimate of level of understanding needed by checking all the levels up to the highest one needed for that particular content. The score for level of understanding is the highest level checked. Altogether, the subjects made judgments on the levels of

understanding necessary from twelve content areas of "The Design, Operation and Maintenance of Building Systems." The possible levels of understanding come from Bloom's Taxonomy of Educational Objectives: Cognitive Domain (1956) are level 1--recall; level 2--interpretation; level 3—application; level 4--analysis, level 5—synthesis, and level 6—evaluation. Because the taxonomy is assumed to be hierarchical the subjects' ratings on necessary level of understanding were treated as interval measurements for statistical purposes.

Table 4.15 indicates a definite rank order for subjects' judgments on the necessity of level of understanding. To understand more precisely what the mean rank order of level of understanding means, a repeated measures analysis of variance was performed on means ordered from highest to lowest. The result of this analysis is presented in Table 4.16.

Table 4.16 presents the result of the F-test for the difference between mean ranks of level of understanding. There is a significant difference between the mean rating of level of understanding for pairs 5 with 12; pairs 12 with 2; pairs 7 with 3; and pairs 9 with 10. When tabulated, the eleven paired comparisons result in four separate rankings. A new rank is assigned each time there is a significant difference between mean rating scores. Each change in ranking is separated by a dotted line in the table.

Therefore, when the mean scores of necessary level of understanding are ranked on the basis of significant difference between means, the result is a significant difference in the perceived level of understanding necessary for four sets of the following contents.

TABLE 4.15
FREQUENCY DISTRIBUTION OF LEVEL OF UNDERSTANDING JUDGMENTS
WITH MEAN RATINGS OF LEVEL OF UNDERSTANDING

Content Description	Level of Understanding												
	Recall		Interpret		Apply		Analyze		Synthesize		Evaluate		Mean
	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	
1. Load Factors in Building Design	18	5.6	78	24.4	105	32.8	65	20.3	21	6.6	33	10.3	3.287
2. Basic Engineering Principles for Cooling & Heating Systems	5	1.6	22	6.9	66	20.6	103	32.2	52	16.2	72	22.5	4.222
3. Factors Responsible for Placing Heat Loads on a Building's Cooling System	14	4.4	34	10.6	94	29.4	80	25.0	33	10.3	64	20.3	3.872
4. Sealing Material Necessary for the Best Performance of Windows and/or Curtain Walls	18	5.6	63	19.7	128	40.0	68	21.2	20	6.3	23	7.2	3.244
5. Energy Management Programs	2	0.6	9	2.8	33	10.3	80	25.0	65	20.3	131	40.9	4.844
6. Design and Maintenance of Plumbing Systems	16	5.0	51	15.9	125	39.1	75	23.4	29	9.1	24	7.5	3.381

TABLE 4.15 (CONT.)
FREQUENCY DISTRIBUTION OF LEVEL OF UNDERSTANDING JUDGMENTS
WITH MEAN RATINGS OF LEVEL OF UNDERSTANDING

	Content Description	Level of Understanding												
		Recall		Interpret		Apply		Analyze		Synthesize		Evaluate		Mean
		Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	Total Resp.	%	
7.	Roles and Relationships of Owners, Architects and Contractors in Development and Construction	13	4.1	32	10.0	69	21.6	68	21.2	44	13.7	94	29.4	4.188
8.	Basic Building Materials Used in Building Construction	17	5.3	32	10.0	112	35.0	66	20.5	45	14.1	48	15.0	3.731
9.	Roofs and Roof Maintenance	11	3.4	41	12.8	111	34.7	79	24.7	36	11.2	42	13.1	3.669
10.	Water Treatment for Boilers and Cooling Water	21	6.6	53	16.6	109	34.1	78	24.4	25	7.8	34	10.6	3.422
11.	Design and Maintenance of Automatic Control Systems for Building Equipment	17	5.3	49	15.3	88	27.5	72	22.5	40	12.5	54	16.9	3.722
12.	Basic Codes and Regulations that Impact Property Management	6	1.9	11	3.4	62	19.4	66	20.6	52	16.2	123	38.4	4.612

N = 320

TABLE 4.16
MEAN RANKINGS FOR LEVEL OF UNDERSTANDING RATING WITH TESTS FOR SIGNIFICANT DIFFERENCE BETWEEN ADJACENT MEANS

Paired Contrasts of Levels of Understanding	Mean	Rank of Mean	F	Significance of F
[1]CE-5	4.844			
With CE-12	4.612	1	6.698	.0100*
CE-12 with CE-2	4.222	2	15.6047	.0001*
CE-2 with CE-7	4.188	2	.1114	.7388
CE-7 with CE-3	3.872	3	8.4663	.0039*
CE-3 with CE-8	3.731	3	2.2563	.1340
CE-8 with CE-11	3.722	3	.0105	.9184
CE-11 with CE-9	3.669	3	.3208	.5715
CE-9 with CE-10	3.422	4	10.1081	.0016*
CE-10 with CE-6	3.381	4	.3421	.5590
CE-6 with CE-1	3.287	4	1.1725	.2797
CE-1 with CE-4	3.244	4	.2910	.5899

* Significant at the .05 level

The level of understanding rating is significantly different for "Energy Management Programs" (CE-12); "Basic Codes and Regulations That Impact Property Management" (CE-12); "Basic Engineering Principles for Cooling and Heating Systems" (CE-2); and "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" (CE-7). The level of understanding rating is significantly different for (CE-7) "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" and "Factors Responsible for Placing Heat Loads on a Building Cooling System"(CE-3), "Basic Building Materials Used in Building Construction" (CE-8), "Design and Maintenance of Automatic

[1]CE: "Content Expectation", used as an identification of the subjects' expectations of the necessary levels of understanding for usefullness of the content.

Control Systems for Building Equipment"(CE-11), and "Roofs and Roof Maintenance"(CE-9) respectively. The level of understanding rating is significantly different for "Roofs and Roof Maintenance"(CE-9) and "Water Treatment for Boilers and Cooling Water"(CE-10), "Design and Maintenace of Plumbing Systems"(CE-6), "Load Factors in Building Design"(CE-1), and "Sealing Material Necessary for the Best Performance of Windows and/or Curtain Walls"(CE-4).

On the basis of the above analysis, the null hypothesis is rejected. Subjects do significantly differ in their perceptions regarding necessary levels of understanding. Although there is not a significant difference between every content, there is enough difference to warrant this conclusion.

Level of Formality X Kind of Learning Experience

Research Question: Is there a relationship between level of formality and kind of learning experience?

Research Hypothesis: Subjects' preferences regarding level of formality are related to their preferences regarding kind of learning experience.

Statistical Hypothesis: Subjects' judgments regarding level of formality bear no significant relationship to their judgments regarding kinds of learning experience.

Table 4.17 is a summary of a univariate analysis of variance for formality and each one of the kinds of learning experiences. Although they are listed in one table, a separate univariate analysis was necessary for each individual kind of learning experience because of the linear dependance of the variables on one another, thus producing a scale that is ipsative in nature and resulting in a singular matrix. The table shows three separate contrasts for level of formality. These contrasts are

TABLE 4.17
UNIVARIATE ANALYSIS OF VARIANCE FOR PREFERENCE FOR LEVEL OF FORMALITY BY THE MEAN NUMBER OF TIMES INPUT, SELF AWARENESS AND SHARING WERE CHOSEN AS PREFERRED KINDS OF LEARNING EXPERIENCES

Levels of Formality Contrasts	Kind of Learning Experience					
	Input		Self Awareness		Sharing	
	F	Sig. of F	F	Sig. of F	F	Sig. of F
1. Low Formal vs. High Formal	8.188	.0045*	.4392	.5078	13.5055	.00028*
2. Very High Formal vs. Moderately High Formal	1.269	.2608	.8498	.3573	.20414	.65171
3. Very Low Formal vs. Moderately Low Formal	.16854	.6817	.0019	.9649	.2346	.6285

*Significant at the .05 level

derived from the four possible scores on level of formality. To pass judgment on a preference for level of formality, subjects were asked to indicate in which of two pictures they felt students were learning the most. The setting was held constant and judgments were made in three different settings. A score of one was assigned for low formality and a score of two for high formality. Thus, if a subject was consistent in choosing low formality, a score of three results and if subjects are consistent in choosing high formality, a score of six results. A score of four is two low choices and one high and a score of five is two high choices and one low. The level chosen is used for the univariate analysis of variance with kind preference for each of learning experience. The kind of learning experience variables that are being used is the score of preference for each kind of learning experience.

Table 4.18 lists the mean scores for each level of formality by kind of learning experience. Analysis of these mean scores will give an indication of what direction a relationship is taking if a relationship does exist between level of formality and kind of learning experience.

From Table 4.18 the following can be observed. There is a significant relationship between the mean number of times input and sharing were chosen and the contrast between the lower scoring formal and the higher scoring formal. There were no other significant differences on any other scores for level of formality and kinds of learning experiences.

The means in Table 4.18 give the direction of the two relationships which are significant. Subjects who show a score preference for low formality have a higher mean score on preference for sharing. The reverse is also true. Subjects who show a score preference for a high formal situation have a lower mean score on preference for sharing.

Subjects who show a score preference for low formality have a lower mean score on preference for input. Also, subjects who show a score

TABLE 4.18
MEAN COMPARISONS OF THE FOUR LEVELS OF FORMALITY FOR INPUT, SHARING AND SELF AWARENESS

Levels of Formality	Kind of Learning Experience		
	Mean Level For Input	Mean Level For Self Awareness	Meal Level For Sharing
1. Low Formal	1.565	2.565	4.870
2. Moderately Low Formal	1.953	2.575	4.472
3. Moderately High Formal	2.294	2.524	4.183
4. High Formal	2.571	2.857	3.571

preference for high formality have a higher mean score on preference for input.

Therefore, the null hypothesis is rejected. Subjects within this population do show a preference for what level of formality they prefer with sharing and input. However, there is no conclusive relationship between level of formality and self-awareness. Furthermore, we can conclude that those who score higher on formality will score higher on input and lower on sharing; further, those who score lower on formality will score lower on input and higher on sharing.

Level of Formality By Content Importance

Research Question: Is there a relationship between level of formality and content importance?

Research Hypothesis: Subjects' preferences regarding level of formality are related to their judgments regarding importance of content.

Statistical Hypothesis: There will be no relationship between level of formality and content importance.

Table 4.19 shows the results of a multivariate analysis of variance between subjects' preference for level of formality and their judgments on content impotance for the set of 12 content areas. Notice from Table 4.18 that there is no significant difference with the multivariable analysis for any of the three contrasts of levels of formality and judgment of content importance. Because there is no significant difference on the multivariate test, it is not appropriate to discuss the univariate results.

TABLE 4.19
MULTIVARIATE ANALYSIS OF VARIANCE FOR DIFFERENCES IN JUDGMENT OF IMPORTANCE OF CONTENT BY PREFERENCE FOR LEVEL OF FORMALITY

Level of Formality Contrasts	Judgment of Importance of Content			
	Approx. F	Hypothesis D.F	Error D.F	Sig. of F
1. Low Formal vs. High Formal	1.16307	12	305	.30916
2. High Formal vs. Moderately High Formal	.63100	12	305	.81545
3. Low Formal vs. Moderately Low Formal	.56472	12	305	.86980

Therefore, on the basis of these findings the null hypothesis is not rejected. There appears to be no significant relationship between subjects' preference for level of formality and subjects' judgments on content importance.

Level of Formality By Necessary Level of Understanding

Research Question: Is there a relationship between level of formality and necessary level of understanding?

Research Hypothesis: Subjects' preferences regarding level of formality are significantly related to their judgments regarding necessary level of understanding.

Statistical Hypothesis: There will be no relationship between level of formality and subjects' judgment of necessary level of undertstanding.

Table 4.20 shows the results of a multivariate analysis of variance between subjects' preference for level of formality and their judgments on the necessary levels of understanding for the set of 12 content areas.

Notice from Table 4.20 that there is no significant difference with the multivariate analysis for any of three contrasts of level of formality and judgment on necessary levels of understanding. Because there is no significant difference on the multivariate test, it is not appropriate to discuss the univariate results.

TABLE 4.20
MULTIVARIATE ANALYSIS OF VARIANCE FOR DIFFERENCES IN JUDGMENT OF NECESSARY LEVELS OF UNDERSTANDING BY PREFERENCE FOR LEVEL OF FORMALITY

Level of Formality Contrasts	Judgment of Necessary Levels of Understanding			
	Approx. F	Hypothesis D.F	Error D.F	Sig. of F
1. Low Formal vs. High Formal	.64605	12	305	.80204
2. High Formal vs. Moderately High Formal	1.43744	12	305	.14765
3. Low Formal vs. Moderately Low Formal	.80582	12	305	.64447

Therefore, on the basis of these findings the null hypothesis is not rejected. There appears to be no significant relationship between the subjects' preference for level of formality and subjects' judgments on the necessary levels of understanding.

Level of Formality with Instructional Setting

Research Question: Is there a relationship between level of formality and setting?

Research Hypothesis: Subjects' preferences regarding level of formality are significantly related to their preferences regarding instructional setting.

Statistical Hypothesis: There will be no significant relationship between subjects' judgment regarding level of formality and their judgment regarding instructional setting.

Table 4.21 is a summary of a univariate analysis of variance for formality and each one of the instructional settings. Although they are listed in one table, a separate univariate analysis was necessary for each individual instructional setting because of the linear dependence of the individual variables (equipment room, small group and classroom) on each other. The table shows three separate contrasts for level of formality. These contrasts are derived from the four possible scores on level of formality. The scoring for level of formality was explained above in the section on the relationship of level of formality with kind of learning experience. The scoring for level of formality remains the same for this particular hypothesis.

From Table 4.21 the following can be observed. There is a significant relationship between the mean number of times equipment room, small group and classroom were chosen and certain paired contrasts of the level of formality variable. Table 4.22 provides more information on the nature of the relationship.

First, from Table 4.22, for equipment room there is a significant difference in the mean number of times equipment room was chosen and the contrast of low formality versus high formality and the contrast between the very high formal versus the moderately high formal.

The means from Table 4.22 indicate the direction of the difference. Those subjects who show a low score preference for formality have a higher mean score on preference for equipment room as an instructional setting. The reverse is also true. Subjects who show a score preference for high formality situations have a lower mean score on preference for equipment room as an instructional setting. In addition, subjects who show a

TABLE 4.21
UNIVARIATE ANALYSIS OF VARIANCE FOR LEVEL OF FORMALITY BY MEAN NUMBER OF TIMES EQUIPMENT ROOM, SMALL GROUP AND CLASSROOM WERE CHOSEN AS PREFERRED INSTRUCTIONAL SETTINGS

Levels of Formality Contrasts	Instructional Settings					
	Equipment Room		Small Group		Classroom	
	F	Sig. of F	F	Sig. of F	F	Sig. of F
1. Low Formal vs. High Formal	4.1996	.04125*	12.77174	.00041*	28.55818	.00001*
2. Very High Formal vs. Moderately High Formal	24.15684	.00001*	8.57976	.00365*	1.01774	.31383
3. Very Low Formal vs. Moderately Low Formal	.11303	.73694	6.31572	.01246*	5.31572	.02178*

*Significant at the .05 level

TABLE 4.22
COMPARISONS OF PAIRED CONTRASTS OF THE FOUR LEVELS OF FORMALITY WITH THE MEAN SCORE OF PREFERENCE FOR EQUIPMENT ROOM, SMALL GROUP AND CLASSROOM

Levels of Formality	Instructional Setting		
	Mean Scores for Equipment Room	Mean Scores for Small Group	Mean Scores for Classroom
1. Low Formal	3.30435	2.08696	.60870
2. Moderately Low Formal	3.31496	2.22835	.45669
3. Moderately High Formal	3.56349	1.58730	.84921
4. High Formal	2.57143	1.66667	1.76190

moderately high score preference for formality have a higher mean score on preference for equipment room as an instructional setting than subjects who show a high preference for formality. The trend is clearly one in which those who prefer the equipment room as an instructional setting show a clearer preference for lower formality. Further study of Table 4.22 indicates that subjects who show a score preference for low formal learning situations have a higher mean score on preference for the small group as an instructional setting. The reverse is also true, subjects who show a score preference for high formal learning situations have a lower mean score on preference for the small group as an instructional setting.

The trend for subjects who show a score preference for the classroom as an instructional setting runs counter to findings for the other two instructional settings. Subjects who show a higher mean score preference for the classroom show a preference for high formality. The reverse is also true, subjects with a lower mean score on preference for classroom have lower mean preference scores for formality.

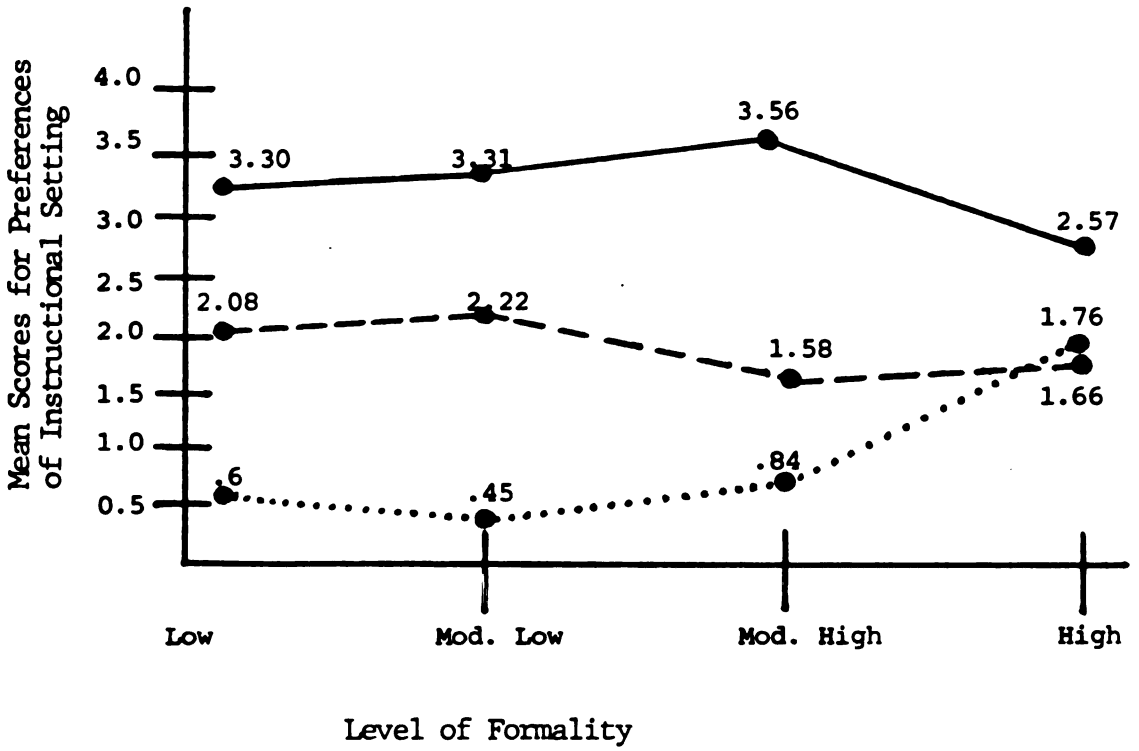
Therefore, the null hypothesis is rejected. There is a significant relationship between level of formality and preference for instructional setting. Figure 4.2 summarizes the relationships found between level of formality and instructional setting.

Kind of Learning Experience With Content Importance

Research Question: Is there a relationship between kind of learning experience and content importance?

Research Hypothesis: Subjects' preferences regarding kind of learning experience are significantly related to judgments regarding content importance.

Statistical Hypothesis: There will be no significant relationship between preference for kind of learning experience and subjects' judgments concerning content importance.



Key:

_____ Equipment Room

- - - - Small Group

..... Classroom

FIGURE 4.2
RELATIONSHIP OF PREFERENCE FOR LEVEL OF FORMALITY
AND PREFERENCE FOR INSTRUCTIONAL SETTING

Table 4.23 is the result of a multivariate analysis of variance for significance between the variable named "learning preference" and content importance. Learning preference is calculated by taking each individual choice made by each subject and adding all scores for the individual choices within the various combinations to get the total score for each kind of learning experience.

TABLE 4.23
RESULTS OF MULTIVARIATE ANALYSIS OF VARIANCE BETWEEN LEARNING PREFERENCE AND CONTENT IMPORTANCE

Approx. F	Hypothesis D.F	Error D.F	Significance of F.
1.54494	24	534	.04821*

*Significant at the .05 level.

Table 4.23 indicates that there is a significant relationship between learning preference and content importance for the set of 12 content areas. Further analysis were pursued to ascertain which contents are accounting for the difference and what the nature of the relationship is between those contents and learning preference.

Table 4.24 identifies which contents account for the difference between learning preference and content importance.

TABLE 4.24
UNIVARIATE F. TESTS FOR SIGNIFICANCE OF THE TWELVE SEPARATE CONTENT STATEMENTS

Content Statement	F	Significance of F
CI-1	1.74195	.17709
CI-1	.29293	.74631
CI-3	5.69411	.00377*
CI-4	.19380	.83221
CI-5	1.86835	.15632
CI-6	.39753	.67236
CI-7	3.04901	.04900*
CI-8	.14585	.86461
CI-9	.64605	.71708
CI-10	.64605	.52490
CI-11	.59077	.55460
CI-12	1.20615	.30091

*Significant at the .05 level.

Note from Table 4.24 that "Factors Responsible for Placing Heat Loads on a Building's Cooling System"(CI-3), and "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" (CI-7) are the two contents that have a significant relationship with preference for kind of learning experience. Table 4.25 "Relationship of Preference for Kind of Learning to Specific Course Contents" provides information on the specific nature of the relationship.

TABLE 4.25
RELATIONSHIP OF PREFERENCE FOR KIND OF LEARNING TO SPECIFIC COURSE CONTENTS AND MEAN RATINGS FOR LEARNING PREFERENCE

Learning Preference Contrasts	Specific Content Importance Statement			
	CI-3		CI-7	
	T-Value	Sig. of T	T-Value	Sig. of T
1. Input vs. Sharing	-2.50538	.01281*	2.32463	.02081*
2. Input and Sharing vs. Self-Awareness	-2.81218	.00527*	.22972	.81848

Mean Ratings for Learning Preference	CI-3	CI-7
1. Input	3.75000	3.41667
2. Sharing	3.41500	3.76500
3. Self-Awareness	3.18182	3.67972

*Significant at the .05 level.

Table 4.25 indicates that there is a significant relationship between learning preference and both the CI-3 and CI-7 content statements. For the CI-3 content statement, there is a difference between both input versus sharing and input and sharing versus self-awareness. The direction and nature of the difference is revealed by the size of the means for these three kinds of learning experiences also found in Table 4.24. Input has the largest mean score followed by sharing, then self-awareness. When it comes to the course content CI-3 "Factors Responsible for Placing Heat Loads on a Building's Cooling System" subjects prefer input kind of learning experience over sharing and they prefer input and sharing combined over self-awareness.

When it comes to course content, "Roles and Relationships of Owners, Architects and contractors in Development Construction" (CI-7), sharing has the higher mean than input and there is no significant difference between input and sharing compared with self-awareness.

Therefore, the null hypothesis can be only partially rejected. There is a significant relationship between CI-3 and CI-7 and learning preference, but the null hypothesis must be accepted for the other item course contents. There appears to be no significant relationship between the content importance rating of CI-1, CI-2, CI-4, CI-5, CI-6, CI-8, CI-9, CI-10, CI-11, and CI-12 and learning preference.

Kind of Learning Experience With Necessary Level of Understanding

Research Question: Is there a relationship between kind of learning experience and level of understanding?

Research Hypothesis: Subjects' preferences regarding kind of learning experience are significantly related to judgments regarding the necessary level of understanding for a relevant learning experience.

Statistical Hypothesis: There is no significant relationship between subjects' preference for kind of learning experience and their judgment regarding the necessary level of understanding.

Table 4.26 is the result of a multivariate analysis of variance for significance between the variable named "learning preference" and the subjects' judgments regarding the necessary level of understanding for relevant learning. In the previous section, a description of how learning preference is calculated was given.

The necessary level of understanding is a rating by each subject of which level of understanding is the minimum acceptable level necessary for a particular content. Table 4.26 indicates that there is not a

significant relationship between learning preference and subjects' judgments concerning the necessary levels of understanding.

TABLE 4.26
RESULTS OF MULTIVARIATE ANALYSIS OF VARIANCE BETWEEN LEARNING PREFERENCE AND JUDGMENTS CONCERNING NECESSARY LEVEL OF UNDERSTANDING

Approx. F	Hypothesis D.F	Error D.F	Significance of F
.73019	012	266	.72143

Therefore, on the basis of no significance on the multivariate analysis between learning preference and level of understanding, the null hypothesis is not rejected. There appears to be no significant relationship between preference for kind of learning experience and subjects' judgments concerning necessary level of understanding. Subjects' preference for kind of learning experiences is not related to what importance they place on levels of understanding necessary for relevant learning to occur in certain specific content areas.

Kind of Learning Experience With Instructional Setting

Research Question: Is there a relationship between kind of learning experience and setting?

Research Hypothesis: Subjects' preferences regarding kind of learning experience are significantly related to preferences regarding instructional setting.

Statistical Hypothesis: There is no significant relationship between preference for kind of learning experience and preference for instructional setting.

Table 4.27 shows the results of the cross tabulation of kinds of learning experience with preference for instructional setting. The Chi-square is not significant, therefore, the null hypothesis is not rejected.

There appears to be no significant relationship between preference for kind of learning experience and preference for instructional setting.

TABLE 4.27
CHI-SQUARE BETWEEN KIND OF LEARNING EXPERIENCE AND INSTRUCTIONAL SETTING

Chi-Square	Degrees of Freedom	Significance
25.88465	18	.1024

Content Importance With Level of Understanding

Research Question: Is there a relationship between content importance and level of understanding?

Research Hypothesis: Subjects' judgments regarding content importance will be positively related to judgments regarding the necessary level of understanding for a relevant learning experience.

Statistical Hypothesis: There will be no relationship between subjects' judgment regarding content importance and the necessary level of understanding for a relevant learning experience.

Table 4.28 presents the Spearman correlation coefficients for all of the CI's and CE's, plus the level of significance. Spearman's coefficient was selected for use because there are so few numbers used in the range of the scales.

The data in Table 4.28 demonstrate that there is a fairly high positive correlation between all content importance judgments (CI) and levels of understanding (CE) for all 12 content areas. The highest correlation is CI-11 and CE-11 at .7154 with the lowest being CI-2 with CE-2 at .4687. All of the correlations have a significance of .001 at the .05 level.

TABLE 4.28
CORRELATION OF SUBJECTS' JUDGMENTS CONCERNING CONTENT IMPORTANCE WITH JUDGMENTS CONCERNING NECESSARY LEVELS OF UNDERSTANDING

Variable	CI-1 With CE-1	CI-2 With CE-2	CI-3 With CE-3	CI-4 With CE-4	CI-5 With CE-5	CI-6 With CE-6
r =	.6185	.4687	.5633	.5366	.4732	.6020
Sig =	.001*	.001*	.001*	.001*	.001*	.001*

Variable	CI-7 With CE-7	CI-8 With CE-8	CI-9 With CE-9	CI-10 With CE-10	CI-11 With CE-11	CI-12 With CE-12
r =	.6768	.6961	.6533	.6989	.7154	.5477
Sig =	.001*	.001*	.001*	.001*	.001*	.001*

N = 320

*Significant at the .05 level

Therefore, the null hypothesis is rejected. There is a positive relationship between judgments of content importance and judgments regarding the necessary levels of understanding. When subjects rated a content more important, they also gave it a higher rating on the necessary level of understanding scale.

Content Importance with Instructional Setting

Research Question: Is there any relationship between content importance and setting?

Research Hypothesis: Subjects' judgments regarding content importance are significantly related to preferences regarding instructional setting.

Statistical Hypothesis: There will be no significant relationship between subjects' judgment of content importance and subjects' preference for instructional setting.

Table 4.29 shows the results of a multivariate analysis of variance of six paired contrasts of various instructional settings with importance ratings of the twelve content statements as the set of dependent variables. The paired contrasts of instructional settings were created to explore logical combinations of relationships that may possibly show some relationship to content importance and level of understanding. The six paired contrasts are (1) clear preference for setting versus no clear preference for setting; (2) equipment room versus small group and classroom; (3) small group versus classroom; (4) non-classroom, small group and equipment room versus all other no clear preference; (5) non-small group, classroom and equipment room versus non-equipment room and no preference; and (6) non-equipment, small group and classroom room versus no preference.

TABLE 4.29
MULTIVARIATE ANALYSIS OF VARIANCE FOR A SIGNIFICANT RELATIONSHIP BETWEEN CONTENT IMPORTANCE AND PREFERENCE FOR INSTRUCTIONAL SETTING

Paired Contrasts for Setting	Judgment of Content Importance			
	Approximate F	Hypothesis D.F.	Error D.F.	Significance of F
1	.93361	12	302	.51344
2	.58769	12	302	.85188
3	1.12722	12	302	.33721
4	1.50109	12	302	.12242
5	.80516	12	302	.64515
6	1.42963	12	302	.15111

The results in Table 4.29 indicate that there is no significant relationship between preference for instructional setting and rating of content importance. Therefore, the null hypothesis is not rejected. There appears to be no relationship between subjects' importance rating of course contents and their preferences for instructional setting.

Level of Understanding With Instructional Setting

Research Question: Is there a relationship between level of understanding and setting?

Research Hypothesis: Subjects' preferences regarding level of understanding are significantly related to preferences regarding instructional setting.

Statistical Hypothesis: There will be no significant relationship between subjects' judgments concerning necessary levels of understanding and preference for a particular instructional setting.

Table 4.30 shows the result of a multivariate analysis of variance of six paired contrasts of various instructional settings against the twelve ratings on necessary levels of understanding. The paired contrasts of instructional setting were created to explore logical combinations of relationships that may possibly show some relationship to necessary levels of understanding. The six paired contrasts are (1) clear preference for setting versus no clear preference for setting; (2) equipment room versus small group and classroom; (3) small group versus classroom; (4) non-classroom, small group and equipment room versus all other no clear preference; (5) non-small group, classroom and equipment room versus non-equipment room and no preference; and (6) non-equipment room, small group and classroom versus no preference.

TABLE 4.30
MULTIVARIATE ANALYSIS OF VARIANCE FOR A SIGNIFICANT RELATIONSHIP BETWEEN JUDGMENT OF NECESSARY LEVELS OF UNDERSTANDING AND PREFERENCE FOR INSTRUCTIONAL SETTING

Paired Contrasts for Setting	Necessary Levels of Understanding			
	Approximate F	Hypothesis D.F.	Error D.F.	Significance of F
1	.50032	12	302	.91391
2	.94269	12	302	.50440
3	.99123	12	302	.45713
4	.91819	12	302	.52891
5	1.15653	12	302	.31420
6	1.01741	12	302	.43249

The results in Table 4.30 indicate that there is no significant relationship between preference for instructional setting and subjects' judgments regarding necessary levels of understanding. Therefore, the null hypothesis is not rejected. There is no relationship between subjects' judgments concerning necessary levels of understanding and their preference for instructional setting.

Major With Level of Formality

Research Questions: Is there a relationship between his/her major in school and an adult learners' expectations concerning level of formality?

Research Hypothesis: Subjects' majors in school are significantly related to preferences regarding level of formality.

Stastistical Hypothesis: There is no relationship between subjects' major in school and preference for level of formality.

Table 4.31 is a frequency distribution of four categories of major created from the raw data.

TABLE 4.31
FREQUENCY DISTRIBUTION OF MAJOR IN SCHOOL

Major			
Neither	Business	Engineering	Both
48.4%	34.4%	15.6%	1.6%

N = 320

The four categories of majors were created by combining all other majors except business and engineering for the first category. The second category is business only and the third is engineering only. The fourth category is a combination of engineering and business. The frequency Table 4.31 indicates that almost one-half of the sample has had

neither business nor engineering work in school. One-third of the sample has had business background in school Fifteen percent of the sample has had engineering work in school with one and a half percent having both engineering and business. The variable major was organized in this manner because of the course content variable in the study. The course content variable is engineering-type material. It was postulated that relationships between major and other variables would be more likely to surface if the major was organized in this manner.

Table 4.32 is a crosstab and Chi-square on the relationship of level of formality with major in school.

TABLE 4.32
CROSSTAB AND CHI-SQUARE OF LEVEL OF FORMALITY WITH MAJOR IN SCHOOL

Chi-Square	Degees of Freedom	Significance
8.50506	9	.4842

N = 320

Table 4.32 indicates that there is not a significant relationship between level of formality with major in school. Therefore, the null hypothesis is not rejected. There appears to be no relationship between level of formality and major in school. Subjects' major in school shows no relationship to subjects' preference for level of formality.

Major With Kind of Learning Experience

Research Question: Is there a relationship between his/her major in school and an adult learner's expectations concerning kind of learning experience?

Research Hypothesis: Subjects' majors in school are significantly related to preferences regarding kind of learning experience.

Statistical Hypothesis: There is no significant relationship between majors in school and kind of learning experience.

Table 4.33 shows the results of a cross tabulation of major with kind of learning experience. The Chi-square is not significant so the null hypothesis is not rejected. There appears to be no significant relationship between subjects' majors in school and preference for kind of learning experience.

TABLE 4.33
CHI-SQUARE BETWEEN MAJOR AND KIND OF LEARNING EXPERIENCE

Chi-Square	Degrees of Freedom	Significance
4.118	18	.9997

Major With Importance of Content

Research Question: Is there any relationship between his/her major in school and expectations concerning content importance?

Research Hypothesis: Subjects' majors in school are significantly related to judgments regarding content importance.

Statistical Hypothesis: There is no significant relationship between major in school and the importance of content rating.

Table 4.34 is a multivariate analysis of variance of major in school with rating of content importance.

Table 4.34 indicates that there is no significant relationship between major in school and rating of content importance. Therefore, the null hypothesis is not rejected. There appears to be no significant relationship between major in school and rating on content importance. A subject's major does not influence his evaluation of how important a particular content is for a properly trained property manager.

TABLE 4.34
MULTIVARIATE ANALYSIS OF VARIANCE OF MAJOR IN SCHOOL
WITH RATING OF CONTENT IMPORTANCE

Major Paired Contrast	Ratings of Content Importance			
	Approx. F	Hypothesis D.F.	Error D.F	Sig. of F
1. Neither Business and Engineering against Business	1.66912	12	305	.07269
2. Business against Engineering	1.49905	12	305	.12310
3. Engineering against Business and Engineering	1.11870	12	305	.34404

Major With Level of Understanding

Research Questions: Is there a relationship between his/her major in school and expectations concerning the level of understanding?

Research Hypothesis: Subjects' majors in school are significantly related to judgments regarding necessary level of understanding.

Statistical Hypothesis: There is no significant relationship between major in school and subjects' judgment concerning necessary level of understanding.

Table 4.35 is a multivariate analysis of variance of major in school with ratings of necessary levels of understanding for specific contents.

Table 4.35 indicates that the third paired contrast, Engineering against usiness and Engineering, is significant at the .05 level. Therefore, an analysis of the mean scores on level of understanding in relation to that third paired contrast will give some indication of the direction of the difference between mean scores in the paired contrasts.

TABLE 4.35
MULTIVARIATE ANALYSIS OF VARIANCE OF MAJOR IN SCHOOL WITH RATINGS OF SUBJECTS' JUDGMENTS OF NECESSARY LEVEL OF UNDERSTANDING

Major Paired Contasts	Ratings of Necessary Level of Understanding			
	Approx. F	Hypothesis D.F.	Error D.F	Sig. of F
1. Neither Business and Engineering against Business	.78714	12	305	.66375
2. Business against Engineering	1.16690	12	305	.30626
3. Engineering against Business and Engineering	2.11311	12	305	.01604*

*Significant at the .05 level

Table 4.36 presents the means for the third paired contrast and the CE statements that show a significant relationship.

TABLE 4.36
COMPARISON OF MEAN SCORES OF NECESSARY LEVELS OF UNDERSTANDING WITH THE PAIRED COMPARISON OF BUSINESS AND BUSINESS AND ENGINEERING

Content Statements	Mean Scores of Significant Levels of Understanding Paired Contrast Means of Business Against Business and Engineering	
CE-1--Load Factors in Building Design	Business vs. Business & Engineering	— 4.14 — 4.40
CE-8--Basic Building Materials Used in Building Construction	Business vs. Business & Engineering	-- 3.36 -- 4.60
CE-12--Basic Codes and Regulations that Impact Property Management	Business vs. Business & Engineering	— 2.70 — 4.00

Table 4.36 indicates that for each of the significant CE ratings for levels of understanding those who have had both business and engineering majors rate those content statements higher on the necessary levels of understanding scale. Those subjects with both business and engineering majors, or engineering only majors, tend to prefer a higher level of understanding for the content statements than those with business majors in only business.

Therefore, the null hypothesis is only partly rejected. There is a relationship between some majors and ratings on necessary levels of understanding for some content areas. It would appear that the subjects with the more varied school backgrounds (with majors in both business and engineering) feel the need in some content areas for a higher level of understanding. This is a definite trend but further research would need to be done to fully identify the strength of the relationship.

Major With Instructional Setting

Research Questions: Is there a relationship between his/her major in school and expectations concerning the instructional setting?

Research Hypothesis: Subjects' majors in school are significantly related to preferences regarding instructional setting.

Statistical Hypothesis: There is not a significant relationship between subjects major in school and their preference for instructional setting.

Table 4.37 is a summary of a univariate analysis of variance for majors in school with each one of the instructional settings. Although they are listed in one table, a separate univariate analysis was necessary for each individual instructional setting because of the linear dependence of the individual variables (equipment room, small group and classroom) on each other. The table shows three separate contrasts for major.

TABLE 4.37
UNIVARIATE ANALYSIS OF VARIANCE FOR MAJOR BY MEAN NUMBER OF TIMES EQUIPMENT ROOM, SMALL GROUP AND CLASSROOM WERE CHOSEN AS PREFERRED INSTRUCTIONAL SETTINGS

Major in School Paired Contrasts	Instructional Settings					
	Equipment Room		Small Group		Classroom	
	F	Sig. of F	F	Sig. of F	F	Sig. of F
1. Neither Business or Engineering against Business, Engineering & both Business & Engineering	7.47710	.00660*	10.53312	.00130*	1.15462	.28340
2. Business against Engineering	.70208	.40272	1.19166	.27583	.18181	.67011
3. Business against Business and Engineering	7.06231	.00827*	1.11281	.29228	1.11268	.29231

*Significant at the .05 level

Table 4.37 indicates that there is a significant relationship between major in school and preference for both equipment room and small group instructional settings. There is no significant relationship between major in school and classroom as a preferred instructional setting.

Table 4.38 must be studied to provide further insight as to the nature of the relationship between major and mean scores on preference for instructional setting.

Table 4.38 indicates that subjects who did not have business or engineering majors had a higher mean preference score for equipment room as an instructional setting than those who have had business or engineering or both business and engineering. Also, subjects who have only a business background have a higher mean preference score for equipment room as an instructional setting than those who have both business and engineering backgrounds. Clearly, the trend is for those who have no engineering backgrounds to prefer the equipment room as an instructional setting.

Further, from Table 4.38 subjects who have had neither business or engineering have a lower mean preference score for small group as an instructional setting than those who have had both business and engineering. Subjects who have had both business and engineering prefer small group as an instructional setting over subjects who have not had business or engineering.

Therefore, the null hypothesis cannot be rejected. There is a significant relationship between major in school and preference for instructional setting. In general, subjects with no business or engineering have the strongest preference for the equipment room setting while those with business and engineering have the highest mean preference for the small group setting.

TABLE 4.38
COMPARISONS OF PAIRED CONTRAST OF MAJOR IN SCHOOL WITH MEAN SCORE OF PREFERENCE FOR EQUIPMENT ROOM, SMALL GROUP, AND CLASSROOM

Major in School	Instructional Setting		
	Mean Scores for Equipment Room	Mean Scores for Small Group	Mean Scores for Classroom
1. Neither Business or Engineering	3.51613	1.72903	.75484
2. Business	3.31818	2.03636	.64545
3. Engineering	3.02000	2.16000	.82000
4. Business and Engineering	3.00000	2.80000	.20000

Years of Formal Schooling With Level of Formality

Research Question: Is there a relationship between his/her years of formal schooling and the adult learners' expectations concerning level of formality?

Research Hypothesis: Subjects' years of formal schooling are significantly related to preferences regarding levels of formality.

Statistical Hypothesis: There is no significant relationship between years of formal schooling level of formality.

TABLE 4.39
CORRELATION BETWEEN YEARS OF FORMAL SCHOOLING AND LEVEL OF FORMALITY

Number of Subjects	Correlation	Significance
316	.0413	.233

Table 4.39 indicates that there is not a significant relationship between preference for years of formal schooling and level of formality. Therefore the null hypothesis is not rejected. There appears to be no relationship between subjects' preference for level of formality and years of formal schooling.

Years of Formal Schooling with Settings

Research Question: Is there a relationship between his/her years of formal schooling and the adult learners' expectations concerning the instructional setting?

Research Hypothesis: Subjects' years of formal schooling are significantly related to preferences regarding instructional setting.

Statistical Hypothesis: There will be no significant relationship between the number of years in formal school and preference for instructional setting.

Table 4.40 shows the results of a multivariate analysis of variance of six paired contrasts of various instructional settings against number of years of formal schooling. The paired contrasts of insructional settings were created to explore relationships that may possibly show some relationship to number of years of formal schooling. The six paired contrasts are (1) clear preference for setting versus no clear preference for setting; (2) equipment room versus small group and classroom; (3) small group versus classroom; (4) non-classroom, small group and equipment room versus all other no clear preference; (5) non-small group, equipment room and classroom versus non-equipment room and no clear preference; and (6) non-equipment room, small group and classroom versus no preference.

TABLE 4.40
MULTIVARIATE ANALYSIS OF VARIANCE FOR A SIGNIFICANT RELATIONSHIP BETWEEN NUMBER OF YEARS OF FORMAL SCHOOLING AND PREFERENCE FOR INSTRUCTIONAL SETTING

Paired Contrast for Setting	Number of Years of Formal Schooling			
	Approx. F	Hypothesis D.F.	Error D.F	Sig. of F
1	.19473	2	306	.82316
2	7.07958	2	306	.00099*
3	.68535	2	306	.50468
4	.29342	2	306	.74592
5	.25166	2	306	.77767
6	.45619	2	306	.63412

*Significant at the .05 level

Table 4.40 indicates that contrast number two, equipment room versus small group and classroom, is significant.

Table 4.41 is the univariate analysis of variance for number of years of formal education.

TABLE 4.41
UNIVARIATE ANALYSIS OF VARIANCE FOR NUMBER OF YEARS OF FORMAL SCHOOLING FOR PAIRED CONTRAST OF EQUIPMENT ROOM VS. SMALL GROUP AND CLASSROOM

Univariate	F	Significance of F
Number of Years of Formal Schooling	8.61351	.00359*

*Significant at the .05 level

The univariate analysis of variance for setting contrast number two indicates that the number of years of formal education is significantly related to the preference for equipment room as an instructional setting versus small group and classroom.

Contrast number two indicates that the average number of years of formal schooling is less for those who chose equipment room than the average number of years of schooling for those who chose small group or classroom.

Therefore, the null hypothesis can be partially rejected. There is a significant relationship between the number of years of formal schooling and preference for the instructional setting of equipment room. No other relationships between years of formal schooling and instructional setting were identified. It can be said, however, that those who have had less formal schooling have a stronger preference for the equipment room as an instructional setting.

Years of Employment in Property Management with Content Importance

Research Question: Is there a relationship between his/her years of employment in property management and the adult learners' expectations concerning content importance?

Research Hypothesis: Subjects' years of employment in property management are significantly related to judgments regarding content importance.

Statistical Hypothesis: There is no significant relationship between the number of years in property management and subjects' ratings of content importance.

Table 4.42 shows the correlation between number of years in property management and ratings of content importance.

TABLE 4.42
CORRELATIONS BETWEEN THE NUMBER OF YEARS IN PROPERTY MANAGEMENT AND SUBJECTS' RATINGS OF CONTENT IMPORTANCE

Years In Property Management	CI-1	CI-2	CI-3	CI-4	CI-5	CI-6
Correlation	-.0574	.0793	.0431	-.0456	.0479	-.0259
Significance	.161	.085	.228	.215	.204	.327

Years In Property	CI-7	CI-8	CI-9	CI-10	CI-11	CI-12
Correlation	.0140	-.1000	-.0538	-.0111	-.0228	-.0981
Significance	.404	.042*	.178	.424	.347	.045*

N = 320

*Significant at the .05 level

Table 4.42 indicates that there is no correlation between the number of years in property management and subjects' ratings of content importance. There are two statements, CI-8 and CI-12, which show a significance of just under .05. This indicates that the correlations

between CI-8 and CI-12 and ratings of content importance are greater than what would occur by chance.

Therefore, on the basis of the above data, the null hypothesis is not rejected. There appears to be no relationship between the number of years subjects have been in property management and how important they rate particular content statements.

Years of Employment in Property Management With Necessary Level Of Understanding

Research Question: Is there a relationship between his/her years of employment in property management and the adult learners expectations concerning level of understanding?

Research Hypothesis: Subjects' years of employment in property management are significantly related to judgments regarding necessary levels of understanding.

Statistical Hypothesis: There is no significant relationship between the number of years in property management and subjects' ratings of necessary levels of understanding.

Table 4.43 indicates that there is no correlation between number of years in property management and ratings of the necessary levels of understanding.

There are two statements, CE-3 and CE-12, which show a significance of just under .05. This indicates that the correlations between CE-3 and CE-12 and ratings of necessary levels of importance are greater than what would occur by chance.

Therefore, on the basis of the above data, the null hypothesis is not rejected. There appears to be no relationship between the number of years subjects have been in property management and how important they rate the necessary levels of understanding.

TABLE 4.43
CORRELATIONS BETWEEN THE NUMBER OF YEARS IN PROPERTY MANAGEMENT AND SUBJECTS' RATINGS OF NECESSARY LEVELS OF UNDERSTANDING

Years In Property Management	CE-1	CE-2	CE-3	CE-4	CE-5	CE-6
Correlation	-.0529	.0748	.0955	-.0053	.0414	-.0210
Significance	.180	.098	.049*	.464	.237	.358

Years In Property Management	CE-7	CE-8	CE-9	CE-10	CE-11	CE-12
Correlation	.0030	-.0152	-.0293	-.0359	-.0273	-.1192
Significance	.480	.396	.306	.267	.318	.019*

N = 320

*Significant at the .05 level

Other Findings

Because there are indications in the adult education theoretical literature that age is often a good predictor of preference for certain kinds of learning settings, the raw data were analyzed for possible relationships between age and preference for level of formality, preference for kind of learning experience, rating of content importance, rating for necessary level of understanding and preference for instructional setting. The results are as follows:

A. Level of Formality and Age.

There was no significant relationship found between age and preference for level of formality.

B. Preference for Kind of Learning Experience and Age.

The statistical analysis using a univariate analysis of variance found a significant difference of .019 on the mean age of subjects and their preference for sharing over self-awareness as a kind of learning experience. Those preferring sharing over self-awareness are younger, with a mean age of 45.3 for those showing a preference for self-awareness.

C. Rating of Content Importance and Age.

There was one content statement that had any relationship to age. CI-8 "The Design and Maintenance of Automatic Control Systems for Building Equipment" showed a negative correlation of -.1976 with age with a significance of .001. Younger subjects rated content statement (CI-8) more important.

D. Rating of Necessary Levels of Understanding and Age.

There was no significant relationship between subjects' rating of necessary levels of understanding and age.

E. Preference for Instructional Setting and Age.

The statistical analysis using a univariate analysis of variance found a significant difference of .033 on mean age of subjects and their preference for an instructional setting. Those preferring equipment room over small group and classroom are younger, with a mean age of 41.9 versus a mean age of 48.5 for those showing a preference for small group and classroom.

CHAPTER 5

SUMMARY, CONCLUSIONS, DISCUSSION AND RECOMMENDATIONS

The purpose of the investigation was to inquire into the learners' expectations concerning several key variables and possible significant relationships among those variables (labeled expectation variables) as well as significant relationships between the expectation variables and other key variables termed "learner variables." Key relationships among these variables are being explored in order to better understand certain pedagogical expectations this particular population of adult learners has that, when met, contribute to an overall perception of the courses in the professional development program as being relevant for meeting perceived educational needs, interests, and motives.

Specifically, the problem focused on five major related variables labeled expectation variables. The problem was to examine (a) pedogogical expectations of the entire sample toward level of formality, kind of learning experience, curricular outcomes (content importance and level of understanding) and instructional setting; (b) relationship between the five expectation variables; and (c) relationships between selected learner variables, years of formal schooling, years of employment in property management, major in school, age, expectation variables, level of formality, kind of learning experience, importance of content, level of understanding and educational setting.

Chapter 5 presents the summary and implications of the findings resulting from the investigation. The conclusions are specified and implications for further research and for program development discussed.

Summary of Findings

Table 5.1 presents a complete summary of research findings.

TABLE 5.1
SUMMARY OF FINDINGS

Level of Formality (most preferred to least)	Low, High
Kind of Learning Experience (most preferred to least)	Sharing, Self-awareness, Input
Instructional Setting (most preferred to least)	Equipment room, small group, classroom
Content Importance (highest rating to lowest)	1. "Energy Management Programs" "Basic Codes and Regulations That Impact Property Management"
	2. "Basic Engineering Principles for Cooling and Heating Systems"
	3. "Roles and Relationships of Owners, Architects and Contractors in Development and Construction"
	4. "Factors Responsible for Placing Heat Loads on a Building's Cooling System" "Basic Materials Used In Building Construction" "Design and Maintenance of Automatic Control Systems for Building Equipment" "Roofs and Roof Maintenance"
	5. "Water Treatment for Boilers and Cooling Water" "Design and Maintenance of Plumbing Systems:

	6. "Load Factors in Building Design" "Sealing Materials Necessary for the Best Performance of Windows and/or Curtainwalls"
Level of Understanding Necessary (highest rating to lowest)	1. "Energy Management Programs" "Basic Codes and Regulations That Impact Property Management"
	2. "Basic Engineering Principles for Cooling and Heating Systems" "Roles and Relationships of Owners, Architects and Contractors in Development and Construction"
	3. "Factors Responsible for Placing Heat Loads on a Building's Cooling System" "Basic Materials Used In Building Construction" "Design and Maintenance of Automatic Control Systems for Building Equipment" "Roofs and Roof Maintenance"
	4. "Water Treatment for Boilers and Cooling Water" "Design and Maintenance of Plumbing Systems: "Load Factors in Building Design" "Sealing Materials Necessary for the Best Performance of Windows and/or Curtainwalls"
Formality by Kind of Learning Experience	Low formality preference have higher mean score on sharing. Low formality preference have lower mean score on input. No conclusive relationship between formality and self-awareness.
Formality by Content Importance	No relationship found at .05 level

Formality by Necessary Level of Understanding	No relationship found at .05 level
Formality by Instructional Setting	Low formality preference have higher mean scores on preference for equipment room. High formality preference have lower mean score on equipment room. Low formality preference have higher mean score on preference for small group. High formality preference have lower mean score on small group. Low formality preference have lower mean score on preference for classroom. High formality preference have higher mean score on preference for classroom.
Kind of Learning Experience by Content	For "Factors Responsible for Placing Heat Loads on a Building's Cooling System" Input preferred over sharing and input and sharing combined preferred over self-awareness.
Kind of Learning Experience by Level of Understanding	No relationship found at .05 level
Kind of Learning Experience by Instructional Setting	No relationship found at .05 level
Content Importance by Level of Understanding	High Positive Correlation
Content Importance by Instructional Setting	No relationship found at .05 level
Levels of Understanding by Instructional Setting	No relationship found at .05 level
Major by Formality	No relationship found at .05 level
Major by Kind of Learning Experience	No relationship found at .05 level
Major by Content Importance	No relationship found at .05 level

Major by Level of Understanding	For "Load Factors in Building Design"; "Basic Codes and Regulations That Impact Property Management" and "Basic Building Materials Used in Building Construction" level of understanding rated higher for subjects with both business and engineering majors.
Major by Instructional Setting	Subjects with no engineering preferred equipment room. Subjects with both business and engineering majors preferred small group.
Years of Formal Schooling by Formality	No relationship found at .05 level
Years of Formal Schooling by Instructional Setting	Years of schooling less for those who chose equipment room.
Years in Property Management by Content Importance	Negative correlation between years in property management and "Basic Codes and Regulations That Impact Property Management" and "Basic Building Materials Used in Building Construction"
Years in Property Management by Level of Understanding	Slight positive correlation between years in property management and "Factors Responsible for Placing Heat Loads on a Building's Cooling System" Slight negative correlation with years in property management and "Basic Codes and Regulations That Impact Property Management".
Age with Formality	No relationship found at .05 level
Age with Kind of Learning Experience	Younger subjects prefer sharing over self-awareness.
Age with Levels of Understanding	No relationship found at .05 level
Age with Instructional Setting	Younger subjects preferred equipment room.

Conclusions

The following conclusions are drawn from the findings:

1. The subjects in this study significantly differ in which levels of formality they judge as providing more important learning. The subjects, on an average, judge the low level of formality more favorably than high formality.
2. The subjects in this study significantly differ in which kinds of learning experiences they prefer. Typically, the subjects prefer sharing learning experiences above input and self-awareness. The percentage totals indicate that preference for sharing is almost twice as prevelant as the preferences for all other choices, individually and in combination with one another.
3. Subjects in this study significantly differ in their perceptions regarding which instructional setting is more productive for learning. Typically, subjects had a strong preference for equipment room as an instructional setting. The small group instructional setting was next, followed by the classroom setting.
4. Subjects in this study significantly differ in their perceptions regarding which course contents are more important. A definite rank order of content importance can be established from the content statements. "Energy Management Programs" (CI-5), and "Basic Codes and Regulations That Impact Property Management" (CI-12) are both rated first. "Basic Engineering Principles for Cooling and Heating Systems" (CI-12) is rated second. "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" (CI-7) is rated third. "Factors Responsible for Placing Heat Loads on a Bulding's Cooling System" (CI-3), "Basic Materials Used in Building

"Construction" (C-8), "Design and Maintenance of Automatic Control Systems for Building Equipment" (CI-11), and "Roofs and Roof Maintenance" (CI-9) are all rated fourth. "Water Treatment for Boilers and Cooling Water" (CI-10) and "Design and Maintenance of Plumbing Systems" (CI-6) are rated fifth. "Load Factors in Building Design" (CI-1) and "Sealing Materials Necessary for the Best Performance of Windows and/or Curtainwalls" (CI-4) are both rated sixth.

5. Subjects in this study significantly differ in their perceptions of how many levels of understanding are necessary for a relevant learning experience. The rankings of the level of understanding fall into four groups. The highest mean level of understanding rank occurred for "Energy Management Programs" (CE-5) and "Basic Codes and Regulations That Impact Property Management" (CE-12). The second highest mean ranking for level of understanding occurred for "Basic Engineering Principles for Cooling and Heating Systems" (CE-2) and "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" (CE-7). The third highest mean ranking for level of understanding occurred for "Factors Responsible for Placing Heat Loads on a Building's Cooling System" (CE-3), "Basic Building Materials Used in Building Construction" (CE-8), "Design and Maintenance of Automatic Control Systems for Building Equipment" (CE-11), and "Roofs and Roof Maintenance" (CE-9). The fourth highest mean ranking for level of understanding occurred for "Water Treatment for Boilers and Cooling Water" (CE-10), "Design and Maintenance of Plumbing Systems" (CE-6), "Load Factors in Building Design" (CE-1), and "Sealing Materials Necessary for the Best Performance of Windows and/or Curtainwalls" (CE-4).

6. Subjects' judgments about levels of formality are significantly related to their judgments regarding preferences for kinds of learning experiences. Subjects who show a preference for low formality have a higher mean score on preference for sharing. The reverse is also true of subjects who have a preference for high formality having a lower mean score on preference for sharing. Subjects who show a preference for low formality have a low mean score on preference for input. The reverse is also true with subjects having a preference for high formality showing a higher mean score on preference for input. There was no conclusive relationship found between level of formality and self-awareness.
7. There was no significant relationship found between subjects' preferences for level of formality and their judgments on content importance.
8. There was no significant relationship found between subjects' preferences for level of formality and their judgments on the necessary level of understanding for a meaningful learning experience.
9. There is a significant relationship between level of formality and preference for instructional setting.
    (a) Subjects who show a score preference for low formality have a higher mean score on preference for equipment room as an instructional setting. The trend runs fairly consistent in the opposite direction. Subjects who show a score preference for high formality have a lower mean score on preference for equipment room.
    (b) There is a similar trend for small group instructional setting.

Subjects who show a score preference for low-formality learning situations have a higher mean score on preference for small group as an instructional setting. The trend also runs consistent in the other direction as subjects who have a score preference for high formal learning situations have a lower mean score on preference for small group.

(c) The relationship trend for classroom is the opposite of the trend for equipment room and small group. The subjects who show a score preference for high formality also show a higher mean score on preference for classroom as an instructional setting. The trend is also true in reverse, subjects with a lower preference score for level of formality also show a lower mean score preference for classroom as an instructional setting.

10. Overall, there was not a significant relationship between subjects' preferences for kind of learning experience and content importance; however, in the case of two content statements "Factors Responsible for Placing Heat Loads on a Building's Cooling System" (CI-3) and "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" (CI-7), there was a significant relationship found. For CI-3, input was the preferred type of learning experience over sharing and both input and sharing combined were preferred over self-awareness. For CI-7, sharing was the preferred type of learning experience over input.
11. There was no significant relationship between preference for kind of learning experience and subjects' judgments concerning the necessary level of understanding for a meaningful learning experience.
12. Subjects' preferences for kind of learning experience was not

not found to be significantly related to subjects' preferences for instructional setting.

13. Subjects' judgments of content importance were significantly related to subjects' ratings on the necessary level of understanding for meaningful learning. Overall, when subjects rated a content more important, they also gave that content a higher rating on the necessary level of understanding scale.
14. There was no significant relationship found between subjects' ratings of content importance and their preferences for instructional setting.
15. There was no significant relationship found between subjects' judgments concerning necessary level of understanding and their preferences for instructional setting.
16. Subjects' majors in school were not found to be significantly related to their preference for level of formality.
17. Subjects' majors in school were not found to be significantly related to their preferences for kind of learning experience.
18. Subjects' majors in school were not found to be significantly related to their ratings of content importance.
19. Overall, the subjects' majors in school were not found to be significantly related to subjects' rating of the necessary level of understanding. However, there was one paired contrast of major, engineering versus business and engineering, that showed a significant difference in relation to three separate ratings of level of understanding, "Load Factors in Building Design" (CE-1), "Basic Building Materials Used in Building Construction" (CE-8), and "Basic Codes and Regulations that Impact Property Management" (CE-12).

For each of the significant CE ratings, those subjects who had both business and engineering majors rated those particular content statements higher on the necessary level of understanding scale. It would appear that the subjects with more varied school backgrounds exemplified by majors in both business and engineering recognize the need in some content areas for a higher level of understanding. This is a trend, but more detailed research would have to be completed to confirm this trend conclusively.

20. Overall, there was a significant relationship with major in school and preference for equipment room as an instructional setting and small group as an instructional setting. There was no significant relationship between major in school and classroom as an instructional setting.
    (a) With regards to the relationship between major and equipment room there was a clear trend for those who had no engineering backgrounds in school to prefer the equipment room as an instructional setting. Also, subjects who had only a business major had a higher mean score preference for equipment room than those who had both business and engineering.
    (b) Subjects who had both business and engineering backgrounds showed a preference for small group as an instructional setting.
21. Subjects' amount of formal schooling was not found to be significantly related to their preferences for level of formality.
22. Subjects' number of years of formal schooling was found to be significantly related to their preferences for instructional setting. The average number of years of formal schooling was less for those who chose equipment room than the average number of years of formal schooling for those who chose small group or classroom. Those

subjects who have had less formal schooling definitely prefer the equipment room as an instructional setting.

23. Overall, the number of years of employment in property management was not found to be significantly related to the subjects' judgments of content importance. However, there are two content statements "Basic Building Materials Used in Building Construction" (CI-8), and "Basic Codes and Regulations That Impact Property Management" (CI-12), that are barely significant. Both content statements show a negative correlation with the number of years in property management. This negative correlation would seem to indicate that the more years a person spends in property management, the less important the two content areas are, "Basic Building Materials Used in Building Construction" (CI-8), and "Basic Codes and Regulations That Impact Property Management" (CI-12).

24. Overall, there is not a significant relationship between the number of years subjects have spent in property management and their ratings of the necessary level of understanding. However, there are two content statements that have a significant relationship to ratings on the necessary level of understanding. "Factors Responsible for Placing Heat Loads on a Building's Cooling System" (CE-3) shows a small positive correlation with a significance of .049. The conclusion is that the longer a person is in property management, the more necessary it seems to have a higher level of understanding of factors that influence heating loads. "Basic Codes and Regulations That Impact Property Management" (CE-12), has a small negative correlation with the number of years in property management. This negative correlation parallels the same negative correlation for the content importance rating of "Basic Codes and Reulations That Impact

Property Management" (CI-12). This negative correlation would seem to indicate that the longer one stays in property management, the less necessary it seems to be to have a greater level of understanding as to how codes and regulations impact property management.

25. In some cases age was found to be significantly related to certain expectation variables.

    (a) There was no significant relationship between age and preference for level of formality.

    (b) The age of the subjects is significantly related to the subjects' preferences for kind of learning experience. Subjects who prefer sharing over self-awareness are younger. No other significant relationships were found between age and preference for kind of learning experience.

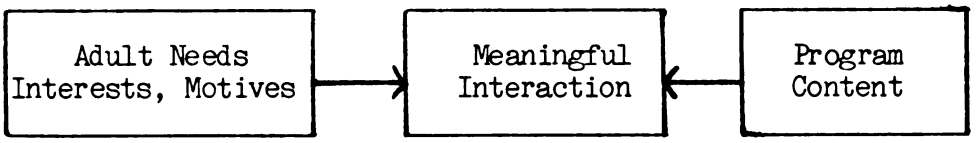
    (c) Overall, there was not a significant relationship between content importance and age. However, there was one content statement, "Design and Maintenance of Automatic Control Systems for Building Equipment" (CI-8) that showed an inverse relationship with age. Younger subjects rated this content statement as more important.

    (d) There was no significant relationship between subjects' rating of the necessary level of understanding and age.

    (e) The age of the subjects is significantly related to preference for instructional setting. Younger subjects prefer the equipment room as an instructional setting as opposed to small group or classroom. There were no other significant relationships found between age and preference for instructional setting.

Discussion and Recommendations

Regarding Level of Formality. In Chapter 1, the Peter and Boshier model was presented as a framework within which to understand the relationship of the variables in this research. The model is diagrammed again to focus the discussion and recommendations of the research findings.



This study was undertaken to better understand a particular population of adult learners and to translate that understanding into some recommendations for curriculum development. The Peters and Boshier model provides a way of understanding the interaction of the variables in the study and focusing that interaction on the question of how the learning experience in the Building Owners and Managers Institute (BOMI) can be organized to be perceived as relevant by the adult learners coming to BOMI for training. This relevancy question is a very important one for the Institute to have in mind because all of the participation in the courses is totally voluntary. It is absolutely necessary for the Institute staff to have an indepth understanding of the needs, interests, and motives of the constituency it is serving so that the educational services provided can be congruent with the expectations of the students.

With regard to level of formality, there was a slight preference of the subjects in this study for a lower level of formality. It was also found that this lower level of formality was significantly related to both the subjects' preferences for kind of learning experience and their preferences for instructional setting. The subjects who showed a

preference for low formality also showed a preference for sharing as a type of learning experience. If the subjects showed a preferencee for high formality, they showed a greater preference for input as a type of learning experience. There seems to be an interaction between preference for level of formality and preference for instructional setting. Those who showed a preference for low formality also showed a significant preference for equipment room as an instructional setting. Also, the group preferring low formality showed a significant preference for small group as an instructional setting, although the preference for equipment room was higher. Those who showed a preference for high formality showed a greater preference for the classroom as an instructional setting.

The visual representation of the relationship between preference for level of formality and instructional setting found in Figure 4.2 on page 122 provides direction for curriculum planning. From a study of the diagram one could conclude:

1. If a high level of formality is utilized, it makes less difference what type of instructional setting is used. The mean scores for preference for instructional setting tend to be closer together as level of formality gets higher.
2. If classroom is utilized as an instructional setting, then it can be expected that there will most likely be a preference for a higher level of formality.
3. If different settings are going to be utilized, then it can be expected that there will be a measurable difference concerning the preference for level of formality.

The significant relationships between kind of learning experience and instructional setting are made even more significant by the lack of

relationship with any of the learner variables of age, years in property management, major in school or amount of formal schooling and the expectation variables of content importance and necessary level of understanding. The preference for level of formality does not seem to be a determinant of the other variables listed. This lack of relationship of level of formality with the other learner variables and content importance and necessary level of understanding points to a focus on the curricular implications of level of formality as it interacts with kind of learning experience and instructional setting. The relationship of preference for a low level of formality and sharing as a type of learning experience indicates some very concrete direction for instructor training.

Instructors should be made aware of generalized preference for low formality, and sharing, and be helped to understand how certain teaching methods of discussion and peer interaction would be perceived by students in the BOMI program as more relevant than lecture. This conclusion is further supported by the fact that students showing a preference for low formality showed a low preference for input as a type of learning experience. In addition to using a dialogical approach in instruction, the findings indicate that students also prefer an instructional setting that has more of a "hands on" type of approach, (i.e. the equipment room) and also the interaction provided by a small group setting as opposed to a classroom. This preference for small group is consistent with the preference for a lower level of formality and a sharing kind of learning experience as opposed to input.

Regarding Kind of Learning Exerience. There was a definite preference by the subjects in the study for sharing as a type of learning experience above input and self-awareness. This preference for sharing was twice as

large as the preference for other possible choices. As was indicated in the discussion on level of formality, the interaction of the preference for a lower level of formality and a preference for sharing as a type of learning experience is significant. It is clear that the subjects in this study have a strong preference for learning experiences that are organized in such a way that they can learn from their peers. This conclusion is supported also by a significant relationship found between age and preference for sharing as a kind of learning experience. There was a significant relationship between those with a younger mean age and sharing as a preferred type of learning experience. There were no other significant relationships for kind of learning experience with preference for instructional setting, major in school, content importance, or level of understanding, with one exception.

There was a significant relationship with two content importance ratings. "Factors Responsible for Placing Heat Loads on a Building's Cooling System" (CI-3) showed up as significant with input as a preferred type of learning experience over sharing. "Roles and Relationships of Owners, Architects and Contractors in Development and Construction" (CI-7) showed up as significant with sharing as a preferred type of learning experience over input. The ability to begin to isolate students' preferences for a type of learning experience with a particular content could be very helpful in instructor training programs. If there are different preferences for kind of learning experiences associated with different kinds of content on a wider basis, the awareness of this information would be very important to help structure the course so the course could be perceived as more relevant by the students in meeting their needs and interests. With further refinement of the instruments

used in the study, the relationships of preference for kind of learning experience with content ratings could be better understood. Understanding the nature of this relationship could give very concrete direction to both teaching methods and the organizaton of learning situations.

It is quite conceivable that the preference for kind of learning experience would vary with course contents. At this point the recommendations concerning the utilization of a particular kind of learning experience and a specific instructional setting must be seen in the context of the particular course content that formed the basis of this study. It is quite possible that different course contents could influence the outcome of adult learners' preferences for kind of learning experiences and instructional settings differently than this present study.

Regarding Judgment of Content Importance and Level of Understanding. This research only utilized the content statements of one out of seven courses in the BOMI curriculum. The research established that there was a definite rank order of importance by students for course content and the perceived level of understanding necessary for that course content. The limits of this study would prevent generalization of the relationship of content importance and level of understanding outside of the scope of the particular course that was considered. However, the fact that students do rate some contents as more important than others should be taken into consideration in future curriculum planning strategies of the Institute. A similar survey instrument for each one of the Institute courses could be prepared to very quickly allow an instructor to determine the various student ratings of individual course contents that make up an entire course. The relative importance of the individual course contents, as assigned by the students, would give valuable information to the

instructor as to how the overall class time should be allocated to various topics. However, student choice should not totaly control allocation because student bias could prevent important topics from getting a fair share of coverage.

The research also established that there is a high correlation between the rating of content importance and the necessary level of understanding given to a content statement. The higher on the rating scale a particular content statement is rated, the more important is seems to be to have a higher level of understanding of that content. Understanding this relationship between content importance and level of understanding can further direct an instructor as to how to utilize various teaching techniques in particular content areas. When only a mastery of information is desired for a particular content rated lower, one teaching technique can be utilized. However, when analytical skills and problem-solving skills are desired, a change in teaching technique should be utilized to facilitate mastery of the material on a higher level of understanding.

There was some indication in the study that the kind of detailed planning described above might be important at certain times. How could one identify when such detailed planning would be important? The study showed that there was a slight relationship between students' majors in would indicate that these learner variables do, in fact, sometimes impact a person's perceptions of importance of various levels of understanding. This is the first place in the study where these learner variables begin to shed some additional insight into the relationship of subjects studied and their pedogogical expectations. Further refining of the instruments might allow one to more precisely understand possible relationships between major in school, number of years in property management, and

subjects' ratings of necessary level of understanding.

Regarding Instructional Setting. The study found that there was a definite preference for instructional setting. A strong preference for equipment room as an instructional setting over small group and classroom exists. The strong preference for equipment room as an instructional setting must be understood in the context of the study which focused only on one of the seven courses in the RPA curriculum. The course utilized for this study has a major component of its content relating directly to the understanding and efficient operation of the major mechanical equipment components in a commercial building. It is logical, because of the content of the course utilized for this study, that students would indicate some preference for the "on-site" teaching experience as opposed to a more isolated classroom-type experience.

Even though in this study the preference for instructional setting is somewhat course specific, a general principle can be isolated to guide future instructional planning. A careful and comprehensive review of specific course contents should be made to determine if those contents might be better understood by a student and taught more productively by an instructor in learning environments that were perceived to be congruent with specific course contents. Such a matching of course content with specialized learning environments could be a very productive teaching/learning strategy to enhance the perceived relevancy of the adult learners' professional development learning program.

The next highest preference for instructional setting was small group. The small group setting is somewhat less biased by course contents. This preference for small group should be taken very seriously in the teaching methodologies utilized to instruct the BOMI courses. In the planning and implementation of instructor training experiences for the

BOMI courses a geat deal of time should be spent on how to utilize small group discussion methods and peer interaction as a successful teaching technique.

Instructional setting was the only one of the five expectation variables that had significant relationships with learner variables. There was a significant relationship between preference for instructional setting and major in school. Students who had no engineering backgrounds in school or who just had business and engineering both had a clear preference for equipment room as an instructional setting. Subjects who had both business and engineering backgrounds showed a clear preference for small group as an instructional setting. Those subjects who had fewer years of formal schooling tended to choose equipment room more often. Subjects who had a higher number of years of formal schooling tended to choose small group or classroom as an instructional setting. The younger a subject was, the more likely he/she was to choose equipment room as a preferred instructional setting over small group or classroom. All of these relationships of the learner variables to the expectation variable of instructional setting reinforce again the importance of an instructor having a sensitivity to the expectations that students might have because of their varied backgrounds. These individual differences pointed out by the learner variables of major, years of formal schooling and age, caution an instructor against lumping an entire class into a singular category. If nothing else, this finding about the relationship of instructional setting to various learner variables should raise the level of awareness of the instructor with regards to individual student differences and the importance of being cognicent of those differences in teaching.

One of the most helpful frameworks an instructor could use to maintain such sensitivity is the developmental stages of adulthood. These

generalized descriptions of the progression of adult concerns give an instructor some basic clues as to what can be expected from adults at certain ages. The findings in this current study indicate that the younger subjects had preferences for sharing over self-awareness and equipment room over small group and classroom.

Adults from ages 22 to 30 are in a life phase which is characterized by some exploration of alternatives. This open ended orientation could partially account for the preferences for sharing as a preferred kind of learning experience over input. Older subjects showed a preference for self-awareness which is somewhat consistent with the stages between ages 40 and 50 where one of the predominate concerns is a reassessment of the self. This reassessment results in adults of this age bracket paying greater attention to their feelings, experiences, and cognitive processes. (Neugarten, 19674).

Regarding Curricular Development for Professional Property Management. This study has provided some very specific information for better planning, organization, and implementation of the curriculum of the Building Owners and Managers Institute. With regard to the Institute, the following specific recommendations are made in order to more sharply focus the direction of the Institute. All of these recommendations are made with the understanding that to be successful, the curriculum must be perceived as highly relevant to the needs, interests, and motives of the adults who are served by the curriculum.

The sensitivity to needs, interests and motives is very important as a starting place for curriculum construction decisions. Specific recommendations are made based on the current findings of this study. However, future needs could easily shift enough to warrant other curricular approaches. The literature review in chapter two provides a

framework to sensitize the curriculum developer to the trap of locking onto one direction or method at the expense of openness and flexibility to alternate directions when the needs, interests and motives of adult learners indicate that change may be warranted. Sensitivity to curriculum construction as an open-ended process must always be in the forefront of an educator's thinking when specific directions are prescribed. The next prescription may scrap the current recommendations and take the program an entirely different direction based on the current perception of the needs, interest and motives of participants in the educational program.

1. With lower formality having a slight edge over higher formality, instructor preparation materials and instructor training experiences for teaching the Institute courses need to equip instructors to teach with diaological and discussion methods as opposed to straight lecture. Current instructors must be made aware of this important finding as soon as possible.
2. Sharing-type learning experiences are preferred with input next and then self-awareness. Instructors must be immediately trained to better utilize a very important teaching resource, the student. Teachers must be made aware of the high degree of preference for sharing and learning from peers.
3. Discussion questions and written materials that reflect this need to share with one another in class can be produced to facilitate the interaction. These materials should be included on a chapter-by-chapter basis in all of the courses of the RPA curriculum. Explanations of how to utilize this material should be provided in instructor manuals for each course.
4. A content importance rating survey should be prepared for each course in the BOMI program. This form should be designed so it

can be given at the beginning of each class and scored by the instructor of that class. A simple interpretation guideline should be provided so that the instructor can better understand the rankings that students place on the various course contents. Such a tool can heighten the sensitivity of an instructor to the perceived needs of the students. This content rating form would include both the ratings for content importance and the evaluation of necessary level of understanding.

5. When appropriate, teaching experiences should be arranged in relevant instructional settings. These settings are somewhat course dependent and relate to the basic content emphasis of a course. In the case of the courses that deal with mechanical equipment and other engineering functions of a building, on-site tours and instructional times in actual mechanical and equipment rooms are highly recommended to increase the perceived relevancy of the program for the students. Other course contents lend themselves to this type of practical instructional setting. A guide should be immediately prepared for instructors of the BOMI courses which gives suggestions for field trips, tours, and "hands-on" learning experiences for each one of the BOMI courses.
6. Instructor training materials should be prepared that make instructors more aware of the potential significance of individual student differences. If a class has a wide age range and experience factor in property management, those issues which might have a bearing on better understanding of the individual differences of students should be communicated to BOMI instructors.

Recommendations for Further Research.

Several findings indicate areas where additional research is needed.

1. There is an important relationship between ratings of content importance and necessary levels of understanding for competence for the particular course content in this study. Further insights could be gained for the Real Property Administrator curriculum development if each course were rated as to content importance and the parallel necessary levels of understanding for competence instrument was administered to determine ratings for each course.
2. Further study is needed to clarify relationships between the content of past educational experiences (major in school) and adult learners' expectations concerning level of formality, kinds of learning experiences and instructional setting.
3. Ethnographic research should further explore how attitudes of past schooling and significant teacher models relate to choices adult learners make regarding level of formality, kind of learning experience, and preference for instructional setting.
4. A comparative study isolating subjects at various developmental stages of adulthood, with all other variables the same, needs to be done to determine the influence that various stages of adult development might possibly have on expectations concerning level of formality, kind of learning experience and instructional setting.
5. Further research which helps to refine the instruments themselves would be quite helpful. The instrumentation techniques of using pictures to isolate perceptions and expectations is functional as a research tool, but further research that identifies how to compose the content of a picture in relation to the variable being studied (formality, instructional setting) would be helpful.

6. There appears to be a relationship between the number of years in property management and ratings of content importance and levels of understanding perceived as necessary for competent management. Further research needs to be done for the particular course content in this study to clarify that relationship. Also, studies should be done to determine if the years of experience in property management also effects the ratings of content importance and necessary levels of understanding for other courses in the RPA program.

Summary

Adult learners have specific preferences concerning level of formality, kinds of learning experiences, and instructional settings. They also have identifiable opinions that can be ranked concerning the importance of content statements and level of understanding necessary for competent management. Adult learners do not find sharing, input and self-awareness equally valid as learning situations. Adult learners also seem to have a preference for the level of formality of a learning situation and a preference for a certain level of formality with specific kinds of learning experiences. There is an identifiable preference for certain instructional settings with certain kinds of learning experiences and certain levels of formality with certain instructional settings.

The previous academic backgrounds of the learners in this study does have some effect on their preference for certain instructional settings. The age of adult learners has some effect on their ratings of content importance and preference for instructional setting and kind of learning experience preferred. Years of experience in property management had some

slight effect on the rating of content importance and levels of understanding perceived as necessary for competent management.

Curriculum development is a challenge for any situation. This study provided specific information on expectations that adult learners have, that when met, will help to make the educational program of the Building Owners and Managers Institute accepted as more relevant to the needs, interests and motives of the constituency it serves. This is a beginning. Useful insights for curriculum improvement have been uncovered but much remains to be done to implement the insights in the area of materials redesign and instructor training. This research will help guide the ongoing process of curriculum improvement for the Institute.

Not only does this study provide specific direction for the curriculum development project of the Building Owners and Managers Institute, but it contributes to the overall field of literature that gives direction to educational planners in adult education. This study has demonstrated that adult learners do bring expectations with them to learning situations. Planners of adult education have a choice, they can be sensitive to these expectations and how they influence the adult learner or they can ignore the expectations and pay the consequences in terms of unmotivated students, higher dropout rates, low class morale and frustrated instructors. Respecting the presence of learner expectations and utilizing the understanding of those expectations to organizing meaningful instruction and design relevant materials can assist in the comprehensive implementation of a relevant program for ongoing professional education.

APPENDIX A

KIND OF LEARNING EXPERIENCE

-- INSTRUMENT --

BUILDING OWNERS AND MANAGERS

INSTITUTE INTERNATIONAL

DATA QUESTIONNAIRE

GENERAL DIRECTIONS

There are four sections in the questionnaire booklet. Each section is separated by a colored sheet of paper. Work until you are asked to stop and wait for further directions. Please fill out everything to the best of your ability. This is an anonymous questionnaire. Your cooperation is greatly appreciated in answering the questions as honestly and fully as possible.

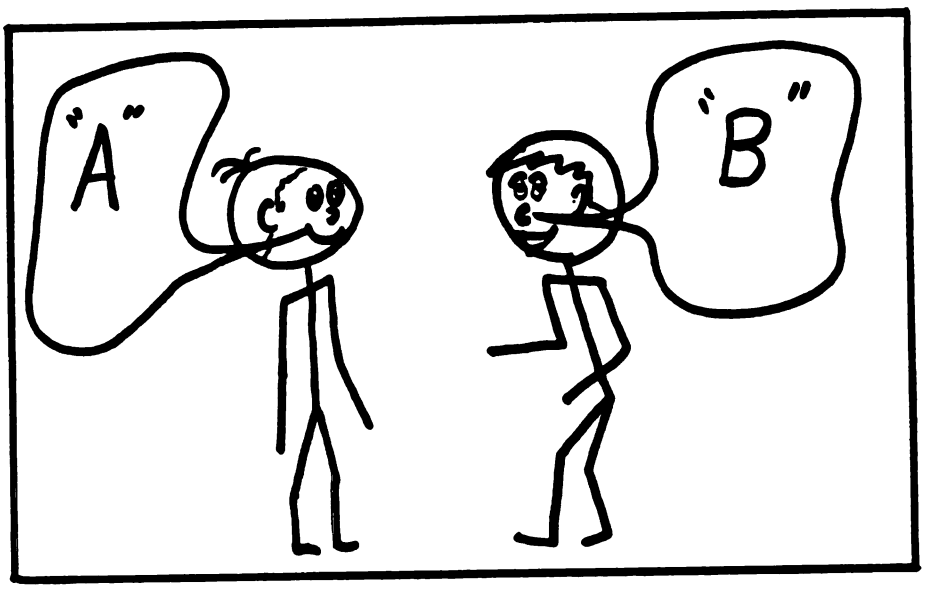
DO NOT OPEN THE BOOKLET UNTIL YOU

ARE TOLD TO DO SO.

DATA QUESTIONNAIRE
SECTION I

DIRECTIONS

Please circle the letter which represents your response to the situations presented on the following pages and on a tape to which you will listen. Circle only one letter per page.



SITUATION ONE - PAIR ONE

(5)

Two students are overheard talking before class. Which student's statement is most like something you might say about a course you have attended?

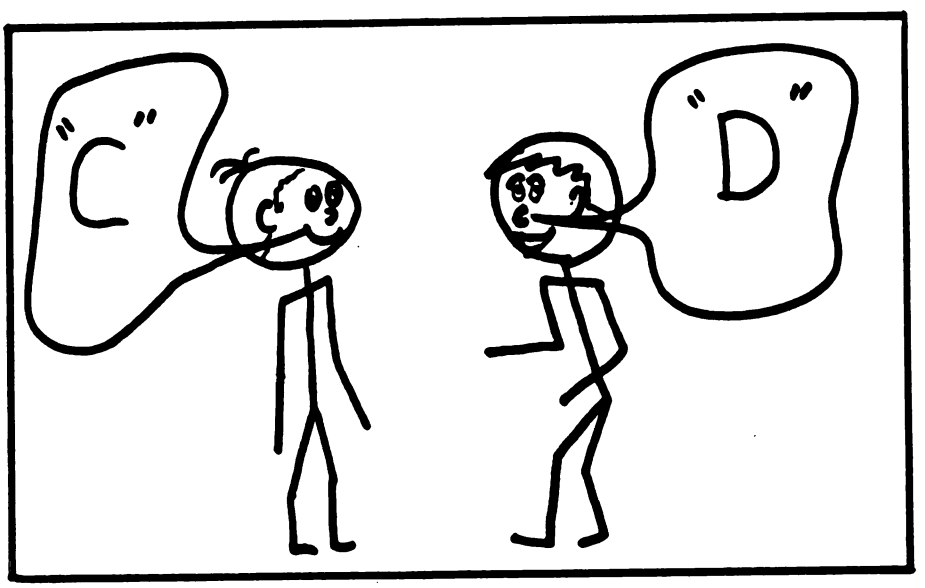
"A" -- There are some things I really need to hear tonight.
I hope the instructor will tell us all about the subject.

-OR-

"B" -- I like the way that our instructor gets us to look at what is going on inside ourselves.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then turn to the next page.



SITUATION ONE - PAIR TWO

(6)

Two students are overheard talking before class. Which student's statement is most like something you might say about a course you have attended?

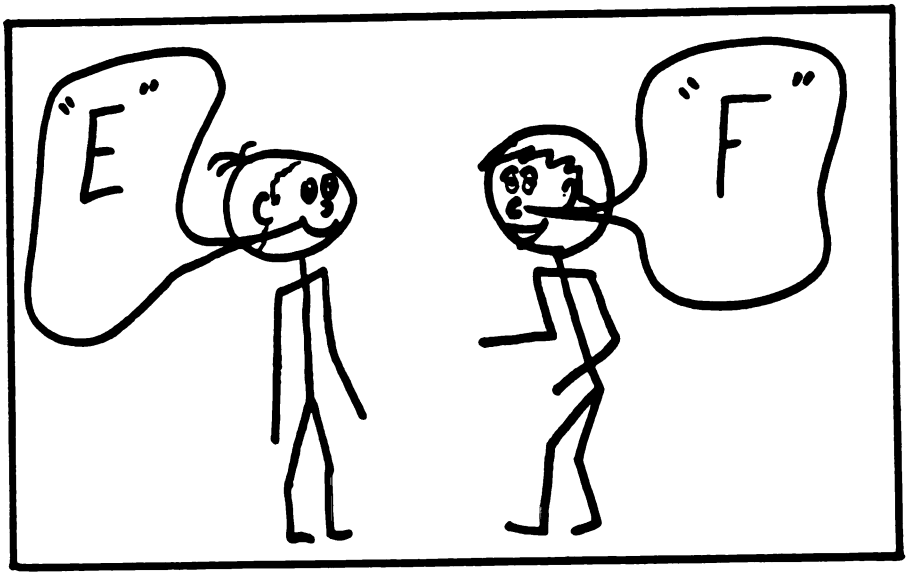
"C" -- I like the way that our instructor gets us to look at what is going on inside ourselves.

-OR-

"D" -- I've been doing a lot of thinking about this subject. Tonight I am hoping we get to talk with the instructor and some other class members to see what they are thinking.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then turn to the next page.



SITUATION ONE -- PAIR THREE

(7)

Two students are overheard talking before class. Which student's statement is most like something you might say about a course you have attended?

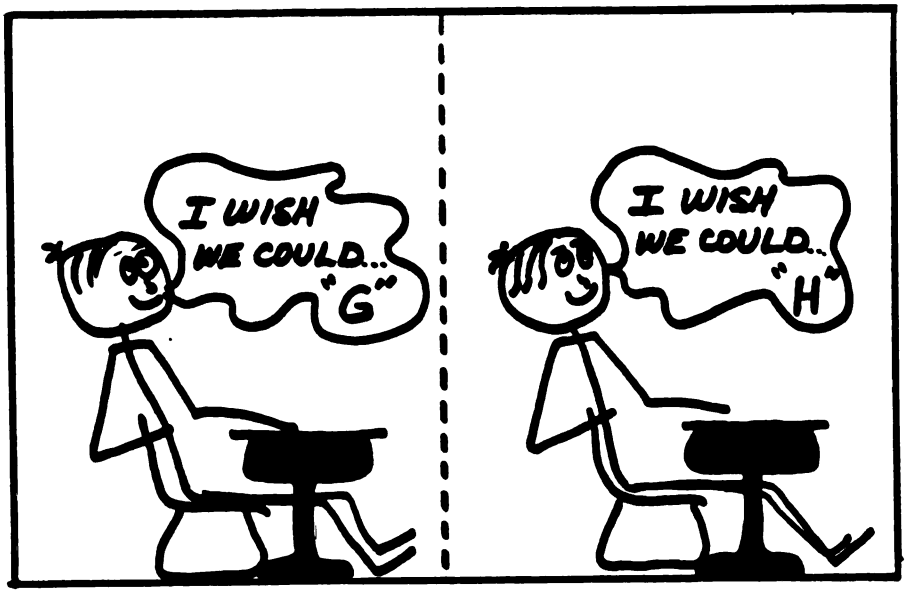
"E" -- There are some things I really need to hear tonight. I hope the instructor will tell us all about the subject.

-OR-

"F" -- I've been doing a lot of thinking about this subject. Tonight I am hoping we get to talk with the instructor and some other class members to see what they are thinking.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then turn to the next page.



SITUATION TWO -- PAIR ONE

(8)

Imagine you are sitting in class and all of a sudden you wish you could do something a certain way. Which statement is most like something you might want to do in class.

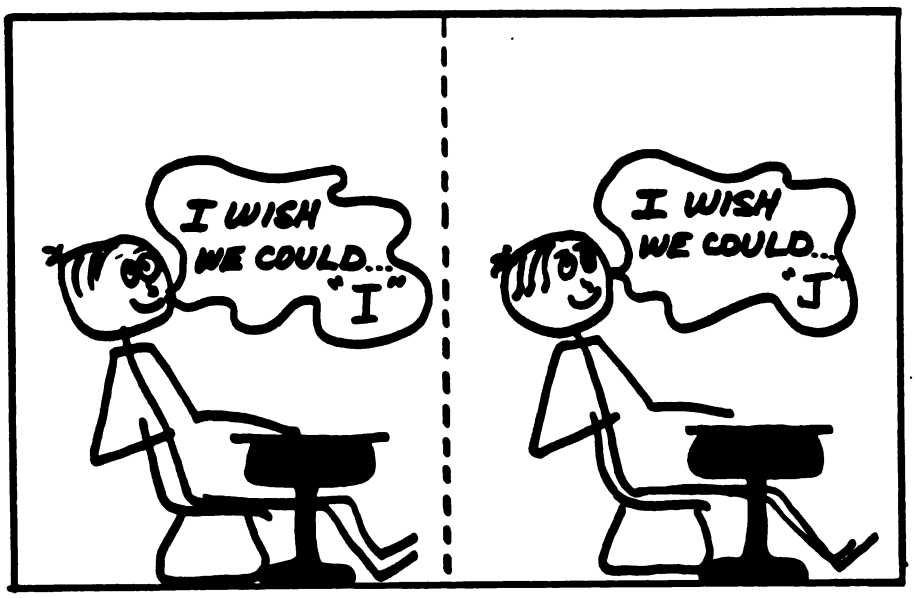
"G" -- I wish we could get the answer to that problem from the instructor.

-OR-

"H" -- I wish we could have more time to think about that issue so I could figure out how it relates to me.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then turn to the next page.



SITUATION TWO -- PAIR TWO

(9)

Imagine you are sitting in class and all of a sudden you wish you could do something a certain way. Which statement is most like something you might want to do in class?

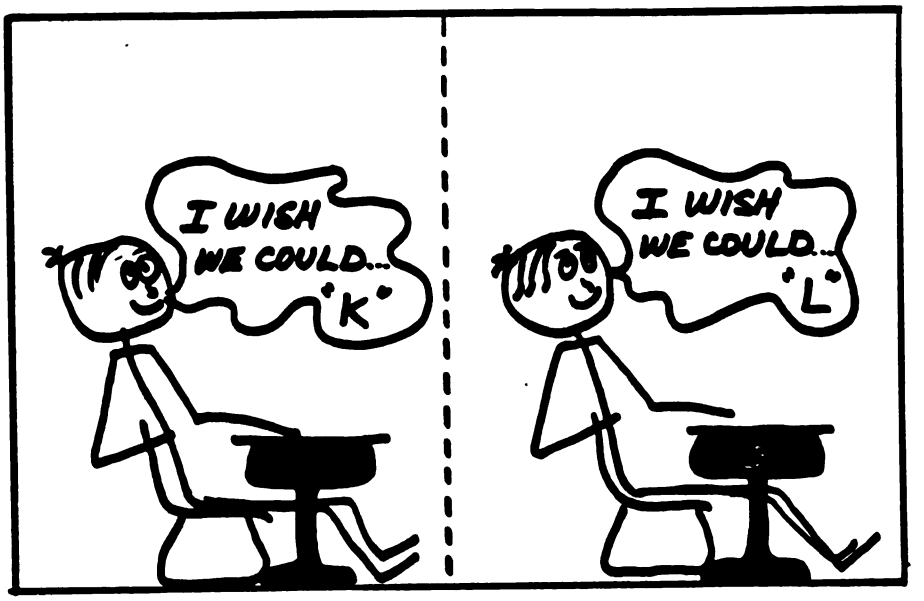
"I" -- I wish we could have more time to think about that issue so I could figure out how it relates to me.

-OR-

"J" -- I wish we could find out what other people think about that subject.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then turn to the next page.



SITUATION TWO -- PAIR THREE

(10)

Imagine you are sitting in class and all of a sudden you wish you could do something a certain way. Which statement is most like something you might want to do in class?

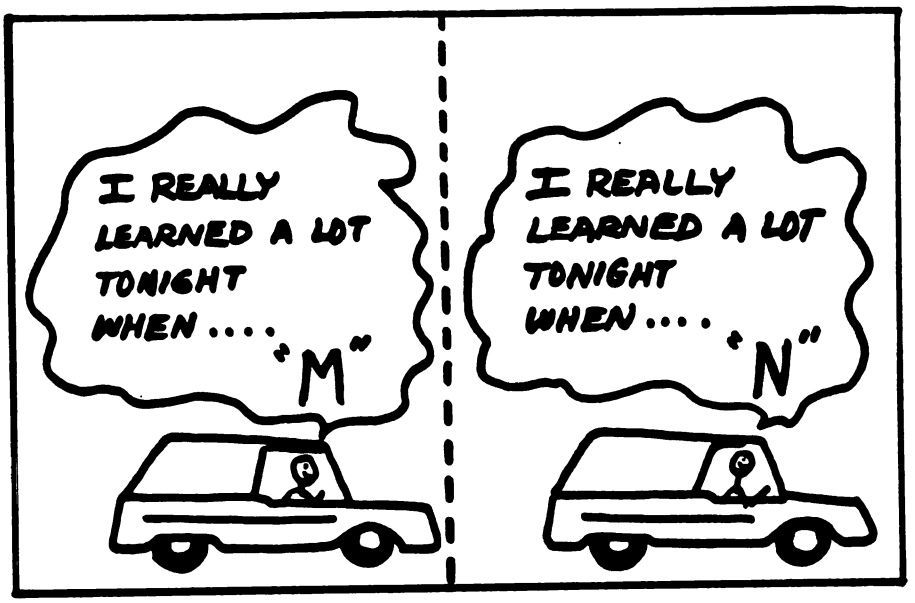
"K" -- I wish we could get the answer to that from the instructor in class.

-OR-

"L" -- I wish we could find out what other people think about that subject.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then turn to the next page.



SITUATION THREE -- PAIR ONE

(11)

You are driving home after a night in class and thinking about the class. Which of the following statements are you most likely to say?

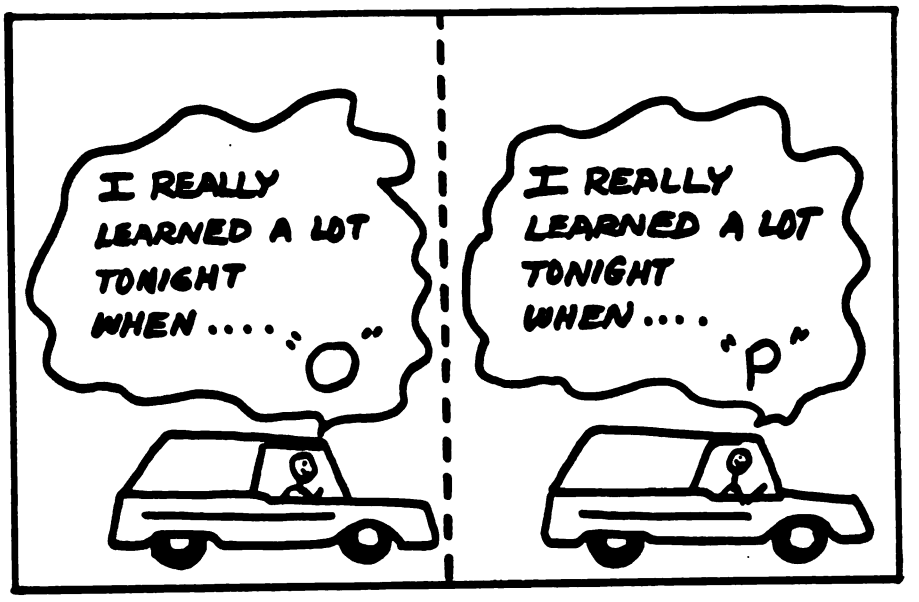
"M" -- I really learned a lot tonight when the instructor answered all our questions.

-OR-

"N" -- I really learned a lot tonight when we did that exercise and I understood how the subject relates to some of my concerns.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then turn to the next page.



SITUATION THREE -- PAIR TWO

(12)

You are driving home after a night in class and thinking about the class. Which of the following statements are you most likely to say?

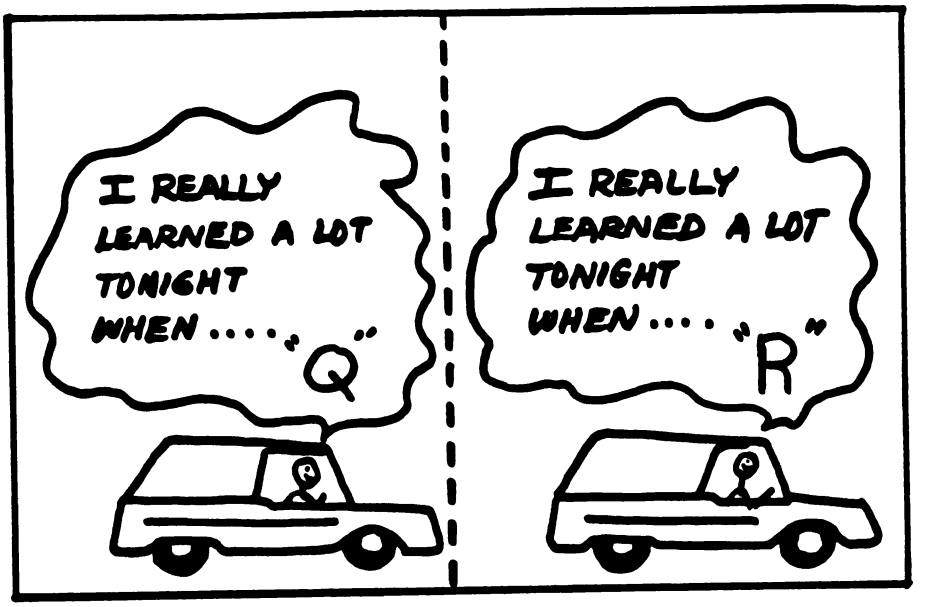
"O" -- I really learned a lot tonight when we did that exercise and I understood how the subject relates to some of my concerns.

-OR-

"P" -- I really learned a lot tonight when we had a chance to discuss and share our thoughts with one another.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then turn to the next page.



SITUATION THREE -- PAIR THREE

(13)

You are driving home after a night in class and thinking about the class. Which of the following statements are you most likely to say:

"Q" -- I really learned a lot tonight when the instructor answered all our questions.

-OR-

"R" -- I really learned a lot tonight when we had a chance to discuss and share our thoughts with one another.

DIRECTIONS

Choose between one of the two possible responses. Circle your choice on this page, then STOP until told to proceed.

APPENDIX B

TAPE SCRIPT FOR ADMINISTRATION OF KIND OF LEARNING EXPERIENCE INSTRUMENT

APPENDIX B

TAPE SCRIPT FOR ADMINISTRATION OF KIND OF LEARNING EXPERIENCE INSTRUMENT

DATA QUESTIONNAIRE — SECTION I

TAPE SCRIPT

The following material will present typical situations you may have found yourself in at one time or another. In each situation that you will be presented with choose the statement which best describes how you would respond in the situation described. Indicate your choice by drawing a circle around the letter identified with your choice in the booklet. Now, turn to the page in your survey booklet labeled "Situation One - Pair One". Study the page as you listen to the following description of the situation on tape and then give your response as directed in the survey booklet.

Two students are overheard talking before class. Which statement is most like something you might say about a course you have attended?

Here is statement "A":

> There are some things I really need to hear tonight. I hope the instruction will tell us all about the subject.

Here is statement "B":

> I like the way that our instructor gets us to look at what is going on inside ourselves.

Choose between one of the two possible responses. Circle your choice in the survey booklet. (Pause 15 seconds). Turn to the next page. The situation is the same. Two students are overheard talking before class. Which statement is most like something you might say about a course you have attended?

Here is statement "C":

> I like the way that our instructor gets us to look at what is going on inside ourselves.

Here is statement "D":

> I've been doing a lot of thinking about this subject. Tonight I am hoping we get to talk with the instructor and some other class members to see what they are thinking.

Choose between one of the two possible responses. Circle your choice in the survey booklet. (Pause 15 seconds). Turn to the next page in your survey booklet. The situaton is the same. Two students are overheard talking before class. Which student's statement is most like something you might say about a course you have attended?

Here is statement "E":

> There are some things I really need to hear tonight. I hope the instructor will tell us all about the subject.

Here is statement "F":

> I've been doing a lot of thinking about this subject. Tonight I am hoping we get to talk with the instructor and some other class members to see what they are thinking.

Choose between one of the two possible responses. Circle yur choice in the survey booklet. (Pause 15 seconds). Turn to the next page in your survey booklet. Now we are looking at a different situation. Imagine you are sitting in class and all of a sudden you wish you could do something a certain way. Which statement is most like something you lmight want to do in class?

Here is statement "G":

> I wish we could get the answer to that problem from the instructor.

Here is statement "H":

> I wish we could have more time to think about that issue so I could figure out how it relates to me.

Choose between one of the two possible responses. Circle4 your choice in the survey booklet. (Pause 15 seconds). Turn to the next page in your survey booklet. The situation is the same. Imagine you are sitting in class and all of a sudden you wish you could do something a certain way. Which statement is most like something you might want to do in class?

Here is statement "I":

> I wish we could have more time to think about that issue so I could figure out how it relates to me.

Here is statement "J":

> I wish we could find out what other people think about that subject.

Choose between one of the two possible responses. Circle your choice in the survey booklet. (Pause 15 seconds). Turn to the next page in your survey booklet. The situation is the same. Imagine you are sitting in class and all of a sudden you wish you could do something a certain way. Which statement is most like something you might want to do in class?

Here is statement "K":

> I wish we could get the answer to that from the instructor.

Here is statement "L":

> I wish we could find out what other people think about that subject.

Choose between one of the two possible responses. Circle your choice in the survey booklet. (Pause 15 seconds). Turn to the next page in your survey booklet. Now we are looking at a different situation. You are driving home after a night in class and thinking about the class. Which of the following statements are you lmost likely to say?

Here is statement "M":

> I really learned a lot tonight when the instructor answered all our questions.

Here is statement "N":

> I really learned a lot tonight when we did that exercise and I understood how the subject relates to some of my concerns.

Choose between one of the two possible responses. Circle your choice in the survey booklet. (Pause 15 seconds). Turn to the next page in your survey booklet. The situation is the same. You are driving home after a night in class and thinking about the class. Which of the following statements are you most likely to say?

Here is statement "O":

> I really learned a lot tonight when we did that exercise and I understood how the subject relates to some of my concerns.

Here is statement "P":

> I really learned a lot tonight when we had a chance to discuss and share our thoughts with one another.

Choose between one of the two possible responses. Circle your choice in the survey booklet. (Pause 15 seconds). Turn to the next page in your

survey booklet. The situation is the same. You are driving home after a night in class and thinking about the class. Which of the following statements are you lmost likely to say?

Here is statement "Q":

> I really learned a lot tonight when the instructor answered all our questions.

Here is statement "R":

> I really learned a lot tonight when we had a chance to discuss and share our thoughts with one another.

Choose between one of the two possible responses. Circle your choice in the survey booklet. This is the end of this part of the survey. Turn to Data Questionnaire -- Section II and complete it per the directions. Thank you for your cooperation.

APPENDIX C

LEVEL OF FORMALITY

— INSTRUMENT —

DATA QUESTIONNAIRE -- SECTION III

DIRECTIONS

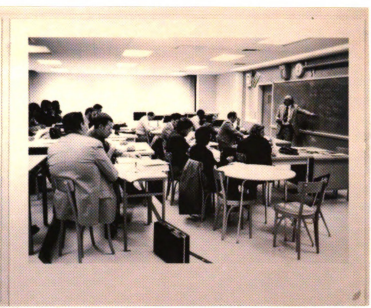
Look at the following pairs of pictures and answer the question at the top of each page. Mark your choice in each pair by placing an "X" in the large box (/___/) under the picture of your choice. Please only one "X" per page.

In which of the following situations do you think people are learning the most?

"A" ☐ "B" ☐

(44)

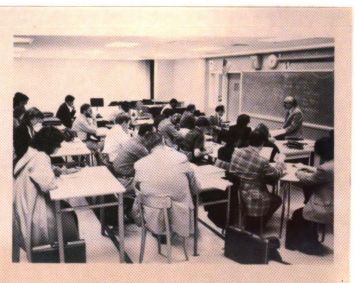
In which of the following situations do you think people are learning the most?



"C" ☐ "D" ☐

In which of the following situations do you think people are learning the most?

"E" ☐



"F" ☐

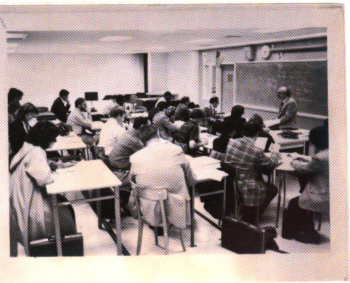
In which of the following situations do you think people are learning the most?

"G" ☐

"H" ☐

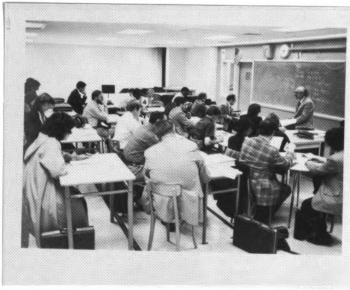
In which of the following situations do you think people are learning the most?

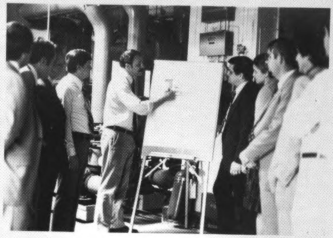
"I" ☐



"J" ☐

In which of the following situations do you think people are learning the most?





"K" ☐ "L" ☐

In which of the following situations do you think people are learning the most?

"M" ☐ "N" ☐

In which of the following situations do you think people are learning the most?

"O" ☐ "P" ☐

In which of the following situations do you think people are learning the most?

"Q" ☐ "R" ☐

APPENDIX D

CURRICULAR OUTCOMES

— INSTRUMENT —

DIRECTIONS

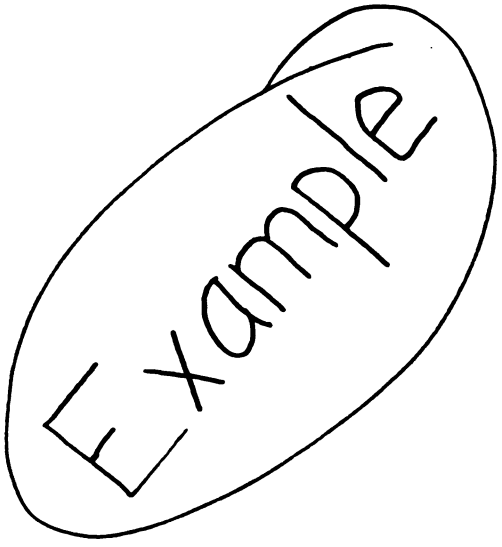
Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

EXAMPLE:

Training of a property manager should deal with the design and maintenance of electrical systems.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	(3)	2	1



Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

EXAMPLE:

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ✓ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ✓ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ___ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ___ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ___ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

1. Training of a property manager should deal with load factors in building design.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(15-16)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

2. Training of a property manager should deal with the basic engineering principles for cooling and heating systems.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(17-18)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

3. Training of a property manager should deal with the factors responsible for placing heat loads on a building's cooling system.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(19-20)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

4. Training of a property manager should deal with the sealing materials necessary for the best performance of windows and/or curtain walls.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(21-22)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

5. Training of a property manager should deal with energy management programs.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(23-24)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

6. Training of a property manager should deal with the design and maintenance of plumbing systems.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(25-26)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

7. Training of a property manager should deal deal with the roles and relationships of owners, architects and contractors in development and construction.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(27-28)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

8. Training of a property manager should deal with basic building materials used in building construction.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(29-30)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

9. Training of a property manager should deal with roofs and roof maintenance.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(31-32)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

10. Training of a property manager should deal with water treatment for boilers and cooling water.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(33-34)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

11. Training of a property manager should deal with the design and maintenance of automatic control systems for building equipment.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(35-36)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Proceed with the left-hand column first, then do the corresponding analysis in the right-hand column for that question. Proceed through the survey on a question-by-question basis always starting with the left-hand column before you do the corresponding analysis in the right-hand column.

Directions: Circle the number which best represents your opinion on the degree of importance the content described has for the properly trained property manager.

12. Training of a property manager should deal with basic codes and regulations that impact property management.

Could Not Work Without It	Extremely Helpful	Helpful To a Certain Extent	Helpful To a Small Degree	No Help At All
5	4	3	2	1

(37-38)

Directions: Adult learners are frustrated when they are required to do something that does not seem relevant to them. Below are six levels of understanding. The first level below is the lowest level of understanding. We assume it is necessary. In your opinion, how many more levels of understanding are necessary for the specific content listed in the left-hand column. Check all that you feel are necessary.

1. ✓ Recall of specific terms and concepts, methods and processes or the recall of a pattern, structure or setting. Recall involves primarily the bringing to mind of the appropriate material.

2. ____ Ability to make interpretations of data by rearrangement or reordering and to extend factual information beyond given data to determine implications, consequences and effects.

3. ____ Application of information, technical principles and theories learned in one situation to another separate situation.

4. ____ Ability to analyze key elements that clarify a situation, or connections and interactions between elements and organizational principles behind information.

5. ____ Ability to put together (synthesize) elements and parts so as to form a whole. This involves the process of working with pieces, parts, elements, etc. and arranging and combining them in such a way as to constitute a pattern or structure not clearly seen before.

6. ____ Ability to evaluate data in terms of logical accuracy and internal consistancy and/or selected or remembered criteria.

DIRECTIONS

Please read the three questions below and answer them by circling your choice at the right.

13. (40) Have you taken Course One, The "Design, Operation and Maintenance of Building Systems", offered by the Building Owners and Managers Institute? (Circle one at right)

Yes No

If YES Answer Questions Fourteen and Fifteen.

If NO Go To The Example on the next page and wait for further directions.

14. (41)	How would you rate "The Design, Operation and Maintenance of Building Systems" course in terms of its usefulness to you in your work? (Circle one number at right)	Couldn't Work without it	Extremely Helpful	Helpful To A Certain Extent	Helpful To A Small Degree	No Help At All
		5	4	3	2	1
15. (42)	Does "The Design, Operation and Maintenance of Building Systems" contain the kind of content that you feel is necessary for effective property management? (Circle one number at right)	Totally Representative	Fairly Representative	Rep. To A Certain Extent	Rep. To A Small Degree	Not Rep. At All
		5	4	3	2	1

APPENDIX E

DEMOGRAPHIC QUESTIONNAIRE

DEMOGRAPHIC QUESTIONNAIRE

54-55. Age _____

56. Sex _____
M or F

57-58. Trade School Major _____
(only if attended, write "none" if did not attend)

59-60. Undergraduate College Major _____
(only if attended, write "none" if did not attend)

61-62. Graduate School Major _____
(only if attended, write "none" if did not attend)

63-64. Years of formal schooling
(Circle year last completed)

Grammar School	High School	Trades or Colleges
1 2 3 4 5 6 7 8	9 10 11 12	13 14 15 16

Graduate/Post Graduate

17 18 19 20 21 22 23 24 _____
(Beyond 24, fill in number)

65-66. How many professional development programs have you attended since you have been in the property management profession? (Seminars and Workshops.)

_____

67-68. How many informal professional activities have you attended since you have been in the property management profession? (Conventions and Regional Meetings.) _____

_____

69-70. How many years have you been in property management? (Circle one).

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23

24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40

_____ (More than 40, fill in number)

71. Are you enrolled in the RPA program of the Building Owners and Managers Institute?

YES NO (Circle One)

ANSWER THIS LAST QUESTION ONLY IF YOU ANSWERED QUESTION NUMBER SEVENTY-ONE "YES".

72. Do you have a preference for the manner in which you take the RPA Courses? CIRCLE ONE. (Assume each option is available to you.)

1. Individual home study.
2. Group discussion.
3. Teacher-lead classroom study.
4. Accelerated class.
5. No preference.

APPENDIX F

INTRODUCTION TO THE RESEARECH PROJECT USED IN DATA GATHERING ACTIVITY

APPENDIX F

INTRODUCTION TO THE RESEARCH PROJECT USED IN DATA GATHERING ACTIVITY

Let me share with you briefly the purpose for this data questionnaire. As most of you know, we are in the process of a major curriculum revision effort for the Building Owners and Managers Institute. Your assistance in filling out this questionnaire will help us fine-tune the curriculum for the RPA designation. We would appreciate your honest and intelligent responses. This will aid us in this curriculum construction process. Please take the questions very seriously and do your best to answer them fully. Please do not be alarmed by the size of the questionnaire. Generally, there is only one check mark or a circle required on each page.

Let me set the stage for what you will find in the questionnaire. We are concerned about making sure that the RPA curriculum is perceived as meaningful and relevant for professional property managers. This questionnaire is attempting to uncover attitudes and perceptions that you have with regards to a relevant training program. Please think about positive learning experiences that you have had. Why were those learning experiences positive? This questionnaire is asking you to response to some learning situations and to evaluate their meaningfulness. Please do not try to read anything into the questions that is not there. There are no tricks intended. Take everything at face value and answer the question as posed.

There are three sections to the questionnaire and a sheet at the end which asks some basic information about who you are. We will do the first section together with the help of a tape recording. Then, I will give you

the directions for the other two sections and you can complete those sections at your own pace. When you've completed all three sections, please fill in the last page completely. Do not leave any blank answers on the last page. Before I turn on the tape recording to give instructions for the first section, let's check our data booklets to make sure that everyone has a complete booklet. Also, please observe that this questionnaire is completely anonymous. We are not interested in who filled out the questionnaire in terms of being able to identify who you are. I'll turn on the tape now which will give the directions for the first section. Listen to the directions, then open your booklets and begin. Thank you very much for your cooperation.

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