A DELPHI STUDY TO IDENTIFY READINESS CRITERIA FOR THE INSTRUCTIONAL DESIGN OF CLASSROOM EXPERIENTIAL LEARNING

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DEDICATION

This project is dedicated to my loving wife

Deborah Ann Dean

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CHAPTER I

INTRODUCTION

The function of education is the facilitation of learning. Little (1981) has proposed that quality education requires two kinds of learning; information assimilation and experiential learning. Information assimilation is the ingestion of knowledge through second-hand symbolic communication. Experiential learning is the taking in and processing of information by direct exposure to the concept. Both should be integral components of an educational program because they complement each other, Little has argued. Individually both types of learning have strengths and weaknesses. Together they can support each other to produce more complete and meaningful learning. "The question is not whether theory or practice provides quality, but rather what combination of the two provides complete learning" (p. 8).

Instructional theory is an important concept for facilitating organized learning. It is distinct from learning theory in that it is normative, not descriptive, as Bruner (1971) has noted. Theories of instruction attempt to specify the optimal conditions and activities necessary for a learning facilitator to influence the learning process. Instructional theories differ from instructor philosophies of how learning takes place. In most formal educational systems, like higher education, the dominant philosophy practiced by most instructors is

information assimilation, according to Little (1981). Information assimilation is promoted through the techniques of lecture and seminar discussion. These techniques use verbal symbolization to transmit theoretical ideas second-hand. They do not provide learners with opportunities to experience ideas directly.

No national survey has been conducted to determine to what extent formal educational systems across the United States provide experientially-based instruction. A study was conducted in 1977 by the Council for the Advancement of Experiential Education (CAEL) in cooperation with the Educational Testing Service and with the support of the Kellogg Foundation. That study, reported by Knapp and Davis (1978), was limited to institutions of higher education. The study was further limited by its definition of experiential learning. Those researchers defined experiential learning as learning which occurs in formal programs outside the traditional classroom environment. It did not consider that experiential learning might include instructional techniques which could be used in the context of learning events in the classroom. To date there is no published evidence documenting the extent to which experiential instructional techniques may be used in formal educational systems.

Experiential learning has been broadly defined by Keeton and Tate (1978) as "learning in which the learner is directly in touch with the realities being studied (p. 2)." They conceded that experiential learning can be both classroom and nonclassroom based:

> Some people mistakenly equate experiential learning only

> with "off-campus" or "nonclassroom" learning. However, a class in critical thinking might incorporate periods of student practice on critical-thinking problems rather than consisting entirely of lectures or dicsussion about critical thinking; similarly, a class in theatre might include the actual enacting of scenes from the plays being studied. In both instances, an experiential component is involved...Put another way, experiential learning typically involves not merely observing the phenomena being studied but also doing something about it, or applying the theory learned about it to achieve some desired result (p. 2).

Accepting that experiential instructional techniques are useful in the classroom, it is logical that instructors may apply structured experience to various subject matters. To do so will require the instructor to adapt an instructional design strategy which promotes what Sherman (1980) called "responsive instruction." Responsive instruction is a "move away from theorizing about learning, memory, and education to an analysis of instruction and the possibilities for instructional actions which exist in any instructional setting" (p. 28).

Many instructional design specialists agree that a readiness assessment or analysis must precede the design of instructional lessons. Kemp (1977) has argued that a plan for developing improved instructional practices must include an assessment of readiness criteria. Thiagarajan (1980) has described readiness criteria for experiential learning as containing an evaluation of the instructional objectives, an assessment of the educational situations and the establishment of standards.

Statement of the Problem

There is no published evidence to show that research has established

readiness criteria which instructors may use in determining the suitability of experiential instructional techniques in a classroom context. Instructors generally may not have available to them information which should be used to design meaningful structured experiences to enhance the learning process.

Purpose

The purpose of this study was to collect information to develop a listing of readiness criteria that instructors could refer to in determining whether an experiential learning activity would be appropriate for use in a classroom. Using a Delphi recognized experts in instructional design, experiential learning, and teaching from across the nation suggested readiness criteria. Those same experts then formed a consensus of opinion on the relative value of all suggested criteria. They ranked them. The product of the consensus study was the readiness criteria to be considered by the instructor in the decision-making process.

Research Questions

The following questions were addressed:

1. What criteria should an instructor consider in order to determine whether any learning event should be facilitated through classroom experiential learning?

2. What relative rank or value does each of the readiness criteria

have?

3. Do authors, instructional designers, instructors and researchers rank the readiness criteria differentially within groups?

Limitations of the Study

The following limitations apply to the study:

1. Only people recognized as subject matter experts in four categories of knowledge were nominated to generate criteria through participation in the study. Those categories were: 1) authors of treatises on experiential learning, 2) instructional designers, 3) instructors in experiential learning programs, and 4) researchers with a special interest in experiential learning.

2. Only people nominated by officers of 17 nationally recognized education organizations in the United States were considered as subject matter experts.

3. Twenty-one of 40 people invited to participate on the panel of subject matter experts agreed to participate. Five people were identified in the researcher group, four people identified in the author group, and six people each identified in the instructional designer and instructor groups.

4. A total of 85 people were nominated by officers of educational associations as subject matter experts. But over half of those nominated were from the research category. To balance the number of experts by category a table of random numbers was used to eliminate 45 nominees, mostly researchers.

5. Dalkey (1969) has contended that as a research instrument the Delphi Technique cannot be validated when it is used to generate and collect value judgments. Information gathered by the Delphi cannot be viewed as truth and the value of the information is not quantifiable.

Assumptions

The following assumptions apply to this study:

1. The information provided by the subject matter expert panelists was objectively and subjectively generated, ranked and prioritized.

2. The population of the study was representative of people who are recognized experts in authoring treatises, researching, instructing and designing experiential learning activities or programs.

3. The population of subject matter experts recognized that a need existed to formulate readiness criteria as a prerequisite to designing meaningful experiential instructional techniques.

4. Although Dalkey (1969) contends that the Delphi Technique cannot be statistically validated, he, Delbecq, et.al. (1975) and others argue its value has been shown by its use in hundreds of studies for the purpose of generating and reaching a consensus on qualified opinions.

Definitions of Terms

The following terms were used in this study:

Classroom-The setting for a formal learning event which can include the traditional classroom, a laboratory, or any place formally recognized

as the setting for learning.

Criteria-Standards or parameters for decision-making; the circumstances under which a judgment is made.

Experience-The process of personally encountering, observing, or undergoing, and the subsequent knowledge acquired.

Experiential-Pertaining to or deriving from experience.

Experiential Education-Education focused upon the acquisition of knowledge through personally encountering, observing or doing the concept.

Experiential Instructional Methods-The facilitation of learning through teaching techniques which require an individual or group of learners to be in direct touch with the realities of the subject matter being studied (e.g. simulations, games, acting, making products, creating objects, etc.)

Experiential Learning-The process of learning by doing; learning in which the learner is directly in touch with the realities being studied (Goldstein, 1978).

Experiential Learning in the Classroom-Facilitating learning in the traditional setting of a classroom using experiential instructional methods.

Experiential Learning Off-Campus-Formal learning programs, which can take the forms of internships, practica, cooperative education in the workplace, preprofessional training or field research, or informal learning, as on the job training, all of which take the learner out of the traditional classroom setting and require the learner to be in contact with the realities being studied.

Learning Event-An organized learning experience.

Readiness Criterion-A standard used in instructional theory for evaluating the appropriateness of an instructional method in preparation for a learning event.

Organization of the Study

Chapter I provided an introduction and rationale for the study. Included in it was a statement of the problem, purpose of the study, research questions and limitations, assumptions, and definitions of terms used in the study.

Chapter II provided a review of literature related to learning theory, experiential learning and instructional theory. It included a framework for learning theory, a history of experiential learning in the United States and frameworks for experiential learning theory and instructional theory. It also reviewed literature which revealed experiential learning to be particularly suitable for adult learning situations. It also noted the need for more research in experiential learning, particularly as it relates to instructional design.

Chapter III examined the procedures used in the study. It defined the population and explained the sampling procedure used in compiling a panel of subject matter experts. It explained the origin of the research instrument. It explained how the information was analyzed. The findings of the study were presented in Chapter IV. Conclusions, implications, recommendations and a summary of the study were given in Chapter V.

CHAPTER II

REVIEW OF LITERATURE

How human beings acquire and use knowledge is the subject of the study of learning. It evolved from British associationist psychologists who theorized how complex ideas may be constructed in the human mind from basic sensory impressions. Learning psychologists have been actively experimenting with the learning process since the 1880's. German pscyhologist Hermann Ebbinghous has been credited by some as the father of learning psychology (Bugelski, 1971). He was among the first to study learning retention. Gagne (1985) has credited people like J. Mill for their early perceptions on learning. Mill (1869), believed that acquiring a new idea requires elements of contiguity of the sensory impressions, repetition of the contiguous event and mental concentration, or attention.

Long before scientific studies of learning began, formal educational programs were developed. Programs were designed on one of two prevailing philosophies. In Europe, from the medieval period through the industrial revolution, scholars developed institutional homes in Paris and Bologna where they introduced models of instruction. Chickering (1977) said these schools required students to master subjects delivered through books and lecture. Houle (1976) noted that craft guilds and apprenticeship systems provided advanced training through practice of the

arts and trades. Two distinct educational systems then evolved. One system emphasized assimilation of knowledge through lecture, discussion and reading. The second emphasized learning through experiencing the reality, and by practicing until grasping the concept to a certain competency level. The second system resulted from what Little (1981) has called an emphasis in practical knowledge.

History

In the United States the first public support for a practical orientation toward higher education was implied in the Morrill Act (1862). But, according to Little (1981), experiential learning within scholarly institutions had been introduced as early as 1824 at Rensselaer Polytechnic Institute in Troy, New York. It was at that institution instructors used systematic field work in botany and geology, an outgrowth of the natural sciences and the scientific method. In the 1890's a movement of progressivism found its center in university settlement homes. It emphasized practical service to the community by students. At about the same time, Johns Hopkins University introduced practical elements to essentially classroom-based instruction. Medical students were required to serve internships in hospitals. In other universities, law colleges were permitting students to practice juris principles in moot courts. Normal schools began requiring practice teaching. And forestry and agricultural curricula began requiring field practice, according to Chickering (1977).

In 1938 public education in the United States began to see

experiential education as an integral part of the learning process, partly due to John Dewey's publication, Experience and Education. Dewey argued that experience is the central concept in his principle of education. "All genuine education comes about through experience... The central problem of an education based on experience is to select the kind of present experiences that live fruitfully and creatively in subsequent experiences (Dewey, pp. 5-6)."

The practice of experiential learning proposed by Dewey was already incorporated in one major facet of American education, vocational education. According to Knight and Knight (1984), experiential learning in trade and industrial education programs was adopted from the teaching practices of Herbart, a Swiss professor of philosophy. By studying the learning process he saw the function of teaching as "sound psychology (Knight and Knight, 1984, p. 22)." This concept resulted in the development of five steps of instruction which are predominantly used in vocational education today. Those stages are (1) preparation, (2) presentation, (3) association, (4) system (expression), and (5) method or application. It is the fifth step of applying the knowledge that is the basis of vocational experiential learning.

Further, the concept of experiental learning is implied in several of Prosser's 16 theorems of vocational education proposed in the 1940's, according to Calhoun and Finch (1976). Prosser stated that vocational education must occur within the same or replicated environment as the actual vocation. He also indicated that learners must be trained in thinking habits and in psycho-motor skills to the degree that they may acquire jobs.

In 1973, Thompson proposed eight assumptions of vocational education, according to Calhoun and Finch (1976). Those assumptions parallel the practical aspects implied in much of experiential learning. Primarily, Thompson required that vocational education produce people with experience and knowledge so they could be marketable and be extensions of the tools of production. Thompson saw vocational education as the means of acquiring the basic skills necessary for that to occur.

Dewey's historical perspective set the stage for change in educational systems, according to Chickering (1977). Small private colleges such as Goddard, Antioch and Berea formally established cooperative education programs. Keeton and Tate (1978) described these programs as sponsored experiential learning in which the student may alternate terms on campus in classroom-based studies with terms away from campus in employment, or engage in both activities concurrently. Experiential programs grew in the 1950's and 1960's. Service learning, education abroad programs, vocational education, and field-based education were all programs which colleges required in professional programs in higher education. The success and notoriety of such secondary education programs as Foxfire, Outward Bound, and Experience Based Career Education added to the popularity of experiential programs during the period.

In 1973 the Cooperative Assessment of Experiential Learning Project began. According to Chickering (1977), the project produced a consortium among 10 colleges to coordinate experiential programs. By the end of the decade well over 200 institutions had joined in the consortium which changed its name in 1976 to the Council for the Advancement of

Experiential Learning (CAEL). As an incorporated organization it has two primary purposes, according to Chickering:

> 1) to foster the development of educational programs using better mixes of experiential learning with theoretical instruction and to foster more widespread use of such programs; and 2) to sophisticate further the understanding and practice of assessment of the outcomes of experiential learning (p. 16).

Keeton and Tate (1978) contended that an overwhelming proportion of adult learning at present is being conducted outside the collegiate environment. Research conducted independently by Tough (1977) and Penland (1977) showed that between 80 and 90 percent of the adult population carries out at least one learning project each year, and the typical adult spends 500 hours during the year learning new things through self-directed life experience. Further, studies by Peterson, Cross, and others (1978) estimate that 72 percent of the more than 116 million workers in the U.S. are involved in learning programs at the postsecondary level from nonacademic institutions.

Kolb (1984) noted that a renewed interest in and attention to experiential learning methods is being demanded by a public which sees a "corresponding need for educational methods that can translate the abstract ideas of academia into the concrete realities of these people's lives" (p. 6). Allen and Durst (1980) proposed that a social shift from a predominantly rural agrarian lifestyle to one that is urban has created a youth population richer in information than in experience. "Unwittingly, we are turning out young people, after 13 years of schooling, who are overwhelmed by information, unable to synthesize it

into an operating foundation for adult action serving self and others" (p. 1).

Experiential Learning Theory

Experiential education as a system and experiential learning as a method of instruction have not been fully accepted within public education systems. Anderson, Hughes and Permaul (1984) said that deficiencies in research and theoretical modeling in experiential learning did exist. Those deficiencies have created suspicion about the value of experiential learning. In their review of research the authors recommended that research be conducted in four areas of experiential learning: (1) practices and structures in experiential education, (2) ethnographic and demographic characteristics, (3) educational and public policies, and (4) curricular concerns relating substance to be learned with teaching-learning methodologies.

The development of experiential curriculum and instruction, as implied by Anderson, Hughes and Permaul, requires that a basic understanding of learning theory be postulated which relates to experience. Such a theory of experiential education was first proposed by Dewey (1938) as he attempted to promote understanding in the growing conflict between "traditional" education and his "progressive" philosophy. He described certain principles promoted in the new approach. These were individuality, free activity, learning through experience, acquisition of skills which are purposeful to the individual, making the most of opportunities in present life and acquaintance with a

changing world. In Kolb's (1984) view, Dewey's perspective was a pragmatic approach. It challenged the rationalist philosophies which dominated thinking about learning and education since the Middle Ages.

As Dewey was proposing a new order for American education, the French developmental psychologist Jean Piaget was proposing a theory which explained how intelligence is shaped by experience. Piaget proposed that intelligence is a product of an interaction between an individual and the person's environment. Action by the learner is the force which sparks that interaction. In a research report to the Swedish Board of Education, Hallden (1980) noted the best techniques for adapting learning to an individual's spontaneous cognitive development are classified by Piaget as "activity" or "discovery learning." These instructional techniques propose that students must have the opportunity to actively explore the area about which they are to learn something. In Piaget's words:

> ...it is necessary to employ the active methods, which give broad scope to the spontaneous research of the child or adolescent and require that each new truth to be learned shall be rediscovered or at least reconstructed by the student, instead of simply being communicated to him/her (1976, p. 22).

Piaget's research was initiated through his early training with Alfred Binet, creator of the first intelligence test. The focus of his research activities was upon the process that learners use in arriving at responses to questions. Through testing he discovered that this process differed in young learners according to age, or stage of mental growth. The realization that the learning process was related to development focused attention on the techniques of instruction. To Piaget,

> Development is a spontaneous process. It includes the entire structure of knowledge, in contradistinction from learning, which takes place in an artificial situation and relates to a limited area of knowledge. We can explain learning in terms of development. But we cannot explain development in terms of learning. This means we seek ways to teach which correspond to or can be adapted to the individual's natural cognitive development (1964, p. 176).

Kolb (1984) has related the work of Piaget to the contemporary psychologist Jerome Bruner:

> Bruner saw in the growing knowledge of cognitive developmental processes the scientific foundations for a theory of instruction. Knowledge of cognitive developmental stages would make it possible to design curricula in any field in such a way that subject matter could be taught respectably to learners at any age or stage of cognitive development (p. 13).

From his studies toward a theory of instruction, Bruner became an advocate of the discovery method of instruction. In his words, "Action and the search for meaning are guided by intention, self-directed, and help can be provided to sustain such self-direction" (1971, p. 177). Efforts by Bruner and others in an experiential perspective in education focused on the translation of the abstract symbolic principles, primarily in science and mathematics, into modes of representation that could be understood by learners at the more concrete stages of cognitive development. Tumin (1976) contrasted nonexperiential and experiential methods based on this symbolic restructuring:

> The contrast between nonexperiential and experiential learning is one between more and less abstract, and more and less linguistic, sets of symbols that are employed in the transactions in which learning takes place, whether in the

> classroom, at the mill bench, or on the golf course. Several points can be made about departures from the more abstract and linguistic methods of traditional school learning (p. 41).

American social psychologist Kurt Lewin, Dewey and Piaget are the "foremost intellectual ancestors of experiential learning theory," according to Kolb (1984, p. 15). In his work with organizational behavior, Lewin's work with group dynamics and "action research" has had the greatest influence on experiential learning theory, according to Kolb. From one "T-group" (T is synonymous with "training") session in 1946 Lewin discovered that "learning is best facilitated in an environment where there is a dialectic tension and conflict between immediate, concrete experience and analytic detachment," according to Kolb (1984, p. 9).

Lewin's conclusion that conflict or tension can serve as a stimulus for learning is the basis of a model developed by Kolb for experiential learning. Kolb's model describes conflicts between opposing ways of dealing with the world. It focuses on the dialectics of concrete experience opposed to abstract concepts and action opposed to observation.

Models adapted from work by Piaget and Dewey also focus on tension, Kolb said (1984). The Piaget model focuses on the dialectic tension between the processes of accomodation of ideas to the external world and the assimilation of experience into the existing cognitive structures. The Dewey model stresses the dialectic tension between motivation that prompts ideation and the reasoning process which directs it.

Tension as used in the three models parallels Freire's concept of

"praxis." The concept encompasses the dialectic relationship of what has become the principle disagreement between experiential learning proponents and advocates of traditional content-oriented instructional techniques. Praxis, or practice, encompasses both the nature of learning and the fundamental process of adaptation to one's life. To Freire the two dialectics are interdependent because praxis is "reflection and action upon the world in order to transform it" (1974, p. 36).

Freire, a Brazilian educator, has argued that Western educational systems are more agencies for social control than instruments for teaching. Though radical in concept, Freire has argued that the means for changing the system will require what he calls "critical consciousness" (1973, 1974) which Kolb (1984) has described as an active process of exploring the personal, experiential meanings of concepts through dialogue with equals. Thus, critical consciousness has become a principle element in experiential learning theory and has been applied to many experiential instructional techniques.

Though Dewey may be considered the father of modern experiential education, much of the neccessary theoretical modeling to accomplish it has been envisioned by Kolb (1976, 1984). Kolb (1976a) offered what he calls a "simple" description of the learning process. It is a four-stage model in which experience "is translated into concepts which in turn are used as guides in the choice of new experiences" (p. 2). The "cycle" of learning involves: (1) immediate concrete experience which is the basis for (2) observation and reflection, which the learner assimilates into (3) the formation of abstract concepts and generalizations, from which implications for some action are deduced, and followed by (4) testing of

the implicated new concepts within a given situation. This final stage of testing prompts the person to take the action which, in turn, evolves to the first stage.

Kolb's description of the learning cycle is important for experiential education, according to Doherty, et.al. (1978), because it "reveals a dialectic interplay between contrasted abilities" (p. 24). Those opposing abilities are concrete rather than abstract, and reflective rather than active. "From these polarities, Kolb has derived an effective tool for measuring the way in which each individual resolves the dialectic tensions in learning" (p. 25).

From Kolb's model four distinct yet integral learning styles are noted. His learning style inventory indicates which of the styles -- concrete, reflective, abstract or active -- the individual has favored and which has predominated over the person's cognitive development. Kolb concluded that individual learning styles are formed by the way each person perceives and processes. Kolb and Doherty, et.al. (1978) contend that traditional content-oriented instruction encourages the development of perceptual and symbolic abilities through the use of reflective observation and concept formation. Also, concrete experience and active experimentation are necessary to foster affective abilities and behavioral skills.

Using his model adapted from Lewin, Kolb (1984) has contended that the central idea in his experiential learning theory "is that learning, and therefore knowing, requires both a grasp or figurative representation of experience and some transformation of that representation" (p. 42). From that concept he defines learning as "the process whereby knowledge

is created through the transformation of experience. Knowledge results from the combination of grasping experience and transforming it" (p. 42).

Little (1981) views experiential learning as the applied principle element of Kolb's model. From that view a rationale for experiential learning was proposed: "Quality education requires both kinds of learning -- experiential learning and information assimilation -- because their strengths and weaknesses are mutually complementary" and because of that, "The question is not whether theory or practice provides quality, but rather what combination of the two provides complete learning" (p. 8).

Instructional Theory

Since the late 1960's facilitators of learning have been influenced to improve their methods of instruction by examining systematic descriptions of ideas about how to relate the external events of instruction to learning outcomes. The influence of Simon (1969) has allowed designers of instruction to develop these concepts into theories of instruction. The value of instructional theory is that it has allowed the examination of the relationship between instructional attempts and outcomes and how these techniques lead to support or enhancement of internal learning processes. Gagne (1985) has placed instructional theory in the following perspective:

> The province of an instructional theory is to propose a rationally based relationship between instructional events, their effects on learning processes, and the learning outcomes that are produced as a result of these processes (p. 244).

Out of instructional theory a specialized area of educational study has been established which has been labeled "instructional technology." Kemp has defined instructional technology as:

> the systematic design of instruction, based on knowledge of the learning process and on communications theory, taking into consideration as many factors and variables of the particular situation as possible, so that successful learning will result (1977, p. 7).

Instructional technology involves a systems approach to problem-solving as based on the method of scientific inquiry. According to Kemp, the systems approach to designing instruction requires that: (1) a problem be recognized, (2) an hypothesis be formed about the problem and possible solutions, (3) experiments be conducted, and (4) data be gathered from the experiments leading to a conclusion about the accuracy of the hypothesis.

Sherman (1980) has described instructional technology as a systematic process for making decisions about instructional strategy. His concept is adapted from a decision-making process by D'Zurilla and Goldfried (1971) which is widely used by researchers and writers on decision-making. That process contains five components: (1) a general orientation to the problem, (2) the identification of intended outcomes, (3) the generation of alternatives, (4) decision-making, and (5) verification.

Kemp (1977) has described instructional technology as a systematic method of problem-solving. It answers three questions: (1) What must be learned? (objectives), (2) What procedures and resources will work best

to reach the desired learning levels? (activities and resources), and (3) How will we know when the required learning has taken place? (evaluation).

Kemp has offered a comprehensive and detailed plan for instructional design that has eight parts:

1. Consider goals, and then list topics, stating the general purposes for teaching each topic.
2. Enumerate the important characteristics of the learners for whom the instruction is to be designed.
3. Specify the learning objectives to be achieved in terms of measureable student behavioral outcomes.
4. List the subject content that supports each objective.
5. Develop pre-assessments to determine the student's background and present level of knowledge about the topic.
6. Select teaching/learning activities and instructional resources that will treat the subject content so students will accomplish the objectives.
7. Coordinate such support services as budget, personnel, facilities, equipment, and schedules to carry out the instructional plan.
8. Evaluate students' learning in terms of their accomplishment of objectives, with a view to revising and reevaluating any phases of the plan that need improvement (1977, p. 8-9).

Gagne (1984) has proposed five categories of capabilities for performance that are learning outcomes. For the purpose of instructional design the categories are: (1) intellectual skills, (2) cognitive strategies, (3) verbal information, (4) attitudes, and (5) motor skills. Each category exists under a distinct classification of human performance. But, as Gagne noted:

> While the events of instruction that support learning processes fall into common categories irrespective of the learning outcome expected, the specific operations that constitute these events are different for each of the five learning outcomes. Learning intellectual skills requires a different design of instructional events from those required for learning verbal information or for those required for learning motor skills, and so on (1985, p. 245).

Experiential Instructional Theory

The five components of the D'Zurilla and Goldfried (1971) and Sherman (1980) models closely parallel Thiagarajan's (1980) three-stage model for his experiential learning package of instruction. The three stages of that model are: (1) analysis and prescription, (2) design and development, (3) verification and revision. In the first stage "you systematically identify who your learners are, under what conditions they are going to use your package, and what cognitive and affective goals you would like them to achieve" (p. 86). In the second stage the instructor selects the appropriate format of experiential activity, preferred media to use, produce the material to be used, and integrate the various components of instruction. In the final stage the instructor should use feedback from experts, representative learners and group leaders for verifying expected effectiveness and then make adjustments to the instructional package as prescribed from the feedback.

Chickering (1977) suggested a rough model for the design of experiential instruction. It contained three elements. The first required the development of an "idea" hypothesis and the subsequent testing of the idea. Second was the observation and careful analysis of the tested consequences. Third, a "reflective review" which discriminated and synthesized the activity required to record the

significant elements of the experience. According to Chickering, the third element was in line with Dewey's statement,

> To reflect is to look back over what has been done so as to extract the net meanings which are the capital stock for intelligent dealing with future experiences. It is the heart of intellectual organization and of the disciplined mind (1938, p. 19).

Steinaker and Bell (1979) have applied their concept of experiential learning as a process in the development of a taxonomy. They proposed that experiential learning is a process, "a hierarchy of stimuli, interaction, activity, and response within a scope of sequentially related events" (1979, p. 9). They have proposed a five-stage taxonomy which explains what activities must occur in the experiential learning process. The taxonomy is presented sequentially and requires the learner to advance through each stage.

The Steinaker and Bell taxonomy begins with exposure to the activity. Learning begins as the participant becomes consciously aware of the experience. The human sensory organisms are exposed to the concept. Then the person must accept or reject the exercise. It is the invitation to the experience. The second stage is participation, the actual decision to become a physical and mental part of the activity. The third stage is identification. The learner and the projected idea(s) are integrated in an emotional context. The fourth stage is internalization. The experience begins to affect the lifestyle of the participant. The final stage is dissemination, the sharing of the learned idea with others.

Consequently, Keeton and Tate (1978) noted, classroom experiential

instructional methods are a distinct element of experiential learning and experiential instructional theories can be developed expressly for experiences in the classroom. To date few instructional theories have been proposed for experiential learning in the classroom.

Pfeiffer and Jones (1974) have proposed one of the few existing approaches to the instructional design of experiential activities. It is used predominantly by trainers in organizational settings. It is also occassionally used in traditional educational settings. The approach was updated by Goodstein and Pfeiffer (1983). Goodstein and Pfeiffer described classroom experiential learning as "structured experience" which occurs in a framework of a cycle (1983, p. 3). They contend that for such activities to be meaningful learners must proceed through five stages: (1) experiencing, (2) publishing, (3) processing, (4) generalizing, (5) applying.

The five stages of structured experience described by Goodstein and Pfeiffer (1983) are regarded as a cycle of activities. All are essential for meaningful experience. The first stage, experiencing, is doing the activity. The second stage, publishing, is the sharing of reactions, observations and emotions produced by the activity. The third stage, processing, is a discussion of the group dynamics which occurred during the activity. The fourth stage, generalizing, is inferring principles from the activity which relate to the real world. The final stage, applying, is planning effective behavior for use in the real world.

Ruben (1977) has developed a generic instructional model for classroom experiential instruction. That model suggests "five conceptual elements of experiential methods: (1) roles, (2) interactions, (3) rules

(4) goals, (5) criteria" (p. 221). To Ruben, "The facilitator/trainer strives to design and select activities which satisfactorily accomodate each of these variables in a manner he or she believes to be appropriate" (p. 225).

Essential to the instructional design process is the establishment of criteria. Ruben has called such criteria "parameters for decision-making" in the selection and development of games and simulations (p. 225). The value of this process is stated by Ruben:

> Overarching this sort of planning and decision-making are more basic and fundamental considerations relative to training or instructional goals. (1) When to use experiential methods and when to use straightforward informational sessions; (2) when to use one sort of game, simulation, or exercise and when to use another; (3) When to provide a structured facilitator-centered debriefing and when to let participants determine directions of discussion (1977, p. 225).

Six criteria used in deciding whether to use a particular method or technique were arbitrarily suggested by Ruben (1977, p. 224). These were: (1) the number of participants, (2) the nature of the participant group, (3) availability of resources, (4) time constraints, (5) activities which will precede and follow the one in question, (6) the predictability of outcomes.

Thiagarajan (1980) has suggested that experiential learning methods were appropriate for five learning objectives which may be applied toward Ruben's criteria. They are:

1. Development of highly complex cognitive skills such as decision-making, evaluating and synthesizing.

2. To positively impact on the learner's values, beliefs or attitudes.

3. To induce empathy (understanding).

4. To sharpen human relations interactive skills such as interpersonal communication skills.

5. To unlearn negative attitudes or behaviors (p. 38).

Massey (1981) reported that a graduate class in experiential learning developed a list of "criteria for experiential activities" while reviewing Dewey. Based on Dewey's Experience and Education (1938), the class concluded that "activity-centered learning" should:

1. Have a clear educational purpose.

2. Be within the range of capacity of the learner.

3. Arouse within the learner an active quest for information or new ideas.

4. Build on the life experiences of the learner.

5. Demand progression of intellectual development.

6. Include a method for keeping track of information for later intellectual use.

7. Be followed by extensive work:
   - clarification of ideas
   - expansion of ideas
   - organization of ideas
   - analysis of observations
   - verification of ideas
   - extract meaning

8. Lead logically to the next activity (p. 111).

Tom (1981), who was reflecting on his own teaching experiences, suggested five "variables" which affect the experiential style of

learning: (1) reality, (2) risk, (3) responsibility, (4) predictability, and (5) analysis.

Chiarelott (1979) suggested that four "principles" should be considered in the development of experiential learning activities. First, the selection should be based upon the continuity and interaction of the learners' past, present and future experiences. Second, the sequencing of activities should be based upon an "experiential continuum" in which the learner uses knowledge gained from one experience to understand the meaning of the new experience. Third, action and reflection should be used in revewing learning experiences. Fourth, the subject matter should be discovered by the learner through a process of inquiry exploring the significance of each experience.

Taylor (1981) suggested that instructors must be aware of four components, or phases, in a "self-initiated learning cycle." First, there is detachment. The learner relates to experience and preconcieved notions. Second, there is divergence. The learner departs from phase one and reflects on the situation. In the third phase, engagement, the learner relaxes without having a solution to the problem. This phase leads to an intuitively-guided exploration of decision-making in light of new information. And there is convergence, the emergence of an insight.

The criteria proposed by both Ruben and Thiagarajan were arbitrarily selected, based on their own unique experiences and concepts of experiential learning. A comprehensive and in-depth review of literature has shown that no criteria have been formulated using recognized research methods. Consequently, a knowledge void exists which inhibits the development of a sound instructional strategy for experiential learning

in the classroom. The absence of this information prompted Ward (1979) to conclude that "the instructor needs the services of a specialist in experiential exercises to tie the learning objective to the appropriate experiential exercise or activity" (p. 3).

Adult Experiential Learning

Referring to Dewey (1938), Chickering (1976), Erikson (1968), and Knowles (1970), (1978), Marienau and Chickering (1976) noted that principles for adult learning stress "the role of experience, freedom to make judgments, and responsibility for the consequences of choice and action" (p. 8). Thus, there is the implication that experience plays a strong role in the process of learning in adults.

According to Lindeman (1927), experience is of highest value in adult education because it is the adult learner's "living textbook" (p. 9). Stern (1953) noted differences between adults and young undergraduate learners in a college class. He found that adults perceived themselves "cramped by tedium" and felt insufficiently challenged by "customary undergraduate assignments" (p. 71). Long (1983) has described the value of experience as part of an adult education process. In perspective, "adult learners have experienced some learning," and "all adults have some experiences that may be related to their learning" (p. 223).

One implication for the use of experience as a method of instruction is described by Knowles (1978). An experiential exercise in his "learning-how-to-learn" activity (p. 123) is the primary facilitating

tool in promoting the self-directed learning process. Further, one of Knowles' four assumptions of andragogy is that adult learning differs from pedagogical, childhood learning, because experience plays a primary role.

> This assumption is that as an individual matures he accumulates an expanding reservoir of experience that causes him to become an increasingly rich resource for learning, and at the same time provides him with a broadening base to which to relate new learnings. Accordingly, in the technology of andragogy there is decreasing emphasis on the transmittal techniques of traditional teaching and increasing emphasis on experiential techniques which tap the experience of the learners and involve them in analyzing their experience. The use of lectures, canned audio-visual presentations, and assigned reading tend to fade in favor of discussion, laboratory, simulation, field experience, team project, and other action-learning techniques (Knowles, 1978, p. 56).

Little (1981) suggested that the objectives in experiential learning are especially adaptable to adult learners. Experiential learning can develop in adults the ability to learn in a self-directed fashion. This is encouraged by the opportunity to see real consequences of one's actions, feel the exhilaration of success and even fail on criteria other than grades. Second, adults can develop functional skills and attitudes necessary for effective adult life. These include skills of interpersonal interaction, group processing, intercultural communication, coping with ambiguity, and working on real-life problems with other adults. Experiential learning may be used to develop an ethical stance, to develop moral reasoning or judgment in complex situations.

Experiential learning methods have value in both adult learning and in learning with young people, according to Jernstedt (1980). Although

primary experiences are better, indirect experiences aid in learning. Vicarious experiences, such as examples, stories, or movies, help to secure the learning. Jernstedt stated that

> ...tying information to be learned to experience, even when the experience is purely hypothetical, can preserve the learning within the mind and prime the mind for new learning more effectively than other techniques (p. 13).

Chickering (1976), explaining the developmental changes which occur to adults and which affect learning, said:

> Experiential learning can be especially helpful in achieving increased interpersonal and professional competence and in modifying interpersonal style. Experiential learning permits students to live through various work settings and social situations, and then to enlarge their perspectives in those situations by systematic observations, reading, discussion, reflection, and self-observation. This approach to learning can contribute significantly to interpersonal competence in ways that businesses, agencies, and organizations in which students are directly involved otherwise cannot. In addition, educational institutions can help students unlearn old behaviors and devise and practice new ones, so that professional and personal development can proceed in this key area (p. 83).

Rogers (1969) defined experiential learning from a humanistic psychology perspective. He recognized elements of adult education later prescribed by Knowles (1978). To Rogers, experiential learning is

> ...a quality of personal involvement -- the whole person in both his feeling and cognitive aspects being in the learning event. It is self-initiated. Even when the impetus or stimulus comes from the outside, the sense of discovery, of reaching out, of grasping and comprehending, comes from within. It is pervasive. It makes a difference in the

> behavior, attitudes, perhaps even the personality of the learner. It is evaluated by the learner. He knows whether it is meeting his need, whether it leads toward what he wants to know, whether it illuminates the dark area of ignorance he is experiencing. The locus of evaluation, we might say, resides definately in the learner. Its essence is meaning. When such learning takes place, the element of meaning to the learner is built into the whole experience (1969, p. 5).

Research Needs

More than two decades ago Carroll (1961) described several areas of educational research which had been neglected. He attributed this to the inability of researchers to mobilize resources and talent required to provide satisfactorily complete answers to a number of questions. Among those neglected areas was the search for knowledge for the development of new methods of instruction. He was concerned about the development of instructional technology which disregarded scientific research in human psychology. Carroll noted that only a handful of studies had been completed, exploring how principles of learning could be applied in the classroom.

Applying the principles of experiential learning to instructional technology in the classroom has continued to be a neglected area of research. Writing for the Peer Assistance Network in Experiential Learning for the National Society for Internships and Experiential Education, Anderson and Smith (1985) reviewed 88 studies relative to experiential learning. Only one study (Coleman, Livingston, et al., 1973) pertained to experiential learning in the classroom. That research was a longitudinal study of the effectiveness of games and simulations in altering attitudes or behaviors.

Anderson, Hughes, and Permaul (1984) identified three areas of focus in current research of experiential learning. The focus of the three areas is in program design and the impact of learning on the learner. The areas identified were (1) program evaluation, (2) career development, and (3) personal-life skills. But the authors proposed that research begin to establish some direction to the (1) practices and structure of experiential learning, (2) curricular concerns, (3) ethnographic and demographic charactistics of experiential learning, and (4) educational and public policies.

Regarding the need for research in curricular concerns, Anderson, Hughes and Permaul contended that "distinct elements, characteristics essential or helpful to triggering or enhancing learning from experience, can be identified and tested for their effectiveness" and specifically that the studies should relate substance to be learned with instructional techniques (1984, p. 4).

Summary

In the quest for knowledge men and women have sought to improve the methods by which information is assimilated, processed and used. Part of the search for knowledge has been to understand the learning process so that learning may be facilitated through systems of education. Learning theories have been proposed to try to explain the process. Learning theories have produced two philosophical perspectives. Methods of instruction were developed from one perspective. That perspective required students to use verbal symbols to ingest information. This

perspective has dominated educational systems in Western cultures.

Dewey proposed a system of instruction in the beginning of this century which recognized and emphasized the value of experience, to enhance assimilation and processing of information. Many people call this an experiential philosophy, or philosophy of action and practice.

Through models of learning like those proposed by Kolb (1984) and others, the practice of an experiential philosophy has been promoted. Acceptance of experiential teaching methods by educational systems is more common than when Dewey first proposed the experiential approach. Many systems of education now recognize that a well-rounded education must contain elements from both the traditional assimilative philosophy and the experiential philosophical perspective. As Little (1981) noted, quality education for each person includes elements of both theory and practice. Thus, facilitators of learning are now becoming aware that instructional strategies which include experiential approaches are essential to quality instruction.

The systems approach to instruction has required instructional designers to consider readiness criteria as prerequisites for determining the instructional technique(s) appropriate for the learning situation. However, no treatises have been published which indicate that systemized research has been conducted to substantiate those criteria as prerequisites to establishing instructional techniques for experiential learning.

CHAPTER III

METHODOLOGY

The purpose of this study was to develop a listing of readiness criteria that instructors could refer to in determining whether a learning event should be facilitated through classroom experiential learning. This chapter explains the method of data collection and its analysis. It contains: (1) the type of research conducted, (2) population, (3) the instrument used to collect information, (4) collection of information, and (5) analysis of the information.

Type of Research

This study consisted of the acquisition of information using a Delphi Technique designed by Delbecq, Van de Ven and Gustafson (1975). As the authors noted, "Delphi is a group process which utilizes written responses as opposed to bringing individuals together (p. 83)." This study obtained recommendations for experiential criteria from a panel of 21 subject matter experts from across the nation. The study then polled the experts asking them to make value judgments about those criteria. The experts were divided into four subject expert groups: (1) researchers, (2) authors of treatises on experiential learning, (3) curriculum specialists, and (4) instructors who have practiced

experiential learning strategies. The study used three mailed questionnaires, a comprehensive literature review and telephone interviews.

Descriptive research is the collection of data for describing conditions as they exist by assessing information about or from whole populations of people (Sax, 1966 and Key, 1974). This study used a method of descriptive research at the ordinal level of statistical measurement to interpret group suggestions and opinions into a collection of descriptive information for decision making (Dalkey, 1972).

Population

The respondent population was defined by this study using two criteria. First, three distinct categories and one general category of respondents were established. The first three categories described experts in the following subjects: (1) research in experiential learning, (2) instructional design, (3) instruction in experiential learning. A fourth general category was for authors who had written treatises on the subject of experiential learning. The second criteria required that experiential experts be nominated by officers of 17 randomly selected education associations identified in the Encyclopedia of Associations, a reference book containing listings of all known organizations around the world.

Executive officers of those educational associations were asked to submit the names of up to eight nominees, two from each category, to the panel of experiential experts. Eight-five people were nominated to the

Delphi panel of experts. Over half of those nominated were categorized as researchers. To avoid a dominant opinion consensus from any one group, the list of names for each group was reduced from ten to 12 names. Each name was assigned a number. A table of random numbers was used to reduce the list to 44 names. Letters seeking their participation in the study were sent to all 44 experts. Twenty-one experts agreed to participate in each of the three mailed questionnaires, and to respond within a deadline period of three weeks.

The Instrument

Information for the study was acquired using an instrument designed by Dalkey and Helmer (1963) and revised by Delbecq, Van de Ven, and Gustafson (1975). The Delphi is a group process using written responses from people who have opinions about a subject. According to Salancik, Wenger and Helfer (1971), "The primary objective of a Delphi inquiry is to obtain a consensus of opinion from a group of respondents (p. 65)." It is used primarily in applied research for the purpose of planning or forecasting, according to Brockhaus and Mickelson (1977). Additionally, it has been used to plan curriculum in higher education, according to Judd (1972).

Dalkey (1969) termed the Delphi Technique as one type of "opinion technology (p. vii)" in his description of a set of experiments the Rand Corporation conducted to evaluate the instrument. The experiments were conducted with upper division undergraduates and graduate students at the University of California at Los Angeles. Ten experiments, involving 14

groups with 11 to 30 members each. The experiments were conducted in the spring, 1968. the results indicated that

> more often than not, face-to-face discussion tended to make the group estimates less accurate, whereas, more often than not, the anonymous controlled feedback procedure made the group estimates more accurate. The experiments thus put the application of Delphi techniques in areas of partial information on much firmer ground (Dalkey, 1969, p. vi).

Dalkey (1969) explained that policy formulation and decision-making require two different kinds of input: factual judgement and value judgment. The experimental work on Delphi procedures dealt exclusively with factual judgments. This project to identify readiness criteria used information gleaned from value judgments. The Delphi is also applicable for use with value judgment information as well. Dalkey said

> A fairly popular form of value judgment is the formulation of the major objectives of an organization and the weighting of these objectives on some scale....But the question of the validity of the procedures is much more obscure when value judgments are involved (1969, p. 73).

To date the Delphi has not been validated for use with information from value judgments, the kind of information used in this project.

Bloom (1979) noted while conducting research on aid to terminally ill people that the Delphi "attempts to take individual opinions and compile a meaningful response and to get an expert opinion without bringing the experts face to face (p. 27). It is a technique developed by the Rand Corporation in the 1950's. It was developed for use as a

forecasting instrument for the U.S. Air Force. According to Weaver (1971), it is used commonly as a method of reaching a consensus, or a convergence of opinion. It may also be used to generate information as in such systemized brainstorming techniques as the Nominal Group Process, according to Delbecg, Van de Ven and Gustafson (1975). The Delphi is, in the words of Berty (1972), "A professionally sound approach devised to provide useful information not only to educate decision-makers but also facilitates a consensus being reached (p. 12)."

The Delphi has three primary features, according to Dalkey (1969). The first is anonymity. This feature is a method of reducing the influence of dominant individuals. The second feature is controlled feedback. In Dalkey's words (1969), this feature is a method of "conducting the exercise in a sequence of rounds between which a summary of the results of the previous round are communicated to the participants (p. 16)." It is a feature which reduces extraneous comments. The third feature is statistical group response. This refers to the concept that the group of participants are defined as a single body, even though a final consensus may indicate a wide spread of opinions among group members.

In this study all 21 members of the Delphi panel responded to three questionnaires. Those responses were acquired through the mail. As prescribed by Delbecq, et.al. (1975), it was a systematic acquisition and aggregation of opinions from a representative sample of experiential experts responding to questions about readiness criteria.

Delphi is essentially a series of questionnaires. In this study three questionnaires were mailed to a panel of 21 subject matter experts.

The first questionnaire asked panelists to respond to the broad question: "What criteria must an instructor consider in order to determine whether any learning event should be facilitated through classroom experiential learning?" The remarks generated by the respondents were then used to develop the second questionnaire. The information generated by panelists in response to the second questionnaire were then used to develop the third questionnaire, as prescribed by Delbecq, et.al. (1975).

In an effort to improve accuracy and to promote an unbiased analysis of the information, a work group of five people was formed. The group pilot tested and analyzed the responses to each of the questionnaires. Additionally, the work group helped compose and edit the cover letters for each of the three cover letters to the questionnaires. The cover letters and design of the questionnaires were based on examples provided by Delbecq, et.al. (1975).

The sample size of 21 respondent panelists fell within the range recommended by Delbecq, et.al. (1975). According to the authors: "Our experience indicates that few new ideas are generated within a homogeneous group once the size exceeds thirty well-chosen participants" (p. 89). However, the authors indicate that the panel size is variable and that a minimum number of ten to 15 people is required to generate sufficient new ideas for group processing.

Collection of Data

Each questionnaire and accompanying cover letter was mailed to the 21 expert panelists. Each panelist was asked to write responses to the

questions on paper provided and to return the questionnaire within three weeks. Panelists who had not responded by the third week were contacted by telephone. All responses were returned by mail. The identity of each panelist was held secret to prevent the domination of certain individuals, and to promote an atmosphere of freedom among panelists so that a wide range of responses to the open-ended questions were generated, as prescribed by Delbecq, et.al. (1975).

Analysis of Data

The study asked panelists to generate readiness criteria to which instructors could refer in determining whether classroom experiential learning is an appropriate methodology. All responses were placed into a classification schema which was at the nominal level of measurement. Information classified into a nominal scale has the property of naming variables, according to Spatz and Johnston (1981).

Analysis of the first questionnaire required the use of a work group. Individual responses by participants were typed onto index cards exactly as they were written on the questionnaire. Each member of the work group sorted the cards into groups of similarity. The work group members then wrote one descriptive title for each group or pile of cards. Finally, all the titles developed by the five work group members were examined. Duplicate titles were eliminated and titles with similar or related conceptual ideas were grouped and retitled. Duplications were eliminated and related ideas condensed into 30 declarative statements representing all ideas generated by the panel of experts. Those 30

statements formed the basis of the second questionnaire.

The second questionnaire asked panelists to select the ten most important of the 30 criteria generated from the first questionnaire. Then panelists were asked to rank those ten from "1" to "10" with "1" being most important and "10" least important. Analysis of all 21 responding questionnaires involved a simple tally of votes for the most important criteria. Additionally, points were awarded using a ten-point scale. A ranking of "1" was given ten points, "2" was given nine points and "10" given one point. The group value of a criteria was based on the number of votes it received and the number of total points it received from its total rankings.

The third questionnaire was a condensation of the second questionnaire. It was designed to reach a final consensus of the most important of the criteria originally generated. This concluding questionnaire contained the top 13 criteria as selected in the second questionnaire, as well as four new criteria which were added by panelists from the second questionnaire. It was analyzed in the same fashion as the second questionnaire.

Statistical testing of the three questionnaires for a determination of independent probability samples was severely limited due to the small number of people within each group. According to Key (1986) and Claypool (1986), there are no statistical testing procedures which can accurately analyze data between groups with six or fewer members. This study was further limited for statistical analysis by the small number of participants overall. Further, analysis of the data itelf for internal validity was not possible because the data is qualitative in nature and,

thus cannot be considered as statistically true. The Delphi is dissimilar to other forms of recognized research when it involves the input of value judgments instead of quantitative factual judgments. According to Dalkey (1969),

> ...the question of the validity of the procedures is much more obscure when value judgments are involved. The prevailing opinion at the present time appears to be that there is no clear sense in which value judgments can be said to be true or accurate. Hence, it is of practical importance to ask whether there is any objective way to test Delphi procedures in the value area (p. 73).

Two statistical methods of analyses were applied to this research. Nominal level descriptive statistics were calculated to describe the mean scores, deviation scores and standard deviations of the criteria in Questionnaire Three. A descriptive table was drawn using the data to depict the deviations which occurred between the four expert categories as they ranked the most important criteria. The purposes of this analysis were to determine which group or groups deviated the most from the panel as a whole, and the amount of agreement each group had for each of the criteria. Second, a Kendall coefficent of concordance (W) was calculated to express the degree of association which existed among the experts as a whole on Questionnaire Three. The Kendall W is a type of correlational test useful in determining the extent of agreement among judges on a number of issues. It is calculated by finding the sum rank of all judges (experts) on each issue expressed as a deviation. Then the mean is calculated and the deviations are squared. The null hypothesis for the Kendall W was that the rankings by the individual experts were

unrelated.

Summary

The identification of readiness criteria for experiential learning was accomplished using a Delphi Technique. Four groups of experts in experiential learning, 21 people from across the United States, participated in the study. The Delphi used three questionnaires adapted from Delbecq, et. al., to acquire suggested readiness criteria and then to vote on their importance. As it was used in the study the Delphi produced value judgments from the experts. Because the true value of a judgment, even a consensus judgment, cannot be validated statistically the study was limited in its statistical validation. Descriptive statistical testing was used to determine the mean of the experts' rank on each criterion as well as deviation scores and standard deviations of each category of expert as a method of comparing ranking by the groups. A Kendall coefficient of concordance (W) test was calculated to determine the extent of agreement by all the experts on the most important criteria.

The product of the Delphi Technique is only a consensus of opinions. It is beyond the scope of this type of research to establish truth from the information contained. However, since the source of the information is from a representative sample of subject matter experts from across the nation, the consensus opinions have value and fulfill the purpose of this study in compiling a list of criteria for reference, according to Delbecq, et.al. (1975).

CHAPTER IV

PRESENTATION OF FINDINGS

The purpose of this study was to develop a listing of readiness criteria to which instructors could refer in determining whether experiential learning would be an appropriate instructional method for a learning event. Experiential experts generated a list of what readiness criteria for classroom experiential learning should be. The experts also judged the value of each criterion in relation to the others, thus creating a priority list of readiness criteria.

This chapter presents the findings of the research. The first section identifies the readiness criteria suggested by the subject matter experts, and describes how experts' suggestions were condensed into the final listing of criteria. The second section identifies those criteria which the experts ranked as most important from all the criteria. The third section describes differentiation of rankings by the four experiential expert groups.

Responses

Research Question Number One

What criteria should an instructor consider in order to determine

whether any learning event should be facilitated through classroom experiential learning?

To answer this question a one-question survey instrument was sent to all 21 Delphi subject matter experts in March, 1986. It asked the experts to recommend criteria necessary for an instructor to consider in determining whether a learning event should be facilitated through classroom experiential learning. In the cover letter accompanying each questionnaire, panelists were asked to respond based on the following definitions: (1) experiential learning methods are group or individual classroom-based exercises like games, simulations, or role playing rather than field-based experiences like internships or practica; (2) criteria are standards for evaluating the appropriateness of experiential learning exercises in any learning event. No other limitations were imposed on panel responses.

Eighteen of the 21 experts contributed 70 criteria. Much of the criteria generated by the experts was duplicate to or similar to criteria suggested by other expert panelists. An analysis by the Delphi work group condensed all the recommended criteria into a total of 30. A synopsis of the condensed criteria is in Table I. In addition to generating the criteria, the experts were invited to comment on their recommendations. Nine panelists accompanied their criteria with extensive explanations, or presented examples to enhance understanding of their idea. Some respondents ranked their criteria according to importance.

In a followup questionnaire, panelists were invited to expand the 30 criteria by adding new criteria which may not have been suggested in the

TABLE I

READINESS CRITERIA FOR CLASSROOM EXPERIENTIAL LEARNING

A Synopsis of Delphi Responses
Clear, concise instructions should be given.
Learners should be able to participate directly.
Adequate space should exist to conduct the activity.
Decision-making is promoted for groups and individuals.
The required materials are appropriate and available for use.
The activity should duplicate the true event.
The activity produces understanding as well or better than other instructional methods.
Equipment needed for the activity is obtainable.
Learners have the prerequisite skills and knowledge needed to perform the activity.
The activity is appropriate for student learning styles and abilities.
Performance and understanding are improved as a result of the activity.
There is adequate time to prepare and conduct all phases of the activity.
There is administrative and public support for the activity.
Ethical issues are considered.
The activity respects the varying ages of the learners.
The activity is appropriate for inducing reasoning, promoting personal growth and awareness, and enhancing creativity.
The activity promotes learner responsibility.
The instructor has significant knowledge of the activity in order to administer it.
The knowledge gained from the activity can be applied to real life.
The activity increases knowledge retention.
There is an adequate number of participants to conduct the activity.

TABLE I (Continued)

A Synopsis of Delphi Responses
The activity is timely to instructional phases of perception, learning, generalization and reflection.
The activity is appropriate for providing reinforcement.
The activity includes feedback and reflection.
Rewards of the activity are both intrinsic and extrinsic.
The instructor should consider his/her assumptions about experiential learning.
The activity is flexible for the learners and instructors.
The activity is appropriate for changing behaviors and shaping attitudes.
The activity increases learner motivation in the learning process.
The activity is appropriate for building complex cognitive and psychomotor skills.
The activity respects the varying developmental levels of the group.
The activity's outcomes must conform to the objectives of the learning event.
The activity is presented in a non-threatening manner so as not to induce fear of failure, balanced with appropriate challenge.
The instructor is open to new learning.

first questionnaire. From the second questionnaire four additional criteria were generated. Those four were added to the list of criteria that instructors should consider. They appear with the original listing of criteria in Table I.

Research Question Number Two

What relative rank or value does each of the readiness criteria have?

A second questionnaire was designed from the criteria generated in the first questionnaire. A third questionnaire was designed from the results of the second questionnaire. The purpose of the second questionnaire was to prioritize the 30 criteria generated from the first questionnaire. It was also designed to generate additional criteria which was not considered in the first round of questioning. The third questionnaire considered 13 of the top 30 criteria. Four criteria generated from the second questionnaire were added. It served as a concluding consensus on the value of those most important criteria.

The second questionnaire was the longest and most complex of the three surveys. The cover letter which accompanied it asked the participating subject matter experts to: (1) review the list of criteria which were listed randomly, (2) comment beside each item if desired, (3) select the ten most important items, then (4) rank those ten items with a score of "1" being highest and "10" the lowest, and (5) add any new criteria which may have been omitted. It was mailed out in April, 1986.

All 21 panelists responded to the second survey. Based on a point system in which rankings of "1" received ten points, rankings of "2"

received nine points and rankings of "10" received one point. An analysis of those surveys resulted in a prioritization of all 30 criteria. The rankings of the 30 criteria are shown in Table II in order of their importance along with the amount of votes and points each received. Additionally, four new criteria were generated by the experts.

One experiential expert did not correctly rank his selection of the top ten criteria. Instead this person ranked each of the top ten criteria as "1." The person argued that all ten were of equal importance. Though this person's ranking procedure was incorrect, the selection of the ten most important was a correct procedure. In this analysis all the votes were counted and the criteria selected were each given ten points.

In the analysis there were four sets of ties. Most notable was the tie for first place. In the case of ties the criterion selected by the greatest number of experts was given a priority status. The most important criterion was "The activity is appropriate for student learning styles." Sixteen experts voted for it. The second most important criterion, selected by 15 experts, was "The activity produces understanding as well or better that the other instructional methods." While fewer experts voted for Criterion Two, those voting for it actually ranked it higher than the 16 who voted for Criterion One. A tie was also established between Criterion 12 and Criterion 13. In this case the same number of experts gave both the same ranking. Thus, both criteria were equal in importance and their rankings were randomly chosen. Criterion 18 and Criterion 19 also received equal status and their rankings were randomly chosen. Priority in the tie between Criterion 24 and Criterion

TABLE II

CRITERIA BY RANK IMPORTANCE

Rank	Votes	Points	Criteria
1	16	95	The activity is appropriate for student learning styles.
2	15	95	The activity produces understanding as well or better than other instructional methods.
3	13	90	Learners participate directly.
4	14	85	The instructor has significant knowledge of the activity to administer it.
5	16	83	The activity includes feedback and reflection.
6	11	76	The activity promotes learner responsibility.
7	11	66	Learners have the prerequisite skills and knowledge.
8	8	61	The activity is timely to instructional phases of perception, learning, generalization, and reflection.
9	9	56	The activity is appropriate for inducing reasoning, promoting personal growth and awareness, and enhancing creativity.
10	10	52	The activity increases learner motivation.
11	8	48	The activity is appropriate for changing behaviors and shaping attitudes.
12	8	47	Performance and understanding are improved.
13	8	47	Ethical issues are considered.
14	8	44	Required materials are appropriate and available.
15	7	43	There is adequate time to prepare and conduct all phases of the activity.
16	6	37	The activity is appropriate for building complex cognitive and psychomotor skills.
17	7	30	Decision-making is promoted for groups and individuals.

TABLE II (Continued)

Rank	Votes	Points	Criteria
18	4	29	Clear, concise instructions are given.
19	4	29	The activity is flexible for learners and instructors.
20	3	25	Knowledge gained is applied to life.
21	5	20	The activity increases knowledge retention.
22	3	14	The activity is appropriate for reinforcement.
23	4	13	Adequate space exists to conduct the activity.
24	3	12	The instructor considers his/her assumptions about experiential learning.
25	2	12	The activity duplicates the true event.
26	2	11	The activity respects the varying ages of the learners.
27	2	10	Equipment needed is obtainable.
28	4	9	Rewards of the activity are intrinsic and extrinsic.
29	1	6	There is administrative and public support for the activity.
30	1	1	There is an adequate number of participants.

25 was established on the basis of number of votes.

An analysis of comments made by subject matter panelists from Questionnaire Two helped explain the results of the rankings given all the criteria. Many Delphi panelists did not vote or rank some criteria because they could be generally applied to all kinds of structured instructional methods. In the words of panelist Steven Hamilton, "Several of the items seem equally important for any type of instructional method and, therefore, less critical for experiential learning distinctively." Considering this interpretation of the objective of the study, some panelists selected only criteria which uniquely applied to experiential learning.

Further, the variety of experiential activities may require consideration of a variety of criteria, according to comments by panelists. Hamilton explains this further:

> Other items seem to me subject to adaptation in the sense that when resources such as space, equipment, and materials are not available another experiential activity not requiring those particular resources might be substituted.

A third major issue seemed to influence voting and ranking, according to the comments. The specific objectives of a learning situation may be considered criteria. Some panelists noted that several criteria were actually objectives of a learning activity. Specifically, Criteria Six and Ten, and Criteria 11, 16, and 17, according to the experts, are not readiness criteria, but are the learning objectives, products of an experiential activity. If those products are not the

objectives of the learning activity, then they may not be considered important criteria, some panelists argued.

The third questionnaire was developed as a method of providing closure for the study and for aggregating the judgments of the subject matter experts. It was designed similarly to the second questionnaire. Subject matter experts were asked to consider 17 of the criteria generated from the two previous questionnaires. The first 13 criteria were the most important ones voted and ranked by the panelists in the second questionnaire. The remaining four criteria were those which had been generated by panelists in the second questionnaire. Again, panelists were asked to review each of the 17 criteria, select the ten most important and rank them from "1" to "10" with "1" being the most important. It was mailed in May, 1986. Seventeen panelists responded to it. The findings of Questionnaire Three are found in Table III.

The final ranking by the subject matter experts did alter the order of importance of the first 15 criteria. Most significantly the criterion "The activity produces understanding as well or better than other instructional methods" was voted as the most important criterion trading places with what had initially been the most important criterion. Several panelists commented that the words "as well" should be removed from this most important criterion. Thus, the experts seem to be saying that, given the sometimes difficult task of developing and conducting experiential activities, as an instructional method experiential learning may not be suitable compared to other instructional methods unless the ultimate product of learning, understanding, is greater than what can be achieved through alternative methods.

TABLE III

MOST IMPORTANT CRITERIA

Rank	Votes	Points	Criteria
1	17	157	The activity produces understanding as well or better than other instructional methods.
2	18	124	The activity is appropriate for student learning styles and abilities.
3	19	123	Learners participate directly.
4	19	112	The activity includes feedback and reflection.
5	19	89	The instructor has significant knowledge of the activity to administer it.
6	15	80	The activity promotes learner responsibility.
7	16	68	The activity increases learner motivation to learn.
8	13	64	The activity is appropriate for inducing reasoning, promoting personal growth and awareness, and enhancing creativity.
9	11	53	Learners have the prerequisite skills and knowledge.
10	6	49	The activity's outcomes must conform to the objectives of the learning event.
11	10	43	The activity respects varying developmental levels of the group.
12	7	37	The activity is timely to instructional phases of perception, learning, generalization, and reflection.
13	8	30	Ethical issues are considered.
14	7	24	The activity is appropriate for changing behaviors and shaping attitudes.
15	7	23	Performance and understanding are improved.
16	5	19	The learning is presented in a non-threatening manner so as not to induce fear of failure, but balanced with appropriate challenge.
17	0	0	The instructor is open to new learning.

One criterion which did not appear in the first questionnaire but had been added by panelists in the second questionnaire was viewed as important. Criterion Ten was voted into the top ten as one of the most important criteria. However, it is not known how this criterion, along with the other three added criteria, might have been judged had they been ranked along with the original 30 criteria. It can only be assumed that at least Criterion Ten would have been judged as important when considered along with all the original criteria.

Two significant comments were noted regarding Criterion Three. Although it is best to have learners participating directly in the activity, there may be occasions when observation may be as valuable to the student as the direct experience, according to several of the panelists. Some panelists suggested that observation is in itself experiential. This may be exemplified by medical students observing live surgery in a hospital. However, some of the same panelists also argued that interaction with the object being studied as well as group interaction are essential components of experiential learning. And interaction requires direct participation to some degree.

Most of the comments accompanying the three questionnaires seem to indicate that the criteria to be considered for the selection and use of a classroom experiential activity are situational, not necessarily the same all the time. An instructor may have to consider different readiness criteria each time an experiential activity is being planned. Therefore, the rankings are less important than consideration of all the criteria, according to several of the panelists.

The criteria generated and voted on by the experts implies, as one

expert suggested, that experiential learning is deductive or "programmed" by the instructor, selected in advance of the activity. However, this implication does not rule out the possibility that students will generate new learning beyond what the instructor has planned. It is this profound possibility that lures students to participate in experiential exercises.

One experiential expert did not follow the procedures for ranking the criteria in Questionnaire Three. The expert repeated the procedure he had used in Questionnaire Two. Arguing that all the criteria were of equal or similar value, the expert ranked most of the 17 criteria as either "1," of paramount importance, "2" desirable, or "3" not necessary. Since the expert did not follow the requested procedure in ranking, his response was not tabulated into the overall analysis.

Research Question Number Three

Do authors, instructional designers, instructors and researchers rank the readiness criteria differentially within groups?

To answer this question, the researcher divided the 21 subject matter experts into four categories of experts. The Delphi panelists were identified into the four groups by the officials who nominated them for the study. The panelists consisted of five researchers in experiential learning, four authors of treatises on the subject of experiential learning, six instructional designers with expert knowledge in experiential learning, and six instructors with experience in experiential learning.

Tabulations and analysis of the third questionnaire were performed

for each of the four groups of subject matter experts. Because of the small numbers of subjects in each group, no test statistic can be accurately employed to test significant difference between the four groups. However, Table IV was developed to show differences of ranking between the four groups in the raw data produced from Questionnaire Three, and Table V shows the deviation scores and standard deviations of the four groups responding to Questionnaire Three. Additionally, a Kendall Coefficient of Concordance (W) was calculated from the responses of 20 experts in the last questionnaire. The Kendall results, found in Table VI, expressed the degree of relationship among all the experts.

As was previously noted, although a response was received from all 21 experiential experts, one person did not follow the procedure for ranking the top ten criteria. As in the analysis for the second study question, the deviant response was not included in the analysis for third study question.

TABLE IV

CRITERIA RANKINGS BY EXPERT CATEGORY

Total Rank	R Rank	A Rank	D Rank	I Rank	Criteria
1	1	3	11	3	The activity produces understanding as well or better than other instructional methods.
2	3	1	1	1	The activity is appropriate for student learning styles and abilities.
3	2	4	4	2	Learners participate directly.
4	4	2	2	4	The activity includes feedback & reflection.
5	12	5	6	7	The instructor has significant knowledge of the activity to administer it.
6	8	8	8	5	The activity promotes learner responsibility.
7	11	9	3	6	The activity increases learner motivation to learn.
8	6	7	16	8	The activity is appropriate for inducing reasoning, promoting personal growth and awareness, and enhancing creativity.
9	14	6	12	13	Learners have the prerequisite skills and knowledge.
10	7	11	5	15	The activity's outcomes must conform to the objectives of the learning event.
11	5	12	10	14	The activity respects varying developmental levels of the group.
12	9	10	9	9	The activity is timely to instructional phases of perception, learning, generalization, and reflection.
13	10	13	14	10	Ethical issues are considered.
14	16	16	15	11	The activity is appropriate for changing behaviors and shaping attitude.
15	15	15	7	12	Performance and understanding are improved.

TABLE IV (Continued)

Total Rank	R Rank	A Rank	D Rank	I Rank	Criteria
16	13	14	13	16	The learning is presented in a non-threatening manner so as not to induce fear of failure, but balanced with appropriate challenge.
17	17	17	17	17	The instructor is open to new learning.

R = Research Group

A = Author Group

D = Instructional Designer Group

I = Instructor Group

TABLE V

GROUP DEVIATION SCORES

Criteria	Mean	sd	R	A	D	I
1	2.00	4.58	-1.00	1.00	9.00	1.00
2	3.25	1.95	- .25	-2.25	-2.25	-2.25
3	3.00	1.00	-1.00	1.00	1.00	-1.00
4	3.75	1.25	.25	-1.75	-1.75	.25
5	6.50	2.87	5.50	-1.50	- .50	.50
6	8.00	1.50	0.00	0.00	0.00	-3.00
7	8.00	3.12	3.00	1.00	-5.00	-2.00
8	8.25	4.09	-2.25	-1.25	7.75	- .25
9	9.00	3.84	5.00	-3.00	3.00	4.00
10	10.00	3.87	-3.00	1.00	-5.00	5.00
11	11.25	3.49	-6.25	.75	-1.25	2.75
12	11.00	1.80	-2.00	-1.00	-2.00	-2.00
13	12.00	1.80	-2.00	1.00	2.00	-2.00
14	13.25	2.41	2.75	2.75	1.75	-2.25
15	12.75	3.31	2.25	2.25	-5.75	- .75
16	14.00	1.22	-1.00	0.00	-1.00	2.00
17	0.00	0.00	0.00	0.00	0.00	0.00

sd = Standard Deviation (rounded to nearest hundredth)

R = Deviation Score for Researcher Group

A = Deviation Score for Author Group

D = Deviation Score for Designer Group

I = Deviation Score for Instructor Group

TABLE VI

RANKS OF TOP TEN CRITERIA BY 20 EXPERTS

Experiential Expert	Top 10 Criteria									
	1	2	3	4	5	6	7	8	9	10
A	1	-	5	6	7	-	-	-	10	2
B	1	7	2	3	10	4	-	6	9	-
C	3	2	6	4	8	7	-	5	-	1
D	1	3	2	5	10	-	7	8	-	-
E	1	3	6	9	10	8	4	5	-	-
F	3	2	8	9	4	6	10	7	1	-
G	5	4	6	3	2	-	-	9	7	1
H	3	1	5	2	8	9	6	7	-	-
I	8	1	2	4	10	3	5	6	9	-
J	1	9	7	8	10	2	5	3	-	-
K	1	10	8	9	2	-	-	7	3	5
L	1	9	3	2	4	6	-	-	5	7
M	1	2	4	5	3	7	8	9	6	-
N	5	1	2	6	7	3	-	4	8	-
O	-	8	2	5	1	4	6	10	-	-
P	1	4	6	5	-	2	3	8	-	-
Q	1	3	5	4	7	8	2	6	9	-
R	3	1	2	5	9	6	7	-	-	-
S	1	4	5	3	2	-	7	8	-	-
T	-	-	-	-	6	10	3	9	1	2
Rank Sums	41	74	86	97	120	85	73	117	68	18

*Kendall Coefficient of Concordance: W = .83
Kendall W calculated to Chi Square = 149.42
Chi Square critical value at .001 = 43.82
Chi Square critical value at .01 = 36.19
Chi Square critical value at .05 = 30.14

One method of examining the amount of deviation each group had from the total scores is found in Table V. That table shows the group ranking mean for each of the 17 criteria from the third questionnaire. It also provides the standard deviation for the group rankings on each of the criteria. The table also shows deviation scores for each group showing the amount of deviation each group's ranking of a criteria was away from the mean of the group rankings. Calculations are rounded to within two decimal places.

Table V indicates that the instructional designers' group had the greatest deviation from the central tendency rankings in voting on the 17 criteria from Questionnaire Three. That group deviated more than three points from the ranking mean on five criteria. Authors showed the most consistency with group scorings. They did not deviate more than three points on any of the criteria. Instructors deviated greatly from the mean on Criterion Nine and Criterion Ten. The research group deviated more than three points from the ranking mean on three of the criteria.

From the standard deviation scores the criterion with the most diversity in voting was Criterion One. This was because the designer's group deviated greatly from the other groups in ranking that criterion. There was also greater diversity on Criterion Eight, Criterion Nine, Criterion Ten, Criterion 11 and Criterion 15.

The greatest agreement was on Criterion 17. Since it received no votes, there was agreement by all the experts that this criterion was not as important as other criteria. The experts also agreed strongly with the rank of Criterion Three and Criterion Four.

The Kendall coefficient of concordance (W) expresses the degree of

association among the Delphi experts on the top ten criteria as they appear in Table IV. Though it does not recognize agreement within each of the four groups, it does show that there was strong individual agreement on the rankings of the top ten criteria. The calculated W of .83 was converted to a Chi Square distribution with a value of 149.42. A Chi Square value equal to or greater than 43.82 is required at the .001 level of significance to reject the null hypothesis that the expert rankings were unrelated. Since the calculated value of W far exceeded the critical value, the null hypothesis was rejected. This Chi Square value indicates a strong relationship among the individual experts on the ranking of the top 10 criteria.

In this instance, the Kendall W test statistic was used to measure the intensity of agreement between all the experiential experts on the ranking of the important criteria. It is not feasible to use other test statistics to measure expert group agreement because of size limitations. The rationale for using the Kendall W was to ascertain overall agreement among all the panel experts on the value of the most important criteria.

A statistically significant value of W may be interpreted as meaning that the experts are applying the same standard(s) in ranking the 17 criteria under study. When few or no external standards exist for ranking, their pooled ranking may serve as a standard, according to Siegel (1956).

Summary

This study was conducted to identify through a consensus of experts the criteria for determining whether an experiential learning activity

would be appropriate for instruction in a specific subject. The 21 experiential experts did produce 34 readiness criteria. According to them, those 34 criteria should be considered by an instructor in the decision to incorporate experiential learning projects in a learning event.

Throughout the project comments made by participating experts strongly noted that as the criteria are situational, an instructor may have to consider the criteria which are appropriate for his or her unique learning situation. Consequently not all 34 criteria may have to be considered. However, there was strong agreement among the panelists that the ten most important criteria must be considered as part of the decision-making process. That strong agreement was statistically validated by the calculation of the Kendall W test statistic. Those ten criteria were identified by the experts through a rank-ordering process, the results of which are shown in Tables III and IV.

Though there were variations among the opinions of researchers, instructional designers, authors and instructors about how some of the top criteria should be ranked, the final consensus showed strong agreement on their importance. Strongest agreement came from authors and instructors. There was less agreement from the other two groups.

Through the strong consensus that was reached it may be concluded that the experiential experts as a total group feel strongly that the generation of readiness criteria is valuable and needed. Though the study should serve as the foundation for further research, it stands on its own as a substantive source of reference to instructors who want to design experiential activities which are meaningful to learners.

The criteria to which instructors and instructional designers could

refer in determining whether an experiential learning activity is appropriate for instruction of a learning event were the primary product of the study. The top six criteria received over half the votes and may be viewed as most important. They are:

1. The activity must produce an understanding of the learning objective as well, and preferably better, than other instructional methods.

2. The activity must complement the individual students' learning styles and their abilities.

3. Learners must participate directly in the activity. However, in some cases, direct observation of the experience may be appropriate as well.

4. The activity must include feedback and reflection as part of the activity's structure.

5. The instructor must have a significant knowledge of the activity so that it may be facilitated in a manner which will likely produce the intended learning objective. The experts implied that the instructor should have previously experienced the activity as a participant or should have previously administered the activity.

6. The activity should promote in the learner a greater sense of responsibility both for learning and, to a broader degree, in life itself.

Based on comments in the three questionnaires, the experts also felt strongly that the criteria must be tied to the learning objectives. Consequently, the criteria are situational. Additionally, the types of

activities along with the learning objectives may dictate what the parameters for using the activities may be.

The experts asserted that learners must have the prerequisite skills and knowledge required for producing the understanding stated in the learning objective. They also contended that orienting the learner to the activity is an excellent method of stimulating participation and promoting motivation in the student.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to develop a listing of readiness criteria to which instructors could refer in determining whether an experiential learning activity is appropriate for instruction in a specific subject. This chapter presents a summary of the research, the conclusions, and recommendations for the data collected.

Summary

There were three specific research questions of the study: (1) What criteria should an instructor consider in order to determine whether any learning event should be facilitated through classroom experiential learning? (2) What ranking (value) should be given to the readiness criteria by the subject matter experts? (3) Do categories of subject matter experts view the value of readiness criteria differentially?

A Delphi Technique with 21 experiential experts participating was used to generate a listing of readiness criteria. This was accomplished by a survey which asked the single question, "What criteria must an instructor consider in order to determine whether any learning event should be facilitated through experiential learning?" Experts were asked

to address the question considering that experiential learning in this case referred to activities within a classroom.

The experiential experts responded with 70 statements. A work group was used to analyze the statements. This work team sorted similar statements into categories. From these categories 30 readiness criteria were produced. To verify those criteria, experiential experts were mailed a second questionnaire containing all 30 criteria. From that list the experts were asked to select the ten most important criteria and to rank those ten according to their relative value. They were also asked to add any other criteria which may have been overlooked in the initial generation of criteria.

Responding to the second questionnaire, the experts identified the ten most important criteria, and in so doing generated four new criteria. A third questionnaire was used to conclude the Delphi. Its purpose was to reach a final consensus by the experts. That consensus was on the identification of the most important criteria.

In responding to the questionnaires the experiential experts showed strong agreement on the ten most important criteria. The first six criteria garnished most of the rank points and should be emphasized, according to the panelists. Those six, according to their rank, are:

1. The activity must produce an understanding of the learning objective as well or preferably better than other instructional methods.

2. The activity must complement individual students' learning styles, as well as their abilities.

3. Learners must participate directly in the activity. However, in

some cases, direct observation of the experience may impact on learning as effectively as directly experiencing the activity.

4. The activity must include feedback and reflection as part of the activity's structure.

5. The instructor must have significant knowledge about the activity in order to facilitate the experience. It is preferable that the instructor have had previous direct experience with the activity either as a participant or in previous admininstration of the exercise.

6. In addition to understanding the objective of the learning, the activity promotes in the learner a greater sense of responsibility. Some experts' comments implied that experiential learning should motivate the student to accept greater responsibility for his or her own learning; to accept the responsibility for interpreting the meaning of the activity. Also, several experts commented that the activity should promote responsibility in its broad context of responsibility to life.

The experts also felt strongly that a requirement for conducting an experiential activity in the classroom should be that learners have the neccessary prerequisite skills or knowledge, and that the activity must achieve its goal of producing understanding of the learning objective. The experts strongly agreed that motivating the learner should be one objective of the experiential activity. Further, the activity should produce in the learners greater reasoning ability, some personal growth and awareness, and a stimulation of the creative thoughts and skills a learner may have.

In comments made by the experiential experts during the Delphi

process, instructors or instructional designers must understand that readiness criteria produced by the experts imply two important principles. First, the readiness criteria which must be considered in the decision-making process will often depend on what the learning objective is and the circumstances in which the activity is to take place. Consequently, instructors may have to consider criteria in the list of 34 (Chapter IV, Table I) in addition to the top ten criteria. Second, the consideration of readiness criteria in regard to learning objectives implies that the experiential activity will be structured. Structure can often limit the amount of inductive learning which takes place. Consequently, in designing experiential activities the experts cautioned instructors to design structured experiences which maximize the inductive reasoning capability of the student while, at the same time, maximizing the certainty that the learner will understand the learning objective.

Some criteria produced through the Delphi Technique complement one criterion offered individually by Ruben (1977). Ruben proposed that one criterion be that the learning outcome(s) must be predictable. The experiential experts in the Delphi said specific learning outcomes must be produced by the activity. Those outcomes which should be produced from the activity are (1) the inducement of reasoning and enhancement of creativity, (2) motivation, (3) promotion of responsibility, (4) an increase in knowledge retention, (5) reinforcement of previous learning (6) some intrinsic as well as extrinsic reward(s), (7) changing behaviors and shaping attitudes, and (8) the building of complex cognitive and psychomotor skills. Based on the comments of the experts, these learning

outcomes are less readiness criteria and more characteristics of experiential learning. That is, they should be the natural consequences of a well-planned experiential activity.

Another of Ruben's "parameters for decision-making" is the consideration of the nature of the participating learners. Delphi experts also addressed this concern in the form of a readiness criteria. Criterion Two is a requirement that the experiential activity be complementary to the unique learning styles and abilities of all the participants. Criterion Nine is a requirement that learners have the knowledge and skills to participate and to achieve the established learning outcome. The experts in their voting emphasized one learning requirement to be that the instructional method must be suited to the learning style of each learner. Consequently, the experts placed very strong value on the work of Kolb (1976-a) and others in identifying the variety of learning styles which instructors may encounter in students. And instructors must properly prepare learners for involvement in the experiential learning as a means of maximizing the potential for predicted learning.

The experts showed strong agreement with a major part of the model for structured experience by Pfeiffer and Jones (1974) and Goodstein and Pfeiffer (1983). Criterion Four requires that all experiential activities include feedback and reflection immediately following the experiencing of the concept. In the Pfeiffer and Jones/Goodstein and Pfeiffer model the major aspects of the activity follow the experience. Their model requires feedback and reflection in the sharing of feelings about the experience. It also requires feedback and reflection in a

group discussion of dynamics during the experience, and in inferring principles from the activity which can be applied to real life.

Conclusions

Conclusions from this research:

1. Considering the inherent difficulties in planning and conducting an experiential activity in a classroom, this method of instruction should only be used when the predicted understanding of the specific learning objective will be equal to or preferably greater than the understanding which could be produced from other less difficult to produce methods of instruction.

2. In determining whether or not to use an experiential activity an instructor must consider the nature of the learners. The instructor should ask the question, "Is the activity appropriate for the students' learning styles and their abilities?" Additionally, an instructor should consider if some students may be injured psychologically or physically by the activity. And the instructor should ask the question, "Do the students have the prerequisite skills and knowledge?" The learners must have an adequate orientation to the activity to guarantee success toward understanding the learning objective(s).

3. The instructor must consider experiential readiness criteria in addition to the readiness criteria broadly required of all other instructional methods. For instance, the instructor must consider time constraints. Many activities may require more than one hour to conduct a

full cycle of an activity. The instructor must consider the availability of resources, the facilities, materials and equipment needed to conduct the activity. And the instructor must consider ethical issues. The instructor may ask, "Will any of the students, or the public, be offended by the activity?" Also, the instructor must consider if the activity will be supported by administrators as well as the public.

4. Not all instructors will have to consider all 34 experiential readiness criteria. The learning objective as well as the circumstances of the activity may require the consideration of only a few of the 34 criteria. But instructors would be wise to consider the ten most important criteria.

5. In developing meaningful experiences with predictable learning objectives, there is a strong likelihood that the students will deduce the learning objective from the structured experience. That could mean that the learner would not be free to draw his or her own conclusions and that there would be no self-discovery. A major attraction to experiential learning is the element of inductive learning which takes place. The learner self-discovers and defines his or her own meaning of the experience. Instructors would be wise to balance the structure of the experience so that learners achieve the predicted level of understanding of the concept while not constraining their freedom to draw additional conclusions.

6. The experiential experts generally agree with Thiagarajan (1980) who proposed learning objectives for experiential learning. Experiential learning activities in the classroom are appropriate when the objective is to develop highly complex cognitive skills such as decision-making,

evaluating and synthesizing. These activities are considered effective in motivating learners in the learning process, causing a drive in the student to understand beyond mere retention.

7. Instructors would be wise to consider Massey's "criteria for experiential activities (1981)." The objective of the activity should have a clear educational purpose and arouse in the learner an interest in actively seeking information. And, according to Dewey (1938), the activity should build on the experiences of the learner. The instructor may want to include some method of recording the information produced from the activity for later intellectual use by both instructor and students.

8. Pfeiffer and Jones (1980) described a long list of classroom experiential activities which may be used by an instructor. These include making products, creating art objects, writing skits, role playing, simulation of transactions and problem-solving, re-enactment of fantasies, nonverbal communication games, simulating bargaining, planning or confronting, team and individual competitive games, and writing.

9. Experiential learning has advantages over other instructional methods even if the amount of understanding of the specific learning objective only equals the amount of understanding possible using alternative instructional methods. Experiential activities are characterized by producing a greater degree of reasoning ability, producing greater awareness and prompting personal growth, and stimulating creative thoughts and skills. Most notably, the experts see experiential activities as far more motivating than other instructional methods. Additionally, experiential learning increases knowledge retention, reinforces previous learning and can contain intrinsic as well

as extrinsic rewards. And experiential exercises have been used for years by psychologists to change behaviors and shape attitudes.

Recommendations

The following recommendations could be implemented:

1. Experimental research should be conducted in an effort to test and validate individually all 34 readiness criteria. Until that time, the criteria presented in this study cannot be considered valid. It is merely a consensus of the opinions from a representative sample of experiential experts.

2. The readiness criteria should be used as a major component of a model for the design of classroom experiential learning. With the design of instructional models for classroom experiential learning, instructors in both public and private sectors should have an expanded opportunity to use classroom experiential learning. These activities are appropriate for youth and adults, whether in recreational, academic or training programs.

3. Colleges of education should add prescribed courses in instructional design to the professional educators' curriculum. Those courses should feature design models for the creation of experiential learning activities in the classroom. As more experiential instructional models are developed, such courses should become more available to students preparing to become instructors.

4. Experiential learning activities in the classroom are possible

and can be desireable under the circumstances suggested by the readiness criteria. To maximize the potential of achieving understanding of the specific learning objectives will require instructors to design plans for administering each activity. Basic concepts of instructional design can be applied in developing such plans. And the readiness criteria identified in this study should be used as principal resources in determining whether a specific experiential activity is appropriate for the objectives and circumstances indicated.

Implications

The search for more responsive and effective methods of instruction requires greater research into experiential learning of all types. The kinds of activities which most instructors can do are restricted to the classroom. However, most research in experiential learning has been devoted to activities and programs which occur outside the structured classroom, outside the control of the instructor. This study implies that experiential learning may be brought into the classroom, or structured learning environment, if it can be tailored to exist within the structured environment of the school or institution.

An attempt by the researcher to design a model of classroom experiential learning served as the catalyst for this study. A few educators, experts in experiential learning, prescribed the circumstances in which experiential activities might be conducted. Most of those criteria were presented as components of instructional design models. This study has served to further encourage model design.

The product of this project should be viewed as the foundation for research in the study of classroom experiential learning. This product is only the beginning. Future research is required to validate the value of each of the criteria.

This study should encourage instructors and researchers in colleges of education to examine further new approaches to facilitating learning. As the door opens to new ideas, educators should grasp the handle firmly and confidently leading the way to the discovery of valuable, useful instructional methods to turn our educational systems more in the direction of producing schools of excellence.

A primary attraction to experiential learning is its inductive aspects. Learners draw their own conclusions, and develop their own opinions as a result of the experiences which occur in these activities. Structuring the exercises to guarantee a particular outcome is appropriate for an educational setting. But instructors should never lose sight that students require the freedom to draw their own conclusions about their experiences. Education should enhance that effort. As new methods of designing experiential activities are created facilitators of learning must seek an appropriate balance of structure and freedom. To restrict a student's instinctive capacity for defining what is learned can result in turning a student off to the learning process. Achieving that balance elevates instruction to the status of an art.

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APPENDIXES

APPENDIX A

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APPENDIX C

LETTER TO NOMINATORS

January 24, 1986

Dr. Ethel M. Smith, Executive Officer
National Association for Trade & Industrial Education
P.O. Box 1665
Leesburg, VA 22075

Dear Dr. Smith:

I am a graduate student and research associate for the School of Occupational and Adult Education at Oklahoma State University. As a candidate for the Doctor of Education degree, I have been encouraged to conduct foundational research in experiential learning as my doctoral research topic. My goal is to determine the suitability of experiential activities to facilitate learning. In this context, experiential learning is an instructional method which may be used to expose students to information, and encourage analysis and practice of that knowledge.

To identify readiness criteria for experiential learning, I will conduct a Delphi group process. In the Delphi a panel of experiential experts will be established to formulate the criteria and reach a consensus as to their importance. The panel will be selected from nominees by officers of educational associations. I am requesting that you submit to me the names of up to eight people you believe would be suitable for the panel. I have enclosed a form for this purpose and a self-addressed stamped envelope for your convenience. I ask that nominees be submitted by February 13, 1986.

Nominees may come from four areas: (1) instructors of curriculum and instructional design courses in colleges of education, (2) instructors of experiential activities, (3) researchers in experiential learning, (4) authors of treatises on experiential learning. Please consider nominees who have pertinent information to share and can include the Delphi task into their competing tasks.

As an educator devoted to the advancement of learning, I hope you will share with me in this search for knowledge. Thank you.

Sincerely,

Robert L. Dean

Robert L. Dean

NOMINATION FORM

Please nominate up to two subject matter experts for each of the three categories. Feel free to nominate yourself for participation in the Delphi Technique.

Category One: Researchers in experiential learning:

Name:_____ Name:_____
Title/Business:_____ Title/Business:_____
Address:_____ Address:_____
City/State:_____ City/State:_____
Phone:_____ Phone:_____

Category Two: Authors of treatises in experiential learning:

Name:_____ Name:_____
Title/Business:_____ Title/Business:_____
Address:_____ Address:_____
City/State:_____ City/State:_____
Phone:_____ Phone:_____

Category Three: Instructional Designers:

Name:_____ Name:_____
Title/Business:_____ Title/Business:_____
Address:_____ Address:_____
City/State:_____ City/State:_____
Phone:_____ Phone:_____

Category Four: Instructors of experiential learning activities/programs:

Name:_____ Name:_____
Title/Business:_____ Title/Business:_____
Address:_____ Address:_____
City/State:_____ City/State:_____
Phone:_____ Phone:_____

APPENDIX D

PARTICIPATION INVITATION LETTER

February 17, 1986

Dr. David McCrory
Professor, Technology Education
West Virginia University
Morgantown, WV 26506

Dear Dr. McCrory:

I am conducting research in experiential learning as my doctoral topic. I am a research associate in the School of Occupational and Adult Education at Oklahoma State University. I plan to identify criteria to determine the suitability of experiential activities in learning.

Experiential learning is a method of exposing learners to new knowledge of skills, arranging for reflection and analysis, and organizing the application of the acquired knowledge or skill.

A Delphi design requires minimum time and effort for the selected panel of experts. It will copnsist of three mailed questionnaires. The first will be mailed the first week of March, 1986. Panelists will list criteria to be considered in determining the suitability of experiential learning as an instructional methodology. The two subsequent questionnaires will focus on the selection and ranking of the most important of the criteria established in the initial questionnaire. The second questionnaire will be mailed in late March and the final questionnaire mailed in late April, 1986.

I have enclosed a form you may use to affirm your participation. Participating experts will receive a summary report of the results. Further, panelists will be recognized in the final research report. Participation on the panel, I feel, shall contribute to our continuing pursuit of teaching excellence. Thank you for your consideration.

Sincerely,

Robert L. Dean

Robert L. Dean

DELPHI PARTICIPATION FORM

NAME:_____

TITLE:_____

ADDRESS:_____

CITY, STATE & ZIP:_____

TELEPHONE:( )_____

PLEASE CHECK ONE:

_____ Yes, I would like to be a member of the PANEL OF EXPERTS FOR EXPERIENTIAL LEARNING.

_____ No, I am unable to participate at this time.

_____ I would like additional information. Please contact me by telephone at the above number.

APPENDIX E

WORK GROUP MEMBERS

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APPENDIX F

QUESTIONNAIRE ONE

AND COVER LETTER

March 7, 1986

Dr. Jane S. Permaul
Director, Field Studies Development
University of California, Los Angeles
70 Powell
Los Angeles, CA 90024

Dear Dr. Permaul:

Thank you for agreeing to participate in my doctoral research. The purpose of this study is to identify criteria for instructors to consider in determining the appropriateness of experiential exercises in learning events. Your insights will be most helpful in establishing these criteria.

Specifically I ask you to identify criteria an instructor should consider in deciding whether to use experiential methods in learning.

For purposes of this research, experiential learning methods are group or individual classroom-based exercises like games, simulations, or role playing, rather than field-based experiences like internships or practica. Criteria are standards for evaluating the appropriateness of experiential learning exercises in any learning event.

I am attaching the first of three questionnaires to identify these criteria. Please complete the enclosed questionnaire and return it to me in time for analysis on March 25, 1986.

Again, thank you very much for your participation.

Sincerely,

Robert L. Dean

Robert L. Dean

QUESTIONNAIRE NO. 1

NAME:_____

YEAR MOST RECENT ACADEMIC DEGREE RECEIVED_____

DIRECTIONS Please answer the following question. Feel free to use additional pages and to elaborate by providing examples or explanations.

In your response please consider experiential learning methods as group or individual classroom-based exercises.

In your response please consider that criteria are standards for evaluating the appropriateness of experiential learning methods.

WHAT CRITERIA MUST AN INSTRUCTOR CONSIDER IN ORDER TO DETERMINE WHETHER ANY LEARNING EVENT SHOULD BE FACILITATED THROUGH EXPERIENTIAL LEARNING?

APPENDIX G

QUESTIONNAIRE TWO

AND COVER LETTER

April 9, 1986

W. Hal Knight
Assistant Professor
G-10 South Campus Courts
Purdue University
W Lafayette, IN 47907

Dear Dr. Knight:

Thank you very much for your participation in my doctoral research. As you recall, I mailed the first questionnaire to you on March 7. The question I asked you to respond to was. "What criteria must an instructor consider in order to determine whether any learning event should be facilitated through experiential learning?"

I am very pleased with the responses to that question by the participating subject matter experts. Participating panelists generated 78 readiness criteria. Through a systematic analysis which grouped identical or similar responses and condensed wording, 30 criteria were produced for further processing.

I need your help to further identify readiness criteria for classroom experiential learning. Specifically, I ask that you (1) review the list of criteria, (2) comment beside each item if you feel it is necessary, (3) select the 10 most important items, (4) rank the 10 items you selected, and (5) add any new criteria you feel have been omitted.

I ask that you return the questionnaire so that it may be analyzed by April 30. Again, thank you for your continued participation in this study.

Sincerely,

Robert L. Dean

Robert L. Dean

QUESTIONNAIRE NO. 2

NAME:_____

INSTRUCTIONS: Please review each of the following 30 items identified in Questionnaire No. 1. Each is a criterion an instructor may consider to determine whether a learning event should be facilitated through classroom experiential learning. Indicate the 10 most important criteria of the 30 using a check. Then, rank the 10 you have selected (using numerals 1 through 10). Please regard "1" as most important. Feel free to add new criteria or to make comments.

Best Items	Rank of Selected Items	Criteria for Classroom Experiential Learning:	Comments:
____	_____	1) Clear, concise instructions are given.	
____	_____	2) Learners participate directly.	
____	_____	3) Adequate space exists to conduct the activity.	
____	_____	4) Decision-making is promoted for groups and individuals.	
____	_____	5) Required materials are appropriate and available.	
____	_____	6) The activity duplicates the true event.	
____	_____	7) The activity produces understanding as well or better than other instructional methods.	
____	_____	8) Equipment needed is obtainable.	
____	_____	9) Learners have the prerequisite skills and knowledge.	
____	_____	10) The activity is appropriate for student learning styles and abilities.	
____	_____	11) Performance and understanding are improved.	

Best Items	Rank of Selected Items	Criteria for Classroom Experiential Learning:	Comments:
____	_____	12) There is adequate time to prepare and conduct all phases of the activity.	
____	_____	13) There is administrative and public support for the activity.	
____	_____	14) Ethical issues are considered.	
____	_____	15) The activity respects the varying ages of the learners.	
____	_____	16) The activity is appropriate for inducing reasoning, promoting personal growth and awareness, and enhancing creativity.	
____	_____	17) The activity promotes learner responsibility.	
____	_____	18) The instructor has significant knowledge of the activity to administer it.	
____	_____	19) Knowledge gained is applied to real life.	
____	_____	20) The activity increases knowledge retention.	
____	_____	21) There is an adequate number of participants.	
____	_____	22) The activity is timely to instructional phases of perception, learning, generalization, reflection.	
____	_____	23) The activity is appropriate for reinforcement.	
____	_____	24) The activity includes feedback and reflection.	
____	_____	25) Rewards of the activity are intrinsic and extrinsic.	

Best Items	Rank of Selected Items	Criteria for Classroom Experiential Learning	Comments:
____	_____	26) The instructor considers his/her assumptions about experiential learning.	
____	_____	27) The activity is flexible for learners and instructors.	
____	_____	28) The activity is appropriate for changing behaviors and shaping attitudes.	
____	_____	29) The activity increases learner motivation in learning.	
____	_____	30) The activity is appropriate for building complex cognitive and psychomotor skills.	

PLEASE ADD ANY ADDITIONAL CRITERIA AN INSTRUCTOR SHOULD CONSIDER IN ORDER TO DETERMINE WHETHER ANY LEARNING EVENT SHOULD BE FACILITATED THROUGH CLASSROOM EXPERIENTIAL LEARNING:

APPENDIX H

QUESTIONNAIRE THREE

AND COVER LETTER

May 8, 1986

Dr. Joan Macala
Northeastern Illinois University
Office of Field & Continuing Education
5500 North Street Louis Ave.
Chicago, IL 60625

Dear Dr. Macala:

Thank you very much for your continued participation in my doctoral research. I am very pleased with responses from the second questionnaire mailed to you on April 9. In the second questionnaire I asked you to select and rank the 10 most important of 30 criteria identified in the first questionnaire.

Delphi panelists chose 13 criteria as most important. There was a tie for first place and for eleventh place. A point system (10 points for a ranking of "1," 9 points for a ranking of "2," etc.) was used to calculate the rankings. In ties, the criterion with the most panelists voting for it was ranked highest.

In this third and final questionnaire please examine the 13 criteria. Notice that they appear according to their ranking alongside the number of ranking points received from the second questionnaire. Added to the list are four new criteria generated from the second questionnaire.

Please rank the 10 most important of all 17 criteria. Once again, rank them using "1" as most important, "2" as second most important, etc.

Please return this final questionnaire to me so that analysis may begin by May 26, 1986.

Within a few months you will receive a copy of a summary report of this Delphi study. It will contain a listing of all criteria in the order of their importance along with study conclusions.

Again, thank you very much for your participation.

Sincerely,

Robert L. Dean

Robert L. Dean

QUESTIONNAIRE NO. 3

NAME: _____

INSTRUCTIONS: Rank the 10 most important criteria an instructor may consider to determine whether a classroom learning event should be facilitated through experiential learning. Use "1" as most important, etc. Include the last four (see second page) for consideration. The first 13 criteria were ranked by voting in the second questionnaire. They appear in order of their ranking. The number of points accumulated in that voting appear beside each criterion.

YOUR FINAL VOTE	FIRST VOTE RESULTS	ITEM (By Rank)	SUMMARY OF EARLIER COMMENTS:
____	95	1. The activity is appropriate for student learning styles and abilities.	Not important if goal is to change learning style. Similar to flexibility but more general.
____	95	2. The activity produces understanding as well or better than other instructional methods.	More important if "better than." If equivalent other methods are better. Depends on objectives.
____	90	3. Learners participate directly.	Interaction is a requirement of experiential-based learning. Observation may also be okay.
____	85	4. The instructor has significant knowledge of the activity to administer it.	It depends on objectives of instruction. This may be more an administrative criteria.
____	83	5. The activity includes feedback and reflection.	Necessary for experiential learning for students and teachers. It implies time for "processing."
____	76	6. The activity promotes learner responsibility.	
____	66	7. Learners have the prerequisite skills and knowledge.	Not a unique criteria to experiential learning. The activity may be adaptable without prerequisite skills.

(over)

YOUR FINAL VOTE	FIRST VOTE RESULTS	ITEM (By Rank)	SUMMARY OF EARLIER COMMENTS:
____	61	8. The activity is timely to instructional phases of perception, learning, generalization, and reflection.	This criterion is somewhat esoteric. Would use word "practice" for "learning."
____	56	9. The activity is appropriate for inducing reasoning, promoting personal growth and awareness, and enhancing creativity.	A criterion only if these are instructional goals. Depends on objectives.
____	52	10. The activity increases learner motivation in learning.	Important if goal is to change behavior. Depends On objectives. Not unique to experiential learning.
____	48	11. The activity is appropriate for changing behaviors and shaping attitudes.	Not necessary if these are the instructional goals.
____	47	12. Performance and understanding are improved.	This is not a criterion if these are the objectives of instruction.
____	47	13. Ethical issues are considered.	The aspect of "at risk" is significant and necessary as a criterion.

NEW CRITERIA

INSTRUCTIONS: The following criteria were added in the second questionnaire. Include these new criteria in voting for the 10 most important criteria.

Rank Items Selected	Criteria for Classroom Experiential Learning:	Comments:
_____	1) The activity respects varying developmental levels of the group.	
_____	2) The activity's outcomes must conform to the objectives of the learning event.	
_____	3) The learning is presented in a non-threatening manner so as not to induce fear of failure, but balanced with appropriate challenge.	
_____	4) The instructor is open to new learning.	

VITA

Robert Loren Dean

Candidate for the Degree of

Doctor of Education

Thesis: A DELPHI STUDY TO IDENTIFY READINESS CRITERIA FOR THE INSTRUCTIONAL DESIGN OF CLASSROOM EXPERIENTIAL LEARNING

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Springhill, Louisiana, March 8, 1951, the son of Darius A. and Elizabeth M. Dean. Married to Deborah A. Freeman on March 9, 1985.

Education: Graduated from South Terrebonne High School, Houma, Louisiana, in June, 1969; received Associate of Arts Degree in Journalism from Nebraska Western College, Scottsbluff, Nebraska, in June 1971; received Bachelor of Arts Degree in Journalism/Public Relations from Northwestern State University, Natchitoches, Louisiana, in June, 1973; received Master of Arts Degree in Human Relations and Supervision from Louisiana Tech University, Ruston, Louisiana, in May, 1984.

Professional Experience: Research Associate, the Center for Human Resource Development, School of Occupational and Adult Education, Oklahoma State University, August, 1984, to May, 1986; City Desk Assistant and News Reporter, The Times newspaper of Shreveport, Louisiana, February, 1979, to August, 1983; Editor, the Chadron Record newspaper of Chadron, Nebraska, August, 1978, to November, 1978; Director of Communications, Boise Southern Company, DeRidder, Louisiana, September, 1975, to June, 1976; News Reporter, the Town Talk newspaper of Alexandria, Louisiana, February, 1974, to September, 1975; News Reporter, the News newspaper of Denham Springs, Louisiana, July, 1973 to February, 1974.

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