A STUDY CONCERNING THE EFFECTS OF SELF-DIRECTED LEARNING ON THE FACTOR OF BUREAUCRATIC ORIENTATION

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CHAPTER I

INTRODUCTION

The primary purpose of a management training program is to provide the requisite skills for managers to become more productive and to provide a wider base from which to select personnel for advancement (English and Marchione, 1977). However, according to Hoy, Buchanan, and Vaught (1981), some studies have actually revealed adverse effects from training programs conducted by training and development personnel. Heim (1981) described a case study of a manager who implemented participative management practices in his organization after receiving company sponsored participative management training. The manager was subsequently denied promotion because he did not project the take-charge directive management style that the company expected from its managers.

Anshen (1955) provided an analysis of three case studies where top management failed to anticipate the changed attitudes and increased abilities of managers returning from management development programs. In all cases, both the manager and the organization were adversely affected. In one case study described by Anshen (1955), a manager submitted his resignation even after being offered a salary increase and the possibility of being selected as the company president within 10 years.

The difficulties encountered with management sensitivity/laboratory training have also been well documented (Henderson, 1974). Laird (1978),

in a discussion of the controversy surrounding the utilization of sensitivity training, stated that the behaviors sensitivity training "encourages are often self-disclosure and openness. These are behaviors which many people feel the organization's real world ultimately punishes" (p. 157). According to Laird (1978), sensitivity training is "'off limits' in some organizations because it requires or develops a degree of self-disclosure with which the organization is uncomfortable" (p. 17). Barker (1979, p. 270) stated that, "It is not uncommon for certain types of people to become very uptight in sensitivity groups, and in some cases even experience serious psychological harm." Odiorne (1970) expressed concern for the individual who is quite sensitive when he described sensitivity training as a, "great psychological nudist camp in which he bares his pale sensitive soul to the hard-nosed autocratic ruffions [and] goes away with his sense of inferiority indelibly reinforced" (p. 277).

Drotning (1966) made perhaps the most damaging criticism when he charged that laboratory training fails to provide learning that is transferable from the classroom to the organizational environment.

> Laboratory training may be a tremendous behavioral tool, but it may also be totally inappropriate for many of its present applications. Does it make sense to think that a large firm can be turned into one 'big happy family' by means of laboratory training? Managers must manage, they must hand out both rewards and punishments, and the possibility of handing out punishment is a strong barrier to open, frank, and trusting interaction between superiors and subordinates (p. 604).

The examples above indicate that two questions should be addressed in the initial design of a management training program (Hoy, Buchanan, and Vaught, 1981). First, will the training provide the student with the knowledge, skills, and attitudes required to successfully accomplish

the responsibilities of his or her position? Second, is the organization prepared and capable of utilizing the manager's newly acquired knowledge, skills, and attitudes? Stated in other words, will the training be effective, and will the organization's expectations and the individual's attitudes, values, and behavior coincide (Ramich, 1981)?

The academic portion of the Airborne Warning and Control System (AWACS) Mission Crew Commaner (MCC) training program was converted in October, 1982, from lecture to a self-directed learning format. The precipitating cause of the conversion was a change in the methodology employed in the training of AWACS' supervisory personnel (Kieser, 1983). Prior to October, 1982, AWACS supervisory personnel were trained using a common curriculum consisting of lecture and self-paced modules. This training program required each MCC student to receive 157 hours of academic training (Dixon, 1978).

Problems were encountered in the summer of 1982 when the training material underwent revision and was oriented toward specific supervisory positions. As a result, supervisory training was reorganized to permit each supervisory training section to utilize the training methodology and scheduling procedures best suited to the needs and requirements of their students. The self-directed learning format was implemented in October, 1982, for MCC students as an experimental program to capitalize upon their prior management experience and to decrease training costs while maintaining training program quality. The self-directed learning program decreased academic lectures for MCC students from 157 hours to four hours (Creech, 1983).

As advocated by Knowles (1980), self-directed learning students are given responsibility for the planning, conduct, sequencing, and

organization of their academic training. In many ways, the philosophy of self-directed learning is in opposition to the philosophy of a bureaucratic organization as described by Weber (1946). For example, self-directed learning emphasizes student initiative, establishment of student-generated goals, and student-directed sequencing of the learning process (Knowles, 1980). According to Weber (1946), however, the functioning of a bureaucracy is predicted upon manager acceptance of the hierarchy of authority and its established rules, regulations, and goals. The bureaucracy also establishes the allowable limits of manager initative and the sequencing of work activity. The self-directed learning experience may create a change in a student's values and attitudes toward the work environment which differs from that of the formal lecture trained student (Kieser, 1983).

Problem

The problem addressed in this study is lack of data concerning the effects of self-directed learning compared to the effects of lecture training for AWACS MCC graduates related to the factor of bureaucratic orientation. Additionally, a need existed to compare the self-directed learning trained graduates to the lecture-trained graduates on the factor of bureaucratic orientation to determine the most efficacious method to utilize in future MCC management training programs.

Purpose

The purpose of this study was to establish a data base for future reference concerning the bureaucratic orientation of AWACS MCC graduates from January, 1980 to August, 1983. An additional purpose of the study

was to determine if graduates of the self-directed learning program differ from graduates of the lecture program in the factor of bureaucratic orientation.

Research Questions

The research question addressed in this study was as follows: Is there a significant difference in bureaucratic orientation between lecture-trained and self-directed learning trained AWACS MCC graduates as measured by the Work Environment Preference Schedule?

Significance of the Study

This study was designed to gather data concerning the appropriateness of using self-directed learning for the training of managers in a highly bureaucratic military organization. The study focused on the effects that a concentrated 14-week self-directed training program had on the factor of bureaucratic orientation. Results of the study may indicate that self-directed learning methodology is a suitable or even superior replacement for traditional lectures in management training and development programs in bureaucratically structured organizations. Results of the study may also provide training directors and training officers with evidence that self-directed learning can be used effectively in lieu of traditional lecture programs.

Scope

This study was limited to AWACS MCCs who graduated from the Tactical Air Command Mission Crew Commander Conversion Course conducted at Tinker Air Force Base, Oklahoma, between January, 1980 and August, 1983.

Assumptions

The following assumptions were made for the purpose of this study:

1. The author assumed accuracy and honesty in the survey responses provided by the graduate MCCs.

2. The author assumed accuracy of the Work Environment Preference Schedule to measure the factor of bureaucratic orientation.

3. There is a lack of information on whether self-directed learning inhibits or facilitates managerial effectiveness and career progression in a bureaucratically structured organization.

Limitations

This study applied to a management training program where prerequisite selection procedures required each student to have had prior aircraft control and warning management experience (Gabriel, 1983). Other prerequisite requirements were that each student: be a commissioned officer with a rank of captain, major, or lieutenant colonel; possess at least a baccalaureate degree; have had a minimum of 10 years management experience, one year of which had to have been as a manager in an aircraft control and warning facility; have completed the basic technical schools for the aircraft control and warning career field; have completed survival and prisoner of war training schools; be a volunteer for flying; and, be certified by a flight surgeon as physically qualified to assume flying responsibilities (Gabriel, 1983).

The limitations of the study is that it applied to a management training program for students who were volunteers and possessed a

uniformity of minimum prior training, educational, and management experience. The results of this study are oriented toward management training programs conducted for students who possess a background in management and are undergoing training to assume responsibilities in a technical area related to their past experience and training.

Definitions

The following definitions were used in this study:

Airborne Warning and Control System (AWACS) refers to the long-range surveillance aircraft produced by the Boeing Aircraft Corporation which have a military designation of E-3A.

Aircraft Control and Warning Management refers to supervisory experience in long-range radar facilities where the functions of surveillance, aircraft identification, and control of interception aircraft are conducted on a daily basis.

Airborne Warning and Control System Mission Crew Commander Conversion Course refers to the intensive 14-week management training program conducted at Tinker Air Force Base, Oklahoma, which prepares prospective mission crew commanders for their initial flight evaluation. The training program, consisting of simulator, academic, and in-flight training, is a conversion course in that its purpose is to qualify selected officers with previous aircraft control and warning management experience for AWACS MCC managerial responsibility.

Bureaucratic Orientation refers to a personality construct which reflects a commitment to the set of attitudes, values, and behaviors that are characteristically fostered and rewarded by bureaucratic organizations. Bureaucratic orientation describes the individual

characteristics of self-subordination, impersonalization, rule conformity, and traditionalism (Gordon, 1973).

Graduate refers to a mission crew commander who has completed the 14-week mission crew commander conversion course training program and succssessfully accomplished the initial flight evaluation.

Lecture is defined as didactic, instructor-oriented presentation of subject material.

Management Development is used to indicate a comprehensive long-term activity consisting of both on-the-job training and off-the-job formal education to prepare the individual for increased levels of responsibility and authority.

Management Training is used to indicate a short term formal training program conducted by trained professionals to increase the effectiveness of managers in their present jobs and to provide the basis for future professional growth and development.

Mission Crew Commander (MCC) refers to the senior mission crew member on-board the AWACS. The MCC is charged with overall responsibility for accomplishment of assigned missions.

Self-Directed Learning, for the purpose of this study, refers to an instructional methodology whereby the student performs the function of self-diagnosis of learning needs, self-selection of materials and resources to achieve learning, organization, and sequencing of learning activities. The evaluative function is retained by the instructor using criteria established by Headquarters Tactical Air Command.

Tactical Air Command is a United Air Force organization tasked with training and equipping tactical combat forces for world-wide assignment in contingency or combat operations.

Organization of the Study

Chapter I contains an introduction to the study and includes the statement of the problem, purpose of the study, research questions to be addressed, and significance and scope of the study. Chapter I concludes with the assumptions, limitations, and definitions of terms utilized in the study.

Chapter II contains a review of the literature pertinent to management training and development, bureaucratic orientation, and self-directed learning. Research studies which were germane to bureaucratic orientation and self-directed learning were reviewed and articles that contained criticisms of contemporary management education and implications for future management training are briefly discussed.

The design of the study and methods used in conducting the study are discussed in Chapter III. The results of the study are reported in Chapter IV. In Chapter V, the summary, conclusions, and recommendations for further research are presented. Chapter V concludes with a discussion concerning recommendations for practice.

CHAPTER II

REVIEW OF RELATED LITERATURE

"Never has so much been spent with so little evidence of value" (Mahler, 1978, p. 50). Mahler's comment was directed toward management training programs in existence prior to 1966 as reported in an intensive study of these programs by Andrews (1966). Comparing present management training programs with those described by Andrews, Mahler (1978, p. 50) concluded that only two changes have occurred: "a new generation of participants is in its seats." Also unchanged in two decades, according to Mahler, participants still rate new found friends as one of the most important benefits of management training programs.

Livingston (1971) wrote that most management training programs do not teach people what they must do in order to become effective managers. Heim (1981) stated that for management training to be effective, the training objectives must be clearly established. According to Heim, most companies fail to communicate their training needs to those responsible for conducting training programs. Wessman (1975, p. 109) expressed a similar view when he wrote, "In most companies the specific [training] needs of individual managers were inadequately identified." Wessman concluded that the failure to identify training needs caused training directors to resort to the purchase of training packages with the broadest appeal. Meed (1973) indicated that contemporary management training was not only ineffective but also

lacked relevancy.

Authors such as Mahler (1978) and Heim (1981) expressed concern that immediate changes are needed in management education. Mahler (1978, p. 53) stated the problem most cogently at the executive level when he wrote, "If several changes do not occur, obsolescense will be a challenge for everyone who currently has anything to do with executive education." Such dissatisfaction with the current state of management training and development indicates that a systematic approach be utilized to probe the extent of the problem.

According to Kerlinger (1964), there are two main reasons for reviewing the research literature related to a problem. The first is to explain and clarify the theoretical rationale of the problem. The second is to provide information concerning what research has and has not been conducted on the problem. Therefore, the review of the literature for this study has been divided into four sections: criticism of contemporary management education, studies pertaining to bureaucratic orientation, studies pertaining to self-directed learning, and implications for future management education programs.

Criticism of Contemporary Management Education

The literature contains numerous articles dedicated to criticism of contemporary management training and development programs. A frequently cited criticism was that many organizations do not have clearly stated purposes, objectives, or missions for their management development activities, (Truskie, 1982, Thorne and Marshall, 1976, and Newell, 1976). English and Marchione (1977) described most training programs as having only a short-term orientation rather than being an

on-going process with a long-range commitment integrated into a long-range commitment integrated into a long-range developmental plan. Anshen (1955) indicated that lack of organizational long-range management training plans results in management sending participants to development programs too soon or too late, or even to the wrong programs. Heim (1981) stated that management failure to clearly delineate training purposes and objectives resulted in selection of non-appropriate programs, wasted organizational resources, and occasionally was dysfunctional to both the participant and the organization.

Another frequently cited criticism was lack of staff, top management, and participant support, commitment, and involvement in the development and administration of management training programs (Wessman, 1975, Muller, 1976). "Lack of staff involvement is one of the major shortcomings of most management development efforts and probably the principle reason why such efforts do not significantly affect the organization" (Truski, 1982, p. 68).

Meek (1973, p. 30) wrote that, "if curriculum developers are serious about producing relevant material . . . others than just the training community . . . must be involved in planning and implementing the curriculum." He summarized his criticism by stating that performance in the curriculum development area is the weakest link in the management training process. Maximum benefit, according to English and Marchione (1977), from management training programs requires active participant involvement concerning expectations, aspirations, and personal growth needs. Failure to include participant involvement in the design of the training program may lead to "compliance without commitment" (English and Marchione, 1977, p. 91).

The failure of management training programs to include organizationally related information that is germane to the manager's job has also received criticism (English and Marchione, 1977). English and Marchione stated that management development programs are noted for not including material which aids participants in identifying their organization's real problems and implementing solutions. Often missing, according to Truskie (1982), in management development programs is an organizational assessment to ascertain what participants need to know about their organizations and how, by applying what is taught in the training program, they can increase their effectiveness in that organization.

Another cited criticism was that management training programs cannot affect behavioral changes unless the organization is prepared to accept these changes (Anshen, 1955). Anshen provided an analysis of three case studies where management failed to provide adequately for the changed attitudes of managers returning from management development programs. In the first case study, management had not anticipated the expanded interest and changed attitude of a manager returning from an executive developmental program. Although not originally planned, management was contemplating transferring him to another job where his abilities could be more effectively employed. In the second case study, a supervisor requested the immediate transfer of a subordinate who had recently completed a university sponsored executive development program. The supervisor, who had not been selected for the training, apparently had become fearful that he would be replaced by the subordinate. The third case study was concerned with a plant manager selected to attend a university sponsored management development program.

Upon returning from the training program, he submitted numerous recommendations, based upon the training he had received, for organizational improvements. After two years of having his recommendations rejected, he submitted his resignation even after being offered a salary increase and the possibility of being selected company president within ten years.

Heim (1981) described the situation where a manager, after receiving participative management training, implemented participative management practices in his organization. The manager was subsequently denied promotion because he did not project the take-charge directive manager style that the company expected from its management force.

The lack of evalaution procedures for management training programs has also received criticism (Newell, 1976). This criticism, according to Newell (1976), is not surprising considering that programs not established with purposes and objectives will be virtually impossible to evaluate for effectiveness. Anshen (1955) referred to this training dilemma when he wrote,

> Business management today is appropriating considerable funds for training development programs. Yet management has less knowledge about the size of the 'return investment' it is likely to get in this case than it does in almost any other use of its money (p. 73).

There were other criticisms leveled at contemporary management education such as lack of a relationship between training performance and job performance (Jastrom, 1974) and failure to integrate the organization's philosophy into training programs (Thorne and Marshall, 1976). Newell (1976) also critized training and development personnel for failure to conduct pilot training programs before conducting management training programs.

Bureaucratic Orientation

> Organizations attempt to deal with any conflict between bureaucratic requirements and individual needs by establishing the primacy of organizational demands; in fact, bureaucracies systematically mold the behavior of personnel to make individual beliefs and values correspond with those of the organization. This process is referred to as bureaucratic socialization, the organization's attempt to induce in members the requisite role orientation for satisfactory performance in an office or position (Hoy, Miskel, 1982, p. 72).

As part of a larger study, Bridges (1965) selected 28 elementary principals from a large city school system in the Midwest. On the basis of Rokeach Dogmatism Scale, Form E scores, 14 principals were classified as open-minded and 14 were classified as closed-minded. The Immediate Supervisors section, Factor B, of the Organization Survey was administered to all full-time members of each teaching staff to obtain an indication of the personal qualities and performance of the 28 principals. Based upon an analysis of the survey data, Bridges (1965) concluded that open-minded and closed-minded principals with limited experience in the role were perceived by the teachers in predictably different fashions. However, there was little difference in teachers' judgments of principals' personal qualities and professional performance between open-minded and closed-minded experienced principals. Bridges (1965, p. 23) stated: "Increased experience . . . has a leveling effect on the personal qualities and performance of elementary principals as perceived by teachers."

In a discussion of the study, Bridges (1965) concluded the data indicated that a principal's behavior is affected, perhaps even molded, by his bureaucratic role.

> Apparently personality and role exert different degrees of pressure on the performance of the principal depending upon the amount of experience which the individual has had in the principal's role. Initially the individual may stamp his particular role with the unique style of his own characteristic pattern of expressive behavior. However, with increased exposure to the expectations associated with the bureaucratic role, the personality of the principal becomes submerged. Principals, it seems, tend to become more alike with behavioral differences attributable to personality becoming less evident as the principal learns how he is expected to behave in his role (pp. 26-27).

In a similar study, Wiggins (1970) found that the behavior of elementary principals was strongly influenced by bureaucratic socialization. He theorized that school bureaucracies tend to mold principals into roles devised to maintain stability of the school system. The results of research conducted by Bridges and Wiggins lead Hoy and Miskel (1982) to state,

> Although the empirical evidence remains limited, there is some support for the notion that in school bureaucracies the part that bureaucratic role and personality factors play in determining behavior varies with the experience the individual has in the role (p. 73).

Figure 1 depicts the relationship between personality, bureaucratic role, and experience as conceptualized by Hoy and Miskel (1982).

Hoy and Rees (1977) conducted a study that indicated the bureaucratic socialization process may occur quite rapidly. In the study, student teachers from a New Jersey state college were administered the Work Environment Preference Schedure (WEPS), the Pupil Control Ideology (PCI) Form and a short form of the Rokeach Dogmatic Scale before commencing a nine week student teaching program in secondary schools throughout New Jersey. The WEPS was administered to measure the factor of bureaucratic orientation. The PCI was utilized to measure the student teacher's pupil control ideology along a custodial

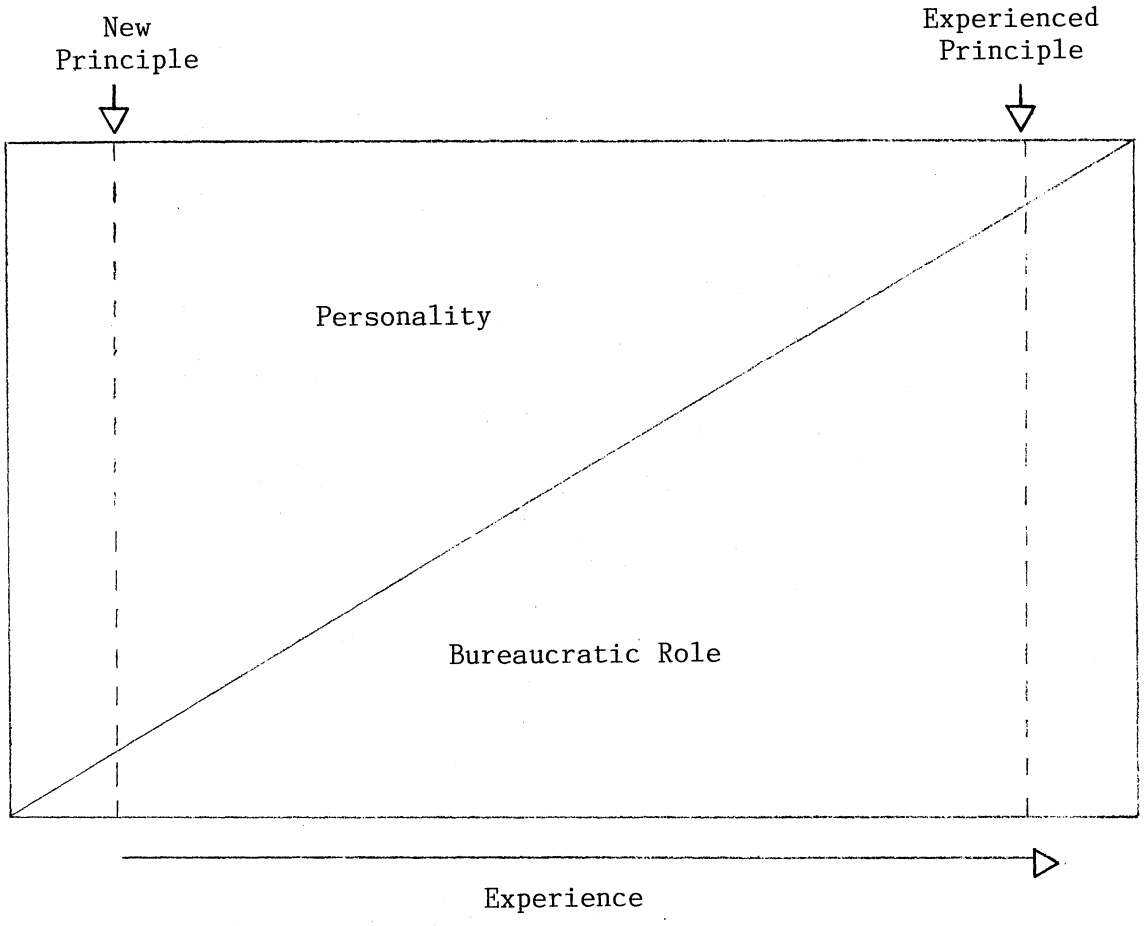

Figure 1. Hypothesized Relationship of Role Personality and Experience

humanistic continuum. The Rokeach Dogmatic Scale was employed to identify the extent to which an individual's belief system is open or closed. After completing the nine week student teaching program, the student teachers were again administered the three surveys described above. Results of the study, according to Hoy and Rees (1977), indicated that student teachers were significantly more bureaucratic oriented and more custodial in their pupil control orientation after completion of the student teaching. The dogmatism of student teachers did not significantly change during the student teaching experience. Hoy and Rees (1977) concluded:

> Apparently, the school bureaucracy quickly begins to impress upon student teachers the value of conformity, impersonality, tradition, subordination, and bureaucratic loyalty. Regardless of all the talk of change and innovation which often occurs in professional education courses, it seems that secondary schools in general begin almost immediately to mold neophytes into roles devised to maintain stability (p. 25).

Self-Directed Learning

Knowles (1980) stated that in a world of accelerated change, there are four "main ideas that are influencing-or will influence-adult education practices in the eighties and nineties" (p. 18). The four main ideas or thrusts are: a reconceptualization of the purpose of education, a shift from focusing on teaching to focusing on learning, conceptualization of lifelong learning as the organizing principle for education, and the development of new methods and techniques for presenting educational services.

The first and most fundamental of the current thrusts is a reconceptualization of the purpose of education. According to Knowles (1980), the mission of education, until recently, has been to produce the

"educated man."

> But in an era of knowledge explosion, technological revolution, and a social policy of equality of education opportunity, this definition of the purpose of education and this faith in the power of transmitted knowledge are no longer appropriate. We now know that in the world of the future we must define the mission of education as to produce competent people--people who are able to apply their knowledge under changing conditions; and we know that the fundational competence all people must have is the competence to engage in lifelong self-directed learning (p. 19).

The second thrust described by Knowles (1980) is a shift away from the focus on teaching to a focus on learning. This redirection of focus puts a new emphasis on education as a process of facilitating self-directed learning. This focus also serves to redefine the role of the teacher from a transmitter of knowledge to a facilitator of self-directed learning and a resource to be utilized by self-directed learners.

Knowles (1980) described the third thrust as being the necessity for conceptualizing life long learning as the organizing principle for all of education. The primary concern of education: "must be . . . with developing the skills of inquiry, and adult education must be primarily concerned with providing the resources and support for self-directed inquiries" (p. 19).

The fourth thrust provided by Knowles (1980) is a concern for developing new methods and techniques for presenting educational services. Educational institutions and teachers no longer are viewed as having a monopoly on education.

> We now perceive that resources for learning are everywhere in our environment and that people can get help in their learning from a variety of other people. The modern task of education, therefore, becomes one of finding new ways to link learners with learning resources (p. 20).

The literature contains a variety of definitions for self-directed learning. Self-directed learning has been described as self-directed use of teacher designed learning modules (Baldwin, 1980; Himmel, 1972; Kazerani, 1978; MacNeil, 1968; Spring, 1980; and Witherall, 1980). Oddi (1983) cited self-directed learning definitions in other studies that went beyond the use of modules and included:

> Self-design and implementation of learning (Magnus, 1973), self-diagnosis of learning needs, self-selection of materials and activities to achieve learning and self-pacing (LaLance, 1976), and giving the student broad topics, a reading list, and freedom to study areas of personal interest (Stanton, 1974), (p. 224).

The research reviewed does not provide conclusive evidence that the self-directed learning method is superior in acquisition of knowledge to the lecture method. Oddi (1983) reviewed 17 research studies conducted between 1967 and 1982 that compared the effectiveness of lecture to other instructional methods. Of the 17 studies reviewed by Oddi, eight studies were directly concerned with comparing the effectiveness of lecture to self-directed learning. One study indicated that the lecture method was superior to self-directed learning, three studies indicated that the self-directed learning method was superior to lecture, and four studies indicated no difference in effectiveness between lecture and self-directed learning. Oddi concluded, however, that the variety of research designs employed in these studies made direct comparison somewhat difficult.

Godorov (1981), for example, compared lecture/discussion with self-directed learning for students enrolled in a speech communications course. The average age of the lecture/discussion group was 26.7 years and the average age of the self-directed learning group was 27.3 years.

Results of the study showed no difference in cognitive achievement between the two groups. Godorov (1981) conducted this study during the course of two class periods.

MacNeil (1968) compared lecture/discussion with self-directed learning for college students enrolled in a nutrition course. Results of the study indicated that the lecture/discussion method was superior to self-directed learning. Students who scored higher with the lecture method had especially high or low scores on autonomy as measured by the Omnibus Personality Inventory.

LaLance (1976) compared lecture/explanation, group discussion, demonstration, and drills to self-directed study for a five week program of tennis instruction with 52 undergraduate students. Results of the study indicated that both methods were equally effective for teaching tennis. Witherall (1980) compared lecture/discussion to an independent, self-directed learning approach for the teaching of FORTRAN IV computer programming. He concluded that both instructional approaches were equally effective. Reddit (1974) also concluded that both methods were equally effective. The Reddit (1974) study compared the group lecture method to self-directed learning in teaching basic electricity to undergraduate students.

Baldwin (1980), Himmel (1972), and Magnus (1973), however, conducted comparison studies that showed self-directed learning to be superior to the lecture method. Nursing students, in a study conducted by Baldwin (1980), using self-directed study achieved significantly higher levels of theoretical knowledge in a surgical nursing course than did a control group of student nurses taught by the lecture method. General psychology undergraduate students, in a study conducted by

Himmel (1972), using self-directed learning showed significantly greater mastery of course content at course completion compared to a control group taught by the lecture method. Tests administered by Himmel (1972) to both groups at three and 12 month intervals after course completion did not reveal any significant difference between the two groups. Magnus (1973) compared the post-test undergraduate science course results to a self-directed elementary education student group with the results of a lecture/discussion group. He found no significant post-test difference between the two groups; however, after ten weeks the self-directed group had a significantly higher level of retention than did the lecture/discussion group.

Kazerani (1978) compared the attitude of students who completed a module self-paced program to the attitude of students who completed the program by the professor/lecture method. Kazerani (1978) stated that the results of the comparison indicated that self-directed students were significantly more satisfied than were students of the traditional lecture method. Himmel (1972), in a study of undergraduate psychology course students, concluded that self-directed learning students had a more favorable attitude toward their learning experience than did students taught by the lecture method.

Spring (1980), in a study comparing the attitude of teacher-directed typewriting course students to the attitude of student-directed typewriting course students, concluded that there was no significant differences in attitudes toward the learning experience between the two groups. MacNeil (1968) also found no difference in attitudes between lecture-discussion nutrition course students and self-directed nutrition course students. Witherall (1980) found negative attitudes

toward self-directed learning in comparing self-directed learning students to lecture students in a FORTRAN IV computer programming course.

The use of contracts for self-directed learning in graduate adult education courses was studied by Caffarelle (1983). She reported that approximately 70 percent of the students believed the contract to be an excellent learning tool, 20 percent believed it to be very good and 10 percent rated the contract method as good. Additional results indicated that the students believed the learning contract method in graduate courses was both valuable and worthwhile in that it assisted them in meshing their own learning needs with course requirements. According to Caffarelle (1983), the students also believed that they had increased their self-directed learning competencies as a result of using a learning contract and were able to use these competencies both in the home and work environment.

Stanton (1974) studied the interaction between teaching methods and learner personality characteristics. The purpose of the study was an attempt to identify certain personality characteristics of students who performed better with lecture than self-directed learning. Stanton (1974) concluded that lecture superior students were less conscientious and perservering, more practical, conventional and careful, and less self-sufficient and resourceful than were students who performed best by self-directed learning. He also concluded that students who were best at self-directed learning perceived themselves as tense and anxious.

Cox (1983) studied the importance of continuing self-directed education for managers and executives in 13 large United States corporations. His study included survey responses from 1,086 middle managers

and top executives. Cox (1983) stated that generally executives have little time for formal education; however, "a well rounded executive is always up to date on business and world matters" (p. 348). Results of the Cox study indicated that 75 percent of the top executives and 69 percent of the middle managers read heavily in business subjects and believed that practice had a positive effect on their careers. Cox (1983) stated that the ultimate objective of formal and informal education endeavors of any ambitious executive are:

> (1) keeping abreast of developments in one's field,
> (2) knowing what applications others in the field are making,
> (3) generating ideas, and
> (4) showing oneself as well informed. These objectives cannot be achieved without directing constant attention to learning (p. 345).

Implications for Future Management Training

> Top management of [the year 2,000] can be expected to have a much broader view of the organization and its relation to society than the typical manager of today. Although they may be chosen partly on the basis of their technical skills, future top managers will likely have stronger backgrounds in the social sciences, world affairs and humanities. Their abilities will reflect a trend toward the manager as statesman, sensitive to social, economic, and political problems (Martin, 1977, p. 504).

Continued education and training, according to Martin (1977), will become a vital and necessary component for the manager in the year 2,000. In less than 20 years, a manager will require a "broader and intensified" education especially in "economics, quantitative methods, behavioral science and law" (Martin, 1977, p. 504).

Simons (1973) indicated that movement toward a post-industrial society will require managers to command less and lead more. He predicted that management approaches will become less arbitrary in the

post-industrial society and managers must be educated to manage change. Stull (1974), in an article devoted to the future of management, wrote, "management will become more responsive to its social role and concerned about its code of ethics" (p. 6). He also predicted that formal management education will become increasingly more important and managers will require continuous mid-career training to keep abreast of new knowledge, methods, and procedures. Stull (1974) quoted Boettinger:

> The task is awesome. Managers will have to achieve an imaginative grasp of their entire society. At the same time, they must weld together the increasingly sectored knowledge of specialists to produce interactive and supportive systems. If it can be done at all, it will have to be done by men of imagination and experience, both prescient and practical, who know where they are, see where they want to go, and have an idea of how to get there (p. 11).

Stull (1974) summarized by stating that the manger's job of the future will be characterized by leadership. The manager will "lead, encourage controversy, pose and test objectives, stimulate thought and take an active part in the running of things" (p. 12).

Talpaert (1981), secretary-general of the European Institute for Advanced Studies in Management, believed that the key figure in the 21st century will be the manager. The most important qualification for the manager of the future, according to Talpaert (1981), will be political skill and moral credibility. He wrote that in the 21st century, life-long education will provide the "real contribution of education to development of true managerial potential" (p. 25). He observed that to develop this kind of potential, individuals must possess maturity and scholarship along with a diversity of experience, qualities which, he indicated, are only progressively acquired.

Jacoby (1976) also expressed the belief that the business world is

in an era of transition from one world to another. According to Jacoby (1976), shifts in the values, attitudes, institutions, and processes of Western societies may provide the impetus "to launch our planet into a new historical era" (p. 29). Jacoby (1976) listed the following six aspects of the business environment that are likely to become the main preoccupation of managers in the near future:

1. High political turbulence and uncertainty.
2. Slow economic growth.
3. Expensive capital and credit.
4. Weakening industrial discipline.
5. Rising public demand and government regulation.
6. Legitimacy of profit-seeking enterprise (p. 29).

Mahler (1978) in an article pertaining to educating the executive in the future provided the following predictions:

1. Executive education will gain in popularity as business, industry, and non-profit organizations increase budget allocations for executive development programs.
2. The 'customers' will begin to exert influence on the design of the educational process.
3. Greater attention will be given to adapting educational programs to the needs of a homogeneous group of 'students'.
4. Reliance upon a single educational experience once during a career will give way to periodic participation in an educational experience pertinent to a given stage in an executive's career.
5. Collaborative approaches will provide substantial financial support for the innovations which will overcome the historical reliance on cases and lectures.
6. The educational process will become much more individualized.
7. More executives will be taught by other executives.
8. More attention will be given to learning different cultures (pp. 52-53).

Votaw (1973), writing from an educator's viewpoint on corporate social reform, provided three prescriptions for the future of management training curriculum development. First, according to Votaw, there should be greater emphasis on continuing education, especially in those areas that pertain to social change.

> It would seem that the most important thing educators must offer is the very thing that they are not providing at present and have not provided in the past: help in interpreting social change to the manager and in finding new values, goals and guiding principles (Votaw, 1977, p. 70).

His second prescription was for educators to find new and better ways of disseminating ideas and information from university centers to managers. Thirdly, Votaw (1973) stated that educators should devote the same kind of attention to the study of the future that is now devoted to the past and present.

Using the Delphi technique with a panel of experts drawn from the Fellows of the Academy of Management, Fulmer (1972) attempted to "add precision to major predictions concerning the future of administration" (p. 5). One of the more significant findings of the study, according to Fulmer (1972), concerned management education. Respondents in the study believed that the manager in the year 2,000 would require twice as much continuous training as needed by the 1985 manager. Fulmer, in quoting an unidentified respondent in the study, summed up the future of management education as follows:

> One formal education is no longer good enough for one working lifetime. Continuing life-long education gets more important by the year. It is necessary for essential performance. Economics will blend with the pressure and bring this quicker than many think (p. 12).

Summary

The review of literature in the field of contemporary managment education and training indicates that there are numerous serious problems which impede training effectiveness. Many of the criticisms of management education cited in this review can be attributed to a lack of knowledge as to what training is necessary and required to provide

the skills needed by a manager to succeed (Truskie, 1982). Thus, the literature contains numerous articles which state that business and industrial organizations fund and conduct management and development programs that lack objectives (Heim, 1981), are not supported by participants and top management (Muller, 1976), and fail to provide information that is germane to the working environment (English and Marchione, 1977). Lack of participant involvement in establishing management training objectives, curriculum design, training activities, and evaluation procedures appears to underlie many of the criticisms of contemporary management education programs (Meek, 1973).

The literature concerning bureaucratic orientation indicated that organizations and educational experiences have the potential to change behavior to conform with organizational established roles (Hoy and Miskel, 1982). The literature also indicated that increased exposure to the expectations of the bureaucratic role tends to submerge personality and results in behavior that is more in conformance with the bureaucratic role than one's own personality characteristics (Bridges, 1965). The study conducted by Hoy and Rees (1977) demonstrated that exposure to only a nine week training program could significantly change individual attitudes to conform with bureaucratic established norms.

The research conducted on self-directed learning generally concluded that self-directed learning was equally as effective as the lecture method for the acquisition of knowledge (Oddi, 1983). Results of studies concerning student attitude toward self-directed learning are mixed. The wide range, according to Oddi (1983), of material taught in the attitude studies makes the drawing of conclusions most

difficult.

The literature on self-directed learning does indicate that the acquisition of self-directed skills is becoming increasingly more important (Knowles, 1980). Gagne (1974), in discussing the rationale for individualized instruction, wrote that to achieve future long-range benefits, "the earlier that students are taught to accomplish and practice independent learning, the more successful will they become as mature adults" (p. 189). The Cox Report (1983) also emphasized the importance of individual learning abilities to maintain professional competence. Knowles (1980) expressed the view that the entire mission of education has changed from that of transmitting knowledge to that of developing competencies in students which will enable them to successfully engage in lifelong self-directed learning.

Oddi (1983) provided several thought-provoking questions which serve as a fitting summation to the review of literature on self-directed learning.

> Given the generally favorable results in achievement and attitude with self-directed study, what are the consequences of a self-selection of learning method on the adult learner's skill and readiness to learn? Is self-directed study a viable learning approach for certain learning tasks and not for others--or for certain individuals and not for others? Do traditional methods of teaching undermine the learner's confidence and impede ability to act as a self-directed learner . . . ? (p. 228).

The literature on the future of management education emphasizes the importance of continuing education and the necessity of managers to have an understanding of areas that transcend technical skills (Martin, 1977). Several articles reviewed indicated that management training will become a pervasive component of a manger's career and the educational process will become more individualized (Talpaert, 1981,

Mahler, 1978). The importance of developing innovative approaches to meeting the training needs of managers was a theme stressed throughout many of the articles reviewed (Votaw, 1973, Mahler, 1978). Fulmer (1972, p. 12) succinctly summarized the difficulties involved when he wrote, "Perhaps the greatest challenge facing us in planning for the future is the threatening task of shaking loose from the present."

CHAPTER III

METHODOLOGY AND DESIGN

This study was designed to gather data concerning the effects of self-directed learning on the factor of bureaucratic orientation. Additionally, the study was designed to determine if Airborne Warning and Control System (AWACS) Mission Crew Commander (MCC) graduates of a self-directed learning program differed from graduates of a lecture program on the factor of bureaucratic orientation. The population selected for this study and instrumentation utilized for the collection of data are discussed in this chapter followed by a description of the data collection process and procedures utilized for the analysis and compilation of results.

Population

The population for this study consisted of two graduate MCC groups. The first group was composed of 22 lecture-trained MCCs who had graduated from the Mission Crew Commander Conversion Course between January 1980, and September 1982. The second group was composed of 25 self-directed learning trained MCCs who had graduated from the Mission Crew Commander Conversion Course between October 1982 and August 1983. These 47 graduate MCCs constituted the total population trained between January 1, 1980, and August 31, 1983, who were currently assigned and performing AWACS duties as of August 31, 1983. Approval for AWACS personnel

to participate in the study was obtained from the AWACS Wing Assistant Director of Operations on June 24, 1983 (See Appendix A).

Instrumentation

All 47 graduates of the MCC training program were administered the Work Environment Preference Schedule (WEPS) developed by Gordon (1973) and published by the Psychological Corporation of New York. The WEPS was designed to measure the variable of bureaucratic orientation. According to Gordon, bureaucratic orientation is a personality construct which consists of the following individual characteristics: self-subordination, impersonalization, rule conformity, and traditionalism.

The WEPS is a self-administered 24 item survey instrument with five-point Likert response categories that range from "strongly agree" to "strongly disagree". Examples of items include: "A person's first real loyalty within the organization is to his supervisor," "Relationships within an organization should be based on position or level, not on personal considerations," and "A superior should expect subordinates to carry out his orders without question."

The WEPS was scored, according to the WEPS Manual, as follows: two points were given for each response of "Strongly Agree" or "Agree", one point was given for "Undecided" or "Disagree", and zero points were given for "Strongly Disagree". Scoring was accomplished by counting the number of "Strongly Agree" and "Agree" responses, multiplying this value by two, and adding the result to the sum of the "Undecided" and "Disagree" responses. The maximum possible score was 48. The minimum possible score was zero. According to the WEPS Manual:

> High scores on the WEPS typify individuals who accept authority, who prefer to have specific rules and guidelines to follow, who prefer impersonalized work relationships, and who seek the security of organizational and in-group identification. Low scores are made by individuals who do not so characterize themselves (p. 3).

Stability of the WEPS, measured by test-retest coefficients, was .82 during a three-month interval between testing, and .65 during a 16-month interval. The WEPS MANUAL stated that the:

> internal-consistency reliability of the WEPS was found to be .91, .89, .84, and .83 respectively, for samples of Peace Corps volunteers, guidance counselors, business administration students and also management students, and U.S. Military Academy seniors (p. 5).

The validity of the WEPS was determined by correlation with specific personality characteristics as measured by a variety of survey instruments including the Survey of Interpersonal Values, Leader Behavior Description Questionnaire, and the Navy Basic Test Battery, Form 7. According to Gordon (1973), post-administration critiques repeatedly revealed that high-scoring individuals on the WEPS tend to take the WEPS statements very seriously, while very low-scoring individuals not infrequently consider the statements to be somewhat absurd. Gordon (1973) concluded, "In fact, these very reactions in a way provide supporting evidence for the validity of the WEPS" (p. 5).

All 47 graduate MCCs were also administered a demographic questionnaire that requested the respondent to provide the following information: name, age, years of aircraft control and warning experience, and MCC graduation date (See Appendix B). The WEPS and demographic questionnaires were attachments to a cover letter which explained the purpose of the study, expressed appreciation to the respondent for participating in the research project and assured respondent

anonymity (See Appendix C).

Data Collection Process

The 47 graduate MCCs were individually contacted and provided with a copy of the cover letter (Appendix C), demographic questionnaire (Appendix B), and the WEPS. The importance of each individual's contribution to the success of the study was emphasized and the anonymity of the respondents was assured. After completing the demographic questionnaire and the WEPS each respondent personally returned these items for tabulation and analysis. All 47 MCC graduates participated in the study and provided complete and useable data. The data collection process was completed between July 21 and August 31, 1983.

Analysis and Compilation of Results

This study utilized the intact nonequivalent research design methodology as described by Huck, Cormier, and Bounds (1974). According to Huck, Cormier, and Bounds, the intact nonequivalent design is appropriate for research conducted in natural or field settings wherein "the researcher uses intact or naturally assembled groups, such as two sections of a housing development, two military units, . . . or two classrooms" (p. 303). Huck, Cormier, and Bounds stated that the nonequivalent research design is better than the preexperimental one-group pretest-posttest design because it provides two groups for comparison purposes.

The requirements to be selected for mission crew commander training stipulated that each candidate be a volunteer and ensured a uniformity of minimum prior aircraft warning and control management

experience, physical condition and abilities, and previous training (Gabriel, 1983). Even though the selection process ensured uniformity of the above factors, the possibility existed that the self-directed learning graduate MCC group could differ from the lecture-trained graduate MCC group on the factors of age and years of aircraft control and warning management experience.

The results of the WEPS were tabulated and an analysis of covariance conducted utilizing the SPSS-X computer program to determine if there was a bureaucratic orientation difference between the self-directed learning trained group and the lecture-trained group at the .05 level of significance. The analysis of covariates was utilized to adjust for the covarlates of age and years of management experience on the factor of bureaucratic orientation. Additionally, the means and standard deviations were calculated for the two group's WEPS scores, ages, and years of management experience. In conducting the above statistics, months were converted to tenths of years using the following formula: 1/12 x month(s) = percent of the year.

To ensure anonymity of personnel involved and to simplify the association of subjects with their respective data, the 22 lecture-trained MCCs were assigned subject designators of LA to LV. The 25 self-directed learning trained MCCs were assigned subject designators of SA to SY.

Summary

In summary, the Work Environment Preference Schedule (WEPS) survey and a demographic data questionnaire were administered to 47 graduate MCCs, 22 of whom had been trained by the lecture method and 25

of whom had been trained by the self-directed learning method. An analysis of covariance was utilized to determine if a bureaucratic orientation difference existed between the graduate MCC groups. The means and standard deviations were also calculated for the two groups' WEPS scores, ages, and years of management experience.

CHAPTER IV

PRESENTATION OF FINDINGS

The purpose of this study was to establish a data base for future reference concerning the bureaucratic orientation of Airborne Warning and Control System (AWACS) Mission Crew Commander (MCC) graduates. An additional purpose of the study was to determine if self-directed learning trained MCC graduates differed from lecture-trained graduate MCCs on the factor of bureaucratic orientation.

This chapter contains the findings of the research study. The data collected for this study are summarized in the following two major categories:

1. Bureaucratic Orientation,
2. Graduate Group Composition.

Bureaucratic Orientation

Results of the Work Environment Preference Schedule (WEPS) bureaucratic orientation surveys for the graduate MCC lecture-trained and self-directed learning trained groups are contained in Table I. The 22 lecture-trained subjects were assigned letter designators of LA to LV. The 25 self-directed learning trained subjects were assigned letter designators of SA to SY.

An analysis of covariance was used to determine if the self-directed learning graduate MCC group differed from the lecture-trained

TABLE I

WEPS BUREAUCRATIC ORIENTATION SCORES
FOR MCC GRADUATES

Lecture		Self-Directed Learning	
Subject*	Score	Subject*	Score
LA	26	SA	32
LB	40	SB	32
LC	22	SC	38
LD	30	SD	22
LE	24	SE	32
LF	27	SF	20
LG	32	SG	28
LH	36	SH	38
LI	31	SI	26
LJ	26	SJ	29
LK	41	SK	35
LL	32	SL	18
LM	29	SM	29
LN	36	SN	27
LO	33	SO	26
LP	30	SP	27
LQ	23	SQ	33
LR	37	SR	26
LS	25	SS	31
LT	34	ST	38
LU	34	SU	27
LV	31	SV	41
		SW	30
		SX	37
		SY	30

*Letter designators randomly assigned to ensure anonymity.

$\overline{X}$ = 30.86 $\overline{X}$ = 30.08
SD = 5.31 SD = 5.77

graduate MCC group on the factor of bureaucratic orientation. The analysis of covariance was utilized to adjust for the covariates of age and years of management experience. The results of the analysis of covariance are presented in Table II. The analysis of covariance produced a computed F value of .194 which was not significant at the .05 level of confidence; therefore, the analysis indicated that there was no significant difference between the self-directed learning trained graduate MCCs and the lecture-trained graduates MCCs on the factor of bureaucratic orientation. The covariates of age and years of management experience, as determined by the analysis of covariance, were also not significant at the .05 level of confidence.

Graduate Group Composition

Age

The mean and standard deviation were calculated to determine if the lecture-trained group differed from the self-directed learning trained group on the factor of age. Ages of the graduate MCC groups are shown in Appendix D. In calculating the mean and standard deviation, months were converted to tenths of years using the formula: 1/12 x month(s) = percent of one year.

Analysis showed that the mean age of the lecture group was 41.14 years with a standard deviation of 3.01. The mean age of the self-directed learning group was 37.32 years with a standard deviation of 3.40.

TABLE II

SUMMARY TABLE OF ANALYSIS OF COVARIANCE ON WORK ENVIRONMENT PREFERENCE SCHEDULE SCORES

Source	Sum of Squares	Degrees of Freedom	Mean Square	F-Ratio	p value
Method	6.2520	1	6.2520	.194	.622
Age	1.5327	1	1.5367	.043	.828
Exper-ience	.0946	1	.0946	.003	.957
Within	1388.74	43	3230		

Years of Aircraft Control and Warning Management Experience

The mean and standard deviation were calculated to determine if the self-directed learning trained group differed from the lecture-trained group on the factor of years of aircraft control and warning management experience. The years of aircraft control and warning management experience of the graduate MCC groups are shown in Appendix D. In calculating the mean and standard deviation, months were converted to tenths of years using the formula: 1/12 x month(s) = percent of one year.

Analysis showed that the mean years of aircraft control and warning management experience for the lecture group was 15.31 years with a standard deviation of 4.63. The mean years of aircraft control and warning management experience for the self-directed learning group was 7.59 with a standard deviation of 5.26.

Summary

An analysis of covariance was conducted to determine if the self-directed learning trained MCC graduates differed from the lecture-trained MCC graduates on the factor of bureaucratic orientation as measured by the Work Environment Preference Schedule survey. The results of the analysis of covariance indicated that there was no difference in bureaucratic orientation between the two MCC groups.

Analysis of the composition of the two MCC groups indicated that the lecture-trained group was older than the self-directed learning trained group. The mean age of the lecture-trained group was 41.14

and the mean age of the self-directed learning trained group was 37.32. The lecture-trained MCC group also had more aircraft control and warning management experience than the self-directed learning trained MCC group. The lecture-trained group had a mean of 15.31 years of aircraft control and warning management experience to a self-directed learning group mean of 7.59 years.

CHAPTER V

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

The purpose of this study was to establish a data base for future reference concerning the bureaucratic orientation of Airborne Warning and Control System (AWACS) Mission Crew Commanders (MCC) who had graduated from the Mission Crew Commander Conversion Course conducted at Tinker Air Force Base, Oklahoma, between January 1980 and August 1983. An additional purpose of the study was to determine if graduates of the MCC self-directed learning program differed from graduates of the MCC lecture program in the factor of bureaucratic orientation. This chapter presents a summary of the study, conclusions drawn from the study, recommendations for further research, and recommendations for practice.

Summary of Study

This study compared two graduate MCC groups on the factor of bureaucratic orientation. The first group consisted of 22 lecture-trained MCCs who had graduated from the 14-week Mission Crew Commander Conversion Course between January 1980 and September 1982. The second group consisted of 25 self-directed learning trained MCCs who had graduated from the 14-week Mission Crew Commander Conversion Course between October 1982 and August 1983. The 47 graduate MCCs composed the total population trained between January 1, 1980 and August 31, 1983,

who were currently assigned and performing AWACS duties as of August 31, 1983.

Two instruments were used to collect data for the study. The instruments, which consisted of the Work Environment Preference Schedule (WEPS) and a demographic questionnaire, were administered to the 47 graduate MCCs. THe WEPS was utilized to measure the factor of bureaucratic orientation. The demographic questionnaire was utilized to ascertain if the lecture-trained MCC group differed from the self-directed learning trained MCC group on the factors of age and years of aircraft control and warning management experience. All 47 graduate MCCs participated in the study and provided complete and useable data.

The results of the WEPS were tabulated and an analysis of covariance, utilizing the SPSS-X computer program, conducted to determine if there was a significant difference between the self-directed learning trained MCC group and the lecture-trained MCC group on the factor of bureaucratic orientation. The analysis of covariance was utilized to adjust for the covariates of age and years of management experience. The mean and standard deviation were also calculated to determine if the two MCC groups differed on the factors of age and years of aircraft warning and control management experience.

Findings and Conclusions

The following findings and conclusions were derived from the interpretation of data gathered for this study:

1. There was no significant difference in bureaucratic orientation between lecture-trained and self-directed learning trained AWACS

MCC graduates as measured by the Work Environment Preference Schedule.

2. Exposure to the self-directed methodology does not appear to affect the MCC graduates' commitment to the attitudes, values, and behavior that are associated with employment in a bureaucratic organization. The data indicate that the self-directed learning trained MCC group did not experience a change in values and attitudes toward the work environment that differed from that of the lecture-trained MCC group.

Several related observations can also be drawn from the data obtained in this study. Variations in years of aircraft control and warning management experience and age above the minimum were expected. The younger, less aircraft control and warning management experienced, group was exposed to the self-directed learning approach and may have been expected to have had more susceptibility to the independence encountered in self-directed learning. However, the self-directed learning group's mean bureaucratic orientation score was 30.08 compared to the lecture-trained group mean bureaucratic orientation score of 30.86. The mean bureaucratic orientation scores were nearly identical with no statistically significant difference.

Recommendation for Further Research

This study resulted in data which serves as the basis for the following additional research:

1. Research should be conducted to determine if graduates of the self-directed learning program are as satisfied with the training received as graduates of the lecture program.

2. Further research should be conducted to determine if self-

directed learning affects the factor of bureaucratic orientation in management students with no management experience.

3. Research should be conducted to determine if similar results of this study would be obtained in a non-military industrial middle/executive management training program.

4. Further research should be conducted to ascertain if graduates of a self-directed learning management training program possess superior skills to adapt to changes in the work environment than graduates of traditional lecture management training programs.

5. Research should be conducted to ascertain if graduates of a self-directed learning management training program demonstrate more innovativeness and creativity in the work environment than graduates of traditional lecture management training programs.

6. Further research should be conducted to determine if similar results of this study would be obtained at the foreman level in non-military industrial organizations.

Recommendations for Practice

The results of the study indicated that self-directed learning MCC graduates, as a group, had a similar bureaucratic orientation toward the work environment as their lecture-trained MCC graduate counterparts. Selection of the most efficacious method of training AWACS MCCs must therefore be based upon factors other than self-directed learning versus lecture. Additional factors recommended for consideration in selecting either self-directed learning or lecture are costs, expressed graduate preference, training and experience of the training staff, and availability of resources for self-directed learning.

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APPENDIXES

APPENDIX A

APPROVAL FOR AWACS PERSONNEL PARTICIPATION

DEPARTMENT OF THE AIR FORCE
966TH AIRBORNE WARNING AND CONTROL TRAINING SQUADRON (TAC)
TINKER AIR FORCE BASE, OKLAHOMA 73145

REPLY TO ATTN OF: DOOMB 24 Jun 83

SUBJECT: Request to Conduct MCC Graduate Study

TO: 552 AWACW/DO-AS

1. In October, 1982, the MCC training program was converted from lecture to self-directed learning format. Presently, 23 MCCs have been trained using the self-directed learning method.

2. Request authorization to conduct a study for the purpose of ascertaining whether self-directed learning MCC graduates differ from lecture trained graduates in the factors of bureaucratic orientation and duty effectiveness. Results of the study are intended to determine if the MCC instructor staff should continue using the self-directed learning approach. Additionally, I request permission to use the results of the study as the basis for a doctoral dissertation at Oklahoma State University.

3. Instrumentation for the study will consist of a commercial survey entitled "Work Environment Preference Schedule" which is designed to measure the bureaucratic orientation variable. I will also request the Wing MCC Standardization/Evaluation Flight Officers to rank order all line MCCs on the factor of effectiveness. Total time required for each line MCC to complete the survey will be between 20 and 30 minutes. Total time required for the Standardization/Evaluation Officers to rank order the line MCCs will be approximately two hours. Individual survey results and effectiveness ratings will be strictly controlled to protect the privacy of the individuals concerned. Names will not be associated with survey results or ratings in either the draft or final report. No Air Force funds will be required.

4. I have discussed this study with Dr. Quinn of the Human Resources Development Lab, Management and Personnel Division, Aerospace Medical Division, Brooks AFB, and Dr. Austin of the Leadership and Management Development Center, Directorate of Research and Analysis, Air University, Maxwell AFB. After Consultation with other members of their respective directrates, both individuals stated that to their knowledge a study of a USAF sponsored management self-directing learning program has not been conducted. They expressed an interest in the study and indicated that the results of such a study may have applicability to other Air Force training programs. I discussed the proposed research design and method of data analysis in detail with both individuals. They indicated that the research design appeared to be appropriate to achieve the objective of the study.

Robert W. Murphy

ROBERT W. MURPHY, Major, USAF
Chief, Battle Staff Training

Readiness is our Profession

1st Ind to 966 AWACTS/DOOMB Ltr, 24 Jun 83, Request to Conduct MCC Graduate Study

966 AWACTS/CC 27 Jun 83

TO: 552 AWACW/DO-A'S

Approved/~~Disapproved~~.

John H. Morris

JOHN H. MORRIS, Lt Col, USAF
Commander

2nd Ind, 552 AWACW/DO-A'S

TO: 966 AWACTS/DOOMB 27 JUN 1983

Approved/~~Disapproved.~~

RICHARD J. DONOHOE, Col, USAF
Asst Deputy Commander for Operations

APPENDIX B

MCC DEMOGRAPHIC QUESTIONNAIRE

1. NAME: _____

2. Age
(Years/Months): _____

3. Years of Aircraft Control and Warning Management Experience (Years/Months): _____

4. MCC Graduate Date
(Month/Year): _____

APPENDIX C

MCC COVER LETTER

DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 552D AIRBORNE WARNING AND CONTROL WING (TAC)
TINKER AIR FORCE BASE, OKLAHOMA 73145

REPLY TO ATTN OF: DOOMB

SUBJECT: MCC Graduate Survey

TO: Graduate MCCs

1. I am currently conducting a survey of 966 AWACTS MCC graduates to ascertain organizational attitudes. Your responses are important to the success of this survey and will assist the instructor MCC staff to determine if modifications are required in the MCC training program to better meet the 963d and 964th operational requirements.

2. I personally guarantee the anonymity of your survey responses. After I tabulate survey results, your name will not be associated with your responses nor will your name appear in the final report.

3. Thank you for your cooperation and support in assisting me to design a more efficient and effective MCC training program.

Robert W. Murphy

ROBERT W. MURPHY, Major, USAF
Chief Battle Staff Training

APPENDIX D

DATA SUMMARY TABLES

TABLE III

SUMMARY OF MCCS' YEARS OF AGE

Subjects*	Lecture Trained**	Subjects*	Self-Directed Learning Trained**
1	42.33	1	37.25
2	43.25	2	40.33
3	42.33	3	35.33
4	41.50	4	32.42
5	43.50	5	40.58
6	38.67	6	35.67
7	40.83	7	47.92
8	40.92	8	35.83
9	44.83	9	36.00
10	41.00	10	40.92
11	42.17	11	40.00
12	37.08	12	35.92
13	44.17	13	36.08
14	35.75	14	40.08
15	38.83	15	34.25
16	35.83	16	36.25
17	46.83	17	34.17
18	38.83	18	38.75
19	43.67	19	40.75
20	44.17	20	35.75
21	38.08	21	33.75
22	39.50	22	38.17
		23	33.33
		24	39.33
		25	34.17

*Subject letter designators have been replaced with subject numbers to ensure anonymity of respondents.
**Years of age.

$\overline{X}$ = 41.14 SD = 3.01 $\overline{X}$ = 37.32 SD = 3.40

TABLE IV

SUMMARY OF MCCs' YEARS OF AIRCRAFT CONTROL AND WARNING MANAGEMENT EXPERIENCE

Subjects*	Lecture Trained**	Subjects*	Self-Directied Learning Trained**
1	19.75	1	5.00
2	21.00	2	16.75
3	18.50	3	9.50
4	12.00	4	2.67
5	20.50	5	18.00
6	11.00	6	10.00
7	17.00	7	5.75
8	16.17	8	6.33
9	12.83	9	4.00
10	14.00	10	10.17
11	16.25	11	6.67
12	12.83	12	7.33
13	17.33	13	1.67
14	12.50	14	16.25
15	15.50	15	1.58
16	3.67	16	1.38
17	21.17	17	5.50
18	5.67	18	15.92
19	16.00	19	1.58
20	21.42	20	4.08
21	15.58	21	3.00
22	16.17	22	14.50
		23	5.50
		24	4.08
		25	12.00

*Subject letter designators have been replaced with subject numbers to ensure anonymity of respondents.
**Years of aircraft control and warning management experience.

$\bar{X}$ = 15.31 SD = 4.63 $\bar{X}$ = 7.59 SD = 5.26

VITA 2

Robert W. Murphy

Candidate for the Degree of

Doctor of Education

Thesis: A STUDY CONCERNING THE EFFECTS OF SELF-DIRECTED LEARNING ON THE FACTOR OF BUREAUCRATIC ORIENTATION

Major Field: Occupational and Adult Education

Biographical:

Personal Data: Born in Wakefield, Kansas, January 14, 1940, the son of William and Alberta Murphy. Married to Susan D. Lamb on October 2, 1965.

Education: Graduated from Clay County Community High School, Clay Center, Kansas, in 1958; received Bachelor of Arts degree in Psychology from Washburn University in 1962; received Master of Science degree in Education from Troy State University in 1970; graduated from Defense Language Institute in 1972; graduated from Air Command and Staff College in 1975; graduated from Industrial College of the Armed Forces in 1976; completed requirements for Doctor of Education degree at Oklahoma State University in May, 1984.

Professional Experience: Air Defense Division Training Officer, Topsham Air Force Station, Maine, 1963-1965; Instructor Radar Operations Senior Director, Nakhon Phanom Royal Thai Air Base, Thailand, 1965-1966; Chief Senior Controller, Headquarters 10th Air Force, Richards-Gebaur Air Force Base, Missouri, 1967-1969; Radar Operations Senior Director, Ft. Lee, Virginia, 1970-1971; Royal Thai Air Force Air Defense Advisor, Bangkok, Thailand, 1972-1973; Radar Systems Analyst, Elgin Air Force Base,Florida, 1973-1974; Radar Squadron Operations Officer, Germany, 1975-1978; Instructor Airborne Warning and Control System (AWACS) Senior Director, Chief Squadron Strategy and Tactics Training, Tinker Air Force Base, Oklahoma, 1978-1980; Chief AWACS Battle Staff Training, Tinker Air Force Base, Oklahoma, 1980-present.

Professional Organizations: American Association for Adult and Continuing Education and Air Commando Association.