MONTANA STATE UNIVERSITY

An investigation of the factors which influence teachers to try mastery learning in their classrooms
by Robert Gene Osland

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Education
Montana State University
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Abstract:
The problem of this study was to determine which factors were most important in influencing teachers to try Mastery Learning. In this study the change process was examined in relation to the implementation of Mastery Learning and how that process was affected by the following six factors: the instructional leadership by the principal; the school climate; the support from the central office administration and the Board of Education; the supervision of the instructional process; the appropriate in-service education relative to the planned change and the potential for student success.

The study was conducted during the 1984-1985 school year. The population consisted of the regular classroom teachers in three school districts which initiated the attempt to implement Mastery Learning during the 1984-1985 school year.

To collect the data a simulation instrument was utilized. The instrument consisted of a series of simulations or profiles each of which represented a possible change environment. The information cues within each profile were the six factors which were determined to be important in a change process in education. The statistical method used was Judgment Analysis (JAN) which yielded policies, multiple regression equations, for each rater and for clusters of similar raters. The multiple regression weights represented the policies.

In every group analyzed there were two types of policies. In one policy type the teachers expressed an equal importance for all of the change factors. In the second policy type the teachers gave a high priority to the potential for student success and a priority to the appropriate in-service education. The first policy type indicated that all of the change factors were important to a substantial group of teachers. For this reason in a curricular change process care should be excercised to meet all six of the factors. The second policy type showed that early feedback showing student success should be built into the curricular change process and that the teachers should receive appropriate in-service education before the change is implemented in the classroom.

AN INVESTIGATION OF THE FACTORS WHICH INFLUENCE TEACHERS TO TRY MASTERY LEARNING IN THEIR CLASSROOMS

by

Robert Gene Osland

A thesis submitted in partial fulfillment
of the requirements for the degree

of

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Robert Gene Osland

This thesis has been read by each member of the thesis committee and has been found to be satisfactory regarding content, English usage, format citations, bibliographic style, and consistency, and is ready for submission to the College of Graduate Studies.

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ABSTRACT

The problem of this study was to determine which factors were most important in influencing teachers to try Mastery Learning. In this study the change process was examined in relation to the implementation of Mastery Learning and how that process was affected by the following six factors: the instructional leadership by the principal; the school climate; the support from the central office administration and the Board of Education; the supervision of the instructional process; the appropriate in-service education relative to the planned change and the potential for student success.

The study was conducted during the 1984-1985 school year. The population consisted of the regular classroom teachers in three school districts which initiated the attempt to implement Mastery Learning during the 1984-1985 school year.

To collect the data a simulation instrument was utilized. The instrument consisted of a series of simulations or profiles each of which represented a possible change environment. The information cues within each profile were the six factors which were determined to be important in a change process in education. The statistical method used was Judgment Analysis (JAN) which yielded policies, multiple regression equations, for each rater and for clusters of similar raters. The multiple regression weights represented the policies.

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Chapter 1

INTRODUCTION

John B. Carroll (1963:27) set forth the basic premises upon which a new curriculum model was established.

> The amount of time actually needed by a person to learn a given task satisfactorily is a function not only of aptitude, but also of the quality of instruction insofar as it is less than optimal.

Carroll's contention was that with a given aptitude, if sufficient time was spent by the student, under the appropriate instruction, a given task could be learned satisfactorily. From Carroll's original work many educators set forth curriculum models based on this philosophy.

James Block (1971) used the name "Mastery" for a model which structures curriculum in a manner supportive of what Carroll advocated. Block explained that Mastery is structured to maximize the likelihood that each student will reach the performance levels essential for competence. The process operates on the proposition that almost every student can learn the basic skills and knowledge that are the core of school curriculum when the instruction is of good quality and appropriate and when adequate time is spent in learning.

Madeline Hunter (1983:3) stated,

> Consequently, teaching is now defined as a constant stream of professional decisions made before, during and after interaction with the student; decisions which, when implemented, increase the probability of learning. . . . Even champions have coaches.

Mastery Learning had become a major curriculum innovation in education. "Mastery Learning can work and the implications are very exciting, but it isn't easy" (Knight, 1981:136).

Numerous reports had surfaced concerning the need for change in education. A common thread in reports by The National Commission on Excellence in Education (1983), Boyer (1983), Sizer (1984) and Goodlad (1984) was the need for renewed efforts on the part of educators and supportive community members to improve our schools. Indeed, a golden opportunity did avail itself for educators to make substantial changes for the improvement of our schools.

"The problem is how to change and how to manage change successfully" (Block, 1974:120). This problem must be addressed by everyone in education. According to Drucker (1967:5), "every knowledge worker in modern organizations . . . is responsible for a contribution that materially affects the capacity of the organization to perform and to obtain results." Educators, teachers and administrators, with valid experiences of their own, need to provide more background information concerning Mastery Learning. "Otherwise a promising new direction will become another educational fad" (Knight, 1981:136).

> We are slowly moving toward a new conception of a professional discipline concerned primarily with the process of change. It rests on the assumption that social progress can be planned and engineered so that it is more reliable and more beneficial to more people. This new concept of "planned innovation" stresses the importance of realistic diagnosis of needs, adequate resource retrieval, collaborative planning and solution building and systematic design and evaluation of alternative solutions. (Havelock and Havelock, 1973:1,2)

An exciting curriculum model, that worked, had been articulated. Educators were provided with a proven approach in their repertoire to assist in the quest for educational excellence. "The greatest wisdom not applied to action and behavior is meaningless data" (Drucker, 1967:5).

Problem Statement

One area of education which had received a great deal of attention was curriculum. Reports dealing with the need for school curricula to meet the demands of society and aid students in reaching their fullest potential were common. "The push toward educational excellence is irreversible, and the movement seems likely to benefit the public schools" (Odden, 1984:318). Goodlad (1975:16) stated that there are two widely accepted statements of goals for education; "the full development of the individual and identification with an ever-widening concept of social and cultural responsibility." "Education . . . provides new insight and skill, introduces new possibilities, and excites new appetites for something better than what now exists" (Blake and Mouton, 1964:316). One

curriculum model which addressed the full development of the individual was Mastery Learning. Mastery Learning was viewed in this study as an educational change. Change is the process by which innovations are implemented.

Therefore, the problem of this study was to determine which factors were most important in influencing teachers to try Mastery Learning. This study investigated the factors which influence teachers to try Mastery Learning. More specifically, this study examined the change process relating to the implementation of Mastery Learning and how that process was affected by the following six school factors: the instructional leadership by the principal, the school climate, the support from the central office administration and the Board of Education, the supervision of the instructional process, appropriate in-service education relative to the planned change, and the potential for student success. Ancillary information was obtained with three demographic factors. The three demographic factors were: years of teaching experience, level of education degree earned by the teacher, and grade level teaching assignment.

Need For The Study

Mastery learning had proven itself an effective curriculum model. Bloom (1976:210) indicated that, "one implication of this theory is that talent can be developed . . ." In referring to a Mastery Learning implementation project, Rubin

and Spady (1984:44) wrote, "because the vast majority of students learn so well under this system, their success reinforces the teachers' sense of success and efficacy." In reporting research concerning innovative applications of Mastery Learning Bloom (1984:6) concluded, "it would change popular notions about human potential and would have significant effects on what the schools can and should do with the educational years . . ." Numerous studies pointed to the effectiveness of the model and each study contributed more data to the information pool which is utilized by interested educators.

Even with the impressive record which Mastery Learning maintained, the paradigm could be practiced by more educators. Owens (1970:141) contended, "it is a commonplace observation that actual change in schools--significant, meaningful, effective change--is even now proceeding in desultory fashion . . ."

> We need to know . . . why a particular innovation spreads rapidly or slowly, what the causes of resistance to change are in educational systems, and why particular strategies of change chosen by innovators succeed or fail. . . . Given an increase in understanding it seems likely that we may be able to manage educational innovation somewhat more skillfully than we have in the past. (Miles,1964:2)

No study had been conducted in this geographic area concerning the change process relative to the implementation of Mastery Learning. This study attempted to contribute to the data base concerning the implementation of the Mastery Learning curriculum model by determining which factors were most

important in teacher's decisions to try Mastery Learning. It was the researcher's expectancy that information from this study would be significant in providing assistance to area educators in changing school systems and providing a higher quality educational outcome.

General Questions to be Answered

This research study and its subsequent statistical analysis was designed to answer seven questions. The seven questions were:

1. Was there more than one order of importance of the six educational change factors (instructional leadership by the principal, the school climate, the support from the central office and the Board of Education, the supervision of instruction process, appropriate in-service education relative to the planned change, and the potential for student success) present in the population?

2. What importance did the teachers give each of the six educational change factors in trying Mastery Learning?

3. Was there more than one order of importance of the six change factors present in each of the three public schools?

4. What importance did the teachers in each of the three public school districts give each of the six educational change factors?

5. Was a teacher's likelihood of trying Mastery Learning independent of years of teaching experience?

6. Was a teacher's likelihood of trying Mastery Learning independent of level of education degree earned?

7. Was a teacher's likelihood of trying Mastery Learning independent of teaching level assignment?

General Procedures

The procedures followed in this study were as follows.

1. The study was conducted in three school districts, two of which were located in Montana and one of which was located in Wyoming. The researcher traveled to each of the school districts to obtain permission from the superintendents to meet with the teachers and request their participation in the study.

2. A simulation instrument utilizing quantitative profiles to express change environments was developed. Sample profiles are included in Appendix B.

3. To the extent possible, data was obtained from all regular classroom teachers in the selected schools.

4. The researcher was present at the local school district to administer the data collection instrument.

5. Hypotheses related to the questions were formulated.

6. The data obtained was statistically analyzed using the judgment analysis (JAN) technique and conclusions and recommendations were drawn.

7. An ERIC Search was conducted with the following

descriptors: JAN; Judgment Analysis; Change; Develop; Improve; Innovate; Planning; Mastery; and Competency.

Limitations and Delimitations

The following were the limitations of the study.

1. The only curricular change that was considered was the implementation of Mastery Learning.

2. The only schools considered were in school districts in which the initial in-service education relative to Mastery Learning occurred during the 1984-1985 school year.

3. The only phase of the change process this study examined was the decision to try the innovation.

4. Library searches were restricted to those available at Montana State University and inter-library loan.

The following were the delimitations of the study.

1. The study was conducted during the 1984-1985 school year.

2. Only regular classroom teachers participated in completing the research instrument.

Definition of Terms

Mastery Learning--A teaching/learning strategy in which material is divided into small learning units and formative tasks utilized to assess and diagnose student progress. The formative tasks are used not only to identify competent learners but also to diagnose the individual learning

difficulties (feedback) and to prescribe specific remediation procedures (correctives) (Guskey, 1985).

Adoption--"A decision to continue full use of an innovation" (Rogers, 1962:17). The adoption process is the mental process through which an individual passes from first hearing about an innovation to final adoption. For this study, full use refers to applying Mastery Learning in one class or subject.

Rejection--"A decision not to adopt an innovation" (Rogers, 1983:172).

Change--"The process by which alteration occurs in the structure and function of a social system" (Rogers and Shoemaker, 1971:7). Alteration in this study, refers to the effects of teachers applying Mastery Learning in their classrooms where such a system was not previously in use.

In-service Education--"All activities carried out by the district or school to promote staff growth and renewal" (Rogus, 1983:9).

Instructional Leadership by the Principal--"The activity of influencing people to strive willingly for group goals" (American Association of School Administrators, 1983:19).

School Climate--"The perceived subjective effects of . . . environmental factors on the attitudes, beliefs, values, and motivation of people in a particular organization" (Sergiovanni, 1983:56).

Student Success--"Levels of learning in all students that satisfy the public's expectations for minimum standards while providing maximum challenges" (Rubin and Spady, 1984:37).

Supervision Process--A rational modification of teaching performances based on, "systematic cycles of planning, observation, intensive intellectual analysis of actual teaching performances . . ." (Acheson and Gall, 1980:11).

Support from the Central Office Administration and the Board of Education--The enormous influence superintendents and boards exert on principals through their policies, priorities, resources allocated for these priorities and communications to effect these wants (American Association of School Administrators, 1983:56).

Summary

The United States public education system was under a barrage of criticism. One area receiving much attention was curriculum. Movements were numerous which purported to have a good solution for revitalizing curricula. One movement which was solidly based in theory and supportive field research was Mastery Learning. Mastery Learning was a curriculum model which dealt primarily with identifying student problems early, providing appropriate instruction to correct the problems and then determining the student's competencies which become the necessary entry level skills for future areas of study.

Change in education proceeds in desultory fashion even with our contemporary research based approaches and insights. One example of change taking place in school districts is the implementation of Mastery Learning.

In this study an attempt was made to determine which factors in the change process promoted the trying of Mastery Learning. Three school districts were studied to determine what affect six factors had on the decision by individual teachers to pursue Mastery Learning. The six factors of interest were: instructional leadership by the building principal; school climate; support from the central office administration and the Board of Education; supervision of instruction; appropriate in-service education relative to the planned change; and potential for student success. Three demographic factors were ancillary to the study. The three demographic factors were: years of teaching experience; level of education degree earned; and grade level teaching assignment.

The study was conducted during the 1984-1985 school year. Data was gathered by the researcher utilizing a simulation instrument designed to elicit decisions by respondents relative to educational change. The simulation instrument was administered by the researcher at the school site of the participating teachers.

CHAPTER 2

REVIEW OF RELATED LITERATURE

Introduction

For the purpose of this study, the literature was reviewed with regard to two major topics: Mastery Learning and Change Theory. Mastery Learning was reviewed with regard to its historical development, contemporary definition and usefulness and effectiveness in contemporary education. Change Theory was reviewed from a historical perspective, including the contemporary methodology of the science, its application in educational change and more specifically in its utilization for administrative involvement in curriculum change in education.

Mastery Learning

> The essential new fact is that a developed society and economy are less than fully effective if anyone is educated to less than the limit of his potential. The uneducated is fast becoming an economic liability and unproductive. Society must be an "educated society" today--to progress, to grow, even to survive. (Drucker, 1957:114)

Block (1979), one of the most widely recognized proponents of Mastery Learning expressed a similar thought. Block (1977:117) stated, "one of the striking societal features of Mastery Learning is the degree to which it presses for a

society based on the excellence of all participants . . ." The theory and basic ideas underlying the mastery structure are not contemporary. According to Torshen (1977) the roots of Mastery Learning are hundreds of years old. Considerable attention had been given by J. Franklin Bobbit, from 1918-1941, Ralph Tyler in 1950 and Benjamin Bloom, John Carroll, Fred Keller, Robert Meager, and others beginning in the 1960's. Mueller (1976:44) indicated that since its recent resurgence "literally scores of papers, articles, and monographs have reported that students have learned better under the mastery model than under alternative instructional models." A good definition was provided by Cohen (1981:36), "Mastery Learning is competency based and teaches to precisely defined objectives." Cohen further stated that all students must demonstrate mastery of the intended outcome before continuing to the next point in the curriculum. Students who do not master the steps in one curriculum are given additional instruction until they demonstrate mastery or competency. Under this schema it is possible for all students to earn an 'A', but some students get it faster than others.

This coincides with the Carroll model (Carroll, 1963) in which the contemporary theory of Mastery Learning was clearly set forth. Carroll cited five elements which are basic to the concept of Mastery Learning. Three of those elements were considered to be within the individual and two elements were external. The three internal elements were aptitude--the time

needed to learn the task under optimal instructional conditions, ability to understand instruction--appropriate instruction for the individual student and perseverence--the amount of time the learner is willing to engage actively in learning. The two external elements were opportunity--time allowed for learning, and quality of instruction--a measure of the degree to which instruction is presented so that it will not require additional time for mastery beyond that required in view of aptitude. Block (1974) summarized Carroll's model in the following manner:

> As I interpreted it, the Carroll model made clear that if students are normally distributed with respect to aptitude for some subject and all students are given exactly the same instruction (the same in terms of amount and quality of instruction and learning time allowed), then achievement measured at the completion of the subject will be normally distributed. Under such conditions the correlation between aptitude measure at the beginning of the instruction and achievement measure at the end of the instruction will be relatively high (typically about +.70). Conversely, if students are normally distributed with respect to aptitude, but the kind and quality of instruction and learning time allowed are made appropriate to the characteristics and needs of each learner, the majority of students will achieve mastery of the subject. And the correlation between aptitude measure at the beginning of instruction and achievement measured at the end of instruction should approach zero. (4,5)

"One implication of the theory is that equality of learning outcomes can be a goal of education rather than equality of opportunity" (Bloom, 1976:215). Bloom suggested that teachers must find ways of giving each child the help and encouragement needed when needed it rather than ensuring

identical treatment of all children. Inequality of treatment may be needed, at least at certain stages of the learning process, if children are to attain equality of learning outcomes. This concept was clarified by Bloom (1981):

> The kind and quality of instruction and the amount of time available for learning are made appropriate to the characteristics and needs of each student, the majority of students may be expected to achieve mastery of the subject. (156)

This concept was further clarified by Bloom (1979):

> The most important is the feedback-corrective process. . . . When the feedback corrective process is used well, we begin to understand the enormous potential of all of our students. They have the prerequisites for each new learning task . . . (159)

Bloom explained that students use learning time more effectively and that the amount of time required to learn each new step becomes more similar for most students. Bloom (1976) again stressed the importance of corrective feedback.

> The major thesis . . . is that a system of feedback to the teacher and students can reveal errors in learning shortly after they occur, and if appropriate corrections are introduced as they are needed, the educational system can be a self-correcting system so that errors made at one time can be corrected before they are compounded with later errors. (212)

By using the feedback-corrective process the history of the learner is used to advantage. "One assumption . . . is that the history of the learner is at the core of school learning" (Bloom, 1976:13). This concept passed beyond an assumption when research indicated:

> The weight of this evidence suggests not only that there is a predictive relation between cognitive entry behaviors and subsequent achievement measures, but that cognitive entry behaviors are causal links in determining learning. (Bloom,1976:68)

Bloom (1976:68) also stated, "there is a strong positive correlation between the cognitive entry behaviors of a student and his achievement in subsequent courses or learning tasks."

It is the contention of Mastery Learning advocates that the corrective-feedback process detects learning deficiencies before they are harmful to the student. By doing this the student enters the next learning task with the necessary entry level cognitive skills. Because the necessary skills are a part of the student's history, mastery of the tasks occurs in a shorter period of time. According to Hyman and Cohen (1979:105), "Learning for Mastery is consistently more effective than traditional curriculums." Hyman and Cohen further clarified that if the required competencies are clearly defined and the process properly monitored and such a technique compared with the traditional fuzzy, the results have to to be in favor of Learning for Mastery. Hyman and Cohen (1979:109) concluded, "Learning for Mastery appears to us to be the most potent curriculum model of our time."

Chandler (1982) found that of ninety-seven studies comparing average achievement between mastery and nonmastery groups fifty-nine favored mastery. Three favored non mastery and no statistically significant results were found for the remaining thirty-five studies. In another review he found that

forty-eight of sixty-one groups indicated statistically significant average achievement results in favor of mastery taught students. No study favored nonmastery. Chandler (1982:10) concluded, "this means that if a student is at the fiftieth percentile . . . in the nonmastery group he could be expected to move to the eightieth percentile using a mastery approach." According to Bloom (1976:213), "Mastery Learning has already amply demonstrated that the large majority of students in a class can learn selected subjects up to as high a level as the most able students in the group." Bloom (1984:15) reported, "after several years . . . the improvements in students' higher mental process learning and achievement became very pronounced." Bloom's (1984) research indicated that the students develop a positive academic self-concept, an interest in the subject and a desire to learn more in the subject field.

Rubin and Spady (1984) in discussing a successful implementation of Mastery Learning reported:

> Any model that differs this substantially from conventional practice is bound to be met with skepticism if not outright resistance by teachers and administrators, making its implementation highly problematic despite the obvious benefits to students from all ability levels. (43)

Goodlad (1975:16) stated, "it is often said about education, as about many other things, that nothing changes but the appearance of change." In discussing change in public schools Snyder and Johnson (1983:21) reported, "the emphasis for school improvement today is on student achievement, and on students'

needs and creating various mechanisms through which these needs can be met." Bennis, Benne, Chin and Corey (1976) stated:

> Agents of planned change must resist in themselves the despair and accept the deepened ethical responsibility . . . And they must invite their clients to open their values, personal, local, political, religious, to a test against this new universal criterion of good--human survival. (22)

In this society the school is a familiar and omnipresent institution and as James and Tyack (1983:406) stated, "by thinking about what consequences today's transformations in society have for education, Americans can think concretely about how to shape the future of their children."

Change Theory

> In 1900, controversy over planned change was typically stated in sweeping ideological terms. Should or should not men seek, through deliberate and collaborative forethought in the present, to mold the shape of their collective future? Or should confidence rather be placed in a principle of automatic adjustment, operating within the processes of history to reequilibrate, without human forethought yet in the interest of progress and human welfare, the inescapable human upsets and dislocations of a changing society? (Bennis, et al., 1976:14)

Bennis, Benne and Chin (1961:2) suggested, "concerning methods of change, we can observe two idea-systems . . . that are directly counterposed: the law of nonintervention and the law of radical intervention." According to Bennis, et al. (1976) the idea of social scientists participating in and actively influencing change in our society has been a controversy since the emergence of the idea in the late

nineteenth century. In general the 'planners' saw an important place for social science in informing various groups in the processes of planned change. Proponents of 'automatic adjustment' tended to relegate the social scientist to a role of observer and denied them leadership in influencing the direction of practical affairs or, in essence, arrested planned change.

Lester Ward (Commager, 1950) was one of the early proponents in the role of 'planners' for social change. He proclaimed that modern men must extend scientific approaches in the planning of changes in the patterns of their behaviors and relationships. In the early twentieth century he was aware that man was utilizing scientific intelligence to induce changes in the nonhuman environment and he saw this extending to the management of human affairs.

> Man's destiny is in his own hands. Any law that he can comprehend he can control. He cannot increase or diminish the powers of nature, but he can direct them. . . . Human institutions are not exempt from this all-pervading spirit of improvement. They, too, are artificial, conceived in the ingenious brain and wrought with mental skill born of inventive genius. The passion for their improvement is of a piece with the impulse to improve the plow or the steam engine. . . . Intelligence, heretofore a growth, is destined to become a manufacture. . . . The origination and distribution of knowledge can no longer be left to chance or to nature. They are to be systematized and erected into true arts. (Commager, 1950:208,210,213,214)

Proponents of the 'automatic adjustment' approach had opinions directly in conflict with planned approaches. Bennis, et al. (1961:2) suggested that advocates took the position,

"tampering and social tinkering with man's natural and social universe interferes with the homeostatic forces, which if left unfettered, will bring about the perfectly maximized good life." William Graham Sumner (Commager, 1950) was one of the leaders in sociology who emphasized the folly of prophecies such as Ward's.

> If we can acquire a science of society based on observation of phenomena and study of forces, we may hope to gain some ground slowly toward the elimination of old errors and the re-establishment of a sound and natural social order. Whatever we gain that way will be by growth, never in the world by any reconstruction of society on the plan of some enthusiastic social architect. The latter is only repeating the old error over again and postponing all our chances of real improvement. Society needs first of all to be free from these meddlers . . . Here we are, then, once more back at the old doctrine laissez faire. Let us translate it into blunt English, and it will read--Mind your own business. (Commager, 1950:15)

According to Bennis, et al. (1976) subsequent events have to a large extent foreclosed on the Sumner argument for laissez faire. Human interventions designed to shape and modify the institutionalized behaviors of people are now familiar features of our social landscape. In the fifties we were widely seeking to plan social changes.

During the fifties the prevailing model of planned change was an engineering model as opposed to a clinical model distinguished by Gouldner (1956). In the engineering model plans are made by the experts to meet the needs of those affected as interpreted by the experts. In the clinical model the experts work collaboratively with those affected by the

change to empower them with the abilities to understand and internalize the various complexities of the change being innovated. Bennis, et al. (1976) credited man's technical genius in the physical world with the success of the engineering model. The New Deal and World War II had ingrained in the public the concept that with our technology we could advance and conquer most any problem presented to our society. Interestingly, our technical genius, exhibited by the bomb on Hiroshima, initiated a new set of concerns which eventually threatened man's existence. "Man's ingenious and inventive cultivation of technology had given him the power to pollute his planet irreparably and to destroy all terrestrial life" (Bennis, et al., 1976:18).

The turbulent sixties were a key period in the evolution of change theory as suggested by Bennis, et al. (1976):

> They exposed and in a measure cleared away some of the conventional debris that has clouded the realities of existing relationships in our society--the distorting effects of power differentials, the dysfunctional inhibitions of expression of affect, positive and negative, and many human relationships; the gap between professed values and values in use; and the dehumanizing effects of depersonalized relations in many of our bureaucratized institutions, political, industrial, and educational. (19)

It was during this period that the need to regard social relations and the dynamics between individuals, groups and cultures or societies in the planning of change became apparent. The theoretical traditions of organizational analysis and cultural approaches were being established

according to Reid and Walker (1975):

> These are seen as mutually interdependent, and the reaction to innovation is held to depend on the degree to which the consequent reordering of relationships within and between . . . is tolerable in terms of the benefits likely to accrue. (245)

By the conclusion of the sixties the various liberation movements and grass-roots efforts had made permanent impressions on the status of planned change. Bennis, et al. (1976) reported:

> They have unmasked the assimilationist myth of the American melting pot and revealed the pluarlism inherent in American life, the variety of groups and group interests that are seeking their place in the sun and they have thus placed the clarification negotiations of differing values and value orientations as an inescapable priority upon the agenda of agents of change and their clients. (19)

Chin and Corey in Bennis, et al. (1983) suggested three types or groups of strategies for planned change:

1. empirical-rational strategies
2. normative-re-educative strategies
3. power-coercive strategies

The fundamental assumption underlying the empirical-rational strategies is that men are rational. It is assumed that if an individual or group can be shown the advantages of a proposed change the individual or group will adopt the change because of their rationality and self-interest. In normative-re-educative strategies the rationality and intelligence of the individual or group is not denied. Patterns of action are supported by sociocultural norms and by commitments on the part of

individuals to these norms. Norms are undergirded by the attitude and value systems of individuals. Change will occur only as the persons involved are brought to change their normative orientations to old patterns and their commitments to new ones. Changes in normative orientations involve changes in attitudes, values, skills, and significant relationships, not just changes in knowledge. In power-coercive strategies the application of power in some form assures the compliance of those with less power to the plans, directions, and leadership of those with greater power. Goodlad (1979), in developing a conceptual system to define the current state of affairs in the implementation of curricular innovations included the values of the personal domain of all individuals involved in the societal considerations as important factors in the change process.

Lewin (1951) stated that man must participate in his own re-education if he is to be re-educated at all. The re-education is a normative change as well as a cognitive and perceptual change. Lewin emphasized action research as a strategy of changing and participation in groups as a medium of re-education. Lewin's force field analysis provides a graphic understanding of the restraining forces and driving forces present in a given situation. The equilibrium may be shifted in a given direction by either eliminating one set of forces or strengthening the opposing set of forces.

Lewin (1947) identified three phases of the change process:

1. unfreezing
2. changing
3. refreezing

The aim of unfreezing is to provide the impetus for the individual to change. It is a thawing out process in which the forces acting on individuals are rearranged so that they now see the need for change. It is a breaking down of the mores, customs and traditions so that they are ready to accept new alternatives. In changing, the individual is ready to conduct himself in a new pattern of behavior. Refreezing is the process by which the newly acquired behavior is integrated into the individual's personality or ongoing activities.

Realizing that early efforts in the behavioral sciences seemed to provide knowledge without effecting changes, Hersey and Blanchard (1982) proposed a four leveled structure of change in people.

1. knowledge
2. attitudes
3. individual behavior
4. group behavior

Changes in knowledge are the easiest to make, followed by changes in attitude. The attitude changes are more difficult to make due to their being entwined in the value system of the individual. Changes in behavior are significantly more difficult to attain and more time consuming with the

implementation of changed group behavior being the most difficult and time consuming.

Rogers (1983) articulated a planned change process referred to as the Diffusion of Innovations. Rogers (1983:6) defines this as "a kind of social change . . . by which alteration occurs in the structure and function of a social system." Rogers (1962:14) refered to a social system as, "a population of individuals who are functionally differentiated and engaged in collective problem-solving behavior." The members of the social system are individuals but they may represent informal groups or schools. Rogers and Shoemaker (1971) pointed out that many changes take place at the individual level, that is the individual makes a decision to either adopt or reject an innovation. Rogers and Shoemaker also pointed out that change occurs at the social system level. In many situations the individual and system changes are interrelated. "The aggregation of a multitude of individual changes produces a system-level alteration" (Rogers and Shoemaker, 1971:11).

Rogers (1983:10) stated, "there are four elements in any analysis of the diffusion of an idea: (1) the innovation, and (2) its communication between individuals, (3) in a social system, (4) over time." The essence of the process is the human interaction in which one person communicates a new idea to another person.

"An innovation is an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 1973:11). The period of time from the inception of the innovation to the discovery by the individual is of no consequence in regard to human behavior. If the idea seems new to the individual, it is an innovation. The compatability of the innovation is the degree to which it is consistent with the existing values of the individual. The relative advantage is the degree to which an innovation is superior to the ideas it supercedes. The complexity of an innovation is the relative difficulty to understand and use the idea. The divisibility is the degree to which an innovation may be utilized to a limited extent. Communicability is the degree to which an innovation may be diffused to others.

"Communication is a process in which participants create and share information with one another in order to reach a mutual understanding" (Rogers and Kincaid, 1981:65). In the convergence model of communication a cyclical process occurs where one individual shares information and perceives the other person's understanding by their response, and vice versa. After several cycles of information exchange the individuals move to a mutual understanding.

Social systems are composed of individuals and the individuals are categorized on the basis of their innovativeness. "Innovativeness is the degree to which an individual is relatively earlier in adopting new ideas than the

other members of his social system" (Rogers, 1983:22). The five adopter categories are: innovators, early adopters, early majority, late majority and laggards. Lindquist (1978) described the categories in the following manner. Innovators are individuals uncomfortable with the status quo, eager to try new things amd compose 3-4 percent of the system population. Early adopters are open but not as eager as innovators and compose 12-15 percent of the system population. Early majority individuals are cautious followers and compose 33 percent of the system population. Late majority individuals want impressive evidence that this new practice is possible, effective and rewarding before venturing a try. These individuals compose 33 percent of the system population. Laggards resist change until everyone else is doing the new thing and compose 15 percent of the system population. The categories, as described by Lindquist, approximate a normal distribution with divisions in standard deviations from the mean.

Time is important in the diffusion process but difficult to express in absolute terms. "Time does not exist independently of events, but it is an aspect of every activity" (Rogers, 1983:20). Rogers clarified this by explaining that the time dimension is involved as an individual passes from first knowledge of an innovation through its adoption or rejection, the innovativeness of an individual or in an innovation's rate of adoption in a system, usually measured by

the number of individuals that adopt the innovation in a given period of time.

The innovation-decision process is another aspect of the time element.

> The innovation-decision process is the process through which an individual (or other decision-making unit) passes from first knowledge of an innovation, to forming an attitude toward the innovation, to a decision to adopt or reject, to implementation of the new idea, and to confirmation of this decision. This process consists of a series of actions and choices over time through which an individual or organization evaluates a new idea and decides whether or not to incorporate the new idea into ongoing practice. (Rogers, 1983:164)

Rogers (1983) described the present conceptualization in the following manner:

> Knowledge occurs when an individual (or other decision-making unit) is exposed to the innovation's existence and gains some understanding of how it functions.
>
> Persuasion occurs when an individual (or other decision-making unit) forms a favorable or unfavorabale attitude toward the innovation.
>
> Decision occurs when an individual (or other decision-making unit) engages in activities that lead to a choice to adopt or reject the innovation.
>
> Implementation occurs when an individual (or other decision-making unit) puts an innovation into use.
>
> Confirmation occurs when an individual (or other decision-making unit) seeks reinforcement of an innovation-decision already made, but he or she may reverse this previous decision if exposed to conflicting messages about the innovation. (164)

Adoption, in the decision stage, is a decision to make full use of an innovation as the best course of action available. Rejection is a decision to not adopt the innovation. Partial

use of an innovation is classified as adoption. Zuckerman (1983) reported similar conclusions concerning commitment to change. The judgment, or decision, will be either positive or negative depending on how the change will affect the individuals professionally, personally, emotionally and financially.

Implementation is marked by "overt behavior change, as the new idea is put into practice" (Rogers, 1983:174). Kirst, (1982) and Tyack, Kirst and Hansot (1980) reported that reforms which endure make structural and organizational additions within a school system. Levy (1983) and Kirst (1982) reported that positive confirmation will result if innovations are firmly grounded in valid educational philosophy, solve problems, and are persistently and wisely administered.

A form of planned change unique to education does not exist. "Curriculum implementation has been treated . . . as a subcategory of the more general question of how to introduce and establish innovations" (Reid and Decker, 1975:244). Reid and Decker further stated that in planning curricula we are very directly concerned with aims and values and the resources must be personal and institutional. Renfro and Morrison, (1983) in discussing educational change, reported that change has come from developments in the external environment--the environement in which our institutions must survive and thrive and that anticipating and responding to change is a major responsibility for all institutions.

Lindquist (1978) stated that planned change starts with a felt need on the potential user's part. Block (1974) reported the condition of readiness for the teaching staff is that of being student oriented. Herchberger (1975) stated that three elements are necessary prerequisites in successful change. First, there must be dynamic leadership. Second, the philosophical base must be designed and internalized by the faculty and leaders. Third, the environment must allow for the designing, implementation and constant evaluation of all school program and curriculum.

"For years now, studies have pointed to the pivotal role of principals in bringing about more effective schools (Boyer, 1984:22)." Chesler, Schmuck and Lippit (1983) and Nicholson and Tracy (1982) reported that the principal must have an accurate perception of the values and skills of his staff and the staff must recognize the principal's knowledge and emphasis on instructional improvement to successfully implement innovations. Corbett (1982) reported that principals are responsible for providing continued incentives so that innovative behavior in the classroom will be maintained long enough for the new practices to become routine. Corbett (1982b:35) stated, "the burden of providing encouragement and incentives for change likely will fall to administrators . . ." Corbett also suggested that teachers are apt to interpret the ending of formal activities as a lack of administrators' interest. Torshen (1977:26) concurred that "the teachers

cannot be expected to put forth the necessary effort unless they receive adequate support and encouragment from their superiors."

> It seems . . . that if we are to have change in school systems, we cannot look to the principal to initiate this change. The initiative for change must come from the top. Once a change is sanctioned by his superiors, the principal will work to effect that change at the building level. (Griffiths, 1983:284)

Oliver (1984:9) in discussing how to make change happen stated, "leadership for change must occur at the highest level if change is to occur in an organized and systematic manner." In a change process which was gaining momentum in the confirmation stage Grossnickle (1983) included the Board of Education as an important support element.

> In short, it may be said that the Board of Education has wishfully provided rather extensive resources in the hope that students and staff will continue to grow . . . and give potential users the necessary push to get them going. (16)

The superintendent is also an important element in the change process.

> Superintendents . . . had better quickly get over the comforting notion of leaving everything to building principals . . . And both superintendents and principals had better quickly get beyond the equally comforting notion and popular practice of turning over to a team of outside consultants the central task of improving instruction . . . (Goodlad, 1983:7)

In the effective schools projects in New York City and Milwaukee, Eubanks and Levine (1983:701) stated, "a superintendent who maintains high standards and holds schools

accountable, yet rewards those who do good work is a key ingredient."

The education administrator can make change effective by "creating favorable climates, involving people in the change process and helping the people responsible for diffusing the change" (Coleman, 1983:10). Olivier (1984) reported that the principal must provide an atmosphere in which teachers can explore and experiment and which provides instructional teams the opportunity to work as a group with some degree of protection from administrative and peer interference. Herchberger (1975) suggested that the environment allows and encourages humanistic discussions which plan toward possible experimentation of innovation programs. It also provides adequate support and time for the implementation of the innovation programs and for constant evaluation of the entire school program. Lewis (1983) suggested that assessing the climate will be a good indicator for the adoption of an innovation.

> The organizational climate is almost like a barometer, indicating how employees feel about specific managerial practices. Employees may feel relaxed, or driven, uptight, and under suspicion. The climate consists of the interpersonal and environmental factors that shape behavior and motivation. The organizational climate is that set of characteristics which describe an organization. The organizational climate . . . influences people's behavior thus different climates stimulate different motivation and result in different performance and human relationship. (36)

Coleman (1983) and Grant (1983) reported that a climate favorable to change can be cultivated. The climate is characterized by high interpersonal trust and openness, democratic leadership styles by the administrators, equal power, confronted differences, the involvement of all relevant parties and commitment. Herchberger (1975:106) stated, "there must be a climate for desirable change before it can indeed take place."

Sparks (1982) and Nicholson and Tracy (1982) agreed that skillful, knowledgeable teachers who are given a chance to participate are important in the implementation of change. "To bring about change, the first requirement is an interested and skillful practicitioner or teacher (Olivier, 1984:9)." Torshen, (1977) Johnson (1969) and Hannifen and Barrett (1983) agreed that in schools where teachers are properly educated and in-service training is provided to the individuals involved in the implementation, change is occurring.

> The improvement of schooling is a systemic problem that must be approached at a variety of points and with a variety of strategies. Recognizing the existence of and intervening in the pattern of social interaction is one obvious strategy. For example, reformers might try to . . . do a much better job of inservice education . . . (Tye and Tye, 1984:321)

"More than ever before, those who seek to change schools must change teachers while they are working in schools (Mann, 1978:3)." Tye (1984) suggested that it is essential that we make a commitment to provide the necessary support systems for teachers. "Teachers have to understand new ideas from the

inside out if they are to benefit from them" (Ferguson, 1980:310). She also suggested that even a tiny minority of committed teachers and administrators can have a huge impact in implementing programs that work.

Acheson and Gall (1980) reported that teachers are learners and the content they need to learn is the profession of teaching. "At various points in their professional development teachers need the skillful assistance of a clinical supervisor if they are to make progress" (Acheson and Gall, 1980:17).

> After the change appears to be properly diffused, a preliminary review and evaluation is needed to determine whether the intended objectives are being achieved. An ongoing evaluation of each change . . . must be a part of the total change strategy (Coleman, 1983:9).

Cook (1984) expressed that to be successful change agents, principals must employ a developmental strategy that assures tangible results.

> Principals are the professionals who possess all of the necessary attributes of leadership: the initiative to effect change, the willingness to set high goals, the ingenuity to seek improvement, the experience to find the way and the courage to see things through to completion. (13)

"The bottom line, however, is the program's success. . . . The result is a positive team feeling and renewed staff vitality" (Rubin and Spady, 1984:44). Lewis (1983:97) reported that seeing their work group move smoothly and productively toward their goals motivates the leader, "one success becomes a challenge to greater success." Lortie (1975:129) reported

that, "when students exert more than usual effort or show special enthusiasm, some teachers feel self-approval and pride in their craft capacities." Corbett (1982:191) suggested that in our contemporary society student success has become an important motivator for teachers, "primarily because of teacher isolation students have been shown to be particularly important sources of incentives for teachers." Torshen (1977:27) stated that educators need the assurances that educational programs will be "used for the benefit of the students" and not for other purposes.

Summary

Current literature is replete with demands for increased student achievement in our public schools. A contemporary curriculum model which has demonstrated its effects through students gains is Mastery Learning. Three of the major proponents of Mastery Learning, Block, Bloom and Spady, reported student gains in academic achievement, improved functioning in the higher levels of Bloom's taxonomy, and improved attitudes toward the desire to learn the subject matter.

The literature also revealed that it is very difficult to implement changes in United States public schools. A major concern for educators is how to implement proven innovations within their respective school programs.

Contemporary planned change processes follow a pattern similar to the theories of Lewin, Rogers and Hersey and Blanchard. A schematic integration of the three respective theories graphically illustrates their overlapping.

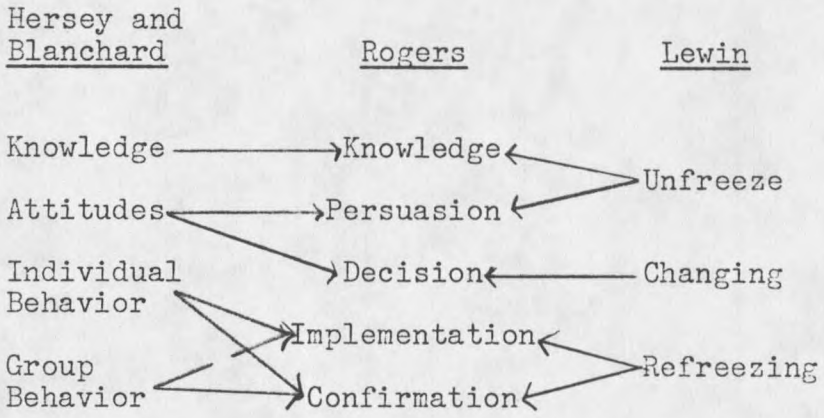


Figure 1

Integration of Change Theories

The review of the literature indicated six categories of importance in implementing an innovation. The six categories were: instructional leadership by the principal; support from the central office administration and the Board of Education; school climate; appropriate in-service education for the staff affected by the innovation; supervision of instruction; and student success.

The six categories mesh with the change processes outlined by Hersey and Blanchard, Lewin and Rogers. Leadership by the principal and support from the central office administration and the Board of Education are important throughout all

phases of each process. School climate is important in the attitude phase for Hersey and Blanchard, the persuasion phase for Rogers and the changing phase for Lewin. In-service education is the vehicle in the knowledge phases for Hersey and Blanchard and for Rogers and in the unfreezing stage for Lewin. Evaluation fits a similar niche in the processes as does building climate. Student success is in the last phases of each of the planned change processes.

CHAPTER 3

PROCEDURES

Introduction

The purpose of this study was to determine which factors were most important for influencing teachers to try Mastery Learning. In order to describe the procedures that were necessary to conduct the study, this chapter is divided in the following manner: Population Description, Method of Analysis, The Categories, Method of Collecting Data, Method of Organizing Data, Statistical Hypotheses and Research Questions, Analysis of Data, Precautions taken for Accuracy and Summary.

Population Description

The population for this study consisted of all the regular classroom teacher grades K-12 in three separate school districts attempting to implement Mastery Learning within their curriculum. Two of these school districts were located in Montana and one district was located in Wyoming. In each of these school districts the same consultant was contracted to assist in the in-service education for the implementation of Mastery Learning.

One of the school districts, hereafter referred to as school district number one, was located in the northwestern portion of Montana. The district contained two elementary schools. One of the elementary schools contained children in grades K-5 and had an enrollment of 233 students. The second elementary school contained children in grades K-6 and had an enrollment of 337 students. The junior high school, grades 7-8, attended to the needs of 182 students and the high school, grades 9-12, attended to the needs of 311 students. The second school district, hereafter referred to as school district number two, was located in the western portion of central Montana and had 201 students enrolled in grades 1-8 and had 137 students enrolled in grades 9-12. The third school district, hereafter referred to as school district number three, was located in north central Wyoming. This school district was composed of eight schools. Three elementary schools which contained children in grades K-6 with enrollments of 115 students, eight students and twenty-five students respectively. There were also elementary schools which contained children in grades K-5, K-4 and 1-8 with enrollments of 400 students, twelve students and 435 students respectively. There were two high schools which contained students in grades 7-12 and 9-12 with enrollments of 100 students and 370 students respectively.

The total population of regular classroom teachers in these three school districts was 207 teachers. There

were eight-two teachers in the first school district, twenty-six teachers in the second school district and ninety-nine teachers in the third school district. Completed instruments were received from thirty-two teachers in school district number one, eight teachers in school district number two and forty-seven teachers in school district number three.

The Categories

From the review of the literature six factors were determined to be important in the process of implementing change in a school district. The six factors were: instructional leadership by the principal; support from the central office administration and the Board of Education; school climate; appropriate in-service education relative to the planned change; supervision of instruction; and potential for student success. These six factors were incorporated within a simulation instrument and the teachers in the school districts where the planned change was attempted were requested to participate in the study by completing the simulation instrument. Three demographic factors relative to the teachers were included. The demographic factors were: years of teaching experience; level of education degree earned; and grade level teaching assignment. The participants were requested to complete a brief questionnaire relating to the three demographic factors.

Method of Analysis

To determine the factors most important in implementing Mastery Learning in schools a technique termed judgment analysis was utilized in this study. "Judgment Analysis (JAN) is a simple but powerful technique for identifying and describing the rating policies that exist within a board or committee of judges" (Christal, 1968:24). Bottenberg and Christal (1968) described the JAN technique as a method which retains maximum predictive efficiency and enables the investigator to make a complete analysis of interrater (interteacher) agreement. Houston and Stock (1969) reported that JAN provides educators with a tool for identifying policies that may be present in the decision making process which are individually made or collectively determined. Christal (1968b) reported the technique had been applied in many studies and that the equations developed had been highly valid and had held up in cross-application. Anderson (1977) suggested that the JAN method distinguished the most important factors from the others more clearly than did rating and ranking and that the method was more consistent in rating numerical profiles rather than verbal profiles. An important consideration in this study was that the technique could be utilized on a population that was widely separated and where the change process was initiated at different times. Holmes and Zedeck (1973:27) reported, "JAN can be used to analyze and

describe the policies of individuals who are separated by time and space and not considered members of a board or committee."

To utilize the JAN technique a simulation instrument was developed. The simulation instrument consisted of a series of profiles which incorporate the diagnostic variables or cues determined to be important for the study. Taylor and Wherry (1965) reported successful utilization of simulated profiles in their research. Keelan, Houston and Houston (1973) demonstrated the JAN technique where the variable profile scores were generated by random techniques approximating a normal distribution. The individual relationship between the variables in the profiles and their ability to keep the rater on course are their validities (Beach, 1967). The simulation instrument containing the profiles comprised of the identified variables was then presented to a group of decision-makers or raters. Each rater was asked to make a rating, prediction, or criterion decision concerning each profile. "After making the criterion decisions, the raters submitted their ratings for analysis by JAN" (Houston and Stock, 1969:24).

> The purpose of JAN is to take a situation in which judges are rating subjects on a single attribute and through regression techniques capture the policy of each judge and iteratively cluster the judges on the bases of policy similarity. (Lutz, 1977:37)

The JAN procedure is broken down into two basic stages. During the first step a least-squares solution of a multiple regression equation was computed for each rater. The second

step involves a grouping which was used to define the areas of agreement and disagreement among the raters.

> The JAN technique starts with the assumption that each judge has an individual policy. It gives an R^2 for each individual judge and an overall R^2 for the initial stage consisting of all the judges, each one treated as an individual system. Two policies are selected and combined on the basis of having the most homogeneous prediction equations, therefore resulting in the least possible loss in predictive efficiency. This reduces the number of original policies by one and gives a new R^2 for this stage. The loss in predictive efficiency can be measured by finding the drop in R^2 between the two stages. The grouping procedure continues reducing the number of policies by one at each stage until finally all of the judges have been clustered into a single group. (Houston, Duff and Roy, 1972:57)

Dudycha (1970:501) defined a policy as, "what raters do when they are asked to respond to a set of complex stimuli." The policy for each rater was represented by a regression equation and the raw score regression weights define the policy (Dudycha and Naylor, 1966). The squared multiple correlation coefficient, R^2, was an expression of the consistency of the rater's rating across all profiles when a separate least-squares weighted regression equation is used for each rater (Christal, 1968). "The resulting R^2 value furnished an indication of the degree to which his behavior was predictable, or, it was the intrarater consistency of his ratings (Dudycha, 1970:502). The results of stage one provided the investigator with some indication of each rater's policy.

"Using the results from stage one, a hierarchical grouping procedure was initiated" (Houston and Stock, 1969:24). During

the second stage each equation or policy was compared with every other policy. In this manner the two raters were located who were in closest agreement concerning how the selection variables should be weighted. These two raters had the most homogeneous regression equations. A single equation or policy was then determined which best represented the joint policy of these two raters. It also indicated the overall loss in predictive efficiency that resulted when the original N policies were replaced by N-1 policies. According to Ward and Hook (1963:77) it is the goal during each iteration of the second stage to, "maximize the between-group sum of squares and minimize the within-group sum of squares for all profile elements." Bottenberg and Christal (1968) reported that at each iteration stage the clustering technique should proceed in a manner that insures the minimum loss of predictive efficiency. "At each step (iteration) the loss of predictive efficiency makes it possible to identify the different rating policies which exist" (Houston and Bentzen, 1969:74). The process continues in a systematic fashion reducing the number of raters by one at each step until all raters had been grouped into a single cluster. At each iteration of the grouping an examination of the loss of predictive efficiency made it possible to identify the different rating policies which existed.

The hierarchical grouping procedure identified the minimum number of different rating policies which actually existed

as well as the areas of agreement and disagreement. At the final stage of the grouping it could be determined if a joint policy of the collective group existed. If no joint policy existed it could be determined how many policies existed within the group. Christal (1968) reported the technique will also provide the equations expressing the different rating policies that do exist. Anderson (1977) reported the JAN method distinguished the most important variable from the others more clearly than did the rating and ranking methods.

To determine the ranking of the six factors a multiple regression analysis of the data for the individual raters in a cluster and the profile variables was utilized. Lane, Murphy and Marques (1982) indicated the raw score regression weights of the policy equations were the most appropriate measure of variable importance. The beta weight with the greatest absolute value was assigned a rank of one and the beta weight with the least absolute value was assigned a rank of six. The rank numbers between one and six were assigned to the respective beta weight values as they decreased successively in absolute value. The greatest value is the factor the raters considered most important with successively lesser values respectively less important. This process was performed for each cluster of raters at a significant iterative drop to determine their policy.

To determine the independence between the demographic factors and the likelihood of trying Mastery Learning the Chi

Square Test for Independence was applied. "Chi square is a means of answering questions about data existing in the form of frequencies" (Isaac and Michael, 1971:135). In this study the researcher determined whether the frequencies observed in the population deviated significantly from expected frequencies.

Method of Collecting Data

A simulation instrument consisting of a series of profiles was utilized to collect data. The instructions and sample profiles for the simulation instrument are included in Appendix B. Each profile was a simulation of a planned change process. The profile cues or variables were the six factors determined to be important in a planned change process from the review of the literature.

Table 1

Profile Variables

Number	Variable	Abbreviation
1	Instructional Leadership by the Principal	ILP
2	Building Climate	BC
3	Support from the Central Office Administration and the Board of Education	SAB
4	Supervision of Instruction	SI
5	Appropriate In-Service Education relative to the Planned Change	ISE
6	Student Success	SS

The intensities, numerical scale value of the variables, for each variable were uniformly distributed throughout the simulation instrument and the intercorrelations of profile variable scores differed only by sampling error from the theoretical population correlation matrix used to generate the profile intensities (Dudycha and Naylor, 1966). The variables within each profile varied in intensity and were assigned a scale value to use in determining rating policies as outlined by Anderson (1977). The mean and standard deviation of the numerical scale values for the six variables are shown in Table 3. A group of demographic variables were included in the simulation instrument.

Table 2

Intercorrelations of the Variables

Variable		1	2	3	4	5	6
ILP	1	1.0000					
BC	2	-.0023	1.0000				
SAB	3	.0242	.0134	1.0000			
SI	4	.0499	-.0196	.0195	1.0000		
ISE	5	.0069	.0148	.0320	.0284	1.0000	
SS	6	.0345	.0316	-.0356	-.0205	-.0561	1.0000

Authorization to contact teachers within each school district was obtained from the superintendent of each district.

The simulation instrument and cover-letter were administered at staff meetings with the building principal and participating teachers present. Anderson (1977) indicated that the context in which decisions are made may well influence the process and suggested that giving judges or raters some leeway in determining when they would most conveniently make their decisions is more reflective of real-life decision making. Following Anderson's suggestion the teachers were requested to complete the instrument at a time and place convenient for them. Upon completion of the simulation instrument the teachers were requested to return the instrument via a stamped, addressed envelope which was provided.

Table 3

Mean and Standard Deviation of Numerical Scale Values for the Profile Variables

Variable	Mean	Standard Deviation
1	50.90	25.26
2	51.30	24.85
3	48.90	26.79
4	49.10	26.35
5	49.20	26.37
6	49.80	25.81

For potential participants who were absent during the researcher's attendance an instrument was left at the teacher's

school of employment along with a stamped, addressed return envelope. Follow-up letters were sent to all potential participants two weeks after the distribution of the simulation instrument. A 50 percent return of instruments was realized. A sample of follow-up letter is included in Appendix C.

Method of Organizing Data

The data collected in the study and obtained through the application of the JAN technique was organized in tables. Tables were used for the following: means and standard deviations of profile cues; means and standard deviations for raters' criterion; intercorrelations between profile variables; correlations between raters and profile variables; stages of judgment analysis for the participating raters; hierarchy of profile variables using standard score regression weights; and Chi Square Test of Independence tables for the demographic data.

Statistical Questions

Question 1: Is there more than one policy utilized by the teachers in determining which factors are most important in trying Mastery Learning?

Question 2: What importance is placed on each of the six factors by the teachers in making their decisions to try Mastery Learning?

Question 3: Is there more than one policy utilized by the teachers in each of the three school districts in determining which factors are most important in trying Mastery Learning?

Question 4: Will the teachers in each of the three school districts in the study place a unique importance on the six factors in in making their decisions to try Mastery Learning?

Statistical Hypotheses

Hypothesis 1: H_o: The likelihood of trying Mastery Learning is independent of the total years of teaching experience.

H_1: The likelihood of trying Mastery Learning is not independent of the total years of teaching experience.

Hypothesis 2: H_o: The likelihood of trying Mastery Learning is independent of the education degree earned by the teacher.

H_1: The likelihood of trying Mastery Learning is not independent of the education degree earned by the teacher.

Hypothesis 3: H_o: The likelihood of trying Mastery Learning is independent of the grade level of the teaching assignment.

H_1: The likelihood of trying Mastery Learning is not independent of the grade level of the teaching assignment.

Analysis of Data

The computer services of the Montana State University Testing Center were used to perform the Multiple Regression analysis utilized in the JAN technique and for the Chi Square Test for Independence. As chosen by Keelan, Houston and Houston (1973), Mabee (1978) and others an apriori minimum drop of .05 in R^2 from one stage to the next stage was used to determine a significant change in policy. A .05 level of significance was utilized in the Chi Square Test of Independence.

Precautions for Accuracy

The data entry process was correlated with the data retrieval in a sequential manner which greatly reduced errors in the data entry procedure. The researcher then examined the computer printout of the data for possible errors and made appropriate corrections. Where possible the Montana State University Statistical package (MSUSTAT) was utilized and the results compared with the printout from the Montana State University Testing Center computer services.

Summary

The purpose of this study was to determine the importance of the six factors which were important in the implemention of Mastery Learning. The population consisted of the regular classroom teachers in three school districts which initiated the attempt to implement Mastery Learning during the 1984-1985 school year.

To collect the data a simulation instrument was utilized. The instrument consisted of a series of simulations or profiles each of which represented a possible situation for a planned change process. The information cues or variables within each profile were the six factors which were important in the implementation of an innovation in education. The scores of the six factors varied and approximated a uniform distribution in their useage throughout the instrument. The teachers (raters) were asked to rate their probability of trying Mastery Learning under the conditions expressed in each profile. Demographic data was obtained from several questions incorporated within the instrument.

The statistical method used for the Judgment Analysis was Multiple Regression. An R^2 and policy was determined for each rater. These policies were then compared and clusters of raters (teachers) with similar policies were formed. The regression weights for each policy represented the ranking of the six factors. The Chi Square Test of Independence was used

to determine the independence between demographic data and a high likelihood to try Mastery Learning. The computer services of the Montana State University Testing Center were utilized in computing the statistical analyses of the data.

CHAPTER 4

ANALYSIS OF DATA

Introduction

The data reported in this chapter are arranged in the following categories: populations and samples, statistical questions, hypotheses and summary.

Populations and Samples

This study centered on three different populations, the regular classroom teachers in three different school districts. The researcher contacted the superintendents of each school district to determine the number of potential participants. It was thus determined that 207 teachers were potential participants.

Out of the total number of regular classroom teachers who were selected and given a simulation instrument 104 of 207 responded by returning the simulation instrument. The valid responses of eighty-seven were utilized in this study.

In school district number one there were eighty-two simulation instruments administered, thirty-six were returned of which thirty-two were valid responses. In school district number two there were twenty-six simulation instruments

administered, fifteen were returned of which eight were valid. In school district number three there were ninety-nine simulation instruments administered, fifty-two were returned of which forty-seven were valid. Returned instruments were not valid for the following reasons: some of the profiles were not rated; none of the profiles were rated; the profiles were rated all zero or all one hundred.

Statistical Questions

The statistical questions in this study were tested using the Judgment Analysis (JAN) technique. The standard beta weights, in the prediction equation for each policy, indicate the importance of each variable or change factor as expressed by the teachers. The R^2 value indicates the consistency of the rater or raters in the prediction equation. The data are presented in tables. The mean and the standard deviation of the criterion ratings for each group are expressed in a table. The tables labeled "Stages for Judgment Analysis Procedure" indicate the clusters of raters at significant stages of the process. In the tables used to illustrate the policy of a cluster of raters the decimal values are the standard beta weights from the multiple regression analysis of all the raters in the cluster and the values in parentheses are the ranks of the variables or change factors as rated by the cluster of raters. An explanation follows each table. Tables giving the mean and standard deviation of the ratings for each teacher,

correlations between the rateings and the profile variables, stages of the JAN procedure and the standard beta weights and R^2 of each rater in a policy are in Appendix A.

The first table shows the mean and standard deviation of the ratings for the various groupings analyzed. The next two tables are the data for all three school districts combined. Tables 7 through 12 are the data for individual school districts one, two and three. Tables 13 through 15 illustrate the demographic data and the last four tables illustrate the data concerning the likelihood of trying Mastery Learning.

Table 4

Range and Standard Deviation of Mean Criterion Ratings

Group	Mean Criterion	Standard Deviation
School Districts 1, 2 & 3	48.24	8.25
School District 1	46.85	8.01
School District 2	45.82	11.54
School District 3	49.60	7.71

The mean criterion rating for the group including teachers from all three school districts indicated they rated their probability of trying Mastery Learning as average. The teachers from School District 2 had the lowest mean criterion

rating and the greatest standard deviation. The teachers from School District three had the greatest mean criterion rating and the least standard deviation.

Statistical Question One: Was there more than one policy utilized by the teachers in determining which factors are most important in trying Mastery Learning?

The purpose of this question was to determine if all teachers were uniform in their perspective of the six educational change factors relative to trying Mastery Learning which would be expressed as one policy or if the teachers had significant differences in their importance of the six educational change factors relative to trying Mastery Learning which would be expressed as group policies or as individual policies.

Table 5 illustrates the data from all three school districts combined.

Table 23 in Appendix A shows that at stage one where each rater is considered a single system or each holds a separate construct of change probability the R^2 values were very high. This indicated that they were consistent in their policy. At stage eighty-seven there was a significant drop in R^2 of occurred when two large groups were united. This loss of predictability, or significant drop in R^2, showed that two separate policies relative to the six educational change factors existed in the group. The R^2 value at stage 86 shows

that 49 percent of the variance was accounted for by using the two policies at stage 86.

Table 5

Stages for Judgment Analysis Procedure
School Districts Number 1, 2 & 3

Stage	Number of Policies	Rater	R^2	Successive R^2 Drop
1	87	single member policies	.7866	-----
86	2	Policy Number 1 (1,3,5,10,11,13,16,20,22,23,28, 29,32,33,37,39,42,46,47,49,50, 52,54,59,62,63,64,68,70,74,75, 76,81,85,86 87)	.4850	-----
		Policy Number 2 (2,4,6,7,8,9,12,14,15,17,18, 19,21,24,25,26,27,30,31,34,35, 36,38,40,41,43,44,45,48,51,53, 55,56,57,58,60,61,65,66,67,69, 71,72,73,77,78,79,80,82,83,84)		
87	1	(1 through 87)	.3576	.1275

The data illustrated in Table 5 formed the basis for answering statistical question one. A significant R^2 drop at stage 87 of .1257 occurred. Two policies were present in stage 86 consisting of thirty-six and fifty-one members respectively. policy number 1 was expressed by the thirty-six member cluster and policy number 2 was expressed by the fifty-one member cluster. This data showed that for the grouping of all three school districts combined two policies or rankings of the

change factors existed among the teachers in rating their probability to try Mastery Learning.

Statistical Question Two: Was there a ranking of the six factors which are important in teacher's decisions to try Mastery Learning?

The purpose of this question was to determine if all of the educational change factors were perceived as equally important by the teachers or if one or more of the six educational change factors was perceived as more important than the other change factors. To determine the relative importance of the six change factors a multiple regression analysis of the data for the raters in each policy was utilized. The decimal values in Table 6 are the standard beta weights from the multiple regression analysis the R^2 value indicates the consistency of the raters. The value in parenthesis is the ranking of the change factor.

Table 6 shows the two policies for the grouping of the three school districts combined.

The raters clustered in policy number 1 utilized a global approach to decide their probability of trying Mastery Learning. Each of the six educational change factors was considered to be of equal importance by these teachers. The raters clustered in policy number two were more specific in their usage of the change factors. These raters placed a predominant emphasis on the potential for student success and a relatively smaller emphasis on in-service education relative to

the planned change. The four remaining educational change factors were considered to a lesser extent.

Table 6

Policies (Beta Weights) at Significant Drop Stage
School Districts Number 1, 2 & 3
Stage 86

Policy Number	Change Factors 1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	R^2
1	.31	.22	.22	.22	.26	.23	.3617
	(1)	(4)	(4)	(4)	(2)	(3)	
2	.09	.11	.12	.08	.19	.68	.5057
	(5)	(4)	(3)	(6)	(2)	(1)	

Statistical question two is answered on the basis of information illustrated in Table 6. The relatively equal values for the beta weights in policy number 1 showed that the raters in policy number 1 considered all of the change factors important and utilized all of the information in considering trying Mastery Learning. The comparatively large beta weight value in policy number 2 for change factor number 6, the potential for student success, showed that this received emphasis from these raters. Change factor number 5, appropriate in-service education relative to the planned change

was ranked second in policy number 2 as indicated by the slightly greater beta weight value.

Statistical Question Three: Was there more than one policy utilized by the teachers in each of the three school districts in determining which factors were most important in trying Mastery Learning?

The purpose of this question was to determine if the teachers in each of the three school districts studied were similar in the importance of the six educational change factors relative to trying Mastery Learning or if they had varying perspectives. A similar importance by all of the teachers in a school district would be expressed as one policy and if the teachers in each of the school districts had significant differences in their perspectives of the six educational change factors they would be expressed as group policies or as individual policies.

The information in Table 7 illustrates the JAN stages in school district number one. At stage 31 there was a significant drop in R^2 which indicated the first significant change in policy occurred when a large cluster and a small, four member, cluster were combined. This loss of predictability or significant drop in R^2 showed that three separate policies or constructs relative to the six educational change factors existed in the school district. The R^2 value at stage 30 shows that 55 percent of the variance was accounted for by using the three policies at stage 30.

Table 7

Stages for Judgment Analysis Procedure
School District Number 1

Stage	Number of Policies	Raters	R^2	Successive R^2 Drop
1	32	32 single member policies	.7753	-----
30	3	Policy Number 1 (1,3,5,10,13,16,20,22,23,25,28, 29,32)	.5517	-----
		Policy Number 2 (2,4,6,8,9,12,14,15,18,19,21,24, 27,30,31)		
		Policy Number 3 (7,11,17,26)		
31	2	2 multiple member policies	.4965	.0552

A significant R^2 drop occurred at stage 31. Three rater clusters were present at stage 30 which showed three policies were used by the teachers in school district number one.

The return of valid instruments from participants in school district number two resulted in a total of eight instruments. Recognizing that the data from school district number two is limited the data in Table 8 is presented.

At stage 6 there was a significant drop in R^2 which indicated the first significant change in policy occurred when a two member cluster and a three member cluster were combined. This loss of predictability or significant drop in R^2 showed that four separate policies or constructs relative to the six

educational change factors existed in the school district. The R^2 value for stage 5 shows that 72 percent of the variance was accounted for by using the four policies at stage 5.

Table 8

Stages for Judgment Analysis Procedure
School District Number 2

Stage	Number of Policies	Raters	R^2	Successive R^2 Drop
1	8	single member policies	.7859	-----
5	4	Policy Number 1 (1,3) Policy Number 2 (2,6,8) Policy Number 3 (4,5) Policy Number 4 (7)	.7230	-----
6	3	2 multiple member policies and 1 single member policy	.6326	.0904

A significant R^2 drop occurred at stage 6. Four rater clusters were present in stage 5 which showed four policies were used by the teachers in school district number two.

Data from school district number three is illustrated in Table 9.

At stage 46 there was a significant drop in R^2 which indicated the first significant change in policy occurred when

a large cluster and a small, six member, cluster were combined. This loss of predictability or significant drop in R^2 showed that three separate policies or constructs relative to the six educational change factors existed in the school district. The R^2 value at stage 45 showed that 58 percent of the variance was accounted for by using the three policies at stage 45.

Table 9

Stages for Judgment Analysis Procedure
School District Number 3

Stage	Number of Policies	Raters	R^2	Successive R^2 Drop
1	47	single member policies	.7911	-----
45	3	Policy Number 1 (1,2,10,11,13,15,16,17,18,25, 28,30,31,32,36,43,46)	.5755	-----
		Policy Number 2 (3,4,6,7,8,9,12,19,20,21,23,24, 26,29,33,34,35,37,38,39,40,41,45, 47)		
		Policy Number 3 (5,14,22,27,42,44)		
46	2	2 multiple member policies	.5134	.0622

A significant R^2 drop of .0622 occurred at stage 46. Three clusters were present in stage 45 which indicated three policies were used by the teachers in school district number three.

Table 7, Table 8 and Table 9 illustrate the data which answered question three. These tables showed that teachers in each of the three school districts used more than one policy in deciding whether they would try Mastery Learning. The teachers in school district one and school district three expressed their different perspectives with three separate policies and the teachers in school district number two expressed their perspectives in four policies.

Statistical Question Four: Would the teachers in each of the three school districts in the study place a similar importance on each of the six factors which are important in decisions to try Mastery Learning?

The purpose of this question was to determine if all of the educational change factors were perceived as equally important by the teachers in each school district or if one or more of the six educational change factors was perceived as more important than other change factors by the teachers.

The data for school district number one is illustrated in Table 10.

The raters clustered in policy number 1 utilized a global approach to decide their probability of trying Mastery Learning. The relatively equal values for the beta weights showed that each of the six educational change factors was considered an important factor by these teachers. The raters clustered in policies 2 and 3 were more specific in their usage of the change factors. The relatively high beta weight

values for change factor 6 indicated that these raters placed a predominant emphasis on the potential for student success. A relatively smaller emphasis on in-service education relative to the planned change is indicated by the beta weight value for change factor 5. The four remaining educational change factors were considered to a lesser extent as indicated by their similar beta weight values.

Table 10

Policies (Beta Weights) at Significant Drop Stage
School District Number 1
Stage 30

Policy Number	Change Factors 1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	R^2
1	.33	.32	.28	.24	.28	.30	.5062
	(1)	(2)	(4)	(6)	(4)	(3)	
2	.09	.12	.17	.05	.24	.59	.4329
	(5)	(4)	(3)	(6)	(2)	(1)	
3	.01	.06	.01	.06	.13	.89	.7767
	(5)	(3)	(5)	(3)	(2)	(1)	

Recognizing that the data are limited, the information for school district number two is presented in Table 11.

The raters clustered in policy number 2 utilized a global approach to decide their probability of trying Mastery

Table 11

Policies (Beta Weights) at Significant Drop Stage
School District Number 2
Stage 5

Policy Number	Change Factors 1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	R^2
1	.08	.05	.15	.05	.02	.88	.8215
	(3)	(4)	(2)	(4)	(6)	(1)	
2	.36	.33	.21	.32	.30	.39	.6073
	(2)	(3)	(6)	(4)	(5)	(1)	
3	-.28	.04	.05	.07	.06	.41	.2309
	(2)	(6)	(5)	(3)	(4)	(1)	
4	.12	.07	.03	.88	.08	.01	.8169
	(2)	(4)	(5)	(1)	(3)	(6)	

Learning. The relatively equal values for the beta weights showed that each of the six educational change factors was considered an important factor by these teachers. The raters clustered in policies 1 and 4 utilized a more specific approach in their decision process as shown by the values for the beta weights. The raters in policy 1 placed a predominant emphasis on the potential for student success and placed some emphasis on support from the central office administration and the board

of education. The remaining four factors were used to a lesser extent. The raters in policy 3 placed an emphasis on the potential for student success. The negative value on the instructional leadership by the principal indicated they felt this change factor was actually a hindrance. The remaining four change factors were considered to some extent by the raters clustered in policy number 3. The low R^2 value for policy number 3 showed the raters were not consistent in the application of their policy. The single member policy number 4 placed a strong emphasis on the support from the central office administration and the board of education as indicated by the high beta weight value and utilized the other five factors to only a small extent.

Table 12 illustrates data from school district number three.

The raters in policies 1 and 3 used an eclectic approach to decide their probability of trying Mastery Learning. In their holistic approach each of the six educational change factors was considered an important factor, as shown by the relatively equal beta weight values, in their decision relative to trying Mastery Learning. The raters clustered in policy number 2 were more specific in their consideration of the six educational change factors in their decision making process. These raters placed a predominant emphasis on the potential for student success which is indicated by a relatively high beta weight value. The beta weight value for change factor 5

indicated they placed some importance on the in-service education relative to the planned change. The remaining four factors were considered equally but with little emphasis as indicated by the value of the beta weights.

Table 12

Policies (Beta Weights) at Significant Drop Stage
School District Number 3
Stage 46

Policy Number	Change Factors 1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	R^2
1	.38	.23	.19	.15	.16	.16	.3698
	(1)	(2)	(3)	(6)	(4)	(4)	
2	.08	.08	.09	.10	.18	.79	.6616
	(5)	(5)	(4)	(3)	(2)	(1)	
3	.27	.18	.21	.21	.38	.31	.4314
	(3)	(6)	(4)	(4)	(1)	(2)	

Table 10, Table 11 and Table 12 provide the data to answer question number two. These tables showed that the teachers in each of the three school districts expressed at least three policies. The policies expressed both global and specific approaches in their decision process.

Statistical Hypotheses

The three statistical hypotheses in this study were tested utilizing the Chi Square Test for Independence because this test indicated whether frequencies observed in the study differed significantly from expected frequencies. The null hypotheses were tested at the .05 level of significance. In the contingency tables which are used to illustrate the demographic data the values enclosed in the parentheses are the expected values. The other values in the cells illustrate the observed values, the actual frequencies of the respondents.

Table 13 illustrates the relationship between the likelihood of trying Mastery Learning and the years of teaching experience.

Null Hypothesis One: The likelihood of trying Mastery Learning is independent of total years of teaching experience.

The data shown in Table 13 formed the basis for rejecting the null hypothesis at the .05 level of significance. The likelihood of trying Mastery Learning is dependent on the years of teaching experience. The ratios between the observed and the expected values for the teachers with over twenty years of experience are reversed when compared with the other two groups. Thus the fewer the years of experience the more likely the teachers are to try Mastery Learning.

Table 13

Likelihood of Trying Mastery Learning and Years of Teaching Experience

Years Experience	High Likelihood	Low Likelihood	Row Total
1 - 10	(33.61)	(11.39)	
	36	9	45
11 - 20	(18.67)	(6.33)	
	20	5	25
over 20	(6.72)	(2.29)	
	3	6	9
Column Total	59	20	79

df = 2; Critical x^2 = 5.99; Calculated x^2 = 9.19; Significance = .01039

Table 14 illustrates the relationship between the likelihood of trying Mastery Learning and the level of degree earned.

Null Hypothesis Two: The likelihood of trying Mastery Learning is independent of the level of degree earned.

The data shown in Table 14 formed the basis for retaining the null hypothesis at the .05 level of significance. The likelihood of trying Mastery Learning was independent of the level of degree earned.

Table 14

Likelihood of Trying Mastery Learning
and Level of Degree Earned

Degree Earned	High Likelihood	Low Likelihood	Row Total
Bachelors	(43.12) 42	(15.83) 17	59
Masters	(16.83) 18	(6.17) 5	23
Column Total	60	22	82

df = 1; Critical x^2 = 3.84; Calculated x^2 = .138
Significance = .7089

Table 15 illustrates the relationship between the likelihood of trying Mastery Learning and level of teaching.

Null Hypothesis Three: The likelihood of trying Mastery Learning is independent of the grade level of the teaching assignment.

The data shown in Table 15 formed the basis for retaining the null hypothesis at the .05 level of significance. The likelihood of trying Mastery Learning was independent of the grade level of the teaching assignment.

Table 15

Likelihood of Trying Mastery Learning and Teaching Level Assignment

Teaching Level Assignment	High Likelihood	Low Likelihood	Row Total
Elementary (K-6)	(25.61) 29	(9.39) 6	35
Intermediate (6-8)	(23.41) 21	(8.59) 11	32
Secondary (9-12)	(10.98) 10	(4.02) 5	15
Column Total	60	22	82

df = 2; Critical x^2 = 5.99; Calculated x^2 = 2.92
Significance = .2307

Summary

In every group analyzed there was more than one policy expressed by the teachers to determine which educational change factors were the most important in their decisions to try Mastery Learning. Each of these policies was an expression of a ranking of the six educational change factors. The likelihood of trying Mastery Learning was found to be dependent on the years of teaching experience, with teachers in the

having less than twenty years experience being more likely to try Mastery Learning.

The judgment analysis was applied to four groupings of classroom teachers. The first grouping was composed of all the teachers in school districts one, two and three combined. The next three groupings were the teachers in each of the three school districts.

The statistical questions were answered with data obtained from the judgment analysis. The teachers in the combined grouping of all three schools districts expressed their probability of trying Mastery Learning in two distinct policies. The teachers in the first policy expressed a global view of the educational change factors by utilizing each of the factors equally in their decision process. The teachers in the second policy were more specific and emphasized change factor number 6, the potential for student success, in their decision process. These teachers also placed some emphasis on the in-service education relative to the planned change. The remaining four change factors were considered to a lesser extent.

In the analysis of separate school districts, in each district the teachers formed three multiple member policies expressing their usage of the six educational change factors. There was one single member policy in school district number two. In each district there was a global policy which indicated the teachers considered all of the information

important in their decision process. In the multiple member policies, which were more specific in their consideration of the change factors, the potential for student success was predominantly emphasized with in-service education for the teachers receiving some emphasis.

Null hypothesis one was rejected at the .05 level of significance. The likelihood of trying Mastery Learning was dependent on the years of teaching experience. Teachers with over twenty years experience were less likely to try Mastery Learning.

Null hpothesis two was retained at the .05 level of significance. The likelihood of trying Mastery Learning was independent of the level of degree earned.

Null hypothesis three was retained at the .05 level of significance. The likelihood of trying Mastery Learning was independent of the grade level teaching assignment.

CHAPTER 5

CONCLUSIONS

Introduction

In this chapter the conclusions reached are discussed, a change model based on the study is proposed and recommendations for further study and action are presented.

Conclusions

The problem of this study was to determine which change factors were most important in influencing teachers to try Mastery Learning. In regard to this purpose three generalizations were apparent. First, in every group analyzed there were two or more policies present. Second, in each group analyzed there was a global policy expressed by the raters which showed they placed equal importance on all six change factors. That is, raters in these policies considered instructional leadership by the principal, building climate, support from the central office administration and the board of education, the supervision of instruction process, appropriate in-service education relative to the planned changed and potential for student success as equally important in an implementation of Mastery Learning. Third, in each group

analyzed there was a more specific and less global policy expressed. These raters tended to strongly emphasize change factor six, potential for student success, and to emphasize change factor five, appropriate in-service education relative to the planned change, and generally place a small emphasis on the remaining four factors.

The presence of two or more policies in every group substantiated the initial phases of three change processes cited in the review of the literature. Hersey and Blanchard (1982) and Rogers (1983) initiate the process with attention focused on the individual. By focusing on the individual variations in thoughts, concepts and philosophies, individual policies within the larger policies could be dealt with. Lewin (1947) suggested identifying driving forces and restraining forces. By categorizing individual policies and group policies, driving forces could be optimized and restraining forces could be weakened or even changed to driving forces.

The existence of global policies in every group showed the merit of all of the change factors for a substantial group of teachers. This facet of the study substantially reinforced all of the literature cited and showed that an ample group of educators viewed each of the six change factors as essential and interrelated in a successful change process.

The strong emphasis on the potential for student success in the less global policies reinforced research by Rubin and Spady (1984), Lewis (1983), Lortie (1975), Corbett (1982) and

Torshen (1977). Teachers respond to programs used for the benefit of students. The emphasis on in-service education substantiated research by Tye (1984), Mann (1978) and Ferguson (1980). Understanding new ideas also fits the initial phase of the change process as reported by Hersey and Blanchard (1982)and Rogers (1983).

One subtle trend was shown in the study. There was an emphasis by the teachers on stressing success for students and on appropriate training for teachers. The emphasis was a bottom up approach emphasizing student and teacher needs as compared to a traditional top down approach directed by the administrator. The importance of the leadership by the principal and support from the hierarchy was corroborated but the real emphasis was placed at the student success and the teacher knowledge and awareness level. A plausible approach for a principal would be to provide support, encouragement and direction for the teachers to facilitate the teacher's understanding, application and confirmation of an educational innovation.

Proposed Change Model

The strong emphasis placed on the potential for student success and the emphasis placed on in-service education spawn a change model for implementing curriculum which is a reordering of the phases of the traditional change models. Traditional change models place a change in attitude phase before an

implementation phase. In this proposed change model the change in attitude phase is the final phase. The phases of the proposed change model for implementing curriculum are as follows:

1. Provide teachers with knowledge of proposed change
2. Apply the change in the classroom
3. Observe improved student success
4. Change in attitudes and beliefs of teachers

The six change factors in this study mesh with the phases of the proposed change model. In essance phase 1 is in-service education relative to the proposed change. In phase 2 both instructional leadership by the principal and the supervision of instruction are applied. In phase 3 the reality observed is the potential for student success. In phase 4 the building climate would be affected by the changes in attitude and beliefs. Support from the central office administration and the Board of Education are important throughout all phases.

To implement change following this model it is imperative that several concepts are adhered to. In phase 1 it is very important that the process used to determine the particular in-service utilized be of high quality and be supported by the faculty. A receptive faculty will gain from the in-service experience.

Applying the change in the classroom is a critical phase. The teachers must receive tangible support in the form of necessary equipment and supplies and intangible support in the

form of leadership and supervision with a coaching emphasis from the principal as well as support and clarification from peers. Peer coaching would help provide necessary formative evaluation and revision as the change took hold.

The important aspect of phase 3 is that immediate feedback be given the teachers concerning student success. It is vital that the teachers observe results which justify the change applied in their classroom. In this study Mastery Learning was the change being implemented. Mastery Learning is designed to provide immediate feedback which both reinforces the teacher's efforts and facilitates corrective procedures for the students which enhances their learning.

The improved student learning in phase 3 provides gratification for the teacher and facilitates the changes in attitudes and beliefs of teachers. Teachers who are successful feel increased satisfaction which would be reflected in the school climate.

The possible outcomes of this proposed change model are multiple. The first and most important outcome is improved student learning. A school or district which could utilize this process effectively would reap numerous benefits from increased student success. These benefits may include greater student interest in their studies, increased enrollment in historically difficult courses, increased student-teacher interaction, decreasing student discipline problems and an

enhanced role for the school principal as the instructional leader.

An effective principal in a school realizing the increased student participation could function in an instructional leadership role. It is this researcher's opinion that the principal with active, growing teachers should provide support or lead his staff with benign neglect. By using the term benign neglect the researcher is implying the principal provide support and leadership for the staff, remove obstacles which may interfere with the teaching learning process and respect the teachers for their ability to manage their classrooms effectively. If the teachers are realizing increased student success from change efforts and there is peer support and evaluation among the faculty the teachers will grow individually and collectively. The effective principal may then take an approach of benign neglect and provide the teachers with the necessary supplies, equipment, freedom and conditions which enhance their growth.

Recommendations for Action

In reviewing the data and conclusions for the study three recomendations for action are particularly cogent. First, an analysis in regard to the educational beliefs, the teaching models utilized and the success in attaining stated goals of the group which is to take part in a change process should be enacted before the implementation is attempted. The approach

utilized should recognize the importance of student success and teacher input and in-service education. The change model proposed in this study would be an excellent manner in which a school district could approach change. To enhance the skills of all teachers and especially the teachers with many years of teaching experience, a plan should be developed within the individual school district to educate and develop all staff.

In analyzing a group the principal could utilize a study similar to this study to identify the concerns of the staff. The utilization of a simulation instrument and judgment analysis would provide usable information and insight of a given situation. The two drawbacks of the process are that the researcher must locate information describing JAN from several sources and that appropriate computer facilities are necessary. Once the data is obtained the transfer of data to an appropriate computer facility would be comparatively simple and inexpensive. By identifying specific information the principal could exercise quality leadership in the development and articulation of a planned change process.

This study showed that programs which enhance the potential for student success have a greater probability of being successfully implemented. Any curriculum innovation should be carefully considered before an attempt is made to implement it but if the purpose is other than student success it should be very carefully analyzed before asking the teachers to try it. Once a decision is made to implement change the

staff should be thoroughly educated in all aspects of the innovation. The in-service education should be of a duration that provides a complete education for the teachers. The principal's role should be one of support allowing for individual differences within given school policies among the teaching staff.

To better facilitate the development of experienced teachers, a plan should be developed in a school district to utilize and assist experienced teachers in personal and professional growth. One of the specific goals should be the facilitation of increased involvement and acceptance of new innovations by teachers with many years of teaching experience.

Recommendations for Further Research

Recommendations for further research are divided into two areas. One area is the study of school districts in the information phase of the change process. The second area is the study of school districts in the confirmation stage of the change process.

Conclusions in this study are based on a population of teachers in three school districts. To further clarify and provide a broader base from which to make conclusioins a study similiar to this study should be completed with another population in the initial phase of implementing Mastery Learning. A study similar to this study should also be completed with another population which is implementing a

different educational innovation and is in the initial phase of the change process. Either of these studies would serve to validate information gained from this study.

This study identified the change factors teachers perceived as important before an actual implementation was initiated. A follow-up study on the same population at the conclusion of the change process could be completed. In this manner any changes in perceived priorities would be determined. A study of the prioritization of the change factors should be completed on a population that has confirmed the application of Mastery Learning. A similar study on a population that has confirmed a different educational innovation could also be conducted. These studies would accommodate a post analysis of the proposed change process and would provide added direction for subsequent change attempts.

Excellent studies could be made on the phases of the proposed change model. To study the various aspects of effectively applying a change in the classroom would be enlightening and would provide direction for future change attempts. A study of the relationship between student success and changes in teacher's attitudes and beliefs would be particularly interesting and very cogent in relation to teacher growth and satisfaction.

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APPENDICES

APPENDIX A

JAN TABLES

Table 16

Profile Ratings: Mean and Standard Deviation of each Rater, School Districts Number 1, 2 & 3

Rater	Mean	Standard Deviation
1	51.95	15.44
2	38.80	25.42
3	49.96	10.76
4	36.46	12.64
5	51.65	14.70
6	24.90	12.90
7	50.60	20.85
8	43.70	17.76
9	39.10	22.68
10	51.85	16.91
11	58.65	20.32
12	35.90	23.99
13	50.25	19.98
14	45.30	17.40
15	40.10	16.43
16	50.23	10.86
17	49.25	26.72
18	36.20	19.37
19	47.68	23.17
20	68.09	25.30
21	45.55	21.56
22	51.55	15.57
23	52.50	15.74
24	40.95	24.60
25	49.75	13.92
26	53.40	23.25
27	45.65	20.84
28	48.60	14.48
29	47.51	18.38
30	42.79	22.20
31	43.81	25.43
32	56.55	16.86
33	48.30	23.48
34	42.05	21.44
35	49.65	24.75
36	43.05	20.38
37	70.49	15.45
38	46.40	32.60
39	61.80	15.98
40	46.00	19.44
41	40.30	25.24
42	42.40	20.55
43	41.20	16.20

Table 16 (continued)

44	51.81	18.84
45	36.65	17.69
46	58.70	15.90
47	47.97	26.89
48	44.75	19.20
49	51.65	17.97
50	49.90	10.79
51	53.54	28.56
52	54.70	16.04
53	38.80	19.85
54	66.41	12.88
55	37.43	26.80
56	43.30	15.81
57	46.25	12.77
58	41.75	28.69
59	58.45	16.97
60	41.10	15.77
61	45.10	22.45
62	44.80	17.42
63	52.60	27.15
64	53.92	25.03
65	49.23	24.66
66	50.45	27.70
67	45.00	18.07
68	49.85	20.63
69	48.20	15.45
70	54.85	15.61
71	53.50	22.96
72	53.80	23.23
73	50.30	19.99
74	68.24	16.60
75	51.85	16.30
76	61.37	17.43
77	51.00	20.12
78	45.80	20.37
79	46.35	17.25
80	49.80	25.81
81	52.80	9.68
82	49.75	19.66
83	26.07	25.80
84	28.65	6.81
85	54.90	15.80
86	51.40	25.84
87	53.20	16.47

Table 17

Correlations Between the Profile Ratings and the Change Factors for Teachers in School Districts Number 1, 2 & 3

Rater	Change Factors					
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS
1	.43	.34	.47	.26	.26	.45
2	.15	.00	.09	-.03	.86	.28
3	.37	.27	.57	.35	.36	.31
4	.19	.10	.16	.04	.45	.50
5	.35	.23	.32	.11	.14	.36
6	.10	-.09	.05	-.09	-.12	1.00
7	.07	.21	-.03	.01	-.07	.80
8	.17	.00	.05	-.09	048	.69
9	.12	-.04	.12	.04	-.04	.86
10	.63	.10	.22	.11	.61	.14
11	.09	-.08	.10	.03	.11	.86
12	.18	.14	.14	.03	.20	.74
13	.65	.61	.03	-.02	.13	-.06
14	.52	.01	.11	-.08	.23	.74
15	.26	.03	.29	.33	.43	.44
16	.48	.33	.49	.33	.38	.36
17	.15	-.04	.10	-.09	.09	.92
18	.52	.25	.29	.12	.08	.62
19	.12	-.08	.12	-.10	.42	.78
20	.31	.37	.17	.08	.40	.34
21	.21	-.02	.23	.03	.28	.83
22	.38	.23	.41	.53	.26	.22
23	.40	.26	.49	.25	.28	.46
24	-.07	.16	.38	-.28	.04	.16
25	.33	.15	.41	.21	.22	.70
26	.07	-.14	.08	-.03	-.05	.94
27	.22	.44	.06	-.03	.19	.54
28	.33	.25	.47	.28	.40	.38
29	.48	.28	.34	.19	.37	.18
30	.23	.03	.37	-.17	-.40	.45
31	.09	-.02	.72	.26	-.04	.45
32	.20	.07	.54	.37	.25	-.02
33	.56	.12	.12	-.01	.50	-.34
34	-.01	.47	-.33	-.16	-.04	.32
35	.29	-.10	.15	-.04	.00	.91
36	.13	-.02	.25	.07	.11	.81
37	.41	.07	.11	.04	.33	.46
38	.13	-.03	.14	-.02	-.02	.96
39	.11	.01	-.06	.00	-.13	.73
40	.23	.03	.24	.05	.32	.73
41	.20	-.06	.06	.15	.15	.79

Table 17 (continued)

42	.35	.22	.27	.05	.71	.20
43	.19	.17	.07	.09	.62	.48
44	.24	.15	.21	.00	-.01	.81
45	.24	.28	.05	.05	.50	.45
46	.23	.21	.19	.11	.62	.33
47	.21	.13	.17	.37	.31	-.60
48	.62	.13	.25	.16	.28	.53
49	.72	.04	.67	.12	.14	.11
50	.47	.30	.50	.39	.42	.35
51	.20	-.04	.13	-.02	-.05	.92
52	.13	.12	.19	.16	.27	.63
53	.14	-.06	.25	.09	.30	.67
54	.31	.11	.52	.19	.17	.26
55	.10	.04	.08	.04	.12	.72
56	.48	.10	.28	.05	.14	.69
57	.13	.07	.09	.10	.55	.43
58	.17	-.09	.10	-.02	.11	.93
59	.32	.02	.49	.48	.48	-.03
60	.38	.46	.46	.14	.21	-.02
61	.15	-.05	.27	.05	-.06	.91
62	.68	.26	.25	.01	.62	.06
63	.94	.01	.15	.00	.11	.13
64	.45	.26	.38	.27	.22	.00
65	.06	-.01	.11	.05	.44	.57
66	.12	-.07	.15	-.06	-.06	.98
67	.31	.24	.15	.03	.20	.77
68	.38	.34	.45	.16	.28	.37
69	.46	-.04	.31	.02	.29	.68
70	.31	.03	.28	.25	.21	.69
71	.17	.02	.05	-.07	-.10	.96
72	.17	-.03	.17	-.01	.00	.96
73	.20	-.02	.13	-.08	.35	.75
74	.61	.21	.22	.07	.21	.19
75	.39	.16	.76	.20	.13	.18
76	.25	.15	.22	.16	.53	.47
77	.27	.19	.22	.05	.10	.76
78	.66	.14	.17	.18	.14	.48
79	.15	-.09	.23	.07	.05	.81
80	.10	-.09	.05	-.09	-.12	1.00
81	.47	.27	.32	.34	.33	.24
82	.27	.01	.40	.09	.00	.76
83	-.38	-.03	-.03	-.15	-.09	.44
84	.17	.20	.35	.03	.29	.46
85	.39	.25	.22	.15	.26	.42
86	-.17	.02	.15	.89	-.14	-.10
87	.46	.29	.35	.34	.33	.35

Table 18

Stages of the JAN Analysis Procedure
School Districts Number 1, 2 & 3

Stage	Number of Policies	R^2	Successive R^2 Drop	Accumulated R^2 Drop
1	87	.7866		
2	86	.7866	.0000	.0000
3	85	.7866	.0000	.0000
4	84	.7865	.0000	.0001
5	83	.7864	.0001	.0002
6	82	.7863	.0002	.0003
7	81	.7861	.0002	.0005
8	80	.7859	.0002	.0007
9	79	.7857	.0002	.0009
10	78	.7856	.0002	.0010
11	77	.7854	.0002	.0012
12	76	.7852	.0002	.0014
13	75	.7850	.0002	.0016
14	74	.7848	.0002	.0018
15	73	.7846	.0002	.0020
16	72	.7843	.0003	.0023
17	71	.7840	.0003	.0026
18	70	.7837	.0003	.0029
19	69	.7834	.0003	.0032
20	68	.7830	.0003	.0036
21	67	.7827	.0004	.0039
22	66	.7823	.0004	.0043
23	65	.7820	.0004	.0047
24	64	.7816	.0004	.0050
25	63	.7812	.0004	.0054
26	62	.7808	.0004	.0058
27	61	.7804	.0004	.0062
28	60	.7800	.0004	.0067
29	59	.7795	.0004	.0071
30	58	.7790	.0005	.0076
31	57	.7785	.0005	.0081
32	56	.7779	.0006	.0087
33	55	.7773	.0006	.0093
34	54	.7768	.0006	.0098
35	53	.7762	.0006	.0105
36	52	.7755	.0007	.0111
37	51	.7748	.0007	.0118
38	50	.7741	.0007	.0125
39	49	.7734	.0007	.0132

Table 18 (continued)

40	48	.7727	.0007	.0140
41	47	.7719	.0008	.0147
42	46	.7711	.0008	.0155
43	45	.7702	.0008	.0164
44	44	.7693	.0009	.0173
45	43	.7684	.0009	.0182
46	42	.7674	.0009	.0192
47	41	.7665	.0010	.0202
48	40	.7654	.0010	.0212
49	39	.7644	.0010	.0222
50	38	.7633	.0011	.0233
51	37	.7621	.0012	.0245
52	36	.7607	.0014	.0259
53	35	.7592	.0015	.0274
54	34	.7577	.0015	.0289
55	33	.7562	.0016	.0304
56	32	.7546	.0016	.0320
57	31	.7528	.0018	.0338
58	30	.7510	.0018	.0356
59	29	.7487	.0023	.0379
60	28	.7463	.0024	.0403
61	27	.7439	.0024	.0427
62	26	.7415	.0025	.0451
63	25	.7389	.0025	.0477
64	24	.7362	.0028	.0505
65	23	.7333	.0029	.0533
66	22	.7300	.0033	.0566
67	21	.7267	.0033	.0599
68	20	.7231	.0036	.0635
69	19	.7194	.0037	.0672
70	18	.7151	.0043	.0715
71	17	.7106	.0046	.0761
72	16	.7055	.0050	.0811
73	15	.6999	.0056	.0867
74	14	.6941	.0058	.0925
75	13	.6871	.0070	.0995
76	12	.6790	.0081	.1076
77	11	.6707	.0083	.1159
78	10	.6617	.0090	.1249
79	9	.6517	.0100	.1349
80	8	.6384	.0133	.1482
81	7	.6240	.0144	.1626
82	6	.6095	.0146	.1772
83	5	.5931	.0163	.1935
84	4	.5667	.0265	.2200
85	3	.5317	.0350	.2549
86	2	.4850	.0466	.3016
87	1	.3576	.1275	.4290

Table 19

Policies for each Rater in Policy 1
School Districts Number 1, 2 & 3

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
1	.36	.43	.40	.29	.25	.49	.8497
3	.30	.36	.49	.36	.36	.36	.8446
5	.30	.29	.29	.14	.13	.37	.4294
10	.55	.14	.15	.17	.57	.17	.7820
11	-.02	.00	.03	.12	.22	.89	.7948
13	.67	.62	.04	.03	.03	-.07	.8244
16	.40	.41	.41	.37	.38	.42	.9429
20	.23	.42	.12	.15	.42	.41	.5710
22	.35	.30	.30	.56	.27	.27	.7534
23	.32	.35	.43	.28	.28	.49	.8038
28	.24	.33	.40	.32	.41	.45	.7724
29	.42	.34	.29	.22	.33	.21	.5960
32	.18	.12	.48	.32	.22	.00	.4733
33	.55	.10	.10	.00	.38	-.35	.6420
37	.32	.12	.04	.12	.35	.49	.4901
39	.05	.08	-.10	.08	-.04	.74	.5610
42	.24	.25	.21	.11	.71	.28	.7602
46	.11	.26	.12	.19	.66	.43	.6764
47	.25	.10	.13	.33	.22	-.57	.6195
49	.69	.10	.65	.06	.02	.03	.9461
50	.39	.39	.41	.42	.42	.41	.9862
52	.03	.20	.11	.24	.36	.70	.6253
54	.26	.17	.47	.17	.15	.26	.4678
59	.27	.07	.39	.47	.45	.03	.7187
62	.61	.29	.21	.06	.54	.09	.8818
63	.93	.05	.11	.03	.00	.04	.8957
64	.43	.30	.33	.26	.16	.01	.5052
68	.30	.41	.40	.19	.27	.40	.6911
70	.21	.12	.18	.32	.28	.73	.7613
74	.58	.26	.18	.11	.15	.17	.5241
75	.35	.23	.73	.13	.07	.15	.7864
76	.13	.22	.14	.24	.58	.55	.6961
81	.42	.33	.24	.39	.32	.29	.6683
85	.32	.31	.16	.21	.28	.46	.5351
86	-.12	.07	.03	.88	-.08	-.01	.8169
87	.39	.37	.27	.39	.34	.41	.7677

Table 20

Policies for each Rater in Policy 2
School Districts Number 1, 2 & 3

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
2	.00	.02	.01	.06	.91	.39	.8890
4	.07	.15	.09	.12	.51	.58	.5692
6	.00	.00	.00	.00	.00	1.00	1.0000
7	.00	.28	-.07	.11	.03	.84	.7376
8	.02	.06	-.01	.01	.57	.76	.7967
9	.02	.05	.05	.12	.07	.88	.7652
12	.07	.22	.08	.12	.28	.80	.7044
14	.42	.08	.05	.02	.27	.73	.8271
15	.17	.10	.18	.39	.48	.52	.6624
17	.03	.04	.05	.00	.19	.94	.8947
18	.45	.34	.24	.18	.09	.62	.8128
19	-.03	-.01	.05	.00	.52	.84	.8812
21	.08	.07	.16	.12	.37	.87	.8795
24	-.11	.19	.44	-.33	.02	.14	.3226
25	.23	.25	.33	.26	.27	.74	.8813
26	-.03	-.06	.02	.05	.07	.95	.8920
27	.15	.49	.04	.06	.24	.60	.6180
30	.22	.09	.42	-.22	-.42	.35	.5683
31	.03	.07	.68	.20	-.02	.44	.7413
34	-.03	.48	-.31	-.06	.01	.37	.4578
35	.19	-.01	.09	.04	.08	.90	.8881
36	.02	.07	.18	.13	.20	.84	.7664
38	.02	.06	.09	.07	.09	.98	.9514
40	.11	.11	.17	.13	.40	.78	.7773
41	.10	.02	-.04	.25	.25	.84	.7578
43	.06	.22	-.02	.20	.69	.59	.7768
44	.15	.25	.17	.07	.06	.82	.7775
45	.13	.32	-.01	.16	.55	.54	.6473
48	.54	.22	.17	.24	.28	.54	.8101
51	.10	.05	.07	.06	.04	.92	.8731
53	.03	.02	.18	.16	.38	.72	.6586
55	.00	.11	.03	.12	.21	.76	.5866
56	.39	.19	.22	.11	.16	.68	.7625
57	.01	.12	.01	.19	.62	.53	.5988
58	.05	.00	.03	.08	.22	.96	.9230
60	.37	.50	.46	.12	.14	-.01	.6276
61	.05	.05	.22	.10	.03	.91	.8988
65	-.07	.04	.04	.14	.54	.66	.6193
66	.01	.03	.10	.01	.05	.98	.9722
67	.21	.32	.09	.13	.27	.82	.8399
69	.35	.04	.24	.08	.32	.68	.7910

Table 20 (continued)

71	.08	.11	.01	.02	.01	.96	.9416
72	.06	.07	.11	.07	.11	.97	.9536
73	.06	.05	.06	.01	.43	.80	.7690
77	.18	.28	.17	.13	.16	.78	.7533
78	.61	.21	.09	.26	.13	.47	.7413
79	.05	.00	.16	.13	.14	.82	.7274
80	.00	.00	.00	.00	.00	1.00	1.0000
82	.19	.11	.35	.12	.05	.75	.7686
83	-.43	-.01	-.01	-.12	.01	.47	.3883
84	.07	.26	.31	.06	.32	.51	.5022

Table 21

Profile Ratings: Mean and Standard Deviation of each Rater, School District Number 1

Rater	Mean	Standard Deviation
1	51.95	15.44
2	38.80	25.42
3	49.96	10.76
4	36.46	12.64
5	51.65	14.70
6	24.90	12.90
7	50.60	20.85
8	43.70	17.76
9	39.10	22.68
10	51.85	16.91
11	58.65	20.32
12	35.90	23.99
13	50.25	19.98
14	45.30	17.40
15	40.10	16.43
16	50.23	10.86
17	49.25	26.72
18	36.20	19.37
19	47.68	23.17
20	68.09	25.30
21	45.55	21.56
22	51.55	15.57
23	52.50	15.74
24	40.95	24.60
25	49.75	13.92
26	53.40	23.25
27	45.65	20.84
28	48.60	14.48
29	47.51	18.38
30	42.79	22.20
31	43.81	25.43
32	56.55	16.86

Table 22

Correlations Between the Profile Ratings and the Change Factors for Teachers in School District Number 1

Rater	Change Factors					
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS
1	.43	.34	.47	.26	.26	.45
2	.15	.00	.09	-.03	.86	.28
3	.37	.27	.57	.35	.36	.31
4	.19	.10	.16	.04	.45	.50
5	.35	.23	.32	.11	.14	.36
6	.10	-.09	.05	-.09	-.12	1.00
7	.07	.21	-.03	.01	-.07	.80
8	.17	.00	.05	-.09	.48	.69
9	.12	-.04	.12	.04	-.04	.86
10	.63	.10	.22	.11	.61	.14
11	.09	-.08	.10	.03	.11	.86
12	.18	.14	.14	.03	.20	.74
13	.65	.61	.03	-.02	.13	-.06
14	.52	.01	.11	-.08	.23	.74
15	.26	.03	.29	.33	.43	.44
16	.48	.33	.49	.33	.38	.36
17	.15	-.04	.10	-.09	.09	.92
18	.52	.25	.29	.12	.08	.62
19	.12	-.08	.12	-.10	.42	.78
20	.31	.37	.17	.08	.40	.34
21	.21	-.02	.23	.03	.28	.83
22	.38	.23	.41	.53	.26	.22
23	.40	.26	.49	.25	.28	.46
24	-.07	.16	.38	-.28	.04	.16
25	.33	.15	.41	.21	.22	.70
26	.07	-.14	.08	-.03	-.05	.94
27	.22	.44	.06	-.03	.19	.54
28	.33	.25	.47	.28	.40	.38
29	.48	.28	.34	.19	.37	.18
30	.23	.03	.37	-.17	-.40	.45
31	.09	-.02	.72	.26	-.04	.45
32	.20	.07	.54	.37	.25	-.02

Table 23

Stages of the JAN Analysis Procedure
School District Number 1

Stage	Number of Policies	R^2	Successive R^2 Drop	Accumulated R^2 Drop
1	32	.7753		
2	31	.7753	.0001	.0001
3	30	.7752	.0001	.0002
4	29	.7746	.0005	.0007
5	28	.7737	.0009	.0017
6	27	.7723	.0014	.0030
7	26	.7710	.0014	.0044
8	25	.7692	.0017	.0061
9	24	.7675	.0017	.0078
10	23	.7657	.0018	.0097
11	22	.7637	.0019	.0116
12	21	.7616	.0021	.0137
13	20	.7592	.0024	.0161
14	19	.7567	.0025	.0187
15	18	.7531	.0036	.0222
16	17	.7489	.0042	.0265
17	16	.7444	.0045	.0309
18	15	.7392	.0053	.0362
19	14	.7333	.0059	.0421
20	13	.7273	.0059	.0480
21	12	.7203	.0070	.0551
22	11	.7132	.0071	.0622
23	10	.7032	.0100	.0722
24	9	.6913	.0118	.0840
25	8	.6782	.0131	.0972
26	7	.6639	.0143	.1115
27	6	.6446	.0192	.1307
28	5	.6194	.0252	.1559
29	4	.5925	.0270	.1829
30	3	.5517	.0408	.2237
31	2	.4965	.0552	.2788
32	1	.3822	.1143	.3931

Table 24

Policies for each Rater in Policy 1
School District Number 1

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
1	.36	.43	.40	.29	.25	.49	.8497
3	.30	.36	.49	.36	.36	.36	.8446
5	.30	.29	.29	.14	.13	.37	.4294
10	.55	.14	.15	.17	.57	.17	.7820
13	.67	.62	.04	.03	.03	-.07	.8244
16	.40	.41	.41	.37	.38	.42	.9429
20	.23	.42	.12	.15	.42	.41	.5710
22	.35	.30	.30	.56	.27	.27	.7534
23	.32	.35	.43	.28	.28	.49	.8038
25	.23	.25	.33	.26	.27	.74	.8813
28	.24	.33	.40	.32	.41	.45	.7724
29	.42	.34	.29	.22	.33	.21	.5960
32	.18	.12	.48	.32	.22	.00	.4733

Table 25

Policies for each Rater in Policy 2
School District Number 1

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
2	.00	.02	.01	.06	.91	.39	.8890
4	.07	.15	.09	.12	.51	.58	.5692
6	.00	.00	.00	.00	.00	1.00	1.0000
8	.02	.06	-.01	.01	.57	.76	.7967
9	.02	.05	.05	.12	.07	.88	.7652
12	.07	.22	.08	.12	.28	.80	.7044
14	.42	.08	.05	.02	.27	.73	.8271
15	.17	.10	.18	.39	.48	.52	.6624
18	.45	.34	.24	.18	.09	.62	.8128
19	-.03	-.01	.05	.00	.52	.84	.8812
21	.08	.07	.16	.12	.37	.87	.8795
24	-.11	.19	.44	-.33	.02	.14	.3226
27	.15	.49	.04	.06	.24	.60	.6180
30	.22	.09	.42	-.22	-.42	.35	.5683
31	.03	.07	.68	.20	-.02	.44	.7413

Table 26

Policies for each Rater in Policy 3
School District Number 1

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
7	.00	.28	-.07	.11	.03	.84	.7376
11	-.02	.00	.03	.12	.22	.89	.7948
17	.03	.04	.05	.00	.19	.94	.8947
26	-.03	-.06	.02	.05	.07	.95	.8920

Table 27

Profile Ratings: Mean and Standard Deviation of each Rater, School District Number 2

Rater	Mean	Standard Deviation
1	49.80	25.81
2	52.80	9.68
3	49.75	19.66
4	26.07	25.80
5	28.65	6.81
6	54.90	15.80
7	51.40	25.84
8	53.20	16.47

Table 28

Correlations Between the Profile Ratings and the Change Factors for Teachers in School District Number 2

Rater	Change Factors					
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS
1	.10	-.09	.05	-.09	-.12	1.00
2	.47	.27	.32	.34	.33	.24
3	.27	.01	.40	.09	.00	.76
4	-.38	-.03	-.03	-.15	-.09	.44
5	.17	.20	.35	.03	.29	.46
6	.39	.25	.22	.15	.26	.42
7	-.17	.02	.15	.89	-.14	-.10
8	.46	.29	.35	.34	.33	.35

Table 29

Stages of the JAN Analysis Procedure
School District Number 2

Stage	Number of Policies	R^2	Successive R^2 Drop	Accumulated R^2 Drop
1	8	.7859		
2	7	.7831	.0028	.0028
3	6	.7778	.0053	.0081
4	5	.7531	.0247	.0328
5	4	.7230	.0301	.0630
6	3	.6326	.0904	.1533
7	2	.4943	.1383	.2916
8	1	.2149	.2793	.5710

Table 30

Policies for each Rater in Policy 1
School District Number 2

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
1	.00	.00	.00	.00	.00	1.00	1.0000
3	.19	.11	.35	.12	.05	.75	.7686

Table 31

Policies for each Rater in Policy 2
School District Number 2

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
2	.42	.33	.24	.39	.32	.29	.6683
6	.32	.31	.16	.21	.28	.46	.5351
8	.39	.37	.27	.39	.34	.41	.7677

Table 32

Policies for each Rater in Policy 3
School District Number 2

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
4	-.43	-.01	-.01	-.12	.01	.47	.3883
5	.07	.26	.31	.06	.32	.51	.5022

Table 33

Policy for each Rater in Policy 4
School District Number 2

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
7	-.12	.07	.03	.88	-.08	-.01	.8169

Table 34

Profile Ratings: Mean and Standard Deviation of each Rater, School District Number 3

Rater	Mean	Standard Deviation
1	48.30	23.48
2	42.05	21.44
3	49.65	24.75
4	43.05	20.38
5	70.49	15.45
6	46.40	32.60
7	61.80	15.98
8	46.00	19.44
8	40.30	25.24
10	42.40	20.55
11	41.20	16.20
12	51.81	18.84
13	36.65	17.69
14	58.70	15.90
15	47.97	26.89
16	44.75	19.20
17	51.65	17.97
18	49.90	10.79
19	53.54	28.56
20	54.70	16.04
21	38.80	19.85
22	66.41	12.88
23	37.43	26.80
24	43.30	15.81
25	46.25	12.77
26	41.75	28.69
27	58.45	16.97
28	41.10	15.77
29	45.10	22.45
30	44.80	17.42
31	52.60	27.15
32	53.92	25.03
33	49.23	24.66
34	50.45	27.70
35	45.00	18.07
36	49.85	20.63
37	48.20	15.45
38	54.85	15.61
39	53.50	22.96
40	53.80	23.23
41	50.30	19.99

Table 34 (continued)

42	68.24	16.60
43	51.85	16.30
44	61.37	17.43
45	51.00	20.12
46	45.80	20.37
47	46.35	17.25

Table 35

Correlations Between the Profile Ratings and the Change Factors for Teachers in School District Number 3

Rater	Change Factors					
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS
1	.56	.12	.12	-.01	.50	-.34
2	-.01	.47	-.33	-.16	-.04	.32
3	.29	-.10	.15	-.04	.00	.91
4	.13	-.02	.25	.07	.11	.81
5	.41	.07	.11	.04	.33	.46
6	.13	-.03	.14	-.02	-.02	.96
7	.11	.01	-.06	.00	-.13	.73
8	.23	.03	.24	.05	.32	.73
9	.20	-.06	.06	.15	.15	.79
10	.35	.22	.27	.05	.71	.20
11	.19	.17	.07	.09	.62	.48
12	.24	.15	.21	.00	-.01	.81
13	.24	.28	.05	.05	.50	.45
14	.23	.21	.19	.11	.62	.33
15	.21	.13	.17	.37	.31	-.60
16	.62	.13	.25	.16	.28	.53
17	.72	.04	.67	.12	.14	.11
18	.47	.30	.50	.39	.42	.35
19	.20	-.04	.13	-.02	-.05	.92
20	.13	.12	.19	.16	.27	.63
21	.14	-.06	.25	.09	.30	.67
22	.31	.11	.52	.19	.17	.26
23	.10	.04	.08	.04	.12	.72
24	.48	.10	.28	.05	.14	.69
25	.13	.07	.09	.10	.55	.43
26	.17	-.09	.10	-.02	.11	.93
27	.32	.02	.49	.48	.48	-.03
28	.38	.46	.46	.14	.21	-.02
29	.15	-.05	.27	.05	-.06	.91
30	.68	.26	.25	.01	.62	.06
31	.94	.01	.15	.00	.11	.13
32	.45	.26	.38	.27	.22	.00
33	.06	-.01	.11	.05	.44	.57
34	.12	-.07	.15	-.06	-.06	.98
35	.31	.24	.15	.03	.20	.77
36	.38	.34	.45	.16	.28	.37
37	.46	-.04	.31	.02	.29	.68
38	.31	.03	.28	.25	.21	.69
39	.17	.02	.05	-.07	-.10	.96
40	.17	-.03	.17	-.01	.00	.96
41	.20	-.02	.13	-.08	.35	.75

Table 35 (continued)

42	.61	.21	.22	.07	.21	.19
43	.39	.16	.76	.20	.13	.18
44	.25	.15	.22	.16	.53	.47
45	.27	.19	.22	.05	.10	.76
46	.66	.14	.17	.18	.14	.48
47	.15	-.09	.23	.07	.05	.81

Table 36

Stages of the JAN Analysis Procedure
School District Number 3

Stage	Number of Policies	R^2	Successive R^2 Drop	Accumulated R^2 Drop
1	47	.7911		
2	46	.7917	.0002	.0002
3	45	.7914	.0003	.0005
4	44	.7911	.0003	.0008
5	43	.7907	.0003	.0011
6	42	.7904	.0004	.0015
7	41	.7899	.0004	.0020
8	40	.7894	.0005	.0025
9	39	.7888	.0006	.0031
10	38	.7882	.0006	.0037
11	37	.7874	.0007	.0044
12	36	.7876	.0008	.0052
13	35	.7859	.0008	.0060
14	34	.7850	.0009	.0069
15	33	.7839	.0010	.0080
16	32	.7828	.0011	.0091
17	31	.7817	.0011	.0102
18	30	.7805	.0012	.0114
19	29	.7793	.0012	.0126
20	28	.7779	.0013	.0140
21	27	.7765	.0014	.0153
22	26	.7751	.0015	.0168
23	25	.7735	.0015	.0183
24	24	.7718	.0017	.0201
25	23	.7697	.0021	.0222
26	22	.7674	.0023	.0245
27	21	.7650	.0024	.0269
28	20	.7615	.0035	.0304
29	19	.7578	.0036	.0341
30	18	.7541	.0037	.0378
31	17	.7496	.0045	.0422
32	16	.7450	.0046	.0469
33	15	.7400	.0051	.0519
34	14	.7347	.0052	.0572
35	13	.7289	.0058	.0630
36	12	.7225	.0064	.0693
37	11	.7145	.0071	.0765
38	10	.7081	.0073	.0838
39	9	.6997	.0085	.0922
40	8	.6894	.0103	.1025
41	7	.6763	.0131	.1156

Table 36 (continued)

42	6	.6590	.0173	.1329
43	5	.6395	.0196	.1524
44	4	.6099	.0296	.1820
45	3	.5755	.0343	.2164
46	2	.5134	.0622	.2785
47	1	.3828	.1306	.4091

Table 37

Policies for each Rater in Policy 1
School District Number 3

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
1	.55	.10	.10	.00	.38	-.35	.6420
2	-.03	.48	-.31	-.06	.01	.37	.4578
10	.24	.25	.21	.11	.71	.28	.7602
11	.06	.22	-.02	.20	.69	.59	.7768
13	.13	.32	-.01	.16	.55	.54	.6473
15	.25	.10	.13	.33	.22	-.57	.6195
16	.54	.22	.17	.24	.28	.54	.8101
17	.69	.10	.65	.06	.02	.03	.9461
18	.39	.39	.41	.42	.42	.41	.9862
19	.10	.05	.07	.06	.04	.92	.8731
25	.01	.12	.01	.19	.62	.53	.5988
28	.37	.50	.46	.12	.14	-.01	.6276
30	.61	.29	.21	.06	.54	.09	.8818
31	.93	.05	.11	.03	.00	.04	.8957
32	.43	.30	.33	.26	.16	.01	.5052
36	.30	.41	.40	.19	.27	.40	.6911
43	.35	.23	.73	.13	.07	.15	.7864
46	.61	.21	.09	.26	.13	.47	.7413

Table 38

Policies for each Rater in Policy 2
School District Number 3

Rater	Change Factors						
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
3	.19	-.01	.09	.04	.08	.90	.8881
4	.02	.07	.18	.13	.20	.84	.7664
6	.02	.06	.09	.07	.09	.98	.9514
7	.05	.08	-.10	.08	-.04	.74	.5610
8	.11	.11	.17	.13	.40	.78	.7773
9	.10	.02	-.04	.25	.25	.84	.7578
12	.15	.25	.17	.07	.06	.82	.7775
19	.10	.05	.07	.06	.04	.92	.8731
20	.03	.20	.11	.24	.36	.70	.6253
21	.03	.02	.18	.16	.38	.72	.6586
23	.00	.11	.03	.12	.21	.76	.5866
24	.39	.19	.22	.11	.16	.68	.7625
26	.05	.00	.03	.08	.22	.96	.9230
29	.05	.05	.22	.10	.03	.91	.8988
33	-.07	.04	.04	.14	.54	.66	.6193
34	.01	.03	.10	.01	.05	.98	.9722
35	.21	.32	.09	.13	.27	.82	.8399
37	.35	.04	.24	.08	.32	.68	.7910
38	.21	.12	.18	.32	.28	.73	.7613
39	.08	.11	.01	.02	.01	.96	.9416
40	.06	.07	.11	.07	.11	.97	.9536
41	.06	.05	.06	.01	.43	.80	.7690
45	.18	.28	.17	.13	.16	.78	.7533
47	.05	.00	.16	.13	.14	.82	.7274

Table 39

Policies for each Rater in Policy 3
School District Number 3

Rater	Change Factors						R^2
	1 ILP	2 BC	3 SAB	4 SI	5 ISE	6 SS	
5	.32	.12	.04	.12	.35	.49	.4901
42	.58	.26	.18	.11	.15	.17	.5241
22	.26	.17	.47	.17	.15	.26	.4678
14	.11	.26	.12	.19	.66	.43	.6764
44	.13	.22	.14	.24	.58	.55	.6961
27	.27	.07	.39	.47	.45	.03	.7187

APPENDIX B

SIMULATION INSTRUMENT

A SIMULATION OF TEACHER DECISION MAKING

An Investigation of the Factors which Influence Teachers to Try Mastery Learning in Their Classroom

School System Change Environment Packet

INSTRUCTIONS TO PARTICIPANTS IN THE STUDY

INTRODUCTION

The educator today often makes decisions in the face of uncertainty. Many of these decisions have widespread implications but, all too often, are made without an appropriate decision-making procedure. The ability to determine which variables are important in making decisions concerning curricula, new programs, planned changes and other processes is a valuable asset to educators. Simulation techniques have provided educators with suitable methods and procedures to aid in making informed decisions.

As a participant in this simulation you will make 100 ratings. There are 100 change environment profiles in this instrument. These profiles contain six pieces of information that describe a school. Given the information in each profile you are to decide whether you would try Mastery Learning in your classrooom? In this simulation "try" means you would test the operation and effect of Mastery Learning in your classroom. The information on each profile will be explained in the next section.

You are to review each change profile and make a rating about the probability of you trying Mastery Learning. You are to function as a faculty member of a school. The school may be where you are currently employed or an imaginary school. It is important that whatever school context you choose that you keep a constant frame of reference throughout the simulation. It is best that you complete the packet in one sitting. If this is

not possible please complete profiles 1-50 in one sitting and profiles 51-100 in a second sitting. If this is not feasible please complete the packet in three sittings. Complete profiles 1-30 the first sitting, profiles 31-65 the second sitting and profiles 66-100 the third sitting. To summarize, given the information in each change environment profile, you are to make a rating as to whether you would try Mastery Learning in your classroom.

INFORMATION CUES

The purpose of this research is to determine how different kinds of information about the change process environment affects how teachers rate the potential for trying Mastery Learning in their classroom. There is much information that is related to the implementation of change but research indicates that this information can be categorized within the following six factors or information cues:

1. Instructional leadership by the principal
2. Building climate
3. Support from the central office administration and the board of education
4. Supervision of instruction
5. Appropriate in-service education relative to the planned change
6. Potential for student success

The information cues are described in the next section. An illustration is included which indicates how to go about the

process of rating each change environment profile. The change environment profile which indicates the conditions most suitable for you trying Mastery Learning is assigned a rating of 100. The change environment profile which indicates the conditions least suitable for you trying Mastery Learning is assigned a rating of 0.

After studying the cue descriptions in the next section and the ranking procedure at the end of the section your task will be to make 100 decisions and rate them on a 100 point scale.

PLEASE READ THE CUE INFORMATION CAREFULLY

SCHOOL SYSTEM CHANGE ENVIRONMENT PROFILE INFORMATION

Cue 1

Instructional Leadership by the Principal

Leadership by the principal is critical in the devlopment of excellence within a school curriculum. Leadership by the principal is a direct outcome of authority granted that person by the teachers. Some typical attributes of effective instructional leadership are listed below.

1. Two way communication between the principal and the teachers.
2. Necessary materials and resources are provided for the teachers.
3. The principal exhibits a thorough understanding of all programs in the building.
4. Constant evaluation of programs is provided.

5. Receptive to ideas from teachers and students.

6. Shared decision making is commonly utilized.

Some attributes of ineffective leadership are:

1. One way communication, from the principal to the teachers, is prevalent.

2. A lack of understanding of programs is common.

3. An ineffective evaluation process is utilized.

4. Decisions are typically made by the principal.

Cue 2

Building Climate

The building climate is the personality of the building. It represents the qualities and patterns of the personnel within a building. Some qualities of a positive building climate are:

1. People care for each other.

2. Friendly, respectful, genuine feelings are observed between all people involved.

3. High expectations exist for the performance of all concerned.

4. A willingness to accept constructive criticism prevails.

5. A favorable environment for learning exists.

6. Very personal, people know each other.

Some qualities of a low level building climate are:

1. People remain annonymous and aloof.

2. Low expectations exist for the performance of all concerned.

3. Social events are attended but not enjoyed.

4. Individuals are very closed with respect to constructive criticism.

Cue 3

Support from the Central Office Administration and the Board of Education

Support from the hierarchy is often subtle and yet very important in achieving excellence in curricula. Some aspects of high level support from the school hierarchy are:

1. Priorities are developed and communicated.
2. The overall direction of programs, in light of the district goals, are established.
3. Articulation among various disciplines and across school levels are ensured.
4. Resources are provided where needed.
5. Individual buildings are allowed to develop their own program within the district guidelines.

Some aspects of low level support from the school hierarchy are:

1. Resources are not available for program development.
2. District goals are not developed.
3. There is little evidence of uniform program development in the district.

Cue 4

Supervision of Instruction

The supervision process is designed to facilitate growth and improvement by individuals at whatever level they are currently functioning. Some characteristics of an effective supervision process are:

1. Responsive to concerns and aspirations of teachers.
2. The teachers realize a felt need.
3. Intimate, professional relationships result.
4. Aids teachers in improving their instructional performance.
5. Improved student learning is one of the outcomes.
6. Instructional problems are diagnosed and solutions proposed.

Some characteristics of an ineffective supervision process are:

1. A high anxiety level exists in relation to the supervision process.
2. Unpleasant interaction results from supervision contacts.
3. Little improvement in instructional performance is achieved.
4. Instructional problems, if identified, are not diagnosed.
5. Student learning is not enhanced.

Cue 5

Appropriate In-Service Education relative to the Planned Change

In-service education is the means by which a faculty, or the professionals in a school district can contribute to the development of a program, can learn how to implement a new program, and can have the opportunity to grow professionally while on the job. Some qualities of effective in-service education are:

1. Sensitive to the needs of teachers.
2. Active involvement of the participants including the opportunity to add new dimensions to the program.

3. Administrators are responsive to the feedback of the teachers.

4. They are promoted as an effort to improve the overall effectiveness of the educational system.

5. Programs should model the same high quality educational practices that teachers are expected to give students.

6. Individual programs are part of a sustained sequential effort to improve the curriculum.

Some qualities of ineffective in-service education are:

1. Insensitive to the needs of teachers, programs chosen and designed by the administration.

2. Promoted as a duty and a part of the school year.

3. Not sequential in addressing the needs of the school.

4. Active endorsement by the administration not apparent.

Cue 6

Student Success

Some contend that the underlying factor in all school decisions should be the welfare of the student. Student success defines the outcome of the school process. Some qualities of high student success are:

1. Actively engaged in learning while class is in session.

2. Students exhibit independent behavior in learning the curriculum.

3. Student behavior indicates a positive attitude toward peers and teachers.

4. Student behavior indicates a positive attitude toward the curriculum and the school.

5. Behavior problems are not typically exhibited.

6. Students are actively engaged in dialogue with teachers.

7. Students exhibit positive self concepts.

8. Students exhibit high scholastic achievement.

Some qualities of low student success are:

1. Students exhibit negative self concepts.

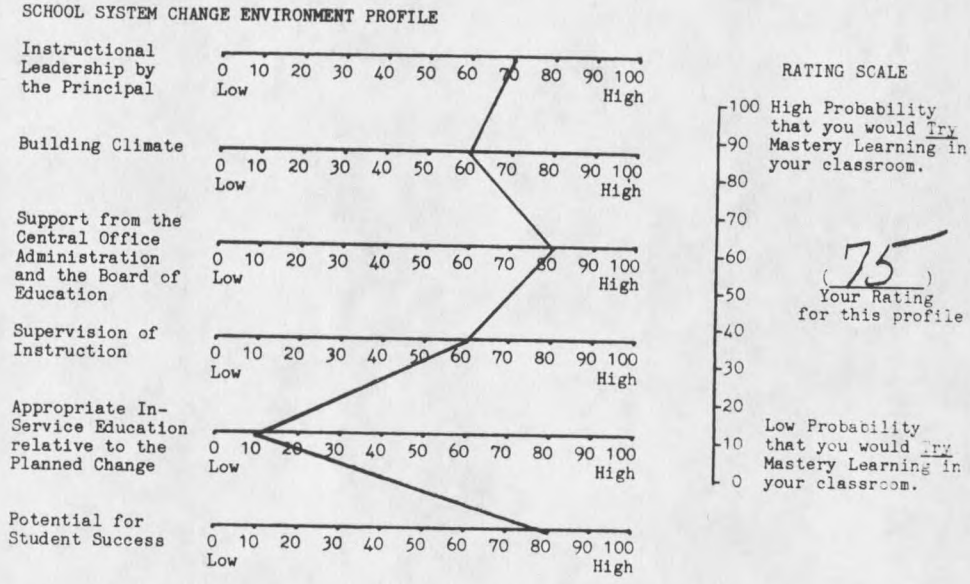
2. Average or low scholasatic achievement is normal.

3. School vandalism is prevalent.

4. Contacts between students and teachers are brief and formal.

5. Students do not respond well to responsibility or opportunity.

SAMPLE SCHOOL SYSTEM CHANGE ENVIRONMENT PROFILE



There are six pieces of information about the school change environment given to you.

1. The level of instructional leadership by the principal is quite high at the 70 percent level.

2. The building climate is slightly above normal at the 60 percent level.

3. Support from the central office administration and the board of education is high at the 80 percent level.

4. Supervision of instruction is slightly above normal at the 60 percent level.

5. The in-service education relative to the planned change is very low at the 10 percent level.

6. Potential for student success as a result of the innovation is high at the 80 percent level.

After studying this profile a decision is made that there is a probability of 75 that you would try Mastery Learning in your classroom.

FINAL INSTRUCTIONS FOR THE SIMULATION

It is important that you complete the profiles in this packet in the order in which they are presented. If more than one sitting is necessary please follow a suggested sequence mentioned earlier. You may review the information explaining the information cues at any time you feel it is necessary. It is important that you maintain a constant frame of reference with respect to school context throughout the simuluation.

Write your rating (score) for each profile in the space provided next to the scale. When you are finished, please return this booklet via the envelope provided.

Thank you for your contribution to this research. A synopsis of the study will be made available to you upon its completion.

Participant Information

Before beginning the simulation, please take a few moments to complete this section. You may be assured that your responses will remain anonymous.

1. With your knowledge of Mastery Learning, please rate the potential for you trying Mastery Learning in your classroom. _____high _____low

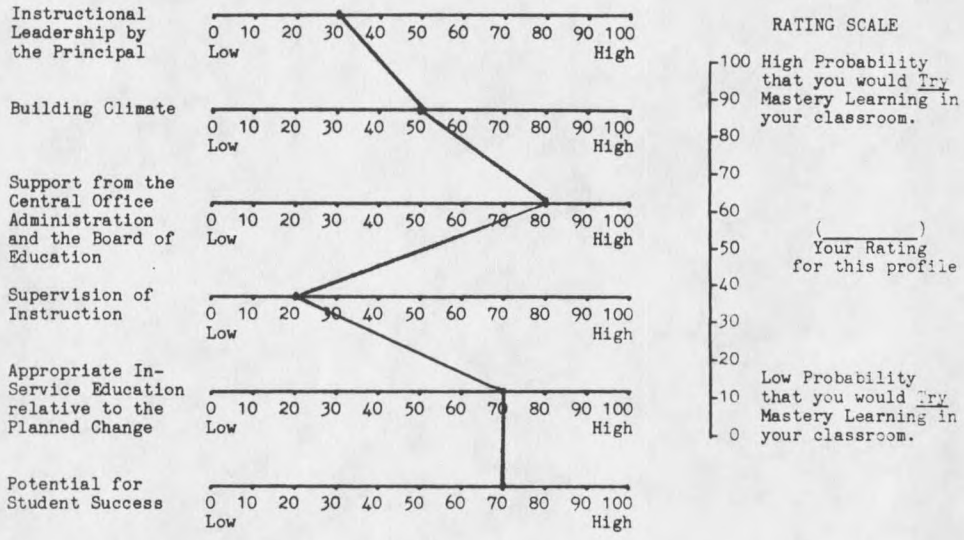
2. How many years have you been employed as a full time teacher? _____

3. Please check the appropriate space indicating your degree of educational training. _____B.S. _____M.S.

4. Please indicate your current teaching assignment. K-3, K-6, 6-12, etc. _____

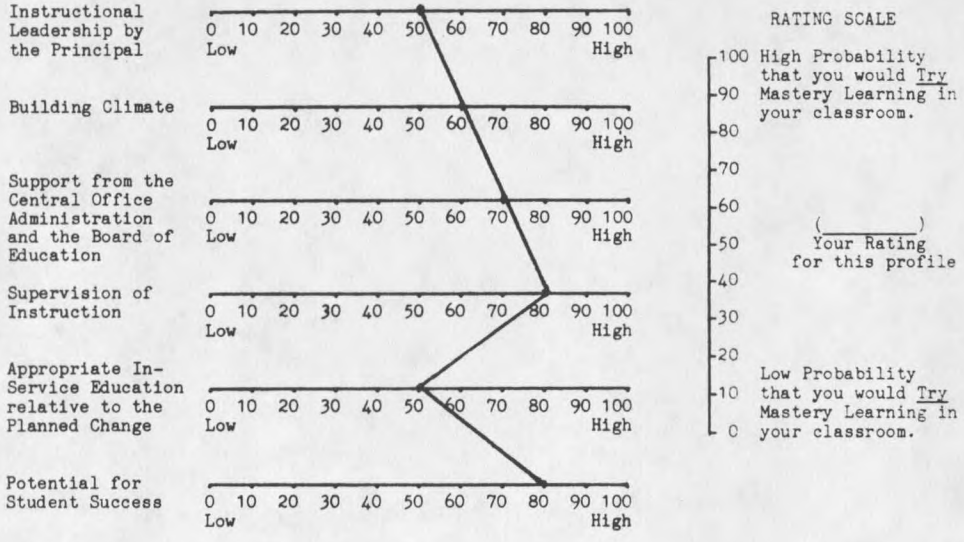
#1

SCHOOL SYSTEM CHANGE ENVIRONMENT PROFILE



#2

SCHOOL SYSTEM CHANGE ENVIRONMENT PROFILE



APPENDIX C

LETTERS

Sample Confirmation Letter

To:

Re: Research Packet

The consideration and interest expressed by yourself in our recent visit is appreciated. The cooperation you extended will be helpful in making this research successful.

Enclosed is a prototype copy, currently being field tested, of the initial pages of the research instrument. I expect the final copy will be quite similar with the exception of additional profile pages, some wording changes and it will be commercially printed and bound.

We discussed distributing the packet to your teachers during the last part of the week of January 28, 1985. I trust this still fits your schedule. I will contact you in mid December to clarify dates.

Please feel free to contact me if you have any questions regarding the research. Am looking forward to working with you in January.

Respectfully,

Robert Osland

Enclosure

Cover-letter Accompanying Simulation Instrument

January, 1985

Dear Teacher,

You have been selected to take part in this important investigation because of your knowledge of Mastery Learning. The purpose of this study is to prioritize the factors which influence teachers to try Mastery Learning in their classroom.

I am working on a research project sponsored by the Department of Educational Services at Montana State University. In order to analyze the factors which are important in teachers adopting Mastery Learning in their classroom I have designed a simulation instrument of teacher decision making.

The accompanying packet contains the simulation instrument. In field testing the instrument the longest time necessary to complete it was an hour and fifteen minutes. Most of you will complete it in less than one hour. Your honest effort will be appreciated. Please read the first ten pages carefully and complete the Participant Information on page ten before beginning the simulation. It is important that you record a score for every decision.

I would appreciate your completing the instrument within the next two weeks and returning it to me in the stamped, self-addressed envelope which has been provided. Your responses will be anonymous and a synopsis of the investigation will be made available to you.

Thank you for your time and assistance in completing this aspect of the investigation.

Respectfully,

Robert Osland

Sample Follow-up Letter

To:

Re: Simulation Instrument

I appreciate the time you took from your busy schedule for our recent visit. Everything you have done is very much appreciated.

Enclosed are copies of a follow-up letter for your faculty. Please distribute them through faculty mail or whatever method is appropriate in your system. To date I have received completed returns of a possible which were handed out. I am hoping for at least a 50 percent return and with your help I believe this will be achieved.

I really enjoyed the opportunity to visit with you and your faculty. Thank you again for all of your cooperation and assistance.

Respectfully,

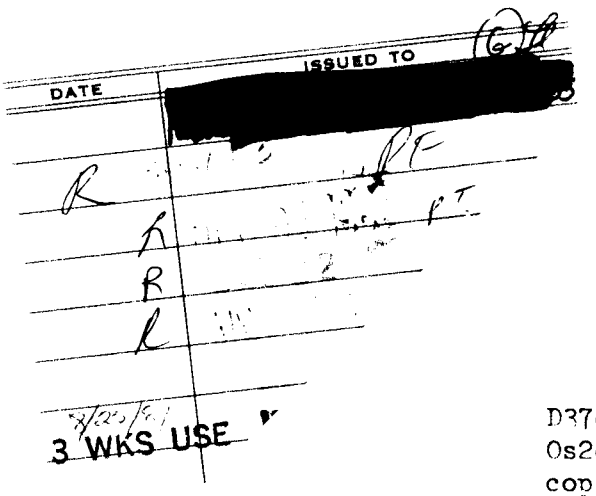
Robert Osland

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An investigation of
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