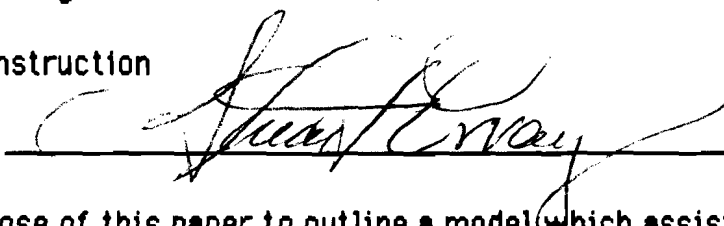


AN ABSTRACT OF THE THESIS OF

Melissa J. Stubenhofer for the Master of Science in Curriculum and Instruction
presented on December 6, 1991.

Title: Institutionalizing a Coherent and Comprehensive Model for the Improvement
of Curriculum and Instruction

Abstract approved: _____



It is the purpose of this paper to outline a model which assists educators in improving curriculum and instruction. This model takes the theories of outcome-based education, Bloom's taxonomy, mastery learning, and a variety of teaching strategies and describes how they can be used in conjunction with the accountability-based curriculum development model. A step by step process curriculum leaders and administrators can follow begins with the acquisition of knowledge, continues through the planning and implementing stages, and concludes with follow-up and evaluation needed for successful restructuring of education.

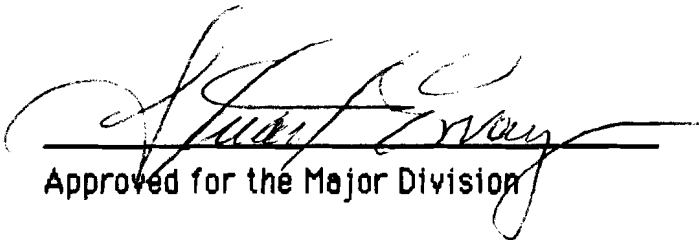
A summary of discussions with curriculum coordinators of three districts currently undergoing curriculum and instructions reform describes their efforts. Some of the problems which have hindered school improvement, as well as those activities and processes which were more successful, provide educators who may be considering school reform with useful examples from which they may benefit. Successful school improvement will occur more quickly if school districts follow a model, devise a well thought-out plan, and learn from the experiences of other districts.

**INSTITUTIONALIZING A COHERENT AND COMPREHENSIVE MODEL
FOR THE IMPROVEMENT OF CURRICULUM AND INSTRUCTION**

**A Thesis
Presented to
the Division of Curriculum and Instruction
Emporia State University**

**In Partial Fulfillment
of the Requirements for the Degree
Master of Science**

**by
Melissa J. Stubenhofer
December 1991**


Approved for the Major Division

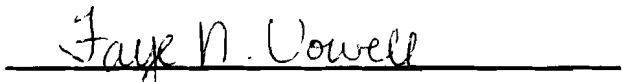

Approved for the Graduate Council

Table of Contents

Chapter 1 - Introduction	1
Chapter 2 - Review of the Literature	8
Chapter 3 - A Model for School Improvement	29
Chapter 4 - Results	41
Chapter 5 - Recommendations and Implications . .	46
Bibliography	48
Appendix A - A Model for Develop and Use of	51
High Achievement Outcomes	
Appendix B - Verbs and Products Corresponding . .	53
with Bloom's Taxonomy	

Chapter 1 - Introduction

Background

The author of this paper is a practicing educator in the Marion school district. In addition to her teaching duties, she also serves as curriculum coordinator and, through the District Curriculum Council, is currently implementing sections of the model outlined in this paper.

Problem

The problem addressed in this paper is that processes are needed and must be developed to assure that K-12 educators use a workable model to prepare and continuously apply an outcome-based curriculum and instructional program that results in high performance student learning.

Hypothesis

A model which provides curriculum coordinators and district administrators with a step by step implementation process will encourage teachers to write, implement, and test high performance outcomes. Such an implementation model will strengthen and clarify efforts to establish an outcome-based K-12 curriculum which provides for mastery of core outcomes by all students.

Proposed Thesis

For years, educators have experimented on and written about a wide variety of topics within education, including student learning and teaching styles, the quality and objectives of learning, assessment, elements that

constitute mastery, and desired exit outcomes. What seems to be missing is the strategy which ties together all of these innovative ideas for improving education.

This model begins with a philosophy for education which comes from the work of Ralph Tyler (Tyler, 1949). Tyler stated that an educational program is not effective if so much is attempted that very little learning is accomplished; objectives must be limited to a number which can be mastered. Objectives which are selected should be those deemed important and consistent with the goals of the school. The underlying goal of this model is to encourage teachers to teach specified core outcomes to mastery for all students. In a more focused look at the model, educators must ensure that all outcomes are at a high cognitive level (Bloom, 1956). These are referred to as high achievement outcomes.

The first step in this school improvement model is the curriculum leader's acquisition of knowledge on topics related to curriculum and instruction, and his/her ability to effectively communicate that knowledge and how it affects the school district. Next, the curriculum leader must identify a personal vision for the future of education and help others do the same. At this point, a plan for inservice training should be developed. Training should begin with an overview for teachers, board members, parents, and patrons. After the overview, work sessions are conducted with teachers on how to develop, write,

teach, and test high achievement outcomes. Included in that activity is training in outcome-based education and mastery learning.

During this time, the curriculum council decides where to begin the implementation process. Members of the subject area committee then prepare to develop a curriculum guide which is written in high achievement outcomes, thereby making it useful to teachers writing high achievement outcomes for specific lessons or units within the classroom.

After the guide is completed, the curriculum leader must oversee its implementation. This may include conducting training over the guide itself, or holding work sessions for the teachers to practice writing high achievement outcomes.

The curriculum leader must keep lines of communication open and stay abreast of changes in the field of curriculum and instruction if the school improvement process is to be successful.

Limitations

The limitations of any model aimed at school reform are numerous. Educational reform must address the vast differences in students and their learning styles, socioeconomic situations, and personalities. Also important are the differences in teachers and teaching styles, and administrators and their leadership styles. Finally, community, state, and national attitudes are important considerations. Because of these overwhelming obstacles, communities and boards tend to spend much of their time, energy and thought

on those issues which they can understand and influence: budgets, buses, and buildings.

The role of an effective curriculum leader is to focus attention on the critical issue of education - "What are teachers teaching, and what are students learning?" In this effort, the curriculum leader faces a significant problem - changing the attitudes of teachers, the board of education and the public. The problem arises because it is difficult to educate only one group at a time. To do this may lead to miscommunication. For instance, if the curriculum leader concentrates all of the training efforts on the teachers, a teacher who misunderstands or disagrees with the program may convey those feelings to a patron who is not in direct contact with the curriculum leader. These misunderstandings may then be communicated to others, thereby creating unnecessary opposition.

Target Audience

This paper is written for curriculum coordinators and district administrators who wish to implement an outcome-based curriculum.

Definition of Terms

High Achievement Outcomes (HAO) - These are outcomes which require the learner to perform tasks from the higher levels of Bloom's Taxonomy (Application, Analysis, Synthesis, and Evaluation). Without eliminating the need for Knowledge level and Comprehension level information, utilizing the higher levels requires students to take their knowledge and

use it in some manner. This allows the teacher to determine whether the student has had a learning experience which may be useful at a later time, or if facts have simply been memorized for the test situation.

High achievement outcomes also require teachers to change the way they test.

Accountability-Based Curriculum (ABC) - This is a model which presents the processes and concepts of curriculum development in a manner that is both logical and sequential. The basis for this model is that members of the group should hold themselves accountable to fulfilling a mutually agreed-upon mission. This model gives direction to the academic curriculum and causes everyone within the organization to feel greater ownership for its programs.

Accountability - Accountability is the assignment and acceptance of responsibility for the fulfillment of organizational functions (mission). In the ABC Model, accountability is both assigned and accepted by those within the organization who are most involved with the teaching/learning process. The assignment of accountability is accomplished through a collegially-prepared mission statement, one that is accepted by all key personnel within the district.

Curriculum Coordinating Council (CCC) - A curriculum council is the chief policy-making and arbitration body in a school district. It is usually chaired by a designated curriculum coordinator; its membership

includes representation from the teaching and administrative staff, by grade level, subject area, and building. Members are appointed for extended terms by the curriculum coordinator and superintendent. CCC decisions are subject to review only by the superintendent and board of education.

Curriculum Coordinator (Director) - This is the person who guides the curriculum development process within the district, as well as serving as chairman of the CCC. The coordinator may be a teacher or an administrator.

Governance Guidelines/Bylaws - An essential aspect of the ABC Model is systematic stability as created by the existence of guidelines or bylaws that clearly describe such critical matters as processes, relationships, communication channels, and assignment of authority.

Long-Range Plan - The long-range plan incorporates textbook selection as well as curriculum study, implementation, validation, and evaluation. The primary reason for a long range plan is that curriculum development is such a large enterprise that a systematic and measured-out process is necessary. Long-range plans are normally five to seven years in length and are continuously implemented, since curriculum work is ongoing.

Mission Statement - A fundamental aspect of the ABC Model is the collegially-developed mission statement. It is a working document which must be prepared carefully under competent leadership. Enough

time should be allotted so that virtually everyone in the district can participate. It is the mission statement to which district educators hold themselves accountable, so it must be specific enough with regard to student learning that all other curriculum documents and actions can be based on it.

Subject Area Committee (SAC) - The SAC is an ad hoc task force primarily consisting of a representation of the district's teachers. The duty of this task force is to develop a K-12 curriculum for a specific subject area which meets the needs of students in that particular district.

Core Outcomes - Core outcomes are the learning objectives or outcomes which are considered to be essential to all students for learning in a particular area to be complete.

Mastery Learning - A theory about teaching and learning that is closely tied to a set of instructional strategies; the theory is based on the belief that all children can learn when provided with conditions that are appropriate for their learning (Guskey, 1987).

Outcome-Based Education (OBE) - A framework for education which is based on three premises: All students can learn and succeed, success breeds success, and schools control the conditions of success (Spady, 1990). The components of Outcome-Based Education include an aligned curriculum, school organization, teaching for mastery, learning support, and informational management (Danielson, 1991).

Chapter 2 - Review of the Literature

Over forty years ago, Ralph Tyler published a book titled Basic Principles of Curriculum and Instruction (Tyler, 1949). In it, he outlines those things essential and fundamental to a successful educational system. The same recommendations can and are being made by the proponents of outcome-based education and mastery learning today.

In 1949, Tyler wrote of the necessity to focus educational efforts upon the critical aspects of contemporary life which "is so complex", and not waste student time on learning things that were important at the turn of the century but no longer have significance. With regard to the vast increases in the complexity of contemporary life from 1949 to the present, that is even more important. The amount of knowledge available to today's students is so tremendous that the acquisition of specific knowledge or facts can not be the focus of education. Rather, the student's ability to acquire and appropriately use needed information needs to be education's goal.

Tyler also addressed the organization of learning experiences for effective instruction. The three criteria for effective organization are continuity, sequence, and integration. This same philosophy of having a curriculum which is continuous and consistent from beginning to graduation is found in the Accountability-Based Curriculum model for curriculum development (Ervoy, 1988). Alignment of the curriculum should reinforce

learning experiences, making mastery more likely. Both Tyler and the ABC authors emphasize the role of the classroom teacher in the objective development process. The classroom teacher, not the subject area specialist from outside the district, is the expert on what the students in that particular district and classroom need to learn.

Another key element found in both Tyler's writing and the ABC model is the importance of selecting objectives by using the philosophy of the school district. This means limiting the number of objectives (or outcomes) to those which are consistent with the desires of the district and can be reasonably attained. Based on what educators know about learning, those attainable objectives should be distinguished from those that require too much time. The knowledge about learning also helps educators place objectives at the appropriate grade levels and in an appropriate sequence from one grade level to the next.

Regarding the process for writing objectives, Tyler discusses the importance of stating objectives in a form which is helpful to the teacher in selecting appropriate learning experiences and in guiding teaching. This involves expressing the outcomes in terms which identify the kind of behavior to be developed in the student and the content or area of life in which this behavior will operate. Even in 1949, educators saw the importance of relating the learning experiences in school to the real lives of the students.

On the issue of evaluation, Tyler describes it as "the process for

determining the degree to which these changes in behavior are actually taking place". Evaluation involves at least two appraisals. The first should occur at the beginning of instruction and the other at some later point, thus giving the teacher a measure of the change that occurred. Also essential is an evaluation which occurs sometime after instruction is complete to determine if the learning was permanent. Tyler points out however, that evaluation should not be considered synonymous with a pencil and paper test. Rather, many different types of evaluation should be used as there are many other kinds of desired behaviors which are not easily evaluated by a written test. One common link among all types of evaluation is that the process begins with the objectives. By basing testing on the objectives taught, evaluation results can be used in a variety of ways. They can be used to analyze the learning experiences to determine what the student did or did not learn. Teachers can also use them to analyze the effectiveness of the teaching strategy employed for that particular objective or lesson. For the purpose of curriculum development, evaluation results can be used primarily in identifying the strengths and weakness of a particular curriculum program. Thus, in 1949 Tyler was advocating the same thing the ABC model does -- accountability for teaching and learning.

The quality of the objectives or outcomes which are developed and taught is fundamental to what kind of student learning occurs. Benjamin Bloom developed a taxonomy of cognitive objectives (Bloom, 1956). The taxonomy, usually referred to as Bloom's Taxonomy, is often viewed as a hierarchy with

lower levels (knowledge and comprehension) and higher levels (application, analysis, synthesis and evaluation). Teachers can fall into the habit of concentrating much time on the lower levels. Knowledge and comprehension objectives are easy to teach and to test, but real life circumstances students encounter require more ability than simple recall. If students are expected to function at the higher levels, they must be taught at those higher levels with high achievement outcomes.

Many educators have written about the use of Bloom's Taxonomy to enhance thinking skills (Presselsen, 1984). Others have outlined the use of the taxonomy in teaching and testing (Simon, 1989; Covington, 1982; Lapointe, 1984; Farrar, 1984). The challenge at the present time is to take what is known about the different levels of Bloom's Taxonomy and transfer the knowledge to student learning experiences. Teachers who are confident using high achievement outcomes will make this transfer successful.

The use of high achievement outcomes in a mastery learning situation is found in Outcome Based Education (Spady, 1991). Teachers decide what high achievement outcome students must learn and then make sure all students master the outcome. Causing all students to learn is the key idea.

This belief that quality of the product, in this case student learning, occurs when conditions are created which produce quality work is founded in the theories of William Edward Deming (Ervay, 1988). Deming's work was in the field of business, but the theories behind it can apply to education.

Checking the end product, testing after all teaching is done, does not provide quality. Errors need to be caught as the product is being made. Formative testing is the answer to quality control in learning (Bloom, 1971).

Deming advocates several principles which could benefit the educational change movement. These include constancy of purpose, commitment to quality, much less dependence on mass testing for quality control, elimination of fear as a motivating factor, reducing divisions among staff that cause communication problems, focused inservice, hiring educational leaders who will get the job done, emphasizing long range plans, developing solutions instead of just following examples, and avoid making excuses for poor quality.

Deming's theories are fundamental to the ABC model (Ervay, 1988). This model of curriculum development provides more than just a theory. The ABC model includes the "how to" of curriculum governance. It is currently being used in numerous school districts both within the state of Kansas and in other states. Richard Manett uses the ABC model as the background for his work on criterion referenced tests. The success of the ABC model lies with its structure which gives districts a framework while still accomodating for individual needs.

In The Quality School, William Glasser addresses Deming's success as it relates to education (Glasser, 1990). Quality education, Glasser states, is the solution to school problems. But this is an oversimplified statement to a complex problem. Change in education must begin at the top with the

management techniques. Management must go from boss-management to lead-management. Lead-management gives teachers control over their teaching. It also gives students control over their learning and the level of quality expected from them. Quality goes beyond grades, which not all students find motivating, and tests, which do not always measure the learning that occurs. By making learning something students want to actively participate in, discipline and motivation problems are alleviated. Glasser also emphasizes that teaching is not just a difficult job, but the hardest job there is.

At the foundation of this model for the development and use of high performance outcomes is an outcome-based K-12 curriculum. The framework for this K-12 curriculum can be found in the Accountability Based Curriculum (ABC) model for curriculum development and maintenance (Ervay, 1988).

Accountability-Based Curriculum Governance Model

The ABC model provides a process for curriculum development and implementation which has been field tested and proven to work in several school districts, including Marion and Hesston. Its success lies in its governance plan which allows school districts the freedom to adapt the plan to fit the individual needs of the district while still providing the structure to follow when problems arise.

The governance component of the ABC model begins with the selection of a curriculum coordinator and the selection of the members of the Curriculum Coordinating Council (CCC). This is a critical step in assuring the success or

failure of the curriculum development process, as much depends on the quality of the coordinator and members of the council. It is important that the superintendent, board of education, faculty and staff, and community have faith in the coordinator's abilities to ensure the support for the actions of the CCC. The coordinator's ability to lead and communicate must be such that they enhance the role rather than hinder it.

The members of the CCC should also display good leadership and communication abilities. They should be respected professionals with good peer relations. Makeup of the council should focus on representation of the entire district: building, grade levels, subject areas, and administration. The exact configuration, outlined in the bylaws, will differ among districts according to the district's philosophy.

Most essential to the success of the ABC Model is that adequate training in the curriculum process to take place. First, the curriculum coordinator and other key administrators should undergo training, followed by the members of the CCC. Eventually, because they will serve on Subject Area Committees (SAC) and Materials and Textbook Selection (MATS) committees, all teachers within the district will need to understand the curriculum development process and believe in its essential role in education.

The first major function of the CCC is to establish the bylaws and develop the district mission statement. The bylaws may be nearly identical to those outlined in ABC (Ervay, 1988). The mission statement, on the other hand,

will be prepared by the CCC with much input from the rest of the faculty and staff.

Development of the mission statement is a lengthy process which ideally stimulates a great deal of dialogue among educators. This open communication is a feature which makes the ABC Model successful, because only through discussion can teachers understand the beliefs and essential concepts behind curriculum development. This then leads to greater ownership and acceptance of the accountability for the district's goals. A mission statement is unique for each district, although there will be some similarities from one mission statement to another. No district can simply copy another's mission statement, put it in place, and expect teachers and staff who have had no part in its creation to accept it as their own. To do this is to set up the curriculum development process for certain failure.

The next step is for the CCC to establish a long range plan for curriculum development. The plan is usually developed based on a five year or seven year cycle. The processes outlined in the plan include the timeline for curriculum development and guide writing, textbook and materials adoption, and curriculum implementation. The first two involve committees: Subject Area Committees (SAC) for curriculum writing, and Materials and Textbook Selection (MATS) for textbook adoption. The composition of these committees depends on the subject area under study, as does the length of time needed to complete the work. It is the job of the coordinator to see that the different

needs of each subject areas are considered when the long-range plan is established, and later when it is revised.

Outcome-Based Education

One of the leading authorities on outcome-based education today is William Spady. Spady has described OBE in terms of its identifying features, beginning with the paradigm behind OBE, and continuing with its purposes, premises, principles, and finally, its practices (Spady, 1991). The paradigm of OBE is that whether students learn something well is more important than when they learn it. The purposes of OBE are to equip all students with the knowledge, competencies, and orientations needed for future success, and to implement programs and conditions that maximize learning success for all students. The three premises include: all students can learn and succeed, success breeds success, and schools control the conditions of success. There are four principles of OBE. They are: (1) clarity of focus, (2) expanded opportunity, (3) high expectations, and (4) design down. The five practices of OBE are: (1) define outcome, (2) design curriculum, (3) deliver instruction, (4) document results, and (5) determine advancement.

Function of the Subject Area Committee - Traditional

Traditionally, the SAC has utilized a 4-Step process for program development. The curriculum writing process begins with information gathering in which the committee systematically gathers information to determine what the district's curriculum really is. This is done by asking the

people who know -- the teachers who do the actual teaching of the subject.

The second step, analysis of information and decision making, involves taking the information gathered on what is actually being taught in terms of content, and scope and sequence. It is then charted to determine its continuity and consistency from kindergarten through high school. At this point decisions must be made as to whether topics are overlapping, being overlooked, or out of sequence. Current research on the subject should be used to help the committee decide if the outcomes the district is teaching are appropriate.

The third step includes developing the subject area mission, purpose and goals. The subject area mission should reflect the district mission and the purpose and goals should outline the philosophy behind the district's teaching of a subject as well as those broad goals which include how the students' understanding, behavior, and attitudes are expected to change due to learning experiences. At the beginning stages of the ABC model, this step should not be allowed to become extensive. It is best to assume what is being done is relatively correct and develop the mission, purpose and goals from that assumption. Over time, as teachers become more professionally in tune, it will be easier for these philosophies to be restructured.

Once the curriculum guide has been developed and approved by the CCC and the board, the final step of the 4-Step process, implementation, begins. This involves giving curriculum guides to all teachers who need one, and making certain teachers are aware of the material in the guide. It may also

involve some inservice.

Completed curriculum guides will differ in format depending on the district and the subject area. In the ABC model, the standard guide contains the subject area mission, purpose, goals, a K-12 scope and sequence chart on topics to be covered, and the grade level objectives. The OBE model of curriculum development adds some key components to the ABC curriculum guide.

Function of the Subject Area Committee - OBE Model

The basic function of the SAC is still the same in the OBE model: to develop a K-12 curriculum guide for the subject area being studied. The duties within the four step process are much more detailed and specific under the OBE Model. The original goal of writing a curriculum guide becomes writing a curriculum which is based on sound learning principles and contains high achievement outcomes which all students, given appropriate instruction and time, are able to master. The guide also provides teachers with possible teaching strategies, materials, and assessment tools.

The 4-Step process again begins with data gathering but it must be broader than before. Everything that is taught must be identified because it is vital to determine what time is being spent on at the present. Teachers must be made to understand the importance of how they use their students' time.

Because of the time factor, the second step, analysis and decision making, is also more significant. Now, instead of just looking for overlaps or

gaps, the committee must look at the whole education picture and decide what specifically students really have to know for learning to be successful and complete.

The third step involves writing the subject mission in terms of high achievement (core) outcomes. These come from the district's core outcomes or exit outcomes, ordinarily found in the district mission statement. Next, the SAC will develop program or subject outcomes. Again the program and subject outcomes should be high achievement outcomes.

Often, the curriculum guide for OBE contains information in addition to that which is in the standard ABC curriculum guide. These include suggestions for teaching strategies, materials and resources, and possible assessment procedures, including sample test questions.

Implementation, the fourth step of the process, is still the most difficult for the CCC to assure. Again the guides are distributed to the teachers, and because of the greater detail, much attention should be paid to insuring that teachers become familiar with all parts of the guide. Evaluations, such as teacher checklists and student tests, should be done to determine whether teachers are implementing the guide, and if not, steps should be taken to determine why it is not. Often, it is not because the teacher is trying to cause problems; rather it is because of intimidation, lack of understanding, or need for revisions in the curriculum guide. It is important that the members and coordinator of the CCC all take part in the

implementation process. Without implementation, the development of curriculum guides is an exercise in futility.

High Achievement Outcomes - Time Model

Along with the ABC Model for governance of the Outcome-Based K-12 Curriculum, there must be high achievement outcomes. These high achievement outcomes require students to go beyond the lower levels of Bloom's Taxonomy and function at the higher levels Bloom outlined (Bloom, 1956). This model then becomes a model in which enough time must be allotted for all students to achieve the outcomes.

Bloom's Taxonomy of Educational Objectives and High Achievement Outcomes

In this model, the taxonomy used is the one developed by Benjamin S. Bloom based on the cognitive domain (Bloom, 1956). Bloom's Taxonomy is based on the level of learning expected from the student. At the lower end (recall) there are two levels. The lowest level of cognition is knowledge. Students are asked to remember previously learned material. The next level, comprehension, requires students to grasp the meaning of learned material. There are four levels in Bloom's Taxonomy at the higher end. The first of the higher levels is application. At this level, student used learned material in new conditions. The second higher level is analysis, in which students are asked to break down material into parts so its fundamental structure can be understood. The final two levels in Bloom's Taxonomy are synthesis and evaluation. Synthesis involves creatively putting parts of learned material

together to form a new whole. Evaluation requires students to make judgments about the value of learned material. Bloom placed evaluation as the highest level, but some more recent educators, such as Susan Kovalik, have transposed these two levels. It may be that educators should view this taxonomy as a continuum rather than a hierarchy.

It is imperative that teachers have an understanding of Bloom's Taxonomy and the learning required of students at each level. It is not necessary for teachers to memorize lists of verbs and to which levels they belong. A list of verbs and student products can be found in Appendix B. After studying the levels and their verbs for extended time periods, as teachers who write high achievement outcomes will need to do, it will become easier for teachers to begin recognizing the different levels, particularly the differences between lower levels and higher levels. Teachers with knowledge of Bloom's Taxonomy will be more cognizant of specifically what they are asking of their students. Questioning techniques should differ depending on the level of the corresponding objective (Goodwin, 1983). Training in writing high achievement outcomes must include knowledge of Bloom's Taxonomy as its foundation. This knowledge will make teachers feel more comfortable with high achievement outcomes, both in the writing and implementing of them. Teachers must be convinced of the importance of consciously using all levels of Bloom's Taxonomy in their teaching/lessons. This model does not diminish the importance of knowledge and comprehension levels of learning. Rather it

sees them as an essential basis for learning at the higher levels.

Alignment within Curriculum Development and Instruction

A duty of the SAC is to see that a curriculum guide is developed which provides the teachers with a means for teaching high achievement outcomes. To do this the SAC must begin with the district mission statement, because each subsequent step in the SAC process must align with the previous step all the way back to the mission statement. At this point, it is crucial to be certain the teachers' belief systems are such that they share the district's mission statement and goals for education. If not, attempts to alter their views should be made. Teachers who do not share the necessary belief system will not be effective in teaching high achievement outcomes, and may have to choose between changing and leaving the district. This sounds harsh, but for the curriculum to be truly accountability-based, the teachers must buy into the district's mission statement and dedicate themselves to teaching in such a way as to uphold that mission (Erway, 1988).

The SAC begins by writing a subject mission statement. Its purpose is to outline why that particular subject is being taught in the district. The subject mission statement must align with the district mission statement's core outcomes. The goals and purposes in the district mission statement which are pertinent to the subject should be analyzed, and subject area goals and purposes adopted from them. From the subject mission statement, the SAC develops course or grade level purposes. From those purposes, the high

achievement outcomes can be written. Alignment of the high achievement outcomes with Bloom's Taxonomy is very important to ensure that they are really high achievement outcomes.

Now that the high achievement outcomes for the course or grade have been written using Bloom's Taxonomy, the SAC must prepare suggested student learning tasks, instructional methods or strategies, and assessment processes. Alignment at this stage is imperative so that teachers are able to affirm that their students are mastering expectations determined by the district as being core outcomes.

Ralph Tyler - Curriculum and Instruction

In 1949, Ralph Tyler addressed many points which are still pertinent today, especially to the model being developed. It should be noted here that Tyler at times refers to objectives and other times uses the term outcomes, while this model refers only to outcomes.

Tyler advocated the cautious use of contemporary life outside school to get suggestions for objectives within schools. Consideration must be given to the practicality and desirability of those areas of life dealt with in schools, as well as to the fact that learning connected to real life may be more meaningful to the students. Tyler also addresses the use of a philosophy in selecting objectives. This philosophy would correspond to the subject mission statement and can reduce the problem of trying to cover too many objectives. Tyler stresses selecting a few highly important, consistent objectives based

on the philosophy of the school.

Reaffirming the importance of alignment, Tyler points out that learnings which are consistent with each other, reinforce each other. He also suggests that objectives should be stated in a form which will be helpful in selecting learning experiences and guiding teaching. The learning experience which is selected to achieve an objective can be the key to its success or failure. No two students have the same learning experience even though it may appear as such. The learning experience also involves how the student internally reacts to it. Therefore, some learning experiences will bring about several outcomes, and several learning experiences may achieve the same objective. For maximum effectiveness, learning experiences should be organized to provide for continuity, proper sequencing, and integration.

Tyler also outlines a process for planning a unit of organization. This plan closely resembles the ABC plan for the subject area committee to use in developing objectives and scope and sequence charts from the exit outcomes.

Evaluation of the effectiveness of learning experiences is also discussed. The need for evaluation was the same in 1949 as it is today -- did the learning experience(s) produce the desired outcome and was the outcome appropriate? Evaluation, according to Tyler, involved more than a single test at the end of the learning experience. Formative evaluation, done at intervals during learning, help to systematically denote the changes that have taken place. It is also important to have evaluation after the learning experience has

been completed and some time has elapsed to determine the permanence of learning.

Tyler emphasized the use of a variety of assessment tools, and not limiting evaluation to pencil and paper tests. He went on to outline the specific procedure to follow for evaluation. Once the evaluation results have been collected, they can be used to determine if any changes need to be made. At the conclusion of Tyler's book are suggestions for how to develop curriculum. Again, this closely resembles the process proven to be successful in the Accountability-Based Curriculum process.

Mastery Learning

The essential elements of mastery learning are discussed in an article by Thomas Guskey (Guskey, 1987). The first element includes feedback, correctives, and enrichment. Feedback provides the student with precise information on learning progress as the instruction takes place. It should be both diagnostic and prescriptive, letting students know what they have learned and what they need to work on more. Feedback alone will not be enough. It must be paired with specific correctives. These correctives should tell the student exactly what needs to be done to correct the problem with the learning and must approach the learning in a new way, using a different teaching technique. Correctives are usually accompanied by enrichment activities for the students who initially mastered the material. These enrichment activities should expand upon the initial learning and be rewarding and challenging.

The second element is congruence among instructional components. These components include learning objectives, instructional activities, feedback and correctives, and evaluation procedures. Without the congruence there is no mastery learning. This does not mean teaching to the test. Rather it means teaching and evaluating the specified learning objectives, or testing what is taught.

When implementing mastery learning, teachers may employ a variety of teaching strategies. One strategy which complements mastery learning, because of the common premises, is cooperative learning (Guskey, 1990). These common premises begin with the requirement for assessment to be criterion referenced. Secondly, both emphasize the role of the teacher as an instructional leader and learning facilitator. Third, mastery learning and cooperative learning are flexible in their application. Last, both are based on sound educational theory and have much research verifying their usefulness. The challenge is for educators to take advantage of the positive effects of utilizing both mastery learning and cooperative learning.

Actually, the real challenge is for teachers to become familiar with mastery learning and a wide variety of teaching strategies, including cooperative learning, so they can implement a mastery learning program in their schools and classrooms which works best for their students, as well as themselves. The important thing to remember is the goal to "improve teaching and learning so that all students learn excellently" (Guskey, 1990). Guskey

developed a chart showing the principal strengths of selected innovative strategies. The chart shows the teaching process from learning objectives, to instruction, to formative assessment, to feedback, correctives and enrichment activities, and ending with summative evaluation. Within those five stages, Guskey indicates where the following strategies fit: effective school, OBE, critical thinking, learning styles, mastery teaching, TESA, mastery learning, and cooperative learning. As Guskey points out, no one strategy can do everything, and the strategies implemented must work with the conditions of the school and classroom.

Implementation of High Achievement Outcomes

Several issues retard the development of high achievement outcomes. They include teacher intimidation, lack of teacher preparation at the university level, lack of teacher preparation through inservice, attitudes that favor traditional rather than mastery teaching, misunderstandings by board members and administrators, parent and patron misunderstandings, and inadequate models for developing high achievement outcomes. As far as implementation goes, issues limiting this include the new role of the teacher and inadequate use of site-based management. How do the SAC initiatives get moved into the building and classroom? What is the role of building leader(s)? How can the program be evaluated? How can student learning be evaluated? In the next chapter, a model will be outlined that will answer these questions and provide curriculum leaders with a process to follow when developing a K-12

Outcome-Based Curriculum using high achievement outcomes.

For many years, the need for increased student learning has been apparent. To achieve this, there must be a focused, sequential curriculum, different student learning styles must be considered, a variety of teaching strategies must be employed, and evaluation must be more than a final at the end of a teaching unit. Why has this need for a better educational system continued to exist?

Part of the reason for this lies in the lack of good models of educational reform, some can be attributed to adherence to traditional teaching styles, and part of the problem is with teachers' lack of belief that what they do really does affect the quality of student learning. But perhaps the biggest problem was outlined by Glasser - teaching is the hardest job there is. It is important not to take too lightly the training and knowledge necessary to be effective teachers.

Chapter 3 - A Model for School Improvement

Change in education is difficult. Part of the reason for the hesitation to change is tradition. The education system has changed relatively little in the past century. There have been some dramatic alterations proposed and/or attempted, fads or bandwagons, but for the most part each has dwindled, leaving cynicism in its wake: a "just wait and this too shall pass" syndrome. The concept behind OBE and mastery learning, that there are certain outcomes which all students must learn, is not one that will go away, nor should it. That must be the goal of education -- to successfully educate all students on those essential learning outcomes. Education must stop failing students who need the system the most, those who do not already know the correct answers. To do this, there must be a fundamental change in education and that change must be institutionalized in all areas of education.

This model for school improvement uses Bloom's Taxonomy in developing high achievement outcomes, linking those objectives to a variety of teaching strategies most likely to be successful, and ends with methods for assessing the students' learning in a variety of ways.

This model is effective because it gives educators control of and responsibility for total student learning, using the premise that they must be prepared for a continually and rapidly changing world. Teachers need to be able to build lessons using broad curriculum goals (core outcomes) by turning them

into high achievement outcomes. This involves more than utilizing a textbook, and to do this teachers need training, support, and encouragement. The teacher needs to go beyond the verbs listed in Bloom's Taxonomy and really think about what is being asked of the student. The teacher must also recognize the importance of all of Bloom's Taxonomy and have an understanding that teaching the higher levels (synthesis and evaluation) does not eliminate the need for learning at the lower levels, but rather allows the student to see the usefulness of the knowledge and its applicability to his/her life. Emphasis on the academics is vital, particularly when the learning is successful. Success and positive self esteem can be a continuous circle if the success is genuine and the learning meaningful.

Another important aspect of this model is that, while the teacher is accountable for teaching the core curriculum and seeing that all students master it, the students and their parents are also accountable for the learning. Support from the home is crucial. The education system's perceived failure is one for which all must take credit and for which everyone will in turn pay. Outcome-based curriculum and high achievement outcomes provide that all students have mastered certain core outcomes when they complete their education, thus eliminating the problem of illiterate high school graduates who can not perform fifth grade mathematics. This process calls for the public's support of a seemingly new idea which it may not fully understand.

This model for school improvement is a combination of a variety of

educational theories, taking the most effective parts of each and putting them in a workable process. The theories include the high order objectives of Bloom's Taxonomy, the outcome based education theory of William Spady, the curriculum development process found in the ABC model, and all the many various teaching strategies.

Conditions Facilitating Use of the Model

Some factors which are key in the successful use of this model are difficult to control. What then are the conditions within a district which facilitate the success of the model's implementation? To achieve success the board of education, as representatives of the school district's patrons, must be aware of the needs of the educational system for change. They must be supportive of the teachers and recognize that change will take time and cost money, but the long term effects will be worth it. The superintendent should lead with vision as well as energize other administrators and staff to be excited about the new direction the district will be taking. Other administrators must be well versed in a variety of teaching strategies to help teachers in improving instruction. They also need to be able to encourage teachers to write, teach, and test high achievement outcomes. To do this they must be truly aware of what is actually happening in the classrooms. Community support for an improved school program will make the change go more smoothly. Looking at the long range goal of improved education will help alleviate some of the short term problems, or make them easier to deal with.

Success of the model is dependent on the district's faculty, because it has control over what occurs in the classroom. Teachers must be willing to grow and change professionally. They must believe in the possibility of and have a commitment to school improvement.

Foundation of Curriculum Development - Curriculum Coordinator and the CCC

Before undertaking the task of developing and using a K-12 Outcome-Based Curriculum with high achievement outcomes, curriculum leaders must answer some important questions and lay a solid foundation for change and restructuring. The first step toward this restructuring is choosing or being a strong curriculum coordinator. This entails more than the characteristics outlined earlier, although strong leadership skills are very necessary and good communication skills are essential for success. A curriculum coordinator must have a vision of the future of education. Where is it going and how can it get there easiest and most effectively? Without a personal vision, a curriculum coordinator can not have made a true commitment to the education profession. In addition to the vision and commitment, the successful coordinator is able to anticipate and plan for the problems which occur when change takes place in education. The coordinator must be committed enough to restructuring education into an outcome-based system that problems are addressed promptly and professionally so as not to jeopardize the success of the whole process.

A strong coordinator also needs a strong CCC which understands the ABC

model, how the OBE model fits within it, and the role of high achievement outcomes in the new system. By having a well-prepared CCC that communicates with the teachers, the coordinator eliminates some misunderstandings. It is unwise to assume, however, that merely disseminating information on OBE and high achievement outcomes will constitute adequate training for CCC members. Several training sessions on the process of writing high achievement outcomes should be held for the CCC to familiarize them with the process. Inservice on OBE may help CCC members understand the premises behind OBE, but few of the educators doing inservice tie the two, ABC and OBE, together. Mastery learning inservice could also be beneficial as it is usually correlated with OBE in an easily understood manner. Again, it is imperative for the curriculum coordinator to help CCC members see the interconnections of ABC, OBE, high achievement outcomes, and mastery learning, so those members can share that knowledge with the rest of the staff when appropriate.

Communication of the Model Components

After the curriculum coordinator has enough knowledge on the necessary topics, it is important that that knowledge can be communicated in both an oral and written manner. Also, this is the stage when the curriculum coordinator and appropriate district administrators develop a plan for inservicing the rest of the staff. Beginning with the CCC may be most appropriate, but costs may require whole staff training at one time.

The curriculum coordinator must decide who can provide the inservice. Big names (the gurus) attract attention and may elicit extra interest initially, but they often provide more theory than application and it is the application which is most pertinent to the majority of practicing teachers. It may be better to utilize another educator or educators with experience in OBE, ABC, high achievement outcomes, and/or mastery learning. Be specific with trainers as to what goals they are expected to accomplish in the inservice sessions, and hold them accountable for those goals.

The most difficult choice is when to provide training. This choice should be made based on the individual district's needs and abilities. The day before school starts is not a good time to spring this on teachers. Probably the best time is in the fall after things have settled down from the first of the year rush. This allows plenty of school year left to continue inservice training.

Before, during and after restructuring begins, the curriculum coordinator must communicate through any and all means possible. Extensive conversations should occur between the coordinator and the superintendent, and possibly with other administrators. Written and oral reports to the board of education to keep them advised on the status of the district will help eliminate or counter possible misunderstandings later and also make them aware of the need for their support, both moral and monetary. Attending faculty meetings and visiting staff when convenient opens communications. Articles in school newsletters and local newspapers will keep parents and

patrons in tune with changes.

Education on the Model

The education/training process must focus around three groups: teachers, board of education, and parents and patrons. For the best results, all three should occur simultaneously. This is not an easy task, which is why proper planning is so important.

1) Teachers

The major goal of teacher training should be to reduce or eliminate the intimidation teachers feel with regard to OBE, mastery learning and high achievement outcomes. Training should begin with the ABC model, move to OBE and mastery learning and then conclude with Bloom and his taxonomy and high achievement outcomes as they relate to the ABC and OBE models. The key is to get as much teacher acceptance as possible and then let them help recruit the rest. The coordinator must anticipate the opposition and not let it get the upper hand. Encourage questions to be directed to the curriculum coordinator and be prepared to answer those questions. Much one-on-one inservice and training with teachers may be required of the coordinator.

Once teachers feel comfortable with the concepts behind the high achievement outcomes, it is time to conduct several work sessions on how to: (1) write high performance outcomes, (2) use and implement them, and (3) create and use assessments. This cannot be done in one session. At first, it will be beneficial to provide the teachers with a list of verbs in Bloom's

Taxonomy levels. But high achievement outcomes are more than just putting the right verb in the behavioral objective. Use of high achievement involves changing the belief system -- what is important for students to know when all is said and done. As B.F. Skinner said, "Education is what survives when what has been learned has been forgotten."

2) Board of Education

In addition to educating the teachers within a district, it is important to educate board of education members. Their support is essential because implementing this program can be costly. It may also be a controversial move for the district, which could generate opposition among staff and patron groups. Having the support of the board from the outset will help make certain that the curriculum coordinator is taking the district in the direction supported by those who control the purse strings.

However, this will not be an easy task. In many cases it will be more difficult than gaining the teachers' support. This is due to the fact that board members are not usually professional educators. Explanations of the process will need to be in layman's terms while still conveying the concepts behind Accountability Based Curriculum, Outcome Based Education, mastery learning and high achievement outcomes. The feasibility of high achievement outcomes and mastery learning may be difficult for them to grasp, so the curriculum coordinator must have a well thought out plan for relaying the information to the board. It must also be remembered that the old system was probably

successful for them, so they may have difficulty understanding why it is not still working.

It is possible the whole idea of curriculum development as an ongoing process, rather than a project which has a beginning and an end, may be a foreign one. For this reason, it should be pointed out that this will not happen overnight. The restructuring necessary to improve the education system will occur gradually so that everyone will have time to understand, and hopefully, accept it. Emphasis must be made on the philosophy behind high achievement outcomes -- that all students can learn. This is a philosophy all associated with education must adopt.

3) Patrons/Parents

The final group with whom the curriculum coordinator must communicate on the changes which are imminent is the parents and patrons of the district. While few parents will disagree with the concept/idea that there are certain "core" outcomes all students can and must master, the idea behind OBE of allowing students enough time to learn is hard to perceive as practical or attainable. Even teachers often see problems with this -- "a sixteen-year-old first grader?" This is why mastery learning must be part of the OBE system. It provides a time frame from which the system operates. It allows for teaching, testing, then either remediating by reteaching using a different teaching strategy and retesting, or extending or enriching the learning experience with meaningful activities. At this point, students move

on--all students. For those who still failed to master the outcome, mastery learning would have schools supply resource people to step in and provide further remediation, again utilizing different teaching strategies.

It is hard, even frightening, for parents to watch their children doing something so new, unusual, and unknown in education. Even if methods used when parents were in school were less than effective, or even inadequate, at least they are approaches the parent understands.

Patrons without children in school may be even more resistant to restructuring. Without a personal stake in day-to-day activities that occur in classrooms, patrons may see only initial costs (training and resources) and not long term goals.

The curriculum coordinator must share those long term goals for a better educated graduate with parents and patrons. Open lines of communication are essential. Articles in newsletters and newspapers should keep everyone well-informed of the future planned for the district's educational system. It is best that information come from the curriculum coordinator and that it be positive and reassuring to counter any negative sentiment which may arise.

Although the primary responsibility for communication is the coordinator's, curriculum council members must also share information with others in a further attempt to convey positive aspects of the new system.

Restructuring Curriculum Development to Include the New Model

While teacher training and information-giving activities are taking

place, the CCC should be preparing for the next step -- bringing OBE, mastery learning, and high achievement outcomes into the present ABC model. The next decision involves selecting the subject area for implementation. Usually the CCC decides via the long-range plan to begin with a particular subject on a K-12 basis, with new subjects added every year or two. However, it can be done by grade level.

Let us assume that teachers are being trained, and a subject area (or grade level) has been chosen. Now the real work begins to implement the new system. The curriculum coordinator will need to be closely involved with the SAC in working on the new curriculum guide. Committee members will need to be very familiar with the goals of the new system, as well as the terminology and process to be used. Additional training or work sessions on writing high achievement outcomes need to be conducted for SAC members. By the time committee work is finished, SAC members should be well enough versed in high achievement outcomes that they can become trainers of future committees.

During the year of curriculum development, it will be necessary to have training or work sessions on how to teach high achievement outcomes for all teachers within the district. Most teachers will also need to be trained in how to use mastery learning to ensure mastery for all students. The curriculum coordinator and other district administrators will need to begin planning for how additional resources, materials, time, and people needed to implement a successful mastery learning program will be provided for and funded. Without

this additional assistance some students will still not master certain outcomes because the classroom teacher feels a need to continue with the new lessons.

When choosing whether to begin with high achievement outcomes and mastery learning at a particular grade or with a specific subject, one consideration should be the number of people who will be involved. Beginning with one grade will mean training grade-level teachers along with those serving on the SAC. This leaves out a great many other teachers who will have to be trained in subsequent years. Also, it will make some teachers feel left out and wondering what is going on. Perhaps the best argument for choosing a specific subject is that the curriculum coordinator would have contact with all teachers, and that contact would clarify the extent of opposition. Those who oppose new ideas can then be confronted and hopefully countered. Teachers are often less skeptical if they are directly involved in something, than if they are on the outside looking at what other teachers are doing.

Curriculum leaders who want to implement this model undertake an enormous responsibility. Rewards to the school district which has a curriculum leader that is willing to assume this role of change-maker can be tremendous in the long run.

Chapter 4 - Results

Efforts to implement an outcome based education system have begun. The success of these programs varies. This chapter will address implementation processes of three school districts and the results of these efforts. The degree of success is to some extent subjective as it is based on the opinions of the districts' curriculum leaders.

Marion

In the Marion school district the move toward an outcome based education program is in its initial stages. The mission statement is being revised to be outcome based. Inservice on an overview of outcome based education was conducted for the District Curriculum Council and SAC members. Efforts were made to develop a math curriculum based on the state and national standards which identified objectives to be mastered at each grade level. Selection of textbooks and resource materials focused on the need to teach high achievement outcomes. In 1991-1992, the math curriculum is being validated with plans to develop an evaluation procedure in the following summer or fall. The language arts curriculum is in the process of being revised. Core exit outcomes are being identified for language arts, and course and grade level outcomes will be developed later. The process has been very slow in the Marion district and not without its problems. These problems are due to 1) lack of good evaluation procedures as well as lack of teacher training and background in testing and assessment; 2) misunderstandings about OBE and mastery learning; 3) difficulty

getting teachers to use the curriculum guides and not textbooks to drive their teaching; 4) high administrator turnover within the past six years which has caused inconsistency in tracking curriculum guide use; 5) lack of a district mission statement and philosophy which is shared by all district employees; 6) misconceptions of OBE and mastery learning by board members and district patrons; 7) too little interstaff communications, as well as too little district-community communications; and 8) lack of focus and dedication on the part of the district to OBE premises.

Halstead

The Halstead school district is currently developing and implementing an OBE program (Earl Guiot, personal communication). The superintendent also performs the duties of curriculum director within that district. He was the source of the information regarding Halstead.

The process in Halstead is moving rapidly. The 1990-1991 school year was the first for the Curriculum Advisory Council (CAC). During that year, a math SAC developed a new math curriculum and during the following summer, a week was spent writing criterion referenced assessments. This year, 1991-1992, the science curriculum is being developed and the new math curriculum is being implemented. Plans are to do one major subject per year and to do the other subject areas each year as time allows. Small staff numbers make it difficult to do more than one major subject area per year and teachers individually can only do two high school courses per school year, so they may be asked to complete other courses during the summers.

Several aspects of the program in Halstead are very positive. A public meeting was conducted in September to help everyone learn as much as possible about the changes taking place. The board has been willing to supply funds necessary to provide effective, high-level training in Phoenix on outcome based education and quality schools, as well as other inservice for those teachers involved in the CAC or SAC's. Payment for curriculum work has been available, and efforts have been made to free people for planning time by hiring substitutes to allow for grade level meetings. The assessments developed are filling a void -- curriculum guides were there before, but no assessments were tied to them. The assessments are more than just multiple choice tests, too. They include observations, demonstrations, and problem solving among others aspects. This use of a variety of assessments is essential to OBE.

In addition to the positive side, there are some problems with the process in Halstead. While the curriculum leader feels that overall the implementation of OBE has been successful, there are some areas that have not been successful. This is due to the fact that change is difficult. It is frustrating, because by the time everyone is convinced of the need for a change, it is almost too late because new developments have made more changes necessary. There are also some teachers who have trouble with the mastery learning component of OBE. They do not feel it is fair to allow students to have as much time as they need to master an outcome.

As an outside observation, it would seem that perhaps the Halstead district is progressing too rapidly. The math curriculum was developed, but before it was taught, the criterion referenced assessment was written. There is no validation

step in the curriculum implementation process. How can they be sure what is there is what they really want to teach and assess?

Hesston

In the Hesston school district, the implementation of outcome based education is progressing at a steady pace. They have been working on outcome based education for two and a half years and Paula Patton, curriculum coordinator, anticipates it will take another three to five years before the entire curriculum within the district is outcome-based (Paula Patton, personal communication). Hesston's commitment to OBE is crucial to the success they are experiencing, and not just the school is committed to change, the community is, too. This commitment is strengthened because results are seen. Students are excited to learn. Other factors contributing to the success of OBE are the board's belief in the abilities of the staff and the administration's belief in OBE. They have made sure that the funding, resources, and time needed for successful implementation of OBE are available. Administrators are enablers of OBE in Hesston. They recognize that change can not happen overnight; it takes time to do it right.

While not progressing rapidly, Hesston in the past two and a half years has developed a systematic plan for implementation and is concentrating on doing it correctly the first time. The mission statement was rewritten in terms of exit outcomes to give the district a foundation on which to build the program. The mathematics program was developed, implemented and validated, and assessments were written and validated. The communications curriculum is currently being validated. In both of these areas, state standards were utilized when developing

outcomes. Minor subject areas are being done as time allows, but it is expected that it will take three more years to complete the big four subject areas (math, communications, science, social science). The evaluation tools being used include teacher-made tests, portfolios, math logs, and experiments. Hesston is fortunate to have a person on staff who is able to teach testing techniques. They also rely on outside training in effective assessment.

Hesston has the vision of what education should and must be if learning is to occur for all students. They focus on what needs to change to improve the program, and believe that what they are doing is best for the school district in the long run. They do not allow outside mandates to change their course of action unless they as professional educators feel they are appropriate. Rather, they look at the outside mandates can help them facilitate change in areas outside the actual curriculum, in areas such as facilities and site management. But they continue to focus on their course of action.

Chapter 5 - Recommendations and Implications

Reports on the state of education in the United States are disheartening. These reports tell of students completing the twelfth grade who fail to compete on an international level in math and science; high school graduates who are functionally illiterate; employers who must retrain new employees in following directions and problem solving. Clearly the time has come for a fundamental change in education. The need is too great to ignore any longer.

Historically educators have been guilty of jumping on every new bandwagon. The move to outcome based education and mastery learning is not a passing notion, though. The premises behind them have been around a long time. Ralph Tyler wrote in 1949 that the number of objectives taught must be limited to those which are essential and because they are essential, all students must learn them. Rita Dunn's research and writings on learning styles indicate that teachers cannot expect all students to learn in the same way or on the same timeframe, and must therefore give students enough time and opportunities to master the objectives.

In addition to limiting the number of objectives, those objectives must be written in terms of high achievement outcomes. The foundation of high achievement outcomes can be traced back nearly half a century to Benjamin Bloom and his taxonomy of cognitive objectives. Again, this is another idea which is not new but is appropriate to current change initiatives. Bloom and Tyler both addressed the problems with testing, too, particularly overemphasis on summative tests. A variety of assessments should be used and most important are formative

tests which allow for remediation before the effort to learn is completed.

Deming's theory for the business world, that emphasizes process and product quality at all stages of development, rather than simply evaluating end products was extremely successful, and is applicable to student learning and testing as Glasser points out.

Why are school districts not all moving immediately to OBE if the theories behind it are so educationally sound? Change, even for the better, is difficult, especially in an institution as old as education. The change needs to begin with the belief systems of people regarding teaching and learning. Focusing on a common vision for the future of education will help everyone see the need for change, and help educators plan. By providing educators with a model for developing and implementing high achievement outcomes, perhaps the change process can proceed more smoothly now and in the near future. Districts which have implemented the model and where success has been proven and validated are needed to encourage others to try. Using these model districts and networking with other districts that share common goals is vital if the process of implementation is to be successful.

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Appendix A - A Model for Development and Use of High Performance Outcomes

Steps for the Curriculum Coordinator or Leader to follow.

- 1 - Know the facts about Accountability-Based Curriculum, Outcome-Based Education, mastery learning, and high performance outcomes and how they coordinate into a better educational system. Make sure members of the CCC also have this knowledge.**
- 2 - Be able to effectively communicate in oral and written communications both the knowledge and opinion about ABC, OBE, mastery learning and high performance outcomes.**
- 3 - Identify, as a professional educator, a personal vision for the future of education and be willing to share it with others.**
- 4 - Develop an overall plan for inservice - who will do the training, who will receive it, when it will be done, where it will be done, what goals the training should meet, how much it will cost.**
- 5 - Provide an overview of the information for teachers, board of education, parents, and patrons. These may be in the form of work sessions, open discussions, newsletters, or newspaper articles.**
- 6 - Conduct work sessions with teachers on the specifics of high performance outcomes - developing, writing, teaching, testing. Inservice sessions should also be conducted on Outcome-Based Education and mastery learning.**
- 7 - With the CCC, select where to implement - subject area or grade level.**
- 8 - Train and work with the SAC on developing a curriculum guide which lends itself to teachers writing and using high performance outcomes.**
- 9 - Oversee the implementation of the new curriculum guide and make sure teachers can use them.**
 - a) Explain the parts of the curriculum guide to teachers.**
 - b) Give some sample high performance outcomes for teachers to use.**

- c) Conduct special meetings during which teachers actually write high performance outcomes and discuss how they might assess them.
- d) Conduct special meetings for teachers to discuss what they have done and any problems or successes they have had. Encourage them to share their ideas with each other.

10 - Make sure to communicate all the time in as many different ways as possible so that everyone interested knows what is going on in the school district.

11 - Keep up with changes in the research on OBE and mastery learning and other pertinent areas of education so that adaptations in the procedures being used can be made when necessary.

Appendix B - Verbs and Products Corresponding the Bloom's Taxonomy

Lower Level

Recall (Finding Out) - Knowledge and Comprehension

Verbs ask, match, discover, listen, identify, locate, research, observe, list, memorize, review, name, read, recall, reproduce, define, describe, select, outline, classify, explain, summarize, convert, predict, distinguish between, draw,

Products events, television, people, books, radio, newspapers, tapes, magazines, models, diagrams, films, records, filmstrips, labels, names, lists, definitions, facts, tests, reproductions, recitations

Higher Levels

Application (Making Use of the Known)

Verbs list, construct, teach, sketch, paint, manipulate, record, experiment, interview, report, simulate, show, apply, make, translate, demonstrate, compute, solve, modify, arrange, operate, relate

Products Diary, collection, puzzle, diagram, photographs, sculpture, diorama, map, scrapbook, stitchery, mobile, model, illustration, report, lesson

Analysis (Taking Apart the Known)

Verbs classify, categorize, separate, compare, dissect, contrast, advertise, survey, summarize, abstract, deduce, order, investigate, differentiate, diagram, estimate, infer, subdivide

Products graph, survey, questionnaire, commercial, report, diagram, chart, outline, conclusion, list, plan, summary, category

Synthesis (Putting Together the New)

Verbs combine, compose, invent, hypothesize, predict, role-play, estimate, infer, create, produce, imagine, write, forecast, design, formulate, construct, rearrange, revise

Products story, poem, play, pantomime, song, news article, cartoon, advertisement, structure, invention, television show, radio show, magazine, recipe, machine, new game, product, puppet show, formula, film, prediction, solution, art product, project, media products

Evaluation (Judging the Outcome)

Verbs evaluate, judge, debate, discuss, editorialize, decide, recommend, choose, dispute, rate, verify, grade, assess, select, criticize, compare, justify, conclude, discriminate, support

Products recommendations, letter, group discussion, panel, news item, court trial, survey, conclusion, value, self-evaluation, judgment, opinion, verdict, scale, evaluation, report, investigation, editorial