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# Mastery learning and the Hunter model as instructional improvement tools

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## Abstract

The publication of reports such as "The Nation At Risk", combined with the recent introduction of improved teacher salary legislation in Iowa which may be tied to accountability, point to the need for schools to improve before others take over the process. It seems anyone who has completed any schooling believes he or she can correct the inadequacies of the school. With such leadership waiting in the wings, the school must take steps to improve itself, preferably through research identified and proven techniques (Gersten & Guskey, 1985).

# MASTERY LEARNING AND THE HUNTER MODEL AS INSTRUCTIONAL IMPROVEMENT TOOLS

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The publication of reports such as "The Nation At Risk", combined with the recent introduction of improved teacher salary legislation in Iowa which may be tied to accountability, point to the need for schools to improve before others take over the process. It seems anyone who has completed any schooling believes he or she can correct the inadequacies of the school. With such leadership waiting in the wings, the school must take steps to improve itself, preferably through research identified and proven techniques (Gersten & Guskey, 1985).

Such improvement must demonstrate in some way that the teacher was able to perform identifiable tasks that could be judged for effectiveness through student achievement. Generally, the student achievement would be based on test score changes as measured by standardized instruments (Cuban, 1984; Goodlad, 1985). Since those instruments usually test mostly math and English, the school must be prepared to respond to outside criticism with arguments supporting the quality of its' program or with programs to attack any discrepancy the test uncovers.

College preparation programs generally do not prepare their graduates for using a particular instructional model, so the school must be ready to

train new staff to work with whatever system the school has chosen. Existing staff must also be trained to use that system as well. Their teaching styles may already include some of the techniques that the district has chosen as meaningful and desirable. But they may not include enough directly observable traits to pass the summative evaluation procedures nor be as effective (Davidman, 1984).

## RESEARCH ON STAFF DEVELOPMENT

Research has indicated that improvement takes place on two levels. The teacher improves individual skills by adapting developmentally in small steps over time. At the same time, the organization develops through its efforts to help the teacher and meet its' organizational needs. The commitment of the teacher to that development should not be expected to precede the use of the system. Not until that teacher has seen results in the classroom would real commitment occur (Gersten & Guskey, 1985; Lieberman & Miller, 1981).

The staff development program may use many different formats, but the program should include both formal and informal components to guide improvement. Day-to-day staff interactions, involvement of staff in program decision-making, and personal modeling by the

principal were valued informal activities. Needs assessment, diagnosis, implementation, and evaluation composed the formal components that need to be addressed (Mangieri & Kemper, 1983; Rogus, 1983).

Many models of instruction when properly implemented would lead to improvement (Sparks, 1983). The model a school uses should be chosen after teacher input has been received to create ownership on the teacher's part. The administration and board must choose the approach they feel best meets the needs of the school in relation to the staff goals. The literature suggests that the administrative backing should become evident to the staff and that commitment must continue throughout the program. Attendance and participation at presentations, support of in-class attempts at change, recognition of successful efforts, support and encouragement through feedback to the staff, and a positive reward system were ways to provide that support (Mangieri & Kemper, 1983; Rogus, 1983).

Joyce (1985) listed administrative commitment as the first necessary component of an effective improvement system. The commitment also included resources of time and money to allow the principal (and the school) to provide a complete staff development

program rather than the one-day 'shot in the arm' presentations. Those one-day attempts may have provided temporary motivation but not the long-term gains that research has shown necessary for an effective development effort (Hall, Benninga, & Clark, 1983; Mangieri & Kemper, 1983; Mohlman, Kierstead, & Gundlach, 1982; Sparks, 1983).

The staff development program should be promoted as a means to a common end for the school and the teacher. It should not be viewed as teacher punishment or a statement of incompetence on the teacher's part. Thus the time factors for executing the program parts should try to meet the time constraints of as many staff as possible (Mohlman et al., 1982).

Components should provide instruction for the teachers in the same frame of reference that they are trying to learn. Thus, the form should provide the opportunity to 'see' the system as it's being taught. Hopefully it would address immediate practical problems from which the teacher could develop principles that could be practiced in the work setting (Rogus, 1983). That practice, along with formative feedback by a valued observer (the principal, a special consultant, or another trusted colleague), must follow or the

innovation may not be integrated into the teacher's regular class routine (Hall et al., 1983; Rogus, 1983).

It should be noted here that not all of the literature agrees with the necessity for such experiential learning by the teacher. Fonzi (1981) in a critique of an article by Fred Wood and Steven Thompson, stated a belief that educated adults would be capable of learning by reading. The formal operation stage (reading) would be far less time consuming and expensive than the experiential system the others advocated (Gallimore, Dalton, & Tharp, 1986; Hall et al., 1983; Lieberman & Miller, 1981; Mangieri & Kemper, 1983; Massey, 1980; Rogus, 1983; Sparks, 1983).

Other real barriers toward experiential methods of in-service training included complaints that on-site training was expensive, that consultants do not have the time or opportunity to go into the classroom to provide individual help, that it was difficult to arrange school schedules to allow on-site activity, and that such in-class help was too disruptive for the students (Massey, 1980).

Research suggested that the model chosen for the improvement effort could be modified to suit the needs of the school. Such modification to the model could

include behavior modification training, learning theory training or whatever the needs of the staff dictated. The following sections review programs that made use of either a mastery learning model or the Madeline Hunter model in their school improvement efforts.

## MASTERY LEARNING AND STAFF DEVELOPMENT

From the roots started by Henry C. Morrison in 1924, the mastery learning system has evolved with a rebirth in the 1960's to include two basic components. First, the student must have the willingness and opportunity to learn. And, secondly, the learning objective must be achievable (Laska, 1985).

The mastery models followed similar sequences: diagnostic testing and teaching of prerequisite skills; teaching in two or more modes of instruction; using formative tests to provide feedback to the teacher and the student; reteaching, using correctives, time and new teaching modes; and using criterion referenced tests based on the objectives for a summative evaluation. Models such as Bloom's Learning for Mastery and Keller's Personalized System of Instruction, simply diverged in their method of handling those steps (Burns, 1979).

The popularity of mastery learning arose because most mastery systems claimed student success rates on

tests that were much higher than the conventional classroom. Ninety to ninety-five percent of mastery taught students tested at or above the 80th percentile (of non-mastery taught students). Reports on the use of meta-analyses to study the claimed effect gave strong credence to those claims (Burns, 1979).

With such statistical evidence, programs to implement the model were begun. Several variations had already been implemented that gave clues to others on what steps to follow to successfully start mastery learning in a school. Not all the observed program results should be expected to apply to the secondary level since many were instituted at the primary level only. The Denver Mastery Learning Program (Barber, 1979) and the Red Bank, New Jersey program (Abrams, 1979) are two such examples. The sequence of careful pre-planning, extended time for staff development before classroom implementation, and then implementation was common to both.

The Teacher Improvement Project at Liberty Missouri Senior High provided an example where a mastery learning approach was used to train the teachers on 27 effective teacher competencies. Just as in other learning programs run for students, the program provided the time,

feedback, and corrective actions necessary for each individual teacher to succeed at his or her own pace (Westerberg, 1983).

Koehn (1983) warned administrators (who would be potential implementers of mastery learning) to deal with teachers just as they expected the teachers to deal with students. Koehn suggested that the administrator must model responsibilities as staff developer, instructional leader, and climate manager. In effect those responsibilities were the teaching, evaluation, and feedback cycles that the mastery learning program was based upon.

The Alaska Gateway District chose to study other mastery learning programs prior to implementation in its' own district. Their evaluator observed several operating programs to find common characteristics: change should be based on need; the head administrator must be dedicated to the program; the board must take formal action; expect the program to take several years to implement; make sure the teachers get involved; employ extensive staff development; and be prepared to revise staff evaluation procedures (Klawunder, 1983).

In one study, Tenenbaum (1986) questioned the ability of mastery learning to teach higher level

thinking skills in 9th grade algebra and sixth grade science. His findings supported mastery learning over conventional methods but also indicated that adding enhanced cues, participation, and reinforcement to the feedback/corrective procedure of the mastery cycle resulted in even greater improvement.

It should not be assumed that everyone has applauded mastery learning as 'the' answer. Burns (1979) points out that no study has shown that the system works with all students in all subject areas. Arlin (1982) criticized it for stealing time from the academically talented so the reteach cycle could gain mastery for the slower learner. The trade-off of time resulted in less breadth of coverage for all students while allowing greater depth for the slower student. That trade-off resulted in what Arlin called "collective leveling" of students.

Fitzpatrick (1985) reported on a study involving secondary math teachers that was designed to evaluate Arlin's time trade-off criticism. Three major components were included in the program. First, the mastery learning training was combined with training on research-based classroom management and organizational strategies designed to improve time-on-task. Second,

the training methods themselves were modeled on research-based effective methods. Third, the administrators were trained in ways to support the teachers in their efforts.

The study found that greater use of the feedback-corrective/enrichment loop of mastery learning, allowed students and teachers to make better use of their available time. The teachers were able to cover the same amount of material they had in the previous year when they didn't use mastery methods. Thus Arlin's (1982) argument was negated for this study on math. However, Fitzpatrick (1985) warned that the results should not be generalized to all subject areas. Instead she recommended that further research in each curricular area should be conducted using a similar training program.

Research has shown that initial teacher expectations of a particular student have a marked effect on that student's success. This research, using teachers who taught one class by their regular method and another class using mastery learning within the same subject area, showed that the effect was no longer a factor. Instead, the teacher provided similar types of feedback to the low-expectancy student during the

corrective/enhancement phase that the high-expectancy student received during the initial instruction. Changed teacher behavior was credited with the resulting low correlation between the teacher's initial expectation and the student's final grade (Guskey, 1982).

## THE HUNTER MODEL AND STAFF DEVELOPMENT

Madeline Hunter's model, also known as A Clinical Theory of Instruction, ITIP, Mastery Teaching, PET, Clinical Teaching, Target Teaching, the UCLA model, & the Hunter model, emerged in the 1970's as a five-step (presently upgraded to eight-step) lesson plan system that teachers could use in presentations to their students (Hunter, 1985). Davidman (1984) suggested that careful planning prior to presentation was imperative to ensure that the instruction that the teacher controls could best stimulate learning for the student.

New concepts would be introduced by a "set", the new concept would have a clear purpose and objective stated for it, the information would be presented to the student with checks for understanding and time for guided practice, a final check would be made for understanding at the close of the lesson, and students who demonstrated mastery would proceed to independent practice (Stallings, Robbins, Presbey, & Scott, 1985).

Hunter (1985) has suggested additional steps and procedures could be added to the system to fine tune it for each school.

Hunter's use of clinical instruction theory considered the following eight points:

1. Control instructional decisions and actions.
2. Teach to an objective.
3. Make the objective appropriate.
4. Monitor and adjust to student action.
5. Make use of principles of learning to plan teaching.
6. Use new research to keep improving.
7. Learn the research basis for making decisions.
8. Artistry in teaching can not be taught but the science can (Davidman, 1984).

Although this writer found no recent reports to review on the use of the Hunter model at the secondary level, Hunter (1985) claimed that the model applies to all levels of education and even to non-school activities. In the same article (What's Wrong with Madeline Hunter?), she identified eight 'myths' attributed as shortcomings of her model:

1. The model is rigid and stifles creativity.
2. The model was created to evaluate teachers.

3. The model applies only to elementary teaching.
4. The model helps teachers who are having difficulty, but can contribute nothing to successful teachers.
5. The model expects the impossible of the typical teacher.
6. There has been no research to support the model.
7. The model consists of a limited set of learning principles.
8. The model is great for direct teaching but does not apply to the arts, to discovery learning, or to cooperative learning. (Hunter, 1985, p.58-59).

Hunter's model or a variation of it has been used to teach the model itself to educators. In Wolfe's (1984) paper describing an implementation in reading and math in an elementary school, it was observed that the training processes of theory presentation, modeling or demonstrating, practice with feedback, and on-site coaching closely aligned with the sequence the teacher was to use in one's own classroom. The teachers in the study reported that the coaching element was the most helpful. They felt that coaching provided by the staff development trainers was the most effective, and coaching by peers extremely useful, but coaching by the

principals (who were considered skilled in coaching) least effective.

In another elementary school project, a similar program was instituted over three years. Included with the training on Hunter's model were classroom management and effective use of time for the teachers and a special set of training topics for the principals. The commitment on the school's part was so complete that in-service sessions were held during the school day with substitutes handling the regular class schedule. The effective follow-up and support services that were provided led to the slow, incremental improvement that the literature has emphasized (Stallings, Robbins, Presbey, & Scott, 1986).

From the administrator's viewpoint, the Hunter model offered a system that gave the teacher input and feedback on what that teacher needed to do to improve. If no improvement was observed than the administrator had a stronger case in the dismissal process to eliminate that teacher. Such linkage of normative evaluation could interfere with teacher acceptance of Hunter's model and was not recommended until the program was well established (Davidman, 1984; Hunter, 1985).

## CONCLUSIONS

The Hunter model and mastery learning shared student achievement as their ultimate goal. Attainment of that student achievement was attacked through what at first seemed to be greatly differentiated methods, but when compared more closely did many of the same things.

Both models encouraged teachers to plan instruction carefully. That stress on planning was to ensure that the objective(s) of each lesson were taught in ways and at levels appropriate for each student. The mastery model used testing as a means of determining student success while the Hunter model used teacher observation of student practice and questioning. Both could result in reteaching a given concept until the student was successful.

In both models it was made clear that the teacher was the one responsible for instruction that was appropriate for the students. When that instruction was unsuccessful, other methods were to be tried rather than making simple restatements of the same material.

If one added testing to Hunter's model, nothing else would need to be changed to have a new working model. Similarly, if one deleted the testing loop from mastery learning and replaced it with better teacher use

of student cues, then one would be very close to what Hunter wanted to do.

It appeared that the use of some model to unify what the organization did was critical. Whether it was either of those presented here or some other model was not critical. What was critical was that the method used to train the staff should use the same model. Without such modeled behavior the teachers could not be expected to adopt a system for their classes.

If this writer had to choose a model to implement, the decision would not depend on personal preference as to which was the better model. Instead, the choice would be made on the observed abilities of the teaching staff. Why force change when the methods being used may only need fine tuning?

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