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Mastery Learning: A Base of Excellence

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ABSTRACT

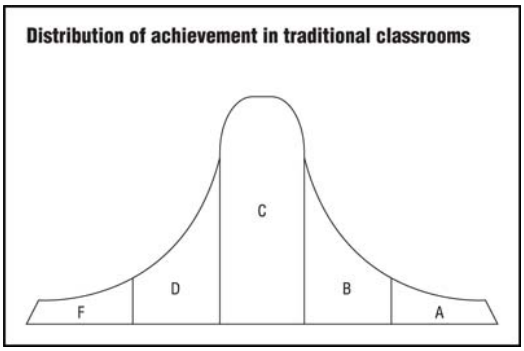
Mastery learning refers to the idea that teaching should organize learning through ordered steps. In order to move to the next step, students have to master the prerequisite step. Mastery learning engages the learner in multiple instructional methods, learning levels and multiple cognitive thinking types. Traditional instruction holds time constant and allows achievement to vary within a group of students. A college course may last sixteen weeks, for example, and at the end of that time students who have mastered the subject thoroughly receive grades of A, those who have mastered very little get grades of F, and so on. Mastery learning, on the other hand, holds achievement constant and lets the time students spend in pursuit of the objectives vary. In the same college course, a few students might meet the standards in ten weeks; most might meet the standards in sixteen weeks; but a few students might take twenty-five or thirty weeks to meet these standards.This paper highlights principles,steps,design application of mastry learning etc.

Keywords: Mastery Learning Principle Application Excellence

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Mastery learning concept was introduced in the American schools in the 1920's with the work of Washburne (1922, as cited in Block, 1971) and others in the format of the Winnetka Plan. The program flourished during that decade; however, without the technology to sustain a successful program, interest among developers and implementers steadily diminished (Block). Mastery learning was revived in the form of programmed instruction in the late 1950's in an attempt to provide students with instructional materials that would allow them to move at their own pace and receive constant feedback on their level of mastery. During the 1960's Bloom's (1968) Learning for Mastery focused new attention on the philosophy of mastery learning. Bloom (1968) is now generally recognized as the classic theoretical formulation on the mastery model.

There is a school of thought that presumes all children can learn if they are provided with the appropriate learning conditions. Learning for mastery or mastery learning, are terms coined by Benjamin Bloom in 1968 and 1971 respectively. Bloom hypothesized that a classroom with a mastery learning focus as opposed to the traditional form of instruction would reduce the achievement gaps between varying groups of students (Guskey 2007). In Mastery learning, "the students are helped to master each learning unit before proceeding to a more advanced learning task" (Bloom 1985) in contrast to "conventional instruction". The mastery learning method divides subject matter into units that have predetermined objectives or unit expectations. Students, alone or in groups, work through each unit in an organized fashion. Students must demonstrate mastery on unit exams, typically 80%, before moving on to new material. Students who do not achieve mastery receive remediation through tutoring, peer monitoring, small group discussions, or additional homework. Additional time for learning is prescribed for those requiring remediation. Students continue the cycle of studying and testing until mastery is met. Block (1971) states that students with minimal prior knowledge of material have higher achievement through mastery learning than with traditional methods of instruction.



The developers of mastery learning assert that it is most useful with basic skills and slow learners at both elementary and secondary levels. Group instruction is often given to the entire class by the instructor with individual time for learning provided until mastery is met. The goal of mastery learning is success for the student. It is asserted that success in achievement, attitude, and motivation in the education or learning environment makes learning more effective.

Mastery learning may be implemented as teacher-paced group instruction, one-to-one tutoring, or self-paced learning with programmed materials. It may involve direct teacher instruction, cooperation with classmates, or independent learning. It requires well-defined learning objectives organized into smaller, sequentially organized units. Individualized instruction has some elements in common with mastery learning, although it dispenses with group activities in favor of allowing more able or more motivated students to progress ahead of others and maximizing teacher interaction with those students who need the most assistance.



The principles of Mastery Learning include matching teaching to student outcomes, utilizing multiple instructional methods, giving specific feedback, and fostering correctives and extensions.

Effective teachers intentionally engage their students in the multiple cognitive levels of thinking described in Bloom's Cognitive Taxonomy: knowledge, comprehension, application, analysis, synthesis, evaluation - critical, creative, complex thinking.

The planning phase of the instructional process addresses identification of the learning, a task analysis, prerequisite skills, and development of effective questions, strategies, and materials.

In the teaching phase, the Cue Set is a step designed to focus student attention and ignite motivation for the learning task.

Bloom considered these expectations, built upon the normal curve, as the most wasteful and destructive aspect of the educational system. He believed that most students, or about 90%, could master what is to be taught. The basic instructional task was to define the course into educational units and find methods and material to help the students to reach the set level. Then the student would be tested with a formative test that would either indicate mastery or emphasise on what was still needed to be learned, to reach the next level. To reach mastery the student needed to get 80 - 90 % right.

Bloom based his theory of Learning for Mastery on Carroll's model of learning which is:

1. Time allowed,
2. Perseverance.
3. Aptitude,
4. Quality of instruction.
5. Ability to Understand Instruction

DESIGHN OF UNIT

1. The concept of mastery learning can be attributed to the behaviorism principles of operant conditioning. According to operant conditioning theory, learning occurs when an association is formed between a stimulus and response (Skinner, 1984). In line with the behavior theory, mastery learning focuses on overt behaviors that can be observed and measured (Baum, 2005).

The material that will be taught to mastery is broken down into small discrete lessons that follow a logical progression. In order to demonstrate mastery over each lesson, students must be able to overtly show evidence of understanding of the material before moving to the next lesson (Anderson, 2000). Definition of clear objectives of what has to be taught/learnt

2. "Subject is divided into relatively small learning units. Each unit will have:

- objectives (i.e. a clear definition of what has to be mastered");
- a brief diagnostic test to be administered before the unit (they may lead to supplementary instruction);
- learning materials and instructional strategies;
- formative evaluation (that in turn should lead to remediation) and summative evaluation.

3. Time to learn is adjusted for each student in order to master at least 80% of the material
4. Assessment whether global objectives have been met.

Most empirical research on this strategy was conducted over two decades ago; however, its founding principles have guided more recent effective instructional and measurement practices. Most of its components, such as the use of feedback, correction, and differentiated instruction, are well documented key tools in the education of students with special needs and English language learners. Results of observations in mastery learning classrooms have shown increased student achievement, retention of learned material, involvement in learning activities, and positive student affect (attitude and demeanor).

In addition, the successful use of mastery learning has positive effects on teachers as well, as their expectations for student achievement improve.

Action Principles

For State

1. Define learning goals or standards that are aligned to instructional units across content areas.
2. Collaborate with institutions of Higher Education to include information about mastery learning strategies in teacher preparation programs.

For District

1. Offer professional development events for teachers and administrators to enhance their capacity on how to implement the mastery learning strategies effectively (Guskey & Pigott, 1988).
2. Identify and provide access to research-based formative assessment tools to guide instruction for students who have learning difficulties.

For School

1. Deliver instruction through large and small group-based instructional techniques combined with progress monitoring and formative assessment. The results of assessment will guide development and delivery of individualized enrichment experiences for those who master the concepts and differentiated corrective learning for those who still need additional experience.
2. Provide opportunities for teams of teachers to plan and prepare procedures and materials to use for feedback, correctives, enrichment, and instructional alignment.
3. Combine teacher expertise and resources to enhance the classroom environment and collaboration (Guskey, 2007).

Assessment

In a mastery learning environment, the teacher directs a variety of group-based instructional techniques, with frequent and specific feedback by using diagnostic, formative tests, as well as regularly correcting mistakes students make along their learning path. Assessment in the mastery learning classroom is not used as a measure of accountability but rather as a source of evidence to guide future instruction. A teacher using the mastery approach will use the evidence generated from his or her assessment to modify activities to best serve each student. Teachers evaluate students with criterion-referenced tests rather than norm-referenced tests. In this sense, students are not competing against each other, but rather competing against themselves in order to achieve a personal best.

APPLICATION

What does a mastery learning classroom look like? Mastery learning curricula generally consists of discrete topics which all students begin together. After beginning a unit, students will be given a meaningful and formative assessment so that the teacher can conclude whether or not an objective has been mastered. At this step, instruction goes in one of two directions. If a student has mastered an objective, he or she will begin on a path of enrichment activities that correspond to and build upon the original objective. Students who do not satisfactorily complete a topic are given additional instruction until they succeed. If a student does not demonstrate that he or she has mastered the objective, then a series of correctives will be employed. These correctives can include varying activities, individualized instruction, and additional time to complete assignments (Guskey 2007). These students will receive constructive feedback on their work and will be encouraged to revise and revisit their assignment until the objective is mastered

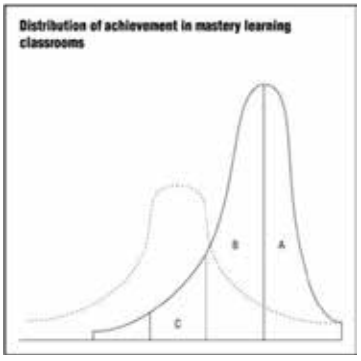


Figure 3ILLUSTRATION BY GGS INFORMATION SERVICES. CENGAGE LEARNING, GALE.

measures (Block & Burns, 1976; Block, Efthim, & Burns, 1989; Guskey & Pigott, 1988, Whiting & Render, 1987).

CRITISM

In general, mastery learning programs have been shown to lead to higher achievement in all students as compared to more traditional forms of teaching.

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