Mastery Learning

Compare and contrast direct instruction and mastery learning.

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Direct Instruction

In general, all direct instruction models have the following common principles:

- **More teacher-directed instruction (> 50%) and less seatwork (< 50%)**

- **Active presentation of information (could be by teacher, computer, another student)**

- **Clear organization of presentation**

- **Step-by-step progression from subtopic to subtopic (based on task analysis)**

Direct Instruction

In general, all direct instruction models have the following common principles:

- •.Use many examples, visual prompts, and demonstrations

- • Constant assessment of student understanding (before, during and after the lesson).

- • Alter pace of instruction based on assessment of student understanding

- • Effective use of time and maintaining students' attention

Direct Instruction

Direct instruction is more effective than other models of instruction because it is more efficient with the restricted amount of time available for schooling.

Because it focuses on efficiency, there is also a recognition that classroom management is important.

Direct Instruction

However, there is generally no requirement of direct instruction models to match instructional objectives of the teacher to objectives that will be tested outside the classroom.

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Remember that Carroll proposed that school learning is a function of time. To be more specific, Carroll proposed that

School Learning $= f$ (Time Spent / Time Needed)

where

Time Spent $= f$ (Opportunity & Perseverance)

and

Time Needed $= f$ (Aptitude, Prerequisite Knowledge, & Quality of Instruction)

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Bloom reasoned that because student aptitude varied, time needed to learn the required content would vary.

If all students had the prerequisite skills and received quality instruction, then all students could learn required content if time was allowed to vary.

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In fact, Bloom states that 90% of students can learn what is normally taught in schools at an A level if they are given

- **enough time and**

- **appropriate instruction.**

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Enough time means

• the Engaged Time required to demonstrate mastery of objectives.

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Appropriate instruction means

• course is compartmentalized into units of instruction

• instructional objectives are developed for each unit

• students are required to demonstrate mastery of objectives for unit before moving on to other units

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In mastery learning, grades may be determined by:

- Actual number of objectives mastered
- Number of units completed
- Proficiency level reached on each unit
- Any combination of above

Students can work at own pace if course is so structured, but mastery learning can be accomplished with group instruction.

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The advantages of mastery learning include:

- **students have prerequisite skills to move to next unit**

- **requires teachers to do task analysis, thereby becoming better prepared to teach the unit**

- **requires teachers to state objectives before designating activities**

- **can break cycle of failure (especially important for minority and disadvantaged students)**

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The disadvantages of mastery learning include:

- **not all students will progress at same pace**

- **must have a variety of materials for reteaching**

- **must have several tests for each unit**

- **if only objective tests are used, can lead to memorizing and learning specifics rather than higher levels of learning**

Mastery Learning

In summary, research suggests that when teachers attempt to implement mastery learning in their individual classrooms, the burden of producing extra materials and the increase in time-off-task leads to no superiority for this method.

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However, when mastery learning is implemented on a school-building level where extra time is provided outside of the normal school day and assistance is provided in developing additional materials, mastery learning produces impressive gains in student achievement.