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Improving the Dynamics of Academic

Interactions: How to Script Lessons

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**DRAFT ONE<sup>1</sup>**

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## Improving the Dynamics of Academic Interactions: How to Script Lessons

How one teaches course content and manages classroom behavior are often “compartmentalized” as separate educational issues when in fact research suggests that the two are interrelated (e. g., Clarke et al., 1995; Dunlap et al., 1993; Gunter & Reed, 1997; Gunter, Shores, Jack, Denny, & DePaepe, 1994; Kauffman, 1997). More directly, when teachers present information to students following the “explicit instruction” format associated with direct instruction (e.g., “Focus: Research on General...”, 1995) scripted lessons (Gunter, Hummel, & Conroy, in press; Gunter & Reed, 1997), students’ achievement increases and often their misbehavior, collaterally, decreases. The purpose of this paper is to define explicit instruction, provide a rationale for explicit instruction, describe how teachers can employ the components of explicit instruction and explain how its systematic use can result in increased academic achievement and decreased undesirable behavior by students.

### Definition of Explicit Instruction

There are several different labels for what we refer to as explicit instruction including effective instruction, systematic teaching, and active teaching (Rosenshine & Stevens, 1986). Conceptually, one can view explicit instruction as a specific form of what Slavin (1994) calls a direct instruction (DI) lesson. Critical features of direct instruction lessons include highly sequenced instruction, clear and concise directions, teacher guidance, active student participation, and assessment probes in order to practice and master new knowledge and skills. There are seven sequential parts to a DI lesson: (a) gain learner’s attention, (b) review prerequisites, (c) present new content, (d) probe learning, (e) provide independent practice, (f) assess performance and provide feedback, and (g) provide distributed practice and review. Explanations for each step in a DI lesson are presented within the framework of developing scripted lessons.

### Scripted Lessons

Planning and implementing explicit instructional lessons are important for student achievement and teacher accountability. Teachers often over the course of the year engage in a variety of routinized schedules and activities. Frequently these routines drive the structure of the day regardless of whether students are actively learning new knowledge and skills. Explicit instruction is simply highly structured teacher routine.

There are commercially available explicit instructional programs (e.g., SRA's Reading Mastery, and Saxon's Math). However, one can choose to develop his/her own explicit instructional lessons by scripting. Developing one's own "scripted" lessons is a straightforward task that practicing educators can do by themselves, and has the added benefit that one can apply this powerful instructional tool with virtually all course content, and with all levels of students.

Typically, scripted lessons are planned for teaching academic skills that comprise a series of chained behaviors such as spelling words and math computation, as well as discrete behaviors such as sight vocabulary and math facts. In essence, a teacher would plan a scripted lesson for acquisition of knowledge and skills where there are definitive steps to completing the academic task. However, scripted lessons should not be limited to academic tasks that teach concrete skills. Bloom (1956) identified six levels of learning within a hierarchy beginning with knowledge (basic recall) and progressing through comprehension, application, analysis, synthesis, and evaluation. Teachers can prepare scripted lessons that reflect advanced levels of learning. In the following sections, the procedures for scripting will be integrated into the parts of an explicit instructional plan.

#### Revisit Pertinent Skills and Knowledge

New lessons begin by gaining student attention, revisiting pertinent skills and knowledge previously taught. This step is often simply referred to as review. It allows teachers to carry out several teaching functions such as focusing student attention on the task, probing student understanding of content, providing review opportunities for students, and providing opportunities for corrective feedback or positive feedback to students.

All lessons are based on clearly stated and communicated (to students) objectives that specify what the students should be able to do or say after the lesson. Formats for reviewing previous content can take many shapes. For example, teachers may plan a series of higher order questions that are sequenced based the Bloom (1956) taxonomy in order to review and assess previous learning. Teachers could divide the class into teams and the students could devise questions for the other team to answer based on previously learned material. A very commonly used review strategy is having students check homework assignments. Remember the goal is to review previous content, check for student acquisition, and determine whether re-teaching is required for content necessary to work with the new information or procedures to be presented.

### Presentation of New Content

A primary defining characteristic of effective instruction is that new content is presented in small steps (a bottom-up approach [Slavin, 1993]). In the following, procedures presenting new information are analyzed.

Step One: It goes without saying that one's objectives should clearly state what the students are to say or do rather than employing ambiguous terms such as know, understand, etc. Additionally, it is axiomatic that teachers themselves must be able to do the complex outcomes specified in course objectives. Suppose one of a teacher's goals was that students learn how to add two 2-digit numbers. The objective for this could be: After the lesson on addition, when given a set of 50 problems, students will correctly hand-compute two 2-digit addition problems with regrouping with 90% accuracy in 10 minutes or less.

Step Two: Once one has good objectives the next step in developing an explicit lesson plan that involves identifying the step-by-step progression for successfully completing the academic task. This is formally called a "task analysis" (Gagne, 1962). Conceptually, a complex activity specified in an objective is delineated into subcomponent behaviors that are placed within a sequential order. The key is to insure that each subcomponent identifies an overt action that the students must perform. For example, simply list, in order, the first thing to do, the second, etc. until the complex action stated in the objective is completed. It is a straightforward process but novices often make predictable mistakes. The most common mistakes include (a) skipping steps, (b) not specifying an overt action at each step, and (c) not having enough steps.

Teachers generally are masters of their content and the tasks associated with their objectives are done by them almost rotely because they have practiced them countless times. Since it is so easy for teachers to do complex activities it is a good idea to double check the sequence of your academic content to ensure that certain steps have not been skipped. Specifying an overt action at each step is critical because it provides the teacher and learner with an objective reference point to monitor progress. No one can objectively "know" if a person has actually acquired a skill until the person demonstrates it. The last point focuses on the number of subcomponents within the task. The number of subcomponents may range from 3 steps to as many as 15 steps. As Gagne` (1977) pointed out, one should continue breaking down the objective's activity until the first step is a behavior that everyone in the class can do without training. Table 1 highlights an example of how to delineate the steps of adding two digit numbers

with and without regrouping. This forms the basis for the scripted lesson that is to be followed to teach students the series of discrete behaviors identified in the complex action specified by an objective.

### Guided Practice

For each step the teacher provides clear instruction and explanation, and models the step in order to provide guided practice to students. During the numerous group and individual practice opportunities the teacher initially guides--using prompts--student(s) through the steps (and later through activities composed of multiple steps) and fades this assistance as the student(s) acquires mastery of the content. The steps for guided practice are model, probe, and then check.

Model: The teacher models/demonstrates the correct sequence of behaviors required for successful completion of the academic task. Teachers should select a model(s) based on the needs of the student and the academic task. Typical models include verbal (e.g., verbally stating each letter of a word in sequential order), written (e.g., steps to complete the problem are written at the top of the page, pictorial (e.g., picture cue demonstrating an action), or physical demonstration (e.g., the teacher demonstrates the physical actions required to complete the appropriate step). Instructional models should ensure student responding and be individualized to the needs of the student(s).

Probe: The teacher should assess informally student acquisition of new knowledge and skills. This information provides the teacher with data that can support whether progress is being made toward achievement of the objective. Since, instruction is presented to the whole group, most probes are designed to prompt a choral group response. Teachers can use this opportunity to assess whether they are implementing the scripted lesson reliably in order to maximize student learning or to determine the effectiveness or lack of effectiveness of their model.

Check: Many of the practice opportunities provided to students involve questions that require either choral (probes) or individual answers (checks). Because content and skills are taught in small steps student responses are almost always correct and can trigger positive feedback from the teacher. Incorrect responses trigger non-punitive corrective feedback and are easier to rectify because the “failure” invariably is associated with the most recently modeled step. After the choral response one can either model the next step or probe with a check by

asking an individual student a follow up question related to the step to insure that all students are engaged with the material. After presenting the first two steps, it facilitates the learning process to model these steps together, and as additional steps are modeled teachers should precede each new step by modeling and probing the previous steps done in series. Table 2 presents an example of a scripted lesson for teaching students to add two 2-digit numbers together. When learning is occurring at an accuracy rate of 80% or higher, teachers should transition to providing practice at the independent level.

Independent Practice: After modeling/probing/checking all the steps in the lesson the teacher should provide guided practice on previously acquired knowledge (Heward, Courson, & Marayan, 1990). These independent practice opportunities can be done individually (e.g., worksheets) or in small groups (e.g., cooperative learning). Central to both of these practice opportunities is the requirement that the work not count as a grade, and that the teacher monitors the work as it is being done in order to provide prompts (cues to guide the students) to insure success. Both written exercises and cooperative learning activities are designed to help students review previously learned content. It is critical that teachers understand that this step may occur a number of days after the initial introduction of new information.

#### Positive Outcomes of Scripted Lessons

When teachers systematically use explicit instructional lessons, several outcomes generally occur. First, students spend more time actively engaged with their subject matter which increases their achievement (Rieth & Evertson, 1988). Second, students respond correctly at levels (i.e., 4-6 responses per minute during instruction and 9-12 per minute during practices) more in line with the recommendations for effective instruction such as those provided by the Council for Exceptional Children (1987). Finally, because students respond successfully at such high levels, there are more frequent opportunities for their teachers to attend positively to their correct academic and social responses.

In addition to the benefits previously noted, systematic use of effective instructional practices also can decrease misbehavior problems in the classroom. In their review of the literature, Gunter, Hummel, and Conroy (in press) found that much of the misbehavior exhibited by students may be controlled by negative reinforcement. Specifically, when a lesson is beyond the skill level of students, or is presented in a boring or passive way, many

students “act out” to effectively stop the lesson, at least for a while, to “escape” the tedium and/or frustration of not being able to follow the presentation. In numerous studies, when teachers employed effective instructional tactics the students’ rate of misbehavior decreased even though such responses were not directly targeted. Thus, it may be concluded that when instruction is structured so that students respond correctly at high rates, not only will students’ achievement increase, but those misbehaviors that are maintained by negative reinforcement will decrease measurably.

Table 1

## Identifying the Subcomponents of Teaching Two Digit Addition With and Without Regrouping

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Step	Subcomponent
1	Copy the problem (if not already on a provided sheet) making certain that one of the numbers is above the other and the ones and tens place values for both numbers are aligned, and the bottom number is underlined.
2	Add the ones place values together and if the sum is less than 10, write their sum below the horizontal line aligned with the ones place of the original numbers.
2a	If the sum is greater than ten, write the ones value of the sum below the line and carry the tens value by writing that value above the 2-digit numbers of the problem.
3	Add the tens place values including any carry over from the ones sum to the left of the ones sum and below the tens values of the original numbers.



Table 2

A Scripted Lesson for Teaching Two Digit Addition With and Without Regrouping.

Step	Script
1	<p>Up to now we have been adding one number to another. Today we are going to learn how to add two-digit numbers together. Two-digit numbers have 2 values; a ones value and a tens value. In the number 34, the ones value is 4 and the tens value is 3. What is the ones value in the number 47? (Choral response followed by praise.) What is the tens value? (Choral response.) Good!</p> <p>The first thing we have to do when adding two 2-digit number together is to make sure that two numbers are arranged so that the ones value of the first number is right above the ones value of the second number, and the tens value of the first is also right above the tens value of the second. When we copy a problem where should the ones values of the two numbers be? Where should the tens place values be? (Choral Response.) Good.</p> <p>After we write the two numbers to be we draw a horizontal line under the bottom number. Where does the horizontal line for each addition problem go? (Choral response.) That's right, under the bottom number. Copy this problem so the numbers are positioned for us to add them together: <math>16 + 22</math> (Check each students' work.)</p>
2	<p>Once we have copied the problem we first add the two ones value numbers. What do we add together first, the ones value numbers or the tens value numbers? (Choral response.) Right, we add the ones values first.</p> <p>If the sum of the ones values is 9 or less we write the sum under the ones place below the horizontal line. The sum of 6 plus 2 is? Correct, it is 8. Write the number 8</p>

below the horizontal line under the 6 and 2. (Teacher models the step and check each students' work.)

2a If the sum of the ones value numbers is more than ten we have to write the ones value sum below the horizontal line and write the tens value above the two tens value numbers that are above the horizontal line. If the sum of the ones values is more than 9 what do we do? Yes, we write the ones value of the sum below the horizontal line, and carry the tens value to the tens column.

3 Once we have added both the ones values together and written their sum below the horizontal line we add the two tens value numbers together and write their sum below the horizontal line. What is the sum of 1 and 2? (Choral response) Right, it is 3. Watch where I write the sum of the tens values. (Teacher models) Now you write the sum on your paper. (Teacher checks each students' work.)

Now I am going to write another problem on the board. Copy it and add the values together. (Teacher gives several problems without regrouping; after check them, give several requiring regrouping.)

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