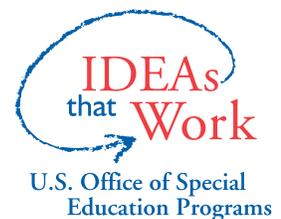NATIONAL CENTER ON ACCESSING
THE GENERAL CURRICULUM

NCAC

Explicit Instruction

Effective Classroom Practices Report

IDEAs
that Work

U.S. Office of Special
Education Programs

Explicit Instruction

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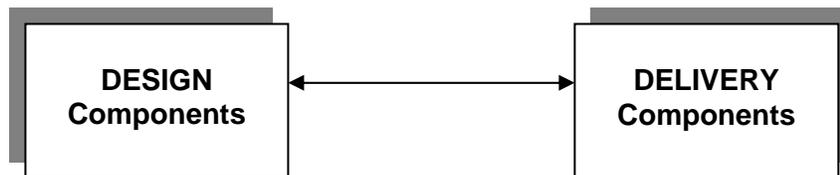
Introduction

The teaching practice of explicit instruction has been available to classroom teachers since the late 1960s. Substantial research has been conducted on components and the complete instructional "package." As with many teaching practices, there are varying degrees of adaptation and acceptance. The effective teaching practices research identified most—if not all—of the components of explicit instruction as essential for positive student outcomes (e.g., Rosenshine & Stevens, 1986; Ellis & Worthington, 1995).
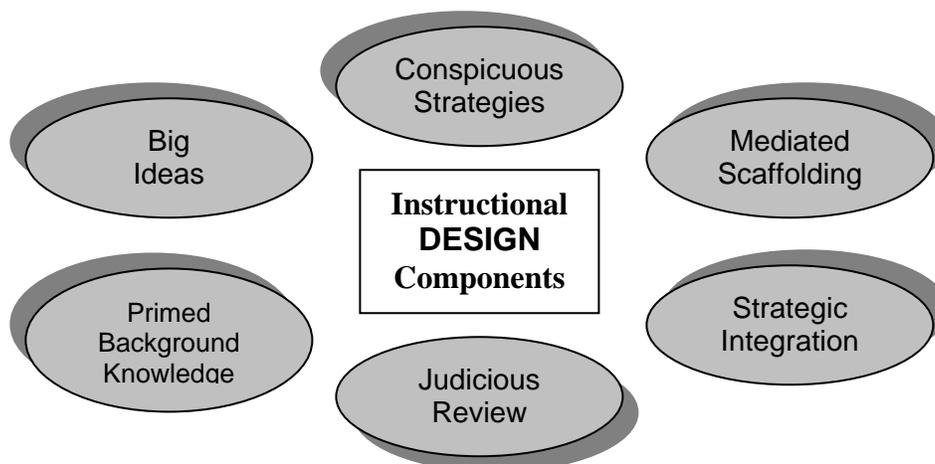
Definition

Explicit instruction is a systematic instructional approach that includes set of delivery and design procedures derived from effective schools research merged with behavior analysis. There are two essential components to well designed explicit instruction: (a) visible *delivery* features are group instruction with a high level of teacher and student interactions, and (b) the less observable, *instructional design principles* and assumptions that make up the content and strategies to be taught.

Identifying Components

Explicit instruction consists of essential:

DESIGN Components ⟷ **DELIVERY Components**

**Standard Instructional Design Components
Essential to All Explicit Instructional Episodes**

Conspicuous Strategies

Big Ideas

Mediated Scaffolding

Instructional DESIGN Components

Primed Background Knowledge

Strategic Integration

Judicious Review

Big Ideas
Big ideas function as the keys that unlock content for the range of diverse learners. Those concepts, principles, or heuristics facilitate the most efficient and broadest acquisition of knowledge. Teaching using big ideas is one promising means of striking a reasonable balance between unending objectives and no objectives at all.

Conspicuous Strategies
People accomplished at complex tasks apply strategies to solve problems. Empirical evidence suggests that all students in general, and diverse learners in particular, benefit from having good strategies made conspicuous for them. This paired with great care taken to ensure that the strategies are well-designed result in widely transferable knowledge of their application.

Mediated Scaffolding
This temporary support/guidance is provided to students in the form of steps, tasks, materials, and personal support during initial learning that reduces the task complexity by structuring it into manageable chunks to increase successful task completion. The degree of scaffolding changes with the abilities of the learner, the goals of instruction, and the complexities of the task. Gradual and planful removal of the scaffolds occurs as the learner becomes more successful and independent at task completion. Thus, the purpose of scaffolding is to allow all students to become successful in independent activities. There are at least two distinct methods to scaffold instruction; teacher assistance and design of the examples used in teaching.

Strategic Integration
An instructional design component, strategic integration, combines essential information in ways that result in new and more complex knowledge. Characteristics of strategic instruction include: a) curriculum design that offers the learner an opportunity to successfully integrate several big ideas, b) content learned must be applicable to multiple contexts, and c) potentially confusing concepts and facts should be integrated once mastered. The strategic integration of content in the curriculum can help students learn when to use specific knowledge beyond classroom application.
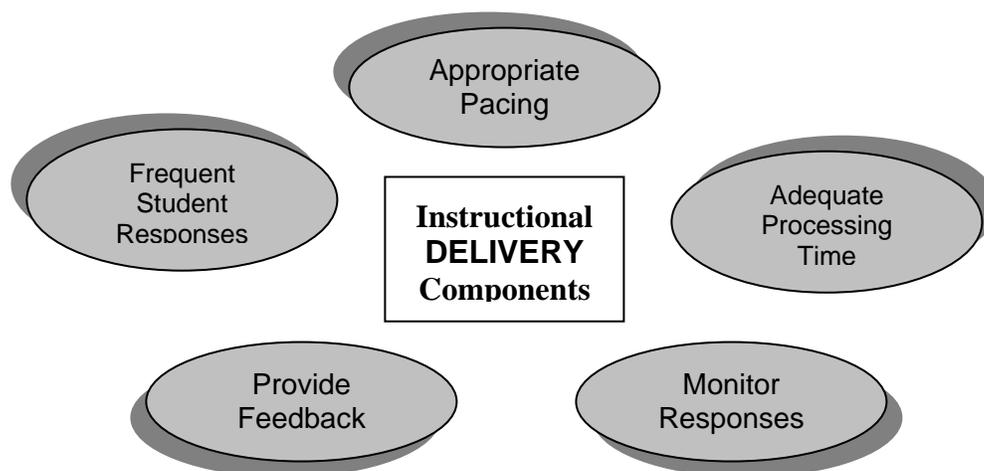
Judicious Review
Effective review promotes transfer of learning by requiring application of content at different times and in different contexts. Educators cannot assume that once a skill is presented and "in" the learner's repertoire that the skill or knowledge will be maintained. Planned review is essential to ensure that students maintain conceptual and procedural "grasp" of important skills and knowledge (Big Ideas). Judicious review requires that the teacher select information that is useful and essential. Additionally, review should be distributed, cumulative, and varied. Requirements for review will vary from learner to learner. To ensure sufficient judicious review for all learners, teachers must regularly monitor progress of the students to inform continued instruction and needed review activities. Review that is distributed over time, as opposed to massed in one learning activity/unit, contributes to long-term retention and problem solving.

Primed Background Knowledge

Acquisition of new skills and knowledge depends largely upon a) the knowledge the learner brings to the task, b) the accuracy of that information, and c) the degree to which the learner can access and use that information. Priming background knowledge is designed to strategically cultivate success by addressing the memory and strategy deficits learners may bring to the new task. The functions of priming background knowledge are to increase the likelihood that students will be successful on new tasks by making explicit the critical features, and to motivate learners to access knowledge they have in place.

**Standard Instructional Delivery Components
Essential to All Explicit Instructional Episodes**

Appropriate Pacing

Frequent Student Responses

Instructional DELIVERY Components

Adequate Processing Time

Provide Feedback

Monitor Responses

Require frequent student responses

When students actively participate in their learning, they achieve greater success. The teacher must elicit student responses several times per minute, for example ask students to say, write, or do something. Highly interactive instructional procedures keep students actively engaged, provide students with adequate practice, and help them achieve greater success.

Appropriate instructional pacing

Pacing is the rate of instructional presentations and response solicitations. The pace of instruction is influenced by many variables such as task complexity or difficulty, relative newness of the task, and individual student differences. When tasks are presented at a brisk pace, three benefits to instruction are accomplished: (a) students are provided with more information, (b) students are engaged in the instructional activity, and (c) behavior problems are minimized (students stay on-task when instruction is appropriately paced).

Provide adequate processing time

Think time (adequate processing time) is the amount of time between the moment a task is presented and when the learner is asked to respond. Time to pause and think should *vary* based on the difficulty of the task relative to the student(s). If a task is relatively new, the amount of time allocated to think and formulate a response should be greater than that of a task that is familiar and in the learners' repertoire.

Monitor responses
This is an essential teacher skill to ensure that all learners are mastering the skills the teacher is presenting. Watching and listening to student responses provides the teacher with key instructional information. Adjustments may be made *during* instruction. Teachers should be constantly scanning the classroom as students respond in any mode.

Provide feedback for correct and incorrect responses
Students should receive immediate feedback to both correct and incorrect responses. Corrective feedback needs to be instructional and not accommodating. Feedback to reinforce correct responses should be specific. Feedback should not interfere with the timing of the next question/response interaction of the teacher and student. Feedback that does not meet these criteria can interrupt the instructional episode and disrupt the learner's ability to recall.

Implications for Access to the General Curriculum

"Declarative, procedural and conditional knowledge are necessary ingredients for strategic behavior. Students can learn about these features of reading through direct instruction as well as by practice. Part of a teacher's job is to explicate strategies for reading so that students will perceive them as useful and sensible" (Paris, S. G. l986 p. 17).

Programs using explicit instruction have been researched extensively across classrooms by grade (preschool through adult) and by ability (special and general education settings) since the mid-1960s. General education classrooms in these studies were most often typical settings, with diverse students, including students at-risk for academic failure, economically disadvantaged students, and students with disabilities. Additionally, applications of explicit instruction incorporate the range of school content areas including reading (decoding and comprehension), mathematics, language arts, history/social studies, science, health, art, and music education.

One of the most visible implementations of Direct Instruction in public schools is Wesley Elementary in Houston, TX. When the school began implementation of instruction using direct instruction, fifth grade students were almost two years below grade level. After four years of implementation, the third, fourth and fifth grade students were performing 1 to 1.5 years *above* grade level. All students scored above the 80th percentile in both reading and mathematics on the district evaluation. Wesley School continues these effective practices school-wide and continues to have exemplary scores on district, state, and national assessment.

It has been thought that teaching using explicit instruction is most beneficial for low-performing students and students in special education. However, the results from extensive research repeatedly indicate that *all* students benefit from well-designed and explicitly taught skills

Evidence of Effectiveness

A meta-analysis conducted by G. Adams yielded over 350 publications (articles, books, chapters, convention presentations, ERIC documents, thesis, dissertations, and unpublished documents) on various forms of studies conducted on Explicit Instruction. Criterion for inclusion limited the analysis to 37 research publications that met four groupings: (a) regular education, (b) special education, (c) the National Follow-Through project, and (d) follow-up studies. Some example findings include—

- In this meta-analysis, Adams found that the mean effect size per study using explicit instruction is more than .75 (effects of .75 and above in education are extraordinary). Accordingly, this confirms that overall effect of explicit instructional practices is substantial. Thirty-two of the 34 studies analyzed had statistically significant positive effect sizes. The authors find the consistent attainment of research with substantial effect sizes is further evidence that explicit instruction is an effective instructional practice for all students. The authors conclude that although Direct Instruction is often described as a program for students in special education, the effect sizes calculated in this meta-analysis are nearly the same thus indicating the teaching strategy is effective for students in general education as well as those identified with disabilities.

- National Follow-Through Project: Students receiving explicit instruction in reading, mathematics, language, and spelling achieved well in these basic skills, as well as reading comprehension, problem solving, and math concepts.

- National Follow-Through Project: Student scores were above other treatment conditions in the affective domain as well as the academic. This suggests that competence in school-related skills, enhances self-esteem. "Critics of the model have predicted that the emphasis on tightly controlled instruction might discourage children from freely expressing themselves and thus inhibit the development of self-esteem. In fact, this is not the case" (Abt IVB, p. 73).

- Review of the research on beginning reading using explicit instruction strategies reported that students considered disadvantaged and students with diverse needs, like other students benefit most from early and explicit teaching of word recognition skills, including phonics.

- Carnine and colleagues empirically evaluated effective delivery components essential to explicit instruction to validate each in relation to student outcomes for a range of students by ability and by age.

Links to Learn More About Explicit Instruction

An Educator's Guide to School-Wide Reform
http://www.aasa.org/404.aspx?i=0
This guide was prepared for educators and others to use when investigating different approaches to school reform. It reviews the research on twenty-four "whole-school," "comprehensive," or "school-wide" approaches.

University of North Carolina at Wilmington—Department of Special Studies
http://www.uncwil.edu/people/kozloffm/
This is the homepage of Martin Kozloff who is a Watson distinguished professor at UNC, Wilmington. He is committed to improving education and is particularly interested in direct instruction. He has written numerous papers and books on this topic.

National Center to Improve the Tools of Educators
http://idea.uoregon.edu/~ncite/
The purpose of this National Center, NCITE, is to advance the quality and effectiveness of technology, media and materials for individuals with disabilities. NCITE creates a marketplace demand for the selection and appropriate use of research-based technology, media and materials (TMM). They are involved in various education projects.

How Phonics Instruction Teaches Critical Thinking Skills
http://projectpro.com/ICR/Phonics/CriticalThinking.htm
This site provides information on how to effectively teach using phonics and the benefits associated with it. Data from the study resulting from the Project Follow-Through is provided, the site authors illustrate how explicit instruction supports the use of comprehensive, systematic phonics in teaching young children to read.

School Improvement in Maryland – Project BETTER/Thinking and Learning
http://mdk12.org/instruction/curriculum/toolkit/index.html
This Web site illustrates the implementation of explicit instruction in reading. "Teachers who provide students with information about reading skills and strategies through direct explanation and the gradual transfer of responsibility help their students become independent learners because they provide both the means and the motivation for becoming better readers."

References

Adams, G. L., & Engelmann, S. (1996). Research in Direct Instruction: 25 Years Beyond DISTAR. Seattle,WA: Educational Achievement Systems.

> Adams and Engelmann present a description of direct instruction and a meta-analysis of research on direct instruction. The authors summarize and report years if research on school implementation data on explicit instruction. This research clearly demonstrates that direct instruction program implementations were successful with the full range of teacher and student populations.

Deshler, D. D., & Schumaker, J. B., (1989). An instructional model for teaching students how to learn. In J.L. Graden, J. E. Zins, & M.J. Curtis (Eds.) Alternative Educational Delivery Systems: Enhancing Instructional outcomes for all students. Pp. 391-411. Bethesda, MD: National Association of School Psychologists.

> This book provides a description of how instruction most effectively occurs for all students when teaching strategies. Deshler and colleagues describe the key components and instructional progression to teach the Strategies Intervention Model. The recommendations and strategies described are empirically validated across settings, teachers and students.

Jones, B. F. (l986). Quality and equality through cognitive instruction. *Educational Leadership*, <u>43</u>, 4-11

> The authors of this article provide rationale for direct instruction in cognitive strategies that includes higher-level thinking and provides growth in all levels of thinking for all students.

Kameenui, E. J. & Carnine, D. W. (1998). Effective teaching strategies that accommodate diverse learners. Upper Saddle River, NJ: Prentice-Hall, Inc.

> Kameenui and Carnine focus this text on the specifics of teaching, instruction and curricula necessary to provide diverse learners a fighting chance in today's settings, in- as well as outside the classroom. The authors describe concrete examples of how six key concepts (big ideas) in reading, mathematics, science, social studies, and writing are taught, scaffolded, integrated, and supported.

Kameenui. E.J., & Simmons, D. C. (1990). Designing instructional strategies: The prevention of academic learning problems. Columbus, OH: Merrill Publishing Co.

> This text is designed for those who are teaching students who are at-risk for academic failure, students with learning disabilities, cognitive disabilities, or are emotionally disturbed. It is about the design and delivery components essential to effective instruction in special and general education settings. The authors provide information based on the premise that the technology of instruction is available to make positive differences for children's academic performance.

Kameenui, E. J. & Simmons, D.C. (1999). Toward successful inclusion of students with disabilities: The architecture of instruction. Vol. 1: An overview of Materials adaptations. Reston, VA: Council for Exceptional Children.

> The authors have written this booklet as a part of the ERIC/OSEP Mini-Library and designed to assist educators engaged in curriculum adaptations for learners of all abilities in today's schools. This is the first of three volumes and it provides an overview regarding fundamental principles of curriculum adaptations.

Madigan, Hall, & Glang (1997). Effective assessment and instructional practices for students with ABI. In A. Glang, G H.S. Singer, & B. Todis (Eds.) *Students with Acquired Brain Injury: The School's Response.* Pp. 123-184.Baltimore, MD: Brookes Publishing Co.

> The focus of this book is on educational issues relating to students with acquired brain injury (ABI), and describes approaches that have been effective in improving the school experiences for students with ABI. The chapter by Madigan, Hall, and Glang provides the reader with a description and case study examples regarding planning and carrying out instruction for students with ABI using explicit teaching procedures for the design and delivery of instruction.

Paris, S. G. (l986). Teaching children to guide their reading and learning. In T.E. Raphael (Ed.), *The contexts of school-based literacy*, Pp. ll5-l30. New York: Random House.

> This chapter provides a rationale for direct instruction in reading strategies and describes a program (Informed Strategies for Learning) to provide direct instruction in comprehension that includes declarative, procedural, and conditional information about strategies.

Pearson, P.D., & Dole, J. A. (1987). Explicit comprehension instruction: A review of research and new conceptualization of instruction. *Elementary School Journal, 88* (2)

> This article is a synthesis of research on three explicit instruction applications to comprehension instruction, reciprocal teaching, process training, and inference training. The authors conclude that we teach comprehension more effectively when using these explicit instructional approaches than by following the traditional basal reading paradigm of mentioning, practicing, and assessing.

Roehler, L. R., Duffy, G. G., and Meloth, M. S. (l984). What to be direct about in direct instruction in reading: Content-only versus process-into-content. In Raphael, T. E. (Ed.), *The contexts of school-based literacy,* Pp. 79-95. New York: Random House

> The authors argue for explicit instruction in reading processes and provide examples with particular references to low-aptitude students.

Rosenshine, B. (1997). Advances in research on instruction. In J.W. Lloyd, E.J. Kameenui and D. Chard (Eds.) Issues in educating students with disabilities Pp. 197-221. Mahway, N. J.: Lawrence Earlbaum

> In this chapter, Rosenshine presents research-based instructional advancements from three bodies of research including (a) cognitive processing, (b) teacher effectiveness, and (c) cognitive strategies as applied to student learning. This research allows educators to articulate and implement a major goal of education; "helping students develop well-organized knowledge structures" (p. 217).

Tarver, S. G., (1996). Direct Instruction. In (W. Stainback and S. Stainback (Eds.) *Controversial Issues Confronting Special Education: Divergent Perspectives* (Second Ed.) Pp. 143-165. Boston: Allyn Bacon.

    In this book chapter, Sara Tarver provides a clear and systematic explanation of direct instruction by means of a comparison to the constructivist/holistic approach. Here the author makes the case that effective instruction must incorporate principles from both behaviorism and holism.