

Inventory of Essential Teaching Skills

Martin A. Kozloff
Watson School of Education
University of North Carolina at Wilmington
March, 2002

Introduction

The Inventory of Essential Teaching Skills can help (1) assess education school students as they move through and complete the curriculum; (2) guide the evaluation and improvement of education school curricula; and (3) evaluate the quality of classroom instruction. The Inventory is not complete. Such a device can never be complete. However, the Inventory contains a large number of skills derived from recent reviews of research on effective instruction. These reviews include the following.

1. Cotton, K. (1995). *Effective school practices: A research synthesis 1995 Update*. <http://www.nwrel.org/scpd/esp/esp95.html>
2. Walberg, H.J. & Paik, S. (2000). *Effective education practices. Educational Practices Series*. International Academy of Education. International Bureau of Education. <http://www.ibe.unesco.org/International/Publications/EducationalPractices/EducationalPracticesSeriesPdf/prac06e.pdf>
3. Kozloff, M.A. (2002). *Sufficient Scaffolding, Organizing and Activating Knowledge, and Sustaining High Engaged Time*. <http://www.uncwil.edu/people/kozloffm/scaffolding.pdf>
4. Rosenshine, B. (1997). *Advances in Research on Instruction*. <http://epaa.asu.edu/barak/barak.html>
5. Rosenshine, B. (1997). *The Case for Explicit, Teacher-led, Cognitive Strategy Instruction*. <http://epaa.asu.edu/barak/barak1.html>
6. Rosenshine, B., & Stevens, (1986). Teaching functions. In M.C. Wittrock (Ed.), *Handbook of research on teaching* (Third edition) (pp. 376-391). New York: McMillan.
7. Rosenshine, B., & Meister, C. (1992). The use of scaffolds for teaching higher-order cognitive strategies. *Educational Leadership*, 49 (7), 26-33.
8. Rosenshine, B. (1986). Synthesis of research on explicit teaching. *Educational Leadership*, 43, 60-69.
9. Ellis, E.S., & Worthington, L.A. (1994). *Research Synthesis on Effective Teaching Principles and the Design of Quality Tools for Educators*. <http://idea.uoregon.edu/~ncite/documents/techrep/tech05.pdf>
10. Brophy, J.E., & Good, T.L. (1986). Teacher behavior and student achievement. In M.C. Witrock (Ed.), *Third handbook of research on teaching* (pp. 328-375). New York: McMillan.
11. Anderson, J.R., Reder, L.M., & Simon, H.A. Applications and Misapplications of Cognitive Psychology to Mathematics Education. Department of Psychology. Carnegie Mellon University. Pittsburgh, PA 15213. Online at <http://act.psy.cmu.edu/personal/ja/misapplied.html>

12. Binder, C. (1996). Behavioral fluency: Evolution of a new paradigm. *The Behavior Analyst, 19*, 163-197.
13. Kame'enui, E.J., & Simmons, D.C. (1990). *Designing instructional strategies: The prevention of academic learning problems*. Columbus, OH: Merrill.

The Inventory

1. The teacher can list the four main forms of cognitive knowledge and give examples of each kind. [verbal associations (simple facts, verbal chains, discriminations); concepts; rule relationships; cognitive strategies]
2. The teacher can define each form of cognitive knowledge in terms of its logical structure.
3. The teacher can show how each higher form of cognitive knowledge contains, as elements, the lower forms of knowledge.
4. The teacher can list and describe the six ways learners' skills can change as a function of effective instruction. The teacher can give examples of each kind of change. [accuracy (getting the logical structure); speed/automaticity (fluency); assembling elements into larger wholes; application to new examples and situations (generalization); retention; independence]
5. The teacher can give examples of the difference between knowing (getting the logical structure) and using (applying, generalizing) each of the four forms of cognitive knowledge.
6. The teacher can give a rationale and examples for why instruction is more likely to be effective when students are first taught a form of knowledge and then are taught how to generalize, use, or apply it; and why it is often less effective to try to teach forms of knowledge at the same time (or in the context of) teaching students to generalize, use, or apply that knowledge.
7. The teacher can state the general differences (objectives, teaching methods, evaluation) between initial instruction and expanded instruction.
8. The teacher can give examples of initial vs. expanded instruction for verbal associations, concepts, rule relationships, and cognitive strategies in a content area.
9. The teacher can state the ways scaffolding facilitates acquiring and using knowledge.
10. The teacher can state the main features of scaffolding.
11. The teacher can state how the logical structure of a curriculum serves as a scaffold.
12. The teacher can describe the main organizational features of strand based curricula.

13. The teacher can state the advantages of strand based curricula as scaffolds.
14. The teacher can examine a knowledge system (e.g., elementary mathematics or secondary English composition) and identify the main strands; and can then arrange specific tasks (verbal associations, concepts, rule relationships, and cognitive strategies) to be taught along each strand using principles of strand progression (from elemental skills to larger wholes, from more general to less general, from immediately applicable to less immediately applicable).
15. The teacher can create lessons consisting of short exercises. Each exercise consists of task items drawn from different strands.
16. The teacher can assess the adequacy of strand based lessons considering: (a) the extent to which tasks from earlier lessons are reviewed and applied in a lesson; (b) exercises within the lesson mutually support one another; (c) skills worked on in the lesson are relevant to (prerequisites for, are embedded in) next lessons.
17. The teacher can define strategic integration and state its purpose and benefits.
18. The teacher can create examples of strategic integration across lessons.
19. The teacher can create examples of strategic integration across exercises within lessons.
20. The teacher can define big ideas and state how they are important as scaffolds.
21. The teacher can give examples of big ideas—central concepts, rule relationships or propositions, and theories or models--drawn from (a) a state course of study, (b) research, and (c) his or her own analysis of a knowledge system.
22. The teacher can state how big ideas might be communicated to students—e.g., verbally, concept maps—and how they would serve as scaffolds during initial instruction and during application across many lessons.
23. The teacher can state how the logical structuring of a lesson can serve as a scaffold.
24. The teacher can state the main features of deductive and inductive arguments.
25. The teacher can give examples of lessons organized as deductive and inductive arguments to scaffold instruction.
26. The teacher can give examples of how to foster strategic integration by logically organizing exercises within a lesson.

27. The teacher can state the main steps in the Socratic form of instruction and what skills this form teaches.
28. The teacher can identify learning tasks for which the Socratic format would be useful.
29. The teacher demonstrates skill at using the Socratic format.
30. The teacher can give examples of each phase of the model-lead-test/check-verification format of instruction.
31. The teacher can state the reasons why the model-lead-test/check-verification format of instruction is effective.
32. The teacher can prepare instructional sequences using the model-lead-test/check-verification format for verbal associations, concepts, rule relationships, and cognitive strategies.
33. The teacher can state why it is not possible to teach a concept, rule relationship, or cognitive strategy with one *positive* example.
34. The teacher can define stipulation error.
35. The teacher can create examples of stipulation errors taught by using too narrow a range of examples.
36. The teacher can state principles for deciding which examples to use and how wide a range of examples to use.
37. The teacher can create a range of examples that is adequate for initial instruction of a concept, rule relationship, and cognitive strategy.
38. The teacher can state why it is not possible to teach a concept, rule relationship, or cognitive strategy using **only** *positive* examples.
39. The teacher can state the design principles for juxtaposing positive and negative examples to teach sameness.
40. The teacher can create a set of juxtaposed examples for teaching sameness in a concept.
41. The teacher can state the design principles for juxtaposing positive and negative examples to teach difference.
42. The teacher can create a set of juxtaposed examples for teaching difference in a concept.

43. The teacher can state why it is not a good idea to teach close together different concepts, rules and cognitive strategies that have similar examples.
44. The teacher can give examples of sequencing too closely tasks that are too similar, and can give examples of proper sequencing of tasks that are similar.
45. The teacher can define acquisition, discrimination, and generalization tests.
46. The teacher can state the importance and the purpose of giving brief acquisition, discrimination, and generalization tests after initial instruction.
47. The teacher can create examples of brief acquisition, discrimination, and generalization tests after initial instruction on a concept, rule relationship, and cognitive strategy.
48. The teacher can define delayed retention tests.
49. The teacher can state the importance and the purpose of delayed retention tests.
50. The teacher can create examples of delayed retention tests for a concept, rule relationship, and cognitive strategy.
51. The teacher can state the importance of distributed practice after initial instruction.
52. The teacher can give examples of distributed practice on concepts, rule relationships, and cognitive strategies.
53. The teacher can state the importance of clarity of terms and statements, brevity, and the use of the same wording in similar tasks; e.g., "First word. What word?...Next word. What word?...Next word. What word?"
54. The teacher can create positive and negative examples of instruction that involves clarity of terms and statements, brevity, and the use of the same wording in similar tasks; e.g., "First word. What word?...Next word. What word?...Next word. What word?"
55. The teacher can state the benefits of correcting errors immediately and the negative consequences of not correcting errors.
56. The teacher can state the steps in the basic or simplest error correction format.
57. The teacher can create error correction formats for verbal associations, concepts, rule relationships, and cognitive strategies.
58. The teacher can define pre-corrections.

59. The teacher can state the benefits of pre-corrections.
60. The teacher can create examples of pre-corrections regarding participation in instruction and application of knowledge.
61. The teacher can state the importance of increasing student engaged time.
62. The teacher can identify specific ways to decrease time wasters and to increase time allocated to teaching and time engaged in teaching.
63. The teacher can state the benefits of teaching at a brisk pace.
64. The teacher typically teaches at a brisk pace.
65. The teacher can state the benefits of teaching in small, homogeneous groups.
66. The teacher can describe how to use placement tests or pre-tests to create small, homogeneous groups.
67. The teacher can identify the sorts of subjects in which small, homogeneous grouping would be useful.
68. The teacher can state the features of a learning community.
69. The teacher can state the ways that a learning community can sustain high engaged time.
70. The teacher can state methods for establishing and sustaining a learning community.
71. The teacher can state specific reasons why students have difficulty organizing and activating knowledge.
72. The teacher can state how specific scaffolding methods help students to organize and activate knowledge.
73. The teacher can describe the use of displayed lesson outlines as a method for helping students to organize and activate knowledge.
74. The teacher skillfully creates lesson outlines for display.
75. The teacher can describe the use of guided notes as a method for helping students to organize and activate knowledge.
76. The teacher skillfully creates guided notes.

77. The teacher can state how concept/proposition maps help students to organize and activate knowledge.
78. The teacher skillfully creates concept/proposition maps.
79. The teacher can state the benefits of focused initial instruction on organizing and activating knowledge.
80. The teacher skillfully plans and delivers focused instruction on organizing and activating knowledge.