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1% 7%가 ( , 1999; , 1999). (2000)

5 , 가

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가

(underachievement with low performance) 가

가 , (learning

disabilities)

가 가 (lowest

achievers)

( , 1999; Fuchs & Fuchs, 1993; Kavale, 1995; Kavale et al., 1994).

(Swanson, 1990, 1993; Swanson & Allexader, 1997).

(learning strategy) 가

(Leshowitz et al., 1993; Scruggs & Mastropieri, 1993).

가

(Leshowitz et al., 1993).

( : - , , )

1.

(learning strategy)

가

(thinking strategy)

(Borich, 2000).

(Nickerson, Perkins, &amp; Smith, 1985).

가

Bartlett (1958)

(interpolation)

(extrapolation)

(reinterpretation)

(Nickerson, Perkins, &amp; Smith, 1985

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(cognitive instruments)가

가 , 가

2.

(Swanson, 1993; Swanson & Alexander, 1997).

(duration of attention) (selective attention)

(continuous performance tests) (duration of attention)

가

가 (Bender, 1992). (selective attention)

가 (Bender, 1992;

Gearheart, 1986; Mercer, 1991).

(organization),

(verbal elaboration), (mental imagery)

(Hallahan, Kauffman, & Lloyd, 1985).

Swanson,

Kosleski, & Stegink(1987) (mapping organizer)

가

(rehearsal) 가 (Melzer, 1994).

가 , 가

(context)

가 가?

1.

(cognitive learning theory)

(Ashman &

Conway, 1989; Deshler, Ellis, & Lenz, 1996).

(process)

가,

가

(outcomes)

(tasks), (environments), (consequences)

가

가

2. /

가

가

가

가

가

(Nickerson, 1987;

Nickerson, Perkins, & Smith, 1985). 가

가

가

(Pascal's Wager)

가 . . , 가

가 가

(type one error)

(type two error)

(Nickerson, Perkins, & Smith, 1985).

가 ( )

가 가 ( )

(Deshler, Ellis, & Lenz, 1996; Harris & Graham, 1994).

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가 , , 가 가

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3.

. Leshowitz, et al.(1993)

(scientific

reasoning skills) 가 가

가 가

가

Scruggs &amp; Mastropieri(1993)

가

(interrogation techniques)

가 가

가

(elaboration)

가 가

가

Swanson(2001)

1963

1997

58

(higher-order thinking abilities)

(effect size)

.82

가 (metacognition)

가

( 1.19).

( .73),

( .54),

(attribution)

( .38)

가

(extended practices)

1.

가 1970

(modality)

가

(Kavale & Forness, 1995).

가

0.08

가

(Kavale, 1990).

가

(visual),

(auditory),

(kinesthetic)

(Mercer, 1991).

(text)

가

가

가 0.14

(Kavale, 1990).

6%

1/3가



가

가

가

가

2.

(mnemonics)

(memory strategy)

(Ashman &

Conway, 1989).

가

(cognitive operations) 가

(rehearsal),

(visualization),

(verbal elaboration),

(categorization)

가

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(metacognitive)

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(Ashman & Conway, 1989;

Ellis, 1993a, 1993b).

1.

가

가 (Pressley et al., 1995).

가

가 가 (Ellis, 1993a).

가

(Deshler, Ellis, & Lenz, 1996; Pressley, et al., 1995; Swanson, 1990).

가

가

가

가

가

가

(self-monitoring)

가

가

2.

가 가

(Torgesen, 1979).

(self-regulated learning abilities)

가 (Butler, 1998; Graham, Harris, & Troia, 1998; Pressley et al., 1995; Zimmerman, 1998).

가 ( Zimmerman, 1998; Pressley et al., 1995).

가 , ) ,

( : , ) ,

( : )

, 2000).

(Zimmerman, 1998).

(self-directed)

가,

(adaptive)

가

가

'(self-handicapping strategies)

가

가

가

3.

Palinscar

& Brown(1984)

(reciprocal teaching), Ashman & Conway(1989)

(process-based instruction), Deshler, Ellis, & Lenz.(1996)

(strategies intervention

model), Ellis(1993a,. 1993b)

(integrative strategy instruction)

Pressley et al.(1995), Graham, Harris, & Troia(1998), Butler(1998)가

(1992)

1)

(reciprocal teaching)

(Palinscar & Brown, 1984).

가

(prediction)

(questioning)

(summarizing)

가

(clarifying)

20

20

가

가

가

(Borich, 2000; Pressley et al.,

1995).

(1)

, (2)

(大役)

, (3)

가

2)

(process-based instruction)

(classroom integrated

model) (Ashman & Conway, 1989). (plan), (coding strategy), / (cooperative learning and teaching), (curriculum content)

가(how to learn)

(serial coding)

(concurrent coding)

(curriculum content)

가

가

가 (assessment)

가

가

가

( , )

(orientation)

가

가

(strategy development)

가

(intra-task transfer)

(

) (consolidation and generalization)

가

가

3)

(strategies intervention model)

(University

of Kansas Institute for Research in Learning Disabilities)

(Deshler, Ellis, & Lenz, 1996).

가 ,

(Hock, Pelters, & Deshler, 2001; Tralli, Colombo, & Deshler, 1996).

(1)

, (2)

, (3)

(demonstration)

, (4)

, (5)

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8

(1)

, (2)

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가

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8

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Deshler, Ellis, & Lenz, 1996 ).

4)

(integrative strategy instruction)

Ellis(1993a, 1993b)가

. Ellis(1993a)

, ‘ , ’

(orientation)

(framing)

가

(application)

(extending)

가

가

가

(instructive)

(constructive)

가

가

(directive)

(conversational)

가

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1993 Ellis가

가

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5)

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Harris, Graham,





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가 (Parker, 1993).

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(素材)

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, 가 (Houck, 1993; Hutchinson,

1993).

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가 가 (Walsh, 1993).

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가 (Vauras et al., 1993).

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가 (Borich, 2000).

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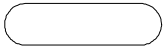
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- (2000). -2000 . . .
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- (1999). :
- . 34(2). 277-295.
- (2000). ( ), (pp. 287-317).
- :
- (1999). . :

- Anderson, V., & Roit, M (1993). Planning and implementing collaborative strategy instruction for delayed readers in grades 6-10. *The Elementary School Journal*. 94. 121-137.
- Ashman, A F., & Conway R N F. (1989). *Cognitive strategies for special education: Process-based instruction*. New York: Routledge.
- Bartlett, F. C. (1958). *Thinking: An experimental and social study*. London: Allen & Unwin.
- Bender, W N (1992). *Learning disabilities: Characteristics, identification, and teaching strategies*. Needham Heights, MA: Allyn and Bacon.
- Borich, G D (2000). *Effective teaching methods* (4th Ed.). Columbus, OH: Merrill and Prentice Hall.
- Butler, D L (1998). A strategy content learning approach to promoting self-regulated learning by students with learning disabilities. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 160-183). New York: Guilford.
- Deshler, D D, Ellis, E. S., & Lenz, B. K (1996). *Teaching adolescents with learning*

*disabilities: Strategies and methods* (2nd Ed.). Denver, CO: Love.

- Ellis, E. S. (1993a). Integrative Strategy Instruction: A potential model for teaching content area subjects to adolescents with learning disabilities. *Journal of Learning Disabilities*. 26. 358-383, 398.
- Ellis, E. S. (1993b). Teaching strategy awareness using integrated formats. *Journal of Learning Disabilities*. 26. 448-481.
- Fuchs, D., & Fuchs, L. S. (1993). Bandwagons and researchers. *The Journal of Special Education*. 27. 133-136.
- Gearheart, B. R. (1986). *Learning disabilities: Educational strategies*. New York: Merrill Publishing Co.
- Graham, S., Harris, K. R., & Troia, G. A. (1998). Writing and self-regulation: Cases from the self-regulated strategy development model. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 20-41). New York: Guilford.
- Hallahan, D. P., Kauffman, J. M., & Lloyd, J. W. (1985). *Introduction to learning disabilities*. Englewood Cliffs, NJ: Prentice-Hall.
- Harris, K. R., & Graham, S. (1993). Fifth invited response: Cognitive strategy instruction whole language: A case study. *Remedial & Special Education*. 14. 30-34.
- Harris, K. R., & Graham, S. (1994). Constructivism Principles, paradigms, and integration. *The Journal of Special Education*. 28. 233-247.
- Huck, M. F., Pulvers, K. A., & Deshler, D. D. (2001). The effects of an after-school tutoring program on the academic performance of at-risk students and students with LD. *Remedial and Special Education*. 22. 172-186.
- Huck, C. K. (1993). Ellis's "potential" integrative strategy instruction model: An appeal extension of previous efforts. *Journal of Learning Disabilities*. 26. 399-403, 416.
- Hitchinson, N. L. (1993). Integrative strategy instruction: An elusive ideal for teaching adolescents with learning disabilities. *Journal of Learning Disabilities*, 26. 428-433.
- Kavale, K. A. (1990). Variances and variety in learning disability interventions. In T. Scruggs & B. Y. L. Wong (Eds.), *Intervention research in learning disabilities* (pp. 3-33). New York: Springer-Verlag.
- Kavale, K. A. (1995). Setting the record straight on learning disability and low achievement: The tortuous path of ideology. *Learning Disabilities Research & Practice*. 10

145-152.

- Kavale, K. A., & Forness, S. R. (1995). *The nature of learning disabilities: Critical element diagnosis and classification*. Mahwah, NJ: Lawrence Erlbaum
- Kavale, K. A., Fuchs, D., & Scruggs, T. E. (1994). Setting the record straight on learning disability and low achievement: Implications for policymaking. *Learning Disabilities Research & Practice*, 9, 70-77.
- Leshowitz, B., Jenkins, K., Heaton, S., & Bough, T. L. (1993). Fostering critical thinking skills in students with learning disabilities: An instructional program. *Journal of Learning Disabilities*, 26, 483-490.
- Meltzer, L. J. (1994). Assessment of learning disabilities: The challenge of evaluating cognitive strategies and processes underlying learning. In G. R. Lyon (Ed.), *Frames of reference for the assessment of learning disabilities: New views on measurement issues* (pp. 571-606). Baltimore, MD: Paul H. Brookes.
- Mercer, C. D. (1991). *Students with learning disabilities (4th Ed.)*. New York: Merrill Publishing Co.
- Nickerson, R. S. (1987). Why teaching thinking? In J. B. Baron & R. J. Sternberg (Eds.), *Teaching thinking skills: Theory and practice* (pp. 27-38). New York: Wiley Freeman and Company.
- Nickerson, R. S., Perkins, D. N., & Smith, E. E. (1985). *The teaching of thinking*. Hillsdale, NJ: Lawrence Erlbaum
- Palinscar, A. M., & Brown, A. L. (1984). Reciprocal teaching of comprehension fostering and comprehension monitoring activities. *Cognition and Instruction*, 1, 117-175.
- Parker, R. (1993). Comments on Ellis's integrative strategy instruction model. *Journal of Learning Disabilities*, 26, 443-447, 481.
- Pressley, M., El-Dinary, P. B., Warton-McDonald, R., & Brown, R. (1998). Transactional instruction of comprehension strategies in the elementary grades. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 42-56). New York: Guilford.
- Pressley, M., Woloshyn, V., & Others (1995). *Cognitive strategy instruction that really improves children's academic performance (2nd Ed.)*. Cambridge, MA: Brookline Books.
- Scruggs, T. E., & Mastropieri, M. A. (1993). *Special education for the twenty-first century*

Integrating learning strategies and thinking skills. *Journal of Learning Disabilities*. 26. 392-398.

- Swanson, H L (1990). Instruction derived from the strategy deficit model: Overview of principles and procedures. In T. E. Scruggs & B. Y. L. Wong (Eds.), *Intervention research in learning disabilities* (pp. 34-65). New York: Springer-Verlag.
- Swanson, H L (1993). An information processing analysis of learning disabled children's problemsolving. *American Educational Research Journal*. 30. 861-893.
- Swanson, H L (2001). Research on interventions for adolescents with learning disabilities: meta-analysis of outcomes related to higher-order processing. *The Elementary School Journal*. 101. 331-348.
- Swanson, H L, & Alexander, J. E. (1997). Cognitive processes as predictors of word recognition and reading comprehension in learning-disabled and skilled readers: Revisiting the specificity hypothesis. *Journal of Educational Psychology*. 128-158.
- Swanson, H L, Kozleski, E., & Stegink, P. (1987). Effects of cognitive training on disabled readers' prose recall: Do cognitive processes change during intervention? *Psychology in the Schools*. 24. 378-384.
- Torgesen, J. (1979). Factors related to poor performance on memory tasks in reading disabled children. *Learning Disability Quarterly*. 2. 17-23.
- Tralli, R., Colombo, B., & Deshler, D. D. (1996). The strategies intervention model: A model for supported inclusion at the secondary level. *Remedial and Special Education*. 17. 204-216.
- Vauras, M., Lehtinen, E., Oksanen, E., & Salonen, P. (1993). Devices and desires: Integrating strategy instruction from a motivational perspective. *Journal of Learning Disabilities* 26. 384-391.
- Walsh, J. (1993). The promise and pitfalls of integrated strategy instruction. *Journal of Learning Disabilities*. 26. 438-442.
- Zimmerman, B. J. (1998). Developing self-fulfilling cycles of academic regulation: An analysis of exemplary instructional models. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 1-19). New York: Guilford.

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E-mail : jhshin@ejong.ac.kr



# Critical Review of Cognitive-Learning Strategies Instruction for Students with Severe Learning Difficulties

Shin, Jong-Ho\*

Students with severe learning problems experience learning failures partly due to ineffective and inefficient use of cognitive learning strategies. Cognitive learning strategies are specific thinking strategies used for content-learning activities, leading to more effective and efficient learning outcomes. The strategies include three specific mental operations: interpolation, extrapolation, and reinterpretation. Instructional programs of cognitive learning strategies are needed for students with severe learning problems because research findings have shown these students can benefit from such programs.

Learning-strategy instructional programs developed for low-achieving students can be classified into three types: perception-based, mnemonics-based, and integrative-strategy instructional programs. Perception-based instructional programs are designed to train perceptual-motor coordination abilities and match instructional presentation modes with learners' perceptual preferences. Research shows that perception-based instructional programs are not successful in enhancing learning outcomes of students with severe learning problems.

Mnemonics-based instructional programs are designed to enhance acquisition, retention, and retrieval of information and include such strategies as visualization, verbal elaboration, and categorization. The programs, however, have limited effects on students' learning in subject areas because they less emphasize integrative use of various learning strategies needed for learning interrelated contents, not pieces of information.

Integrative-strategy instructional programs have been developed such that students are taught the strategies through content-learning activities. Therefore, learning strategies are considered ordinary part of content learning so that it is more likely that students apply and generalize them to other learning situations. Integrative-strategy instructional programs include

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\* Department of Education, Sejong University.

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Reciprocal Teaching, Process-Based Instruction, Strategies Intervention Model, and Integrative Strategy Instruction. Among these, the programs of Reciprocal Teaching and Strategies Intervention Model have been supported by empirical studies.

Practical factors should be considered to implement learning-strategy instructional programs successfully in school settings. First, currently available textbooks are composed of contents themselves, not of how to learn those contents. Integrative composition of textbooks with contents and learning strategies should be considered, especially for students with severe learning problems. Second, successful implementation of strategy instruction requires teachers to be well prepared. Pre- and in-service teacher training of learning-strategy instructional programs should be provided for teachers before the programs are implemented in school settings. Third, effective instructional practices are accompanied by formative evaluation tools used to assess program effectiveness. Therefore, assessment procedures to measure students' abilities to command learning strategies should be developed with strategy instructional programs. Finally, learning-strategy instructional programs include not only cognitive aspects of learning, but also affective aspects of learning. Motivation strategies, therefore, should be included in the programs to make students participate in strategy-learning activities more actively.

■ **Key Words** : Learning Strategies, Under Achievers, Information Processing, Self-Reg Learning