

Research on Direct Instruction (DI) and Higher Order Thinking¹

“While the literature points to evidence in support of Direct Instruction, the literature also indicates a reluctance on the part of teachers to adopt this approach (Vitale and Kaniuka, 2009). This reluctance is born from several factors, citing a key argument that Direct Instruction impedes higher order thinking based on rote learning and memorizing facts. While this argument has been debunked, supported by evidence from neuroscience (Willingham, 2009) this negative perception still seems to linger.”²

“[S]ome critics of DI have suggested that while it might be effective in teaching “basic” skills, it is far less effective in teaching more complex and conceptual areas, such as reading comprehension and concepts or applications within math. Because there were multiple studies that assessed reading and math, we were able to examine this contention ...[A]ll of the estimated effects, and their associated confidence intervals, would be considered large or very large, exceeding the effects found in studies of other interventions. *In short, we could find no support for the contention that DI was not effective with so-called “higher order” skills.*” (italics in original)³

“This mistaken notion that Direct Instruction is a rote learning approach not only reflects a fundamental misunderstanding of the approach but also fails to recognize that so-called higher order thinking depends on the mastery of more basic skills and involves the integration of concepts, rules, and strategies. Virtually all Direct Instruction programs concern higher order thinking skills: classifying, learning rules, making inferences, testing generalizations, analyzing arguments, and solving problems. Carnine and Kameenui (1992) have described how the principles of design have been applied to teach sophisticated problem-solving skills to a variety of learners and across various domains. As the American Federation of Teachers (1998a) noted, although the early mastery of basic skills is a key element, Direct Instruction programs also address students’ general comprehension and analytic skills.”⁴

“The underlying perception, of course, is that...Direct Instruction is limited in effectiveness to reasoning and skills of the lowest order. Although Direct Instruction has been shown to improve overall reading scores, Ryder and others imply that Direct Instruction achieves little beyond the mere decoding of words on the page. Direct Instruction is seen to promote mechanistic tasks and applications over complex cultural activities that require reflection, experimentation, and personal exploration...A more insidious implication is that urban children may gain skills in Direct Instruction programs but at the cost of their ability to discern and critically think about the world around them. Such fears and assumptions, however, lack evidential proof.”⁵

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² Shammas, N. (2023). An Exploration of Direct Instruction: Why Teaching Matters. In: Al Naimiy, H.M.K., Bettayeb, M., Elmehdi, H.M., Shehadi, I. (eds) Future Trends in Education Post COVID-19. SHJEDU 2022. Springer, Singapore. https://doi.org/10.1007/978-981-99-1927-7_25.

³ Stockard J., Wood T.W., Coughlin C., and Khoury C.R. *All Students Can Succeed: A Half Century of Research on the Effectiveness of Direct Instruction*, Lexington Books, July 2020, page 113-4. <https://rowman.com/ISBN/9781498588461/All-Students-Can-Succeed-A-Half-Century-of-Research-on-the-Effectiveness-of-Direct-Instruction>

⁴ Journal of Direct Instruction, Vol. 3, No. 2, pp. 75–110. From Nancy Marchand-Martella, Timothy Slocum, and Ronald Martella, Introduction to Direct Instruction. Published by Allyn and Bacon, Boston, MA, <https://www.nifdi.org/research/journal-of-di/volume-3-no-2-summer-2003/449-the-components-of-direct-instruction/file>

⁵ Thomas Kim and Saul Axelrod, Direct Instruction: An Educators’ Guide and a Plea for Action, The Behavior Analyst Today Volume Number 6, Issue Number 2, 2005, pp. 111-120, <https://files.eric.ed.gov/fulltext/EJ1072120.pdf>