

What Works Clearinghouse™



Beginning Reading

October 2014

Carbo Reading Styles Program®

No studies of the *Carbo Reading Styles Program®* that fall within the scope of the Beginning Reading review protocol meet What Works Clearinghouse (WWC) group design standards. Because no studies meet WWC group design standards at this time, the WWC is unable to draw any conclusions based on research about the effectiveness or ineffectiveness of the *Carbo Reading Styles Program®* on beginning readers in grades K–3. Additional research is needed to determine the effectiveness or ineffectiveness of this intervention.

Program Description¹

The *Carbo Reading Styles Program®* is a literacy intervention for students in grades K–12 that aims to meet the individual needs of learners through assessment and attention to students' particular reading learning styles. The term "learning styles" refers to the concept that different students may need different instructional approaches. Thus, optimal instruction requires determining individuals' learning styles and tailoring instruction accordingly. Students' preferred learning styles are classified as auditory, visual, or kinesthetic (a style in which learning takes place by the student carrying out a physical activity).

The intervention uses the *Reading Styles Inventory®*, which determines a student's learning style for reading and provides specific teaching recommendations that accommodate that style. During the assessment, students are given a questionnaire that asks them what sort of information presentation they prefer (e.g., words versus pictures) and what their personal preferences are as they apply to reading (e.g., the amount of structure and mobility needed). *Reading Styles Inventory®* reports list each student's learning strengths and weaknesses, and provide descriptions of recommended reading methods and strategies. Teachers then match instructional activities to students' preferred learning styles.

Teachers receive training in the implementation of the *Carbo Reading Styles Program®* and a variety of teaching methods appropriate to the different reading styles of their students. Particularly, teachers are trained in the *Carbo Recording Method®*, the core teaching method initially developed to accommodate the reading styles of students with learning disabilities. The method is similar to reading a story to a student: while a student reads a given written passage, they listen to a fluent reader (on an audio recording) who reads aloud the same written passage. The recording includes short segments of high-interest reading materials that are somewhat above the student's reading level. Each segment is played at a slow pace, with particular emphasis on phrasing. Students read along selections a few times in order to master the reading material. At regular intervals, they read back and discuss materials with a teacher, peer, or tutor. The recording is accompanied by questions and writing activities that are used to reinforce the information in the stories. Recorded short stories are available on CDs in the *Power Reading®* program or in *Power Reading Online®*.

The *Carbo Reading Styles Program®* can be used in individual and group settings as a primary or supplementary program. This review of the *Carbo Reading Styles Program®* for Beginning Reading focuses on students in grades K–3.

Research²

The WWC identified 36 studies of the *Carbo Reading Styles Program*[®] for beginning readers that were published or released between 1983 and 2014.

Four studies are within the scope of the Beginning Reading review protocol but do not meet WWC group design standards.

- Two studies used a quasi-experimental design that did not establish that the comparison group was comparable to the intervention group prior to the start of the intervention.
- One study had only one unit assigned to the intervention condition and one unit assigned to the comparison condition, which makes it impossible to attribute the observed effect solely to the program.
- One study could not attribute the measures of the effects solely to the *Carbo Reading Styles Program*[®] because the intervention was combined with another intervention.

Twenty-five studies are out of the scope of the Beginning Reading review protocol because they have an ineligible study design.

- Twenty-one studies did not use a comparison group design, a regression discontinuity design, or a single-case design.
- Four studies were literature reviews or meta-analyses.

Seven studies are out of the scope of the Beginning Reading review protocol for reasons other than study design.

- Three studies did not use a sample aligned with the protocol.
- Three studies did not disaggregate findings for the age or grade range specified in the protocol.
- One study examined the effects of an adaptation of the *Carbo Talking Books Program*, which the WWC determined was too dissimilar to the *Carbo Reading Styles Program*[®] to be considered an effectiveness test of *Carbo Reading Styles Program*[®].

References

Studies that do not meet WWC group design standards

- Barber, L., Carbo, M., & Thomasson, R. (1998). *A comparative study of the Reading Styles program to extant programs of teaching reading*. Bloomington, IN: Phi Delta Kappa Study. The study does not meet WWC group design standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.
- Gull, R. L. (1990). *Effects of matching kinesthetic modality preferences with corresponding reading instruction on comprehension ability and vocabulary development of below-grade-level readers* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9109067) The study does not meet WWC group design standards because the measures of effectiveness cannot be attributed solely to the intervention—there was only one unit assigned to one or both conditions.
- McIntyre, E., Jones, D., Powers, S., Newsome, F., Petrosko, J., Powell, R., & Bright, K. (2005). Supplemental instruction in early reading: Does it matter for struggling readers? *The Journal of Educational Research*, 99(2), 99–107. The study does not meet WWC group design standards because the measures of effectiveness cannot be attributed solely to the intervention—the intervention was combined with another intervention.
- Snyder, A. E. (1997). *Utilization of systematic design and learning styles model as a paradigm for restructuring education* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9806349). The study does not meet WWC group design standards because it uses a quasi-experimental design in which the analytic intervention and comparison groups are not shown to be equivalent.

Studies that do not meet WWC pilot single-case design standards

None.

Studies that are ineligible for review using the Beginning Reading Evidence Review Protocol

- Bradsby, S., Wise, J., Mundell, S., & Haas, S. (1999). Making a difference for LD students: Matching reading instruction to reading styles through recorded books. *Research in the Classroom*. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Brooks, J. D. (1991). *Teaching to identified learning styles: The effects upon oral and silent reading and listening comprehension* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9217763) The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Buechler, M. (2001). *Updated catalog of school reform models* (Program report). (ED458703). Retrieved from ERIC database. <http://eric.ed.gov/?id=ED458703>. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Hodgin, J., & Wooliscroft, C. (1997). Eric learns to read: Learning styles at work. *Educational Leadership*, 54(6), 43–45. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Killion, J. (2002). *What works in the elementary school: Results-based staff development*. Oxford, OH: National Staff Development Council. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- LaShell, L. (1986). *An analysis of the effects of reading methods upon reading achievement and locus of control when individual reading style is matched* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 8705791) The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not at least 50% general education students.
- Maxwell, M. J. (1983). *Teaching reading to disabled readers by eliminating the necessity for grapheme to phoneme encoding* (Doctoral dissertation). St. John's University, Queens, NY. The study is ineligible for review because it does not examine an intervention in a way that falls within the scope of the review.

- Molbeck, C. H. (1994). Using recorded books with reluctant readers. *WSRA Journal (Wisconsin State Reading Association)*, 38(2), 39–42. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Boyd County High School reading lab, Boyd County, KY 2007-2008*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Canyon Del Oro High School, Tucson, AZ 1991-1997*. Syosset, NY: Author. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not at least 50% general education students.
- National Reading Styles Institute. (2010). *Catlettsburg Elementary School, North Rockland, NY 2003-2006*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Gilmer Intermediate School, Gilmer, TX 1997-2000*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Grand Caillou Middle School, Houma, LA 1999-2004*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Immokalee High School, Naples, FL 2001-2005*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Jeannette Myhre Elementary School, Bismarck, ND 1999-2000*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Marion Elementary School, Marion, MI 2001-2005*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Minor Hill Elementary School reading lab, Minor Hill, TN 2007-2008*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *O'Connor Elementary School, Victoria, TX 1993-2008*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Paterson Elementary School, Montgomery, AL 1998-2000*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Ramey Estep High School reading lab, Boyd County, KY 2007-2008*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Thornton Township District 205, Thornton, IL 1997-1998*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *Van Buren R1 Schools, Van Buren, MO 1999-2000*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *West Amory Elementary School, West Amory, MS 1999-2002*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- National Reading Styles Institute. (2010). *West Haverstraw Elementary School, North Rockland, NY 2003-2006*. Syosset, NY: Author. The study is ineligible for review because it does not use a comparison group design or a single-case design.

- Oglesby, F. (1990). *An investigation of pattern in reading style preferences among remedial and developmental readers* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (UMI No. 9111230)
The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Oglesby, F., & Suter, W. N. (1995). Matching reading styles and reading instruction. *Research in the Schools*, 2(1), 11–15. The study is ineligible for review because it does not disaggregate findings for the age or grade range specified in the protocol.
- Queiruga, L. (1992). *Increasing reading achievement using Carbo Recordings with special education tenth graders* (Unpublished paper). National Reading Styles Institute, Syosset, NY. The study is ineligible for review because it does not use a sample aligned with the protocol—the sample is not within the specified age or grade range.
- Schacter, J. (1999). *Reading programs that work: A review of programs for pre-kindergarten to 4th grade*. Santa Monica, CA: Milken Family Foundation. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Skipper, B. (1997). Reading with style: How one school district has turned its students' low reading scores around. *American School Board Journal*, 184, 36–37. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Slavin, R. E., Lake, C., Chambers, B., Cheung, A., & Davis, S. (2009). Effective reading programs for the elementary grades: A best-evidence synthesis. *Review of Educational Research*, 79(4), 1391–1466. The study is ineligible for review because it is a secondary analysis of the effectiveness of an intervention, such as a meta-analysis or research literature review.
- Snyder, A. (1994). On the road to reading recovery. *The School Administrator*, 51(1), 23–24. The study is ineligible for review because it does not use a comparison group design or a single-case design.
- Sudzina, M. (1993). *An investigation of the relationship between the reading styles of second-graders and their achievement in three basal reader treatments* (Research report). (ED353569). Retrieved from ERIC database. <http://files.eric.ed.gov/fulltext/ED353569.pdf>. The study is ineligible for review because it does not use a comparison group design or a single-case design.

Endnotes

¹ The descriptive information for this program was obtained from a publicly available source: the program's website (www.nrsi.com; downloaded March 2014). The WWC requests developers to review the program description sections for accuracy from their perspective. The program description was provided to the developer in March 2014, and the WWC incorporated feedback from the developer. Further verification of the accuracy of the descriptive information for this program is beyond the scope of this review.

² The literature search reflects documents publicly available by December 2013. The studies in this report were reviewed using the Standards from the WWC Procedures and Standards Handbook (version 3.0), along with those described in the Beginning Reading review protocol (version 2.1). The evidence presented in this report is based on available research. Findings and conclusions may change as new research becomes available.

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Glossary of Terms

Attrition	Attrition occurs when an outcome variable is not available for all participants initially assigned to the intervention and comparison groups. The WWC considers the total attrition rate and the difference in attrition rates across groups within a study.
Clustering adjustment	If intervention assignment is made at a cluster level and the analysis is conducted at the student level, the WWC will adjust the statistical significance to account for this mismatch, if necessary.
Confounding factor	A confounding factor is a component of a study that is completely aligned with one of the study conditions, making it impossible to separate how much of the observed effect was due to the intervention and how much was due to the factor.
Design	The design of a study is the method by which intervention and comparison groups were assigned.
Domain	A domain is a group of closely related outcomes.
Effect size	The effect size is a measure of the magnitude of an effect. The WWC uses a standardized measure to facilitate comparisons across studies and outcomes.
Eligibility	A study is eligible for review and inclusion in this report if it falls within the scope of the review protocol and uses either an experimental or matched comparison group design.
Equivalence	A demonstration that the analysis sample groups are similar on observed characteristics defined in the review area protocol.
Extent of evidence	An indication of how much evidence supports the findings. The criteria for the extent of evidence levels are given in the WWC Procedures and Standards Handbook (version 3.0).
Improvement index	Along a percentile distribution of students, the improvement index represents the gain or loss of the average student due to the intervention. As the average student starts at the 50th percentile, the measure ranges from -50 to +50.
Multiple comparison adjustment	When a study includes multiple outcomes or comparison groups, the WWC will adjust the statistical significance to account for the multiple comparisons, if necessary.
Quasi-experimental design (QED)	A quasi-experimental design (QED) is a research design in which study participants are assigned to intervention and comparison groups through a process that is not random.
Randomized controlled trial (RCT)	A randomized controlled trial (RCT) is an experiment in which eligible study participants are randomly assigned to intervention and comparison groups.
Rating of effectiveness	The WWC rates the effects of an intervention in each domain based on the quality of the research design and the magnitude, statistical significance, and consistency in findings. The criteria for the ratings of effectiveness are given in the WWC Procedures and Standards Handbook (version 3.0).
Single-case design	A research approach in which an outcome variable is measured repeatedly within and across different conditions that are defined by the presence or absence of an intervention.
Standard deviation	The standard deviation of a measure shows how much variation exists across observations in the sample. A low standard deviation indicates that the observations in the sample tend to be very close to the mean; a high standard deviation indicates that the observations in the sample tend to be spread out over a large range of values.
Statistical significance	Statistical significance is the probability that the difference between groups is a result of chance rather than a real difference between the groups. The WWC labels a finding statistically significant if the likelihood that the difference is due to chance is less than 5% ($p < .05$).
Substantively important	A substantively important finding is one that has an effect size of 0.25 or greater, regardless of statistical significance.

Please see the WWC Procedures and Standards Handbook (version 3.0) for additional details.