KENTUCKY READING RESEARCH CENTER



# Systematic Review of Effective Reading Component Interventions for Adult Literacy Learners

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UNIVERSITY OF LOUISVILLE. COLLEGE OF EDUCATION & HUMAN DEVELOPMENT

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# Systematic Review of Effective Reading Component Interventions for Adult Literacy Learners


## Abstract

Approximately 25% of adults in the United States aged 16 and older have difficulty with basic reading skills, yet research on effective interventions for this population remains limited. This systematic review synthesizes evidence on reading component interventions for adult literacy learners published between 2010 and 2025, addressing three questions:

1. What student and intervention characteristics have been examined?
2. Which reading components have been targeted?
3. What does research indicate about intervention effectiveness?

Following a systematic search across eight databases, 15 peer-reviewed studies met all inclusion criteria. Participants were adults aged 16–76 enrolled in Adult Basic and Secondary Education programs, correctional education, and postsecondary transitional programs, primarily in the United States. Findings indicate that adult literacy interventions most consistently improved decoding skills, with small to moderate effect sizes, particularly on untimed assessments. Fluency results were generally positive but mixed. Evidence for vocabulary, spelling, morphological skills, and phonological skills was limited by infrequent assessment and inconsistent findings. Reading comprehension results varied considerably by assessment type, with some larger RCTs showing small to moderate gains. Key methodological challenges included high attrition, variable intervention dosage, and inconsistent fidelity reporting. Future research should prioritize underexamined reading components, stronger research designs, and greater attention to professional development for adult literacy instructors.

## Introduction

Approximately 25% of individuals in the United States who are aged 16 and above have difficulty with basic reading skills (National Center for Education Statistics [NCES], 2024). This means that they have difficulty with tasks such as reading basic health-related written instructions, reading a simple story to their children, reading an email from a supervisor, and/or reading tourist information. Due to the high prevalence of low adult literacy in the United States, it is important that effective interventions are designed, tested, and shown to be promising. Unfortunately, because of the dearth of adult literacy research combined with distinct challenges to studying this population, there is still much to be understood about the nature of effective reading instruction for these adults. This review provides a synthesis of what has been published in the last 16 years as an attempt to highlight what is known about the effectiveness of reading component instruction and adult learners. Adult learners and children are different and similar in key aspects that influence research methodology. Therefore, a brief introduction to the characteristics of adult learners and their instructional contexts is critical before introducing the reading components addressed in this review.

### Characteristics of Adult Learners

In K-12 settings, students are typically similar in age at any given grade level, whereas adult learners can considerably differ in their ages. Specifically, individuals may start attending adult literacy programs if they are not currently enrolled in high school (starting anywhere from 16-18 years old depending on the state). As a result, it is not uncommon to have an “out of school youth” in the same class as a significantly older adult, creating difficulties for instructors who need to balance different developmental needs and goals of varying age groups.

Researchers typically use grade level equivalencies to describe individual reading levels. For example, an individual can be said to read at the $4^{th}$ grade level, while another at the $8^{th}$ grade level. Reading grade equivalency is a construct based on children, and it is yet to be empirically determined whether the reading grade equivalency construct accurately describes the reading abilities of an adult. For example, if a 45-year-old individual who has a reading grade equivalency level of third grade works in the field of construction, he or she may generally read at the third grade level, but be able to read work-related sets of words such as “caulk”, “anchor”, and “circuit” that a typical child in the third grade cannot read (e.g., Pae et al., 2012). Therefore, it is arguable whether a third grade reading equivalency level accurately describes this adult’s reading ability.

The reasons why adults have difficulty with reading are extremely varied (e.g., Belzer, 2026). For example, some adults have diagnosed or undiagnosed disabilities. Others were passed from grade to grade without mastering earlier reading skills. Others are immigrants to the United States who either learned to read in languages with different orthographies, never learned to read well in their native languages, and/or did not have an opportunity to become proficient readers in English.

Finally, in the K-12 school system, it is expected that all children in a given class have similar educational attainment histories. For example, in a sixth-grade classroom, it is presumed that all children have experienced similar K-5 instructional content. Adults who have difficulty with reading vary in terms of their highest educational attainment level (e.g., Miller et al., 2024). Immigrants may have not received much if any educational instruction in their home countries. Those born in the United States may have dropped out in the 9th grade at the age of 16 while reading only at the 4th grade level while others may have graduated in the 12th grade with a special education attendance certificate.

All the varying adult learner characteristics in one class and/or in one study (as well as across studies) make it exceedingly difficult for teachers to differentiate instruction and/or for interventional researchers to show significant effect sizes in their studies. On top of these differences, the adult reading instructional context also varies. While the contexts of typical childhood education are relatively homogenous, the contexts of adult reading instruction vary widely. This paper now turns to a brief description of a few adult instructional contexts.

## Adult Reading Instructional Contexts

Instruction to help adults improve their reading skills takes place in different settings. The majority of federally and state funded programs are housed in technical/community colleges, public-school systems, and correctional institutions. Other venues include community-based programs such as libraries and places of worship. Reading instruction is also offered in some workplaces (Lesgold & Welch-Ross, 2012). These venues are important to consider as they have differing cultures, rules, and requirements. For example, instructional reading programs that are housed in postsecondary institutions provide adults with a clear image of postsecondary possibilities and may increase learners' motivation and long-term goal setting. Community-based programs that are not dependent on government funding often can be very learner-centered in ways that programs that must meet federal/state accountability requirements cannot be. Finally, reading programs in correctional institutions do not always have access to internet-based reading activities, and classes can be cancelled due to security measures such as "lock-downs." These differing contexts impact learners' exposure to varying curricula, short-term and long-term instructional reading goals, as well as learners' speed in progressing.

## Reading Components

The reading-related components of phonological skills, decoding, spelling, morphological skills, vocabulary, fluency, and reading comprehension that are important for children are also important for adult learners (e.g., Binder, 2026; Tighe, 2020). Phonological skills are building blocks that are considered one of the essential precursors to word reading (i.e., being able to hear and manipulate sounds). Decoding is the ability to use these types of skills to read unknown words, while spelling is the ability to accurately put letters and sounds together to write

words. Morphological skills involve the ability to understand the smallest parts of meaning within words (i.e., bases and affixes), while vocabulary focuses on knowing many words (breadth) and many uses of these words (depth). Fluency involves accuracy, speed, and prosody, while reading comprehension involves the conglomerate of all these skills (and others) to accurately read individual words, fluently read sentences, construct meaning across sentences, and ultimately to understand what one reads. Studies have indicated that adults who struggle with reading often possess difficulties with many of these components (e.g., Greenberg & Feinberg, 2019; Tighe & Schatschneider, 2016).

**Barriers to Understanding the Reading Components**

Beyond the characteristics of adult literacy learners and their reading instructional contexts, there are several additional barriers and challenges in adult literacy research that impact available robust evidence in intervention-related work. These challenges include inconsistent learner attendance, lack of professional development, scarcity of funding for adult literacy research, and a paucity of appropriately norm-referenced reading-related component assessments (Lesgold & Welch-Ross, 2012).

Many adult learners have difficulty consistently attending classes. The causes of their challenges are as diverse as their demographic profiles. Reasons can include issues such as caregiving responsibilities, health challenges, poor transportation, unstable housing, and employment as well as poor time management skills (e.g., Van Nieuwenhove & De Wever, 2025). As a result, learners may not gain as much as expected from instruction, nor can researchers easily study the efficacy of an intervention that requires consistent attendance.

Requirements to become an adult literacy instructor vary state by state. Many adult literacy instructors do not possess specific adult literacy instructional credentials, and many do not have degrees in educational fields. To make matters worse, they typically receive minimal in-house professional development and ongoing coaching and there is often extraordinarily little funding available for them to attend adult literacy conferences (e.g., Harrison & Patterson, 2023). Lack of professional development funding can result in instructors who may have difficulties adhering to fidelity of implementing instruction, which can call into question implications of student gains or lack of gains in intervention studies.

Although federal agencies, including National Institutes of Health (NIH) and Institute of Education Sciences (IES) have recently poured millions of dollars into adult literacy research, researchers have not benefited from the same financial resources that K-12 researchers have historically received. As a result, there is not a long history of rigorous evidence-based experimental adult literacy research, nor are there many large, longitudinal studies with adequate sample sizes (e.g., Greenberg & Feinberg, 2019). In addition, researchers must resort to either custom-designed tests, which are typically not rigorously tested for reliability and validity or to norm-referenced assessments, which are not designed for adults who read at elementary levels (e.g., Kaldes et al., 2025). For example, if an adult is reading at the third-

grade level, a researcher may want to assess that individual's phonological skills. Unfortunately, assessments of phonological skills (typically thought of as an emergent literacy skill) are not normed on older adults (i.e., older than 25 years of age; Nanda et al., 2014).

### Research Questions

This systematic review addresses the following three research questions:

1. What student and intervention characteristics have been considered with adult literacy learners?

2. Which reading-related components have been tested with adult literacy learners?

3. What does the research say about the effectiveness of the interventions on the individual reading components?

## Methods

### Study Eligibility Criteria

This review included studies of adult literacy interventions based on the following criteria:

1. *Eligible Populations:* Adults 16 years and older who are not enrolled in high school or college and who need reading instruction including adults enrolled in adult literacy programs (e.g., Adult Basic Education [ABE], Adult Secondary Education, including General Educational Development [GED] preparation).

2. *Location:* Studies conducted in English and located in the United States and its territories, Canada, Australia, Ireland, New Zealand, and the United Kingdom.

3. *Eligible Interventions:* Studies evaluated evidence-based interventions and curricula that focus on reading-related component skills among adults in various contexts (e.g., adult literacy programs, postsecondary transition programs, correctional education settings). Interventions and curricula were clearly described and replicable and reported quantitative results. Studies focused on adults who struggle with reading-related component skills (e.g., phonological skills, decoding, spelling, morphological skills, vocabulary, fluency, and comprehension) and not on teacher or professional development. Programs that focused only on family literacy and English as a second language were excluded.

## Search Strategy

The literature search involved searching across eight databases: (1) ERIC, (2) APA PsycInfo, (3) Academic Search Complete, (4) Communication & Mass Media Complete, (5) Education Source, (6) Psychology and Behavioral Sciences Collection, (7) Sociological Collection and (8) Web of Science. Search terms combined keywords related to population (e.g., “Adult Literacy”, “Adult Basic Education”, “Struggling Adult Readers”), intervention (e.g., “Instruction”, “Program”), outcomes (e.g., “Improve”, “Gain”, “Assess”), study design (e.g., “RCT”, “Quasi-Experiment”), and reading (e.g., “Decoding”, “Word Reading”, “Vocabulary”). Studies were filtered to include studies published from January 2010 to December 2025, written in English, and peer reviewed. Systematic reviews and meta-analyses were excluded from this review.

## Coding Procedure

The initial search resulted in 6,019 records. Figure 1 is a PRISMA diagram that outlines the selection process. After removing 822 duplicate records, a total of 5,197 records remained. Titles and abstracts were screened, and 4,418 records were removed according to five exclusion criteria: (1) study location, (2) participant age, (3) only qualitative research, (4) systematic reviews, and (5) health literacy studies. Another 703 records were removed for not including reading-related components (*n* = 138 e.g. “Decoding”, “Word Reading”, “Vocabulary”), not being intervention programs (*n* = 294 e.g., “Curriculum”, “Instruction”, “Program”), or for having a non-experimental study design (*n*= 271 e.g., “Correlational”, “Non-experimental”, “Qualitative”). Through this point, seven (7) trained graduate research assistants coded the dataset. The graduate research assistants individually reviewed 40 articles several times under the project manager’s guidance until they achieved a minimum interrater reliability of 80%. Interrater reliability was calculated using percentage of agreement by dividing the total number of agreements by the sum of agreements and disagreements for each coded category.

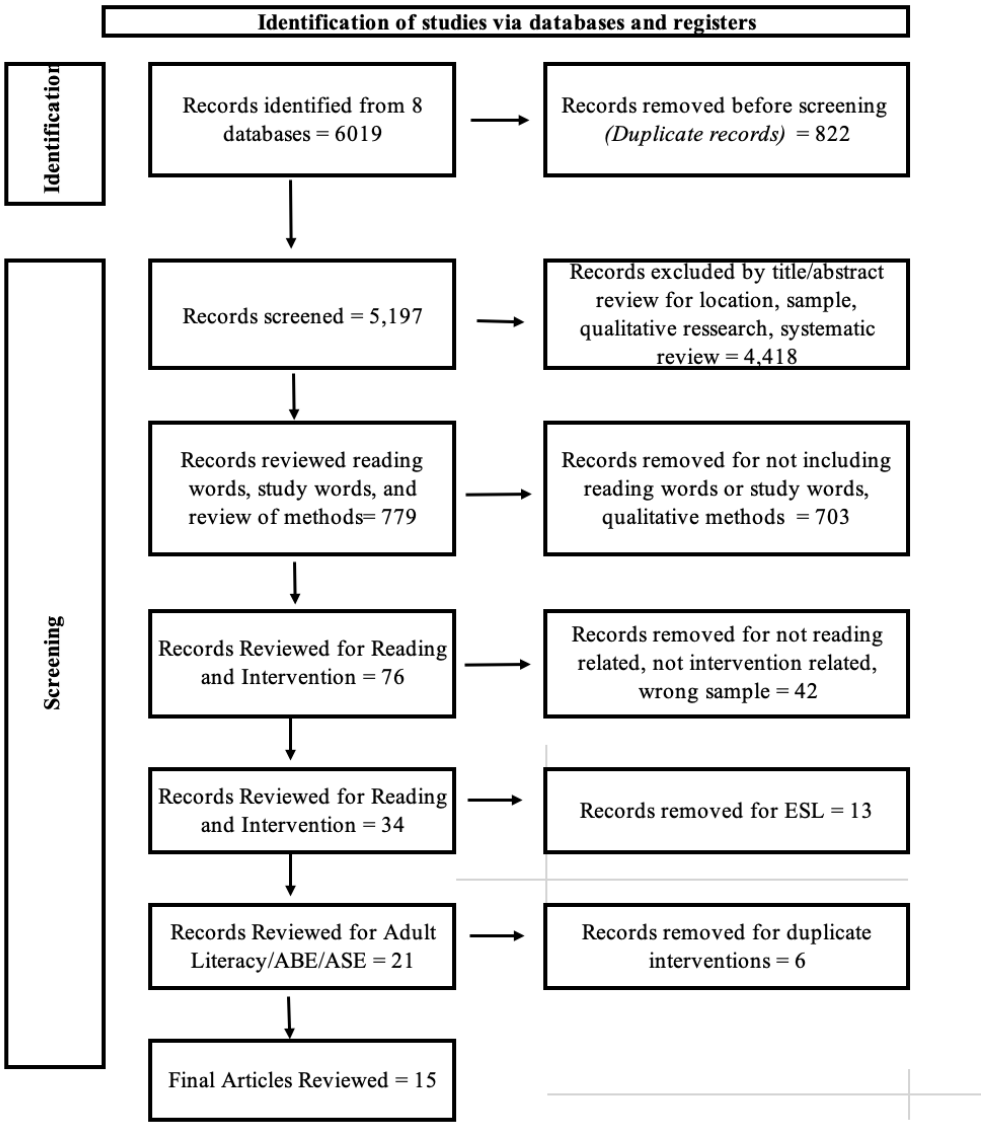
Principal Investigators trained two PhD-level graduate students with experience in adult literacy to complete the remainder of the full-text coding. Full text screening for reading-related studies and quantitative interventions was conducted with 76 studies; 42 studies were removed and 34 met all inclusion criteria. Of those 34 studies, 13 were deemed to be primarily English as a Second Language (ESL) and were removed leaving 21 studies. These studies were reviewed for complete duplicate database interventions; 6 were removed leaving 15 articles included in the final systematic review. The two doctoral-level graduate students individually coded the same studies until they achieved an interrater reliability of 86%, $p < .010$. Interrater reliability was calculated using percentage of agreement by dividing the total number of agreements by the sum of agreements and disagreements for each coded category. The Principal Investigators reviewed and resolved any coding discrepancies.

The final set of included studies (*n* = 15) were coded using a code sheet developed for examining key characteristics of each study. Studies were coded for type of adult learner, type of adult education program, gender, age range/mean, disability status, native language status,

years of formal schooling as a child, grade range, sample size at completed analysis, study design, control comparison, sample size of control condition, type of intervention, name of intervention, whether the intervention was commercial, created, or adapted, type of instruction, number of lessons or interventions, duration and frequency of lessons or interventions, attendance, who led the intervention, whether the intervention included technology, fidelity, and pre-/post-assessment effect sizes by included outcome measures.

**Figure 1**

*PRISMA Diagram*



## Results

### *Student Characteristics*

Table 1 (pp. 14-16) provides an overview of important student characteristics including age range, student type, geographic location, grade equivalency ranges, disability status, native language status, and number of years of formal schooling. Across the 15 included studies, participants were adult learners enrolled in a range of literacy-related contexts, including traditional adult literacy programs (e.g., Adult Basic Education [ABE], General Educational Development [GED] preparation), adult literacy or work release courses as part of correctional education, and a postsecondary transitional program focused on foundational reading skills. Most studies were conducted in the United States (*n* = 12), with three additional studies including participants from both the United States and Canada.

As common in research with adult literacy learners, participant ages varied across studies (16-76), and generally the average age was around mid 30s-early 40s. Three studies focused exclusively on English speakers, and 8 studies reported a mixture of native and non-native speakers of English. Only 6 studies reported anything related to disability status. These studies included self-reports of having a learning disability or being tested for one or previously attending special education or remedial classes in K-12 schooling (see Table 1 for additional details).

### *Intervention Characteristics*

53% (*n* = 8) of the studies were randomized controlled trials (RCTs) and 33% (*n* = 5) were quasi-experimental designs (QEDs), and two studies were subsamples from one of the larger included RCTs that focused on different measures and analyses (e.g., an individual growth analysis approach that examined within-individuals gains analysis [WIGROT]; Scarborough et al., 2013). All QEDs were single group pre-test/post-test designs with no comparison or control groups. Dosage and number of intervention lessons varied considerably, and when reported ranged from 4-72 lessons; however, the actual instructional hours participants received were even more variable given high attrition reported across studies (see Table 2 [pp. 16-25] for further details). Only 7 of the studies reported fidelity of implementation.

### *Reading-Related Components Considered*

All but one of the interventions was multi-component, with decoding (*n* = 12), fluency (*n* = 9), spelling (*n* = 7), vocabulary (*n* = 8), morphological skills (*n* = 7), phonological skills (*n* = 2), and reading comprehension (*n* = 13) all targeted as part of the intervention (see Table 3 [pp. 25-31] for further details). It is important to note that two sets of three articles (First set: Sabatini et al., 2011, Scarborough et al., 2013; Shore et al., 2015; Second set: Fang et al., 2021; Graesser et al., 2021; Hollander et al., 2023) reported on the same intervention. We include these as separate articles, because not all components were tested in a single one and they describe

different aspects of the interventions. In addition, even though an intervention may target a specific reading-related skill, that skill may not have been assessed pre-/post-test. For example, Gray et al. (2018) compared two types of vocabulary interventions, one of which included a focus on morphological components (e.g., word origins, morphemes); however, they did not assess morphological skills in their pre- and post-tests.

### *Effectiveness of Interventions*

Decoding was one of the most frequently assessed reading components and showed the most consistent evidence of improvement across interventions. Many of the studies used norm-referenced assessments, with the most common being Woodcock-Johnson (WJ) measures (Letter Word Identification, Word Attack). These subtests are untimed measures of single word and pseudoword reading to assess decoding. Generally, effect sizes were positive and small to moderate (ds = .12-.46). Other measures of decoding included a timed single word or pseudoword reading task (Test of Word Reading Efficiency [TOWRE] Sight Word Efficiency or Phonemic Decoding Efficiency), and gains were very minimal (ds = .05-.15). Two studies reported no overall gains on decoding (Hock & Mellard, 2011; Hollander et al., 2023) and Alamprese et al. (2011) noticed significant gains on WJ Word Attack but not on TOWRE Sight Word Efficiency, Phonemic Decoding Efficiency, the WRAT Word Reading Test, or a Letter Sound Survey. Overall, these findings suggest small to medium gains of interventions on adults' decoding skills especially when pre- and post-measures were untimed (see Table 3).

Fluency

Results for fluency were mixed but generally positive (see Table 3). Sabatini et al. (2011) reported small but positive gains across three different intervention groups (ds = .29-.39) on a norm-referenced assessment (WJ Fluency), this effect was mirrored in the related studies on the same intervention (Scarborough et al., 2013; Shore et al., 2015). Robinson (2018) and Greenberg et al. (2011) also observed significant gains on the WJ Fluency in their samples. However, the two studies that included fluency based on timed passage reading (Alamprese et al., 2011; Hock & Mellard, 2011) reported no significant gains.

Spelling

Spelling was less frequently considered in adult literacy interventions. Alamprese et al. (2011) reported non-significant gains in spelling on both researcher-created and norm-referenced (Wide Range Achievement Test [WRAT]-3 Word Spelling) assessments. Gray (2019) did observe spelling gains on a researcher-created spelling task (d = 1.32) and Gray (2018, 2019) observed small gains on the WJ Spelling subtest. In contrast, Robinson (2018) did not observe significant gains on WJ spelling subtests using real words and pseudowords. These findings are mixed in terms of the potential effectiveness of spelling for adult literacy learners (see Table 3).

Vocabulary

Vocabulary was frequently assessed; however, many studies reported minimal or non-significant gains (see Table 3). Gray (2019) and Hicks et al. (2025) did report significant gains

on researcher-created vocabulary tasks; however, Gray (2019) reported no gains on a norm-referenced assessment (WJ Reading Vocabulary). Alamprese et al. (2011), Gray et al. (2018), and Scarborough et al. (2013) also reported non-significant gains for any of the norm-referenced vocabulary measures. Hollander et al. (2023) reported gains on a digital vocabulary measure; however, only for their more proficient subgroup of adult literacy learners.

### Morphological Skills

Morphological skills were included in intervention content; however, not always assessed as an outcome (Gray, 2018; Shore et al., 2015; Hicks et al., 2025). Gray (2019) reported a significant, and large effect size gain (d = 2.60) for the intervention group relative to the control group on a researcher-created morphological analysis task. Similarly, Hollander et al. (2023) reported significant gains for some of their subgroups of adult learners (ds = .23, .45) on a digital morphological task (see Table 3).

### Phonological Skills

Phonological skills were rarely assessed, and findings were mixed (see Table 3). Scarborough et al. (2013) reported significant moderate gains (d = .47) on a norm-referenced assessment (Comprehensive Test of Phonological Processing [CTOPP]) whereas Gray (2019) reported no gains on a norm-referenced assessment that taps phonological and orthographic coding skills.

### Reading Comprehension

Reading comprehension was generally an outcome that was consistently measured across studies, and the assessments varied the most (see Table 3). WJ Passage Comprehension tended to be the most commonly used comprehension assessment and results were mixed. Gray et al. (2018), Gray (2019), and Hock and Mellard (2011) reported no or worse performance over time. In contrast, larger-scale RCTs, including Sabatini et al. (2011) and Greenberg et al., 2011 reported very small to moderate gains across intervention groups (ds = .09-.32; $\eta 2$ = .06). In a more recent set of studies, Graesser et al. 2021 reported small but significantly higher means pre- and post-test and Fang et al. (2021) indicated this finding held across four different learner profiles of adult literacy students.

Other studies reported no gains for other norm-referenced assessments including Nelson Reading Test (Alamprese et al., 2011), and the Gray's Oral Reading Test [GORT]-4 (Hock & Mellard, 2011). Two studies included the Reading subtest of the Test of Adult Basic Education (TABE), which is a commonly used progress monitoring assessment in adult literacy programs nationwide. One study (Brown & Rios, 2014) reported a large effect (d = 1.49), with adults on averaging gaining 3.3 grade equivalencies. Yet, Hicks et al. (2026) reported a moderate effect (g = .63); however, also reported non-significant gains for the intervention compared to the control group. Finally, one study (Kallison, 2017), included reading from the Texas Success Initiative Assessment (TSIA), which is a state-mandated assessment to gauge readiness for college-level reading and writing. The study reported significant small to medium growth across five programs (ds = .12-.42).

## Discussion

This report summarized 15 adult literacy interventions available between 2010-2025. There are several takeaways worth noting. First, adult literacy interventions seem to be most effective for decoding skills. This suggests adult literacy interventions may be most influential for foundational reading skills than more complex reading skills that may require the coordination of additional higher-order linguistic and cognitive skills, such as inferencing and background knowledge. The gains on decoding skills were most consistent when the assessments were untimed. This is consistent with previous research that suggests that adult literacy learners, and in particular multilingual adults, may show biased scoring on timed word reading tests because of the additional speed component (Kaldes et al., 2025).

Second, in the reviewed studies, the assessments chosen seem to influence intervention effectiveness. For example, several studies reported gains on researcher-created measures but limited or no gains on norm-referenced or adult-specific assessments (e.g., Gray, 2019; Hicks et al., 2025). Researcher-created assessments likely have more alignment with intervention content and therefore, gains may be easier to detect. However, most of the reported studies used norm-referenced assessments, which makes it harder to detect change over time, especially with large attrition effects.

Third, there was limited attention to some foundational skills, including phonological skills, spelling, and morphological skills, which limits the conclusions that can be drawn on the effectiveness of interventions on these skills. This is notable as many studies have reported that adult literacy learners demonstrate varying degrees of weaknesses in these skills (e.g., Tighe et al., 2019; Tighe & Schatschneider, 2016)  Of these, morphological skills were often targeted in instructional content; however, not explicitly assessed or analyzed (e.g., Alamprese et al., 2011; Fang et al., 2021; Gray et al., 2018). Of the studies that did assess morphological skills, positive gains were noted, which suggests this may be one area for future research. Similarly, many prominent models of reading include connections among phonological, orthographic, morphological, and semantic (vocabulary) knowledge to improve word-level and comprehension skills (e.g. Direct and Indirect Effects Model of Reading [DIER]; Kim, 2020, Reading Systems Framework [RSF]; Perfetti & Stafura, 2014), which suggests more explicit consideration of these different metalinguistic skills is warranted.

### Limitations and Future Research

This study included methodological challenges. For example, all of the quasi-experimental studies identified used a single group pre-/post-test design, which limits confidence that the observed gains in outcomes were caused by the interventions. Another major challenge was that intervention dosage varied substantially across studies, ranging from approximately 8 instructional hours to more than 120 hours; however, greater instructional dosage and being a RCT did not imply larger reading gains. One reason for this is that attrition was common and often substantial across studies, and studies that had greater instructional dosage and more

participants tended to have higher attrition rates. For example, the large-scale RCTs included in this review had attrition rates ranging from 38-54%, which can greatly obscure potential intervention gains; however, attrition is a common issue in adult literacy programs (Lesgold & Welch-Ross, 2012; Tighe & Kaldes, 2026). Previous research suggests that at least 100-150 hours in adult literacy programs is necessary to see a 1-year educational gain (Comings et al., 1999). Future research should consider how we can incorporate more rigorous quasi-experimental designs and focus more on retention efforts.

Researchers were primarily responsible for intervention delivery, which may increase successful implementation; however, it is unclear whether adult literacy instructors would have been able to deliver content or how much training would be required. Fewer than half the studies reported fidelity of implementation, which makes it challenging to understand whether interventions were implemented as intended. Future research should consider developing teacher materials, professional development activities, and coaching, to explore how interventions can be scaled.

## Conclusion

Overall, this review suggests that adult literacy interventions can improve foundational reading skills, particularly decoding and fluency, but evidence for gains in vocabulary, morphological skills, spelling, phonological skills, and reading comprehension remains less consistent. The review also highlights important methodological challenges, including substantial variation in intervention dosage, inconsistent fidelity reporting, and high rates of attrition. Together, these findings suggest that while adult literacy interventions show promise, future research should prioritize direct assessment of underexamined reading components, and interventions that more explicitly connect foundational reading skills to higher-order comprehension outcomes. In addition, researchers should emphasize the importance of measuring and reporting fidelity of instruction, as well as including professional development/coaching activities for teachers in their studies. Increased funding for research would also result in the possibility for larger-scale longitudinal quasi-experimental studies, enabling stronger evidence for reading-related skill instruction.

**Table 1**

*Student Characteristics*

| Author | Age Range, Mean (*SD*) | Type of Student | Location | Grade Range/Reading Comprehension Level | Disability Status | Native Language Status | # Years Formal Schooling as a Child |
|---|---|---|---|---|---|---|---|
| Alamprese et al. (2011) | 16-76, 37(-) | ABE Students in Adult Literacy Programs | U.S. | Reading comprehension level: 4th – 7th grade | Learning Problem or Disability: 31% | English | 6th grade: 8%<br><br>7-12 years: 44%<br><br>HS diploma or GED: 15%<br><br>No response: 33% |
| Brown & Rios (2014) | 23-54, 37(-) | Inmates in a work release center course | U.S. | Reading Comprehension level: less than 9th grade level | - | - | - |
| Fang et al. (2021) | 18-74, 42(13.9) | ABE Students in Adult Literacy Programs | U.S. & Canada | Grade range: 3rd – 8th grade | - | English | - |
| Grasser et al. (2021) | 16-69, 40(14.97) | ABE Students in Adult Literacy Centers | U.S. & Canada | Reading comprehension grade level: 3rd – 7.9 | ~30% Attended special education classes as a child<br><br>26.9% tested for a learning disability | 71.2% English | HS Diploma: 26.9% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Gray et al. (2018) | MPA Intervention 19-31, 24.65(3.97)<br><br>WWS Intervention 19-31, 24.53(4.53) | GED Students at Adult Learning Center | U.S. | Grade range: 8th -12th grade | - | MPA Intervention: 41% English & 59% ESL<br><br>WWS Intervention: 47% English & 53% ESL | MPA Intervention Average 10.06 years<br><br>WWS Intervention Average 10.31years |
| Gray (2019) | 18-30, 23 (-) | GED Students in Adult Learning Center | U.S. | Reading comprehension level: 4th -10th grade | - | 63% English & 37% ESL | Average 10th grade |
| Greenberg et al. (2011) | 16-68, 36.76 (-) | ABE Students in Adult Literacy Programs | U.S. | - | 15% Attended special education classes in school | 44% English & 56% ESL | HS Diploma: 49%<br>Not listed: 51% |
| Hicks et al. (2025) | 23-68, 44.05 (-) | Inmates in a correctional ABE class in a state correctional facility for women | U.S. | Grade range: 6th -12th grade | 67% received special education programming during their education | English | Completed 12th grade: 18.9%<br><br>Average grade at drop out 9.1 |
| Hock & Mellard (2011) | 16-74, 27.7(13.7) | ABE Students in Adult Literacy Programs | U.S. | Grade range: 1st grade - Postsecondary Education | - | - | Average 9.7 years |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Hollander et al. (2023) | Age range not listed, 42.4(13.9) | ABE Students in Adult Literacy Programs | U.S. & Canada | - | - | - | - |
| Kallison (2017) | Age range not listed, 30(-) | Transition Program Students in IP-AES sites. | U.S. | Reading comprehension level: 6th – 9th grade | - | >30% Spanish | GED or HS Diploma |
| Robinson (2018) | Age range not listed,<br><br>Treatment Group: 42.1(-)<br><br>Control Group: 36.5(-) | Inmates in ABE | U.S. | Reading comprehension level: 5th grade or below | - | - | - |
| Scarborough et al. (2013) | 17-70, 42(-) | ABE Students from Adult Literacy Programs | U.S. | Word Recognition Level: 2nd- 7th grade | Learning disability or remedial reading instruction provided: 53% | - | Average school grades completed 9.7(1.9) |
| Shore et al. (2015) | 18-72, 36(-) | ABE Students in Adult Literacy Programs | U.S. | Reading Comprehension Level: 7th GE or below | Learning Disability: 30%<br><br>Support Services (i.e., special education, individual tutoring): 40% | English and Nonnative English Speakers (% not specified) | HS Diploma or GED: 23% |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Sabatini et al. (2011) | 17-76, 36(-) | ABE Students in Adult Literacy Programs | U.S. | Reading Comprehension Level: 7th GE or below | - | English and Nonnative English Speakers (% not specified) | Most adults completed at least 9 to 10 years of formal schooling (% not specified) |

*Note.* - indicates information was not reported. ABE = Adult Basic Education. HS = High School. GED = General Educational Development. MPA = Morpho-Phonemic Analysis. WWS = Whole Word Study. ESL = English as a Second Language. IP-AES = Intensive College Readiness Programs for Adult Education Students. GE = Grade Equivalency.

**Table 2**

*Intervention Characteristics*

| Author | Name/Type of Intervention | Study Design | Sample Size | Control Group (Y/N) | Duration | Fidelity (Y/N) | Pre-/Post-Test (Y/N) | # of Lessons |
|---|---|---|---|---|---|---|---|---|
| Alamprese et al. (2011) | Making Sense of Decoding and Spelling (MSDS) (researcher-developed curriculum): designed to teach adult learners decoding & spelling words more accurately & fluently. | RCT | Total *N* = 561<br>Treatment (*n* = 163)<br>Comparison (*n* = 88)<br>Control (*n* = 98)<br><br>349 ABE learners with pre- & post-test | Y<br><br>Control Group was BaU with instructors continuing existing reading instruction<br><br>Comparison group of 7 ABE classes that used a K-3 | Data was collected from 23 ABE programs over a 3-year period (2 cohorts in treatment, 2 cohorts in control, and 3 cohorts in comparison). | Y | Y | Average number of reading instruction hrs between pre- and post-test = 57. |

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| | | | | structured curricula adapted for ABE as a supplemental analysis | | | | |
| Brown & Rios (2014) | Florida Ready to Work (FLRTW): reading, language, math | QED; Pre-/post-test; single group | 53 Male inmates in a privately operated therapeutic work release center | N | 60-70 hrs to complete. Students who need to repeat sections in order to pass may spend up to 100 hrs on the course. Students work at their own pace, spending a minimum of 5 hrs/week in computer lab. | N | Y | Not reported |
| Fang et al. (2021) | AutoTutor (intelligent tutoring system; multi-component reading comprehension intervention) | QED; Pre-/Post-test; single group; divided into 4 profiles of learners | *N* = 252 Adult literacy students | N | A typical session was composed of approximately 25% AutoTutor interactions, with the remainder human-led instruction | Not reported | Y | Total of 100 hrs of hybrid intervention. |

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| Grasser et al. (2021) | AutoTutor (intelligent tutoring system; multi-component reading comprehension intervention) | QED; Pre-/Post-test; single group | *N* = 52 Adult Literacy Students<br><br>At Analysis: *N* = 43 | N | 4 months, 100 hrs. AutoTutor made up ~25% of the intervention | N | Y | 29 lessons in AutoTutor |
| Gray et al. (2018) | Morpho-Phonemic Analysis (MPA) Intervention: Vocabulary instruction on component reading skills. | RCT | *N*=34 (17 in treatment group; 17 in control group) | Control group used the Semantic Mapping with Whole Word Study intervention. Received traditional evidenced-based vocabulary instruction, involving the teaching of whole words without analyzing words' internal meanings or sound structures. | Both groups: 12hrs over 6 weeks, including 2 hrs of pre-test, 8 hrs of individual tutoring (weeks 2-5), and 2 hrs of post-test | Y | Y | MPA Intervention: 4 instructional tutoring sessions and 2 testing sessions<br><br>Control Intervention: 4 instructional tutoring sessions and 2 testing sessions |
| Gray (2019) | Morphological intervention: randomly assigned to tutoring in either morpheme or syllable analysis | RCT Pilot Study | *N* = 17 (9 treatment and 8 control) *N* (at analysis) = 16 | Control Group completed a phonological intervention, which focused on learning the 6 syllable | 4 weekly 2-hr sessions of intervention | Y | Y | 4 intervention sessions |

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| | to learn academic vocabulary and increase component reading skills | | | types & syllabification (segmenting words into syllables) | | | | |
| Greenberg et al. (2011) | 4 Treatment Groups:<br>DF (Decoding & Fluency)<br>DCF (Decoding, Comprehension, & Fluency)<br>DCEF (Decoding, Comprehension, Extensive Reading, & Fluency),<br>EF (Extensive Reading) | RCT | Midpoint: *N* = 277<br>Post-test: *N* = 198 | Control group (post-test *n* = 40) was BaU adult literacy instruction | 4 days per week, 2 hrs per day | Y | Y | 30 hours of instruction |
| Hicks et al. (2025) | New Century Noah Text (NCNT), which focuses on vocabulary, fluency, & comprehension | RCT | *N* = 38 Women in correctional ABE class.<br><br>Treatment (*n* = 19)<br>Control (*n* = 18)<br><br>For Analysis: *Ns* ranged from 25-33 depending on outcome measure | BaU instruction<br><br>ABE Class: either the morning or afternoon class for 3hrs/day (i.e., 1 hour each of reading, language, and mathematics), 4 days per week.<br><br>The control group took the | NCNT: Lessons were finished with a mean time of 26.36 minutes (range: 18.59–37.27), vocabulary review mean completion time = 8.84 minutes (range: 5.38–12.55), and assessments | N | Y | 72 lessons of NCNT<br><br>*intervention dosage was somewhat variable, with two treatment students unable to complete all 72 lessons" |

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| | | | | same assessments within approximately the same timeframe as the treatment group | mean completion time was 16.67 minutes (range: 8.50–25.50). Students completed around 2 lessons per day, 4 days per week for 4-7 weeks. | | | |
| Hock & Mellard (2011) | No specific name but involves Strategic Instruction Method (SIM), which includes reading comprehension & reading-related subskills, word-reading skills, fluency | RCT | 375 ABE students.<br><br>Treatment *n* = 197; Control *n* = 178<br><br>Drawn from 39 treatment & 38 control classes<br><br>Analysis: Total *N* = 205 | 38 Control classes; control n = 178 participants Learners in control classes received BaU ABE instruction in reading-related topics such as social studies, history, and science<br>. | For experimental and control - classes were Planned as an 8-week duration, 4 days per week for 50-60 min per day (i.e., 26 to 32 hrs) starting at various times during the year. | Y | Y | Did not report # of lessons but reported instructional time.<br><br>Treatment Group: Planned hrs of instruction: Bridging 27 hrs Fluency 19 hrs Prediction 34 hrs Summarization 23 hrs<br><br>Actual hrs of instruction: Bridging 19 hrs Fluency 13 hrs |

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| | | | | | | | | Prediction 30 hrs<br>Summarization 17 hrs<br><br>Control Group: Planned hours of instruction:<br>Bridging 25 hrs<br>Fluency 19 hr<br>Prediction 35 hrs<br>Summarization 23 hrs<br><br>Actual hours of instruction:<br>Bridging 19hrs<br>Fluency 13 hrs<br>Prediction 31 hrs<br>Summarization 18 hrs |
| Hollander et al. (2023) | No specific name but focused on word recognition and decoding, vocabulary, morphology, sentence processing, reading efficiency, reading comprehension | QED; Pre-/post-test; single group that was divided into 4 profiles of learners | *N* = 252 ABE students. | N | 100 hrs of instruction | N | Y | Approx. 30 lesson topics |

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| Kallison (2017) | Intensive College Readiness Programs for Adult Education Students (IP-AES): focuses on comprehension, college readiness, & reading skills | QED; Pre- / post-test; single group | *N* = 240 students enrolled in five IP-AES sites<br>At analysis: *N* = 207 | N | 6-10 weeks (120 hrs); 4–5 days per week, about 3–6 hrs/day | N | Y | Not reported |
| Robinson (2018) | Pure and Complete Phonics (PCP). This was a modification of Orton–Gillingham: targets phonics, word recognition, comprehension, decoding | RCT | *N* = 44 inmates<br><br>At analysis: *N* = 41 | Yes: Control group received the institution's standard reading curriculum (no sample size listed) | 15-week program; 5hrs per week | N | Y | Not reported |
| Scarborough et al. (2013) | 3 Treatment Groups:<br>CR: Corrective reading<br><br>RAVE-O: Retrieval, Automaticity, Vocabulary, Elaboration-Orthography<br><br>GRR: Guided Repeated Reading | RCT subsample<br><br>WIGROT (within-subject gains, replicated over tests) | *N* = 148 ABE learners (A subgroup of completers from Sabatini et al., 2011) | N | Sessions lasted 75 min, on average<br><br>Sessions were conducted about 3x per week for 1 term (10-18 weeks)<br><br>Instruction time totaled | Y | Y | Programs were designed to be completed in 30-45 sessions, but were at the student's pace<br><br>Total number of completed sessions ranged from 12-63, with |

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| | All 3 targeted basic reading skills, but differed in their emphasis on word recognition, decoding, and fluency and in the materials & activities used during tutoring | | | | 44 hours, on average | | | mean of 35 (*SD* = 12).<br>CR = 36 (*SD* = 12)<br>RAVE-O = 34 (*SD* = 12)<br>GRR = 35 (*SD* = 12) |
| Shore et al. (2015) | Relative Effectiveness of Adult Literacy Guided Repeated Reading (REAL GRR) program: oral reading of increasingly challenging texts with a progression of scaffolding toward independent reading | RCT subsample | 50 learners completed the REAL GRR program<br><br>This study reports a subsample of Sabatini et al. (2011), which did randomly assign learners to REAL GRR. | N | 75-minute lessons, for a total of at least 30 hrs of instruction. | N | Y | 30 lessons |
| Sabatini et al. (2011) | 3 Treatment Groups:<br><br>CR: Corrective Reading | RCT | 579 adults met inclusion criteria | BaU where the ABE classrooms were later observed and the class | Instructional sessions took place about 3 times per week for | Y | Y | Mean number of completed sessions =35 (*SD* = 12), ranging from 12-63, with |

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| | RAVE-O: Retrieval, Automaticity, Vocabulary, Elaboration-Orthography<br><br>GRR: Guided Repeated Reading | | Control group: *N* = 279 adults did pre-test but not post-test<br><br>Treatment groups: 300 adults randomly assigned to 1 of 3 instruction groups.<br><br>Completers = 148 completed at least 10 instructional sessions and all post-tests<br><br>Non-Completers = 152 who dropped out before finishing post-test & who completed fewer than 10 | included some oral reading, spelling exercises, and word analysis activities. There was little or no explicit concentration placed on strengthening decoding, word recognition or fluency skills | around 10-18 weeks, with the goal of completing about 45 sessions (around 75 mins/session) | | | about 25% of students completing more than 45 sessions. Mean completed sessions were similar across all 3 interventions |

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| | | | instructional sessions<br><br>*N*s for each Treatment group:<br>CR = 48<br>RAVE-O = 50<br>GRR = 50<br><br>Totals:<br>Completers = 148<br>Control = 279<br>Non-Completers = 151 | | | | | |

*Note.* RCT = Randomized Controlled Trial. QED = Quasi-Experimental Design. WIGROT = Within-Individual Gains Replicated Over Time. BaU = Business as Usual. ABE = Adult Basic Education.

**Table 3**

*Reading Components Included and Main Study Findings*

| Author | Components | Main Findings |
|---|---|---|
| Alamprese et al. (2011) | | |
| | Comprehension | Nelson Reading Test (NRT): non-significant effect (ES = -.04, *p* = .817) |
| | Decoding | WJ Word Attack: significant treatment effect (ES =.19, *p* = .047)<br>WJR Letter Word ID: non-significant effect (ES = .02, *p* = .912)<br>Letter Sound Survey: non-significant effect (ES = .03, *p* = .828)<br>TOWRE Phonemic Decoding Efficiency: non-significant effect (ES = .06, *p* = .573)<br>TOWRE Sign Word Efficiency: non-significant effect (ES = .10, *p* = .360)<br>WRAT3 Word Reading: non-significant effect (ES = .11, *p* = .371) |
| | Fluency | Passage Reading Test: non-significant effect (ES= -.01, *p* = .945) |

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| | Spelling | WRAT3 Word Spelling: non-significant effect (ES = .11, *p* = .098)<br>Study Spelling Test: non-significant effect (ES = .07, *p* = .256) |
| | Vocabulary | Nelson Word Meaning: non-significant effect (ES = -.23, *p* = .072) |
| Brown & Rios (2014) | | |
| | Comprehension | Reading scores on the TABE significantly improved showing a large intervention effect from pre-test (GE *M* = 5.8) to post-test (GE *M* = 9.1) with an average gain of 3.3 GEs, *p*<.05, d = 1.49 |
| | Decoding | **No specific assessment of this skill (just overall TABE Reading results) |
| | Fluency | **No specific assessment of this skill (just overall TABE Reading results) |
| | Spelling | **No specific assessment of this skill (just overall TABE Reading results) |
| Fang et al. (2021) | | |
| | Comprehension | WJ Passage Comprehension Pre → Post (Means)<br>High group 28.06 → 29.37<br>Conscientious Reader 23.63 → 25.78<br>Under-Engaged Reader 25.29 → 26.92<br>Struggling Reader 23.43 → 24.32<br><br>Reading Assessment for Prescriptive Instructional Data (RAPID) Pre → Post<br>High Performer 470.60 → 487.78<br>Conscientious Reader 387.63 → 411.12<br>Under-Engaged Reader 401.24 → 402.41<br>Struggling Reader 363.89 → 361.26<br>Overall, small gains for reading comprehension |
| | Morphology | **This current study did not analyze the morphology measures (this is study only measured the Reading Comprehension from the original study) |
| Grasser et al. (2021) | | |
| | Comprehension | WJ Passage Comprehension: post-test scores (*M* = 28.81, *SD* = 3.87) were significantly higher than pre-test scores (*M* = 27.02, SD = 4.25, *p*<.001). |
| | Decoding | **No specific assessment of this skill |
| | Morphology | **No specific assessment of this skill |
| | Vocabulary | **No specific assessment of this skill |
| Gray et al. (2018) | | |
| | Comprehension | Morpho-Phonemic Analysis (MPA): intervention experimental group<br>WWS: control group<br><br>WJ Passage Comprehension<br>Intervention: Intervention group had no/negative gains with means of pre to post 87.29 → 85.82. |

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| | | Control: Control group had no/negative gains with means for pre to post 85.18 → 81.18. |
| | Decoding | Intervention group had significant gains in Word Attack ($p$<.04) and WJ Letter Word ID ($p$>.01) relative to control group. |
| | Morphology | **The study used a MPA teaching intervention; however, only other literacy skills (word attack, word recognition, vocabulary, spelling & comprehension) were considered for assessments. There was no morphology measure for pre/post |
| | Spelling | WJ Spelling<br>Intervention: slight positive gains with means of 90.24 → 91.41.<br>Control: no gains with same pre/post scores. |
| | Vocabulary | WJ Reading Vocabulary<br>Intervention: minor gains with means of 82 → 82.35 (not significant from control).<br>Control: no/negative gains from pre to post (82.47 → 81.18).<br><br>WJ Picture Vocabulary<br>Intervention: minor gains with means of 78.47 → 78.59.<br>Control: no/negative gains with means of 76.35 → 74.76. |
| Gray (2019) | | |
| | Comprehension | WJ Passage Comprehension<br>Intervention: no/negative gains (88 → 86.5) (d = -.29)<br>Control: no/negative gains (87.1 → 85.8) (d = -.46)<br><br>Sentence Comprehension (Researcher Target Word Measure)<br>Intervention: positive gains of 22.5 → 41.8 (d =1.80)<br>Control: positive gains of 25.9 → 44.8 (d = 2.39) |
| | Decoding | WJ Letter Word ID<br>Intervention: positive gains (85.63 → 86.9) (d = .20)<br>Control: no/negative gains (84.4 → 82.9) (d = -.23)<br><br>WJ Word Attack<br>Intervention: positive gains 82.4 → 83.5 (d=.12)<br>Control: 79.8 → 80.9 (d=.12)<br><br>Word Recognition (researcher target word measure)<br>Intervention: gains of 25.9 → 51.4 (d=2.47)<br>Control: gains of 28.8 → 50.3 (d=2.46) |
| | Morphology | Word Analysis (Researcher target word measure) |

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| | | Intervention: positive gains 30.8 → 51.1 (d=2.60)<br>Control: positive gains of 31.4 → 45.6 (d=1.54) |
| | Vocabulary | WJ Reading Vocabulary<br>Intervention: negative gains 83.8 → 83.4 (d=-.06)<br>Control: negative gains 84.9 → 82.1 (d=-.72)<br><br>Definition Matching (Researcher Target Word Measure)<br>Intervention: positive gains of 23.9 → 49.4 (d=3.10)<br>Control: positive gains of 24.5 → 49.0 (D=4.13) |
| | Spelling | WJ Spelling<br>Intervention: Positive gains 86.5 → 89.6 (d=.24)<br>Control: smaller gains 86.1 → 86.8 (d=.08)<br><br>Spelling (Researcher Target Word Measure)<br>Intervention: positive gains of 30.8 → 50.4 (d = 1.32)<br>Control: positive gains of 30.3 → 49 (d = 1.55) |
| | Phonology | WJ Spelling of Sounds<br>Intervention: no/negative gains 85.8 → 85.6 (d = -.01)<br>Control: positive gains 79.4 → 83.9 (d = .67) |
| Greenberg et al. (2011) | | |
| | Comprehension | All Groups Combined:<br>WJ Passage Comprehension: Significant change over time ($p$ < .001, η2 = .06) |
| | Decoding | All Groups Combined:<br>• WJ Letter Word ID: significant change over time ($p$ < .001, η2 = .05)<br>• WJ Word Attack: significant change over time ($p$ = .005, η2 = .03) |
| | Fluency | All Groups Combined:<br>WJ Reading Fluency: Significant change over time ($p$ < .001, η2 = .18) |
| Hicks et al. (2025) | | |
| | Comprehension | TABE Reading: moderate effect size, but not significant for treatment group (g = .63, $p$ = .116) |
| | Decoding | **No specific assessment of this skill |
| | Fluency | **No specific assessment of this skill |
| | Morphology | **No specific assessment of this skill |
| | Vocabulary | NCNT Vocabulary Test: mean of treatment group was significantly larger than control group ($p$ = .020) |
| Hock & Mellard (2011) | | |

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|---|---|---|
| | Comprehension | GORT–4 & WRMT–R: Analyses showed no significant differences between experimental and control classes on pre- to post-test gains by learning strategy for both comprehension assessments |
| | Decoding | WRMT-R: Bridging classes and the Parallel control classes showed no significant differences in gains in word reading subskills |
| | Fluency | Fluency classes and the Parallel control classes: Analyses showed no significant differences in measures of fluency reading connected texts |
| Hollander et al. (2023) | | |
| | Comprehension | Proficient group made significant gains in reading comprehension (d = .35)<br>Underengaged group made significant gains in reading comprehension(d = .34);<br>Conscientious group made significant gains in vocabulary (d = .54) |
| | Decoding | RISE subtest decoding/word recognition had no significant improvements |
| | Morphology | Underengaged group made significant gains in morphology (d = .23)<br>Conscientious group made significant gains in morphology (d = .45) |
| | Vocabulary | Proficient group made significant gains in vocabulary (d = .36), |
| Kallison (2017) | | |
| | Reading (college readiness scores in reading) | TSIA Reading Scores<br>• Program 1: small significant effect (d=.14, *p*<.01)<br>• Program 2: small significant effect (d =.16, *p*<.05)<br>• Program 3: small significant effect (d =.12, *p*<.05)<br>• Program 4: medium significant effect (d = .58, *p*<.01)<br>• Program 5: medium significant effect (d = .42, *p*<.01) |
| Robinson (2018) | | |
| | Decoding | WJ Letter Word ID: medium significant gains (d =.41, *p*<.05)<br>WJ Word Attack: medium significant gains (d = .33, *p*<.05) |
| | Fluency | WJ Reading Fluency: medium significant gains (d=.321, *p*<.05) |
| | Spelling | WJ Spelling (Real Words): small gains (d=.060, not significant)<br>WJ Spelling (Non-Real Words): medium gains (d=.59, not significant) |
| Scarborough et al. (2013) | | |
| | Comprehension | WJ Passage Comprehension: positive gains (d=.20) |
| | Decoding | WJ Letter Word ID: positive gains (d=.21)<br>WJ Word Attack: positive gains (d =.46) |
| | Fluency | Reading Fluency: positive gains (d =.34) |
| | Morphology | **No specific assessments or outcomes |

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| | Phonology | At pretest, those who made gains during post-test had significantly higher scores on the CTOPP phonological awareness assessment (d=.47*, p<.01) |
| | Spelling | **No specific assessments or outcomes |
| | Vocabulary | WJ Oral language cluster: pretests results did not identify those who would improve after the intervention |
| | Reading | WJ Reading Cluster Results (WJ Letter ID, WJ Word Attack, WJ Fluency, WJ Passage Comprehension): those who made improvements after the intervention had stronger reading skills at pre-test (d =.42, *p*<.01) |
| Shore et al. (2015) | | |
| | Comprehension | WJ Passage Comprehension: small gains (d = .26) |
| | Decoding | WJ Word Attack: small gains after REAL GRR (d = .26)<br>WJ Letter Word ID: small gains after REAL GRR (d = .21)<br>TOWRE Sight Word Efficiency: very small gain (d = .05)<br>TOWRE Phonemic Decoding Efficiency: very small gain (d = .09) |
| | Fluency | WJ Reading Fluency: moderate gains after REAL GRR (d = .33) |
| | Morphology | **No specific assessments or outcomes |
| | Spelling | **No specific assessments or outcomes |
| | Vocabulary | **No specific assessments or outcomes |
| Sabatini et al. (2011) | | |
| | Comprehension | Total:<br>• WJ Passage Comprehension: significant effect (d = .20, *p*<.001)<br>CR:<br>• WJ Passage Comprehension: small effect (d = .18)<br>RAVE-O<br>• WJ Passage Comprehension: small effect (d = .09)<br>GRR<br>• WJ Passage Comprehension: small effect (d = .32) |
| | Decoding | Total:<br>• WJ Word Attack: significant effect (d = .46, *p*<.001)<br>• WJ Word Identification: significant effect (d = .21, *p*<.001)<br>• TOWRE Phonemic Decoding Efficiency: significant effect (d =.19, *p*<.001)<br>• TOWRE Sight Word Efficiency: significant effect (d = .18, *p*<.001)<br><br>CR:<br>• WJ Word Attack: medium effect (d = .58) |

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| | | • WJ Word Identification: small effect (d = .23)<br>• TOWRE Phonemic Decoding Efficiency: small effect (d = .22)<br>• TOWRE Sight Word Efficiency: small effect (d = .08)<br><br>RAVE-O:<br>• WJ Word Attack: medium effect (d = .57)<br>• WJ Word Identification: small effect (d = .19)<br>• TOWRE Phonemic Decoding Efficiency: small effect (d = .27)<br>• TOWRE Sight Word Efficiency: small effect (d = .32)<br><br>GRR:<br>• WJ Word Attack: small effect (d = .26)<br>• WJ Word Identification: small effect (d = .21)<br>• TOWRE Phonemic Decoding Efficiency: small effect (d = .07)<br>• TOWRE Sight Word Efficiency: small effect (d =.15) |
| | Fluency | Total:<br>• WJ Reading Fluency: significant effect (d = .34, *p*<.001)<br>CR:<br>• WJ Reading Fluency: small effect (d = .39)<br><br>RAVE-O:<br>• WJ Reading Fluency: small effect (d = .29)<br><br>GRR:<br>• WJ Reading Fluency: small effect (d = .33) |

*Note.* WJ = Woodcock-Johnson. TOWRE = Test of Word Reading Efficiency. WRAT = Wide Range Achievement Test. TABE = Test of Adult Basic Education. WWS = Whole Word Study. MPA = Morpho-Phonemic Analysis. NCNT = New Century Noah Text. GORT = Gray's Oral Reading Test. WRMT-R = Woodcock Reading Mastery Tests-Revised. RISE = Reading Inventory and Scholastic Evaluation. TSIA = Texas Success Initiative Assessment. CTOPP = Comprehensive Test of Phonological Processing. REAL GRR = Relative Effectiveness of Adult Literacy Guided Repeated Reading. CR = Corrective Reading. RAVE-O = Retrieval, Automaticity, Vocabulary, Elaboration-Orthography. GRR = Guided Repeated Reading.

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