

# Assessing, Preventing, and Overcoming Reading Difficulties

*A professional learning series presented by David Kilpatrick, Ph.D.*

## Module 11 Session 1

*Sponsored by the Exceptional Student Services Unit (ESSU) and created in collaboration with Specific Learning Disability Specialists Jill Marshall and Veronica Fiedler*



**COLORADO**  
Department of Education

## **Module 11: Effective Interventions for Reading Difficulties**

*Session 1: How Do We Determine What is Effective?*



## **Vision**

All students in Colorado will become educated and productive citizens capable of succeeding in society, the workforce, and life.

## **Mission**

The mission of the CDE is to ensure that all students are prepared for success in society, work, and life by providing excellent leadership, service, and support to schools, districts, and communities across the state.

**Every student,  
every step of the way**

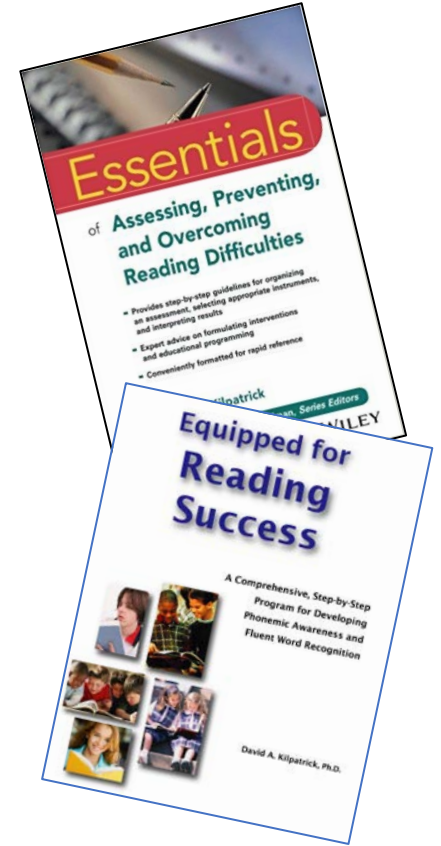
# Reference and Disclaimer

- This on-demand webinar series, *Assessing, Preventing and Overcoming Reading Difficulties*, was developed by David Kilpatrick, Ph.D, in collaboration with the Specific Learning Disability Specialists in the Exceptional Student Services Unit of the Colorado Department of Education.
- Content of the webinar series was originally included in the book *Essentials of Assessing, Preventing, and Overcoming Reading Difficulties* (Wiley, 2015).
- This material was developed under a grant from the Colorado Department of Education. **The content does not necessarily represent the policy of the U.S. Department of Education, and you should not assume endorsement by the Federal Government.**

# The Presenter



**DAVID A. KILPATRICK, PHD** is Associate Professor of Psychology for the State University of New York, College at Cortland. He teaches courses in learning disabilities and educational psychology. He is also a New York State Certified School Psychologist and has conducted over a thousand evaluations of students with reading difficulties during his 27 years with the East Syracuse-Minoa Central School District. David is currently involved in a number of research and writing projects. He facilitates professional development workshops for educators and presents regularly in districts, and at state and national conferences. He is the author of *Essentials of Assessing, Preventing, and Overcoming Reading Difficulties* (Wiley, 2015), and *Equipped for Reading Success-A Comprehensive Step-by-Step Program from Developing Phonemic Awareness and Fluent Word Recognition*.



# Series Designed for Use in Multiple Ways

- 1. Complete all 13 modules:** Participants who engage in all thirteen modules will be provided a comprehensive learning experience encompassing research, impact, and critical elements of assessing, preventing, and overcoming reading difficulties.
- 2. Complete individual modules:** Participants may view a session/s for specific information and guidance on topics related to assessing, preventing and overcoming reading difficulties. This format is ideal for short professional development opportunities, e.g., during an Impact Team meeting or Professional Learning Community.
- 3. Complete as a book or chapter study:** Participants may view all or part of the series as a tandem companion or supplemental resource for supporting a study of the book: *The Essentials of Assessing, Preventing, and Overcoming Reading Difficulties* (Wiley, 2015)

# Assessing, Preventing, and Overcoming Reading Difficulties

## Objective:

Through engagement in this series of 13 on-demand webinars, participants will understand the current research, implications, and the essential elements necessary for assessing, preventing, and overcoming reading difficulties.



**ASSESS**



**PREVENT**



**OVERCOME**

# Assessing, Preventing, and Overcoming Reading Difficulties

## Webinar Series Modules

**Module 1:** Reading Research and the Research to Practice Gap

**Module 2:** Current Approaches to Reading Instruction: Why Many Learners Still Struggle

**Module 3:** The Simple View of Reading

**Module 4:** Word-Level Reading

**Module 5:** Reading Comprehension

**Module 6:** Introduction to Reading Assessment; Assessing Phonological Skills

**Module 7:** Assessing Phonics Skills

**Module 8:** Assessing Word Identification and Reading Fluency

**Module 9:** Assessing Reading Comprehension and Related Skills

**Module 10:** Effective Approaches for Preventing Reading Difficulties

**MODULE 11: Effective Interventions for Reading Difficulties**

**Module 12:** Case Examples of Reading Disabilities

**Module 13:** Specific Learning Disability Identification



# Module 11 Overview

## **Module 11: Effective Interventions for Reading Difficulties**

### **11.1 How Do We Determine What is Effective?**

11.2 Popular Interventions With Minimal to Modest Results

11.3 Phonological Proficiency Intervention Continuum

11.4 Highly Effective Intervention for Reading Difficulties

# Learning Intentions



## **Module 11 Session 1: How Do We Determine What is Effective?**

Participants will be able to:

- ✓ **Identify five ways to determine intervention effectiveness and why four of them are inadequate**
- ✓ **Provide examples of inadequate attempts to determine intervention effectiveness**
- ✓ **Identify a valid way to determine effectiveness of interventions for word-level reading difficulties**

# Five Ways to Determine Intervention Effectiveness

- Informal assessments
- Raw score improvements
- Statistically significant differences between groups
- Effect sizes
- Standard score point gains on nationally normed tests

# Informal Assessment

- “Hey, he seems to be improving”
- Open to subjective, expectancy effects
- No point of reference to others

# Raw Score Improvements

- Pervasive in education
- Progress monitoring in RTI/MTSS
- Distance race analogy
- Students can be progressing in raw scores while getting farther behind at the same time

# Statistically Significant Difference Between Groups

- Included in intervention studies and commonly reported in abstracts, often without the word “statistical”
  - Abstracts available online, full articles usually not
- By its nature it cannot tell you if an intervention is effective
  - It means the difference between groups is not likely coincidental
  - Very small differences may reach “statistical significance”
- Experimental and control may both be effective or ineffective
  - Lack of statistically significant difference may be irrelevant (e.g., Torgesen et al., 2001)
  - Thus, an ineffective approach may show statistical significance while an effective approach may not

# Effect Size

- Virtually required for all instructional/intervention studies
  - Used in many fields
- Due to its pervasiveness in the scientific literature, it is the most potentially misleading index of effectiveness
- Technically incapable to telling us if a program is effective
  - It can only tell us if the program was better than the “control” program in that particular study
  - If an ineffective program is *less ineffective* than the control program, effect size makes it look effective

# Examples of Misleading Effect Sizes

- *Journal of Learning Disabilities, 2012* (Vaughn et al.)
  - Experimental group had a .49 effect size
  - Suggest about 7 standard score points of improvement
  - However, had 0 standard score point improvement
  - This occurred because the control group went down during the study
- *Journal of Learning Disabilities, 2017* (Christodoulou et al.)
  - Experimental group had a .96 effect size
  - Suggests about a 14 standard score point gain
  - 100 hours of 1:1 instruction in summer program
  - Less than 1 standard point improvement
  - Control group of LD readers went down dramatically over the summer



# Another Example of Misleading Effect Size

- *Annals of Dyslexia*, 2010 (Torgesen et al.)
  - Experimental group had a .53 effect size
  - Suggest about 7 standard score points of improvement
  - However, had an average 22 standard score point improvement
  - This occurred because the control group at the school had been using a highly effective approach with a 14 standard score point gain
    - About 90% of experimental groups in the intervention research do not have results that high

# Conclusions About Effect Sizes

- Can determine the magnitude of group differences
- Cannot determine improvement relative to normative group
- We must be cautious about individual studies reviewed by the What Works Clearinghouse, [bestevidence.org](http://bestevidence.org), etc.
- This does *not* affect the National Reading Panel(NRP) results
  - Across dozens of studies, they showed that teaching letter-sound skills and phonological awareness worked better than all other approaches
  - We can therefore conclude that such instruction is superior to those other methods, and thus represents best practice
  - No reference to a norm group is needed to establish this finding
  - Many individual studies had large normative gains (see next slide)

# Standard Score Point Gains

- Standard scores based on a nationally stratified norm group can tell us if an intervention or teaching practice is effective
  - It is the *only* approach capable of telling us if a child is “catching up”
- Strong inter-correlations among all the major word identification subtests from the leading achievement batteries suggests a fairly stable point of reference to determine improvement
  - Not the case with reading comprehension subtests
- Not useful for routine weekly or monthly progress monitoring
  - Studies show they are useful for intensive, short-term interventions
  - Effective interventions show strong gains, ineffective ones do not

# Conclusions About Determining Effectiveness

- The use of nationally normed word identification tests and subtests from the major batteries is our “gold standard” for determining the effectiveness of interventions for word-level reading skills
- All other approaches are inherently incapable of determining effectiveness with that same degree of confidence

# Summary: Module 11 Session 1

- ✓ There are five ways of estimating the effectiveness of interventions: informal assessments, raw score gains, statistical significance, effect sizes, and standard score gains from nationally normed tests
- ✓ The first four of those five approaches are inherently incapable of telling us if an intervention is effective
- ✓ Only standard score point gains on nationally normed tests can tell us if an intervention approach is allowing struggling readers to catch up with their peers



A woman with long brown hair and black-rimmed glasses is shown from the chest up, looking upwards and to the right with a thoughtful expression. Her right hand is raised to her chin, with her index finger pointing up. The background is a light grey color with several black question marks scattered throughout. A large black thought bubble is positioned on the left side of the image, containing white text.

## **Reflect and Connect:**

How have you typically gauged reading improvements? How might this change as a result of this session?

# Wrap Up



**What was your biggest takeaway?**

**What questions do you still have?**

# Up Next

## **Module 11.2** **Popular Interventions with** **Minimal to Modest Results**







*Thank You*

Please visit the CDE Specific Learning Disability Website  
for more information:

<https://www.cde.state.co.us/cdesped/SD-SLD>