Article

Improving Literacy for Students With Emotional and Behavioral Disorders: An Innovative Approach

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Abstract

Most students with emotional and behavioral disorders (EBD) have significant reading difficulties, but educators have few in-service professional learning opportunities geared to reading instruction for these students. The *Integrated Literacy Study Group* was developed as an online professional development program to prepare elementary teachers to meet the literacy needs of students with or at risk of EBD. In this study, the authors use a within-subjects design to evaluate the feasibility of the 10-week digital program with 13 elementary teachers. From pretest to posttest, teachers made statistically and educationally significant gains in knowledge of evidence-based social and emotional learning and reading strategies for students with EBD, as well as significant improvements in general teacher self-efficacy, reading self-efficacy, and social and emotional self-efficacy. Pretest-to-posttest change in teacher burnout and classroom management was educationally significant, but statistically nonsignificant. Most teachers perceived the program content as relevant to their needs and those of their students.

Keywords

evidence-based instruction, professional learning, students with emotional and behavioral disorders, literacy, reading instruction

Compared with children of similar cultural and ethnic backgrounds, students with emotional and behavioral disorders (EBD) have more difficulty with learning, creating relationships with peers and teachers, and engaging in appropriate behaviors and emotional reactions (Benner et al., 2009, 2020). They are typically categorized as internalizing and/or externalizing problems. Internalizing problems include depression, fearfulness, anxiety, and social withdrawal. Externalizing problems involve breaking rules, noncompliance, bullying, and physical aggression.

Gaps in Classroom Reading Instruction

Most students with EBD have significant reading problems (Hollo et al., 2014), with detrimental long-term effects on school and life success. For these students, struggles with reading compound negative outcomes, including poorer academic achievement, greater dropout, more conduct and social problems, and greater likelihood of untoward postsecondary outcomes (Garwood, 2018). Longitudinal investigations show that students with EBD display slower growth trajectories in

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reading than their peers (Yakimowski et al., 2016). The reading achievement gap widens from about two grade levels in elementary school to about 3.5 years in high school (Adamson & Lewis, 2017).

Language acquisition is necessary for reading and academic success (Catts et al., 2006). Language deficits underlie reading and behavioral challenges for students with EBD. Two of three elementary students with EBD have a language disorder (Benner et al., 2009); reading struggles often worsen for nearly nine of 10 (88%) students with EBD served in public school settings (Benner et al., 2002). A meta-analysis of 22 studies by Hollo and colleagues (2014) found the prevalence of below-average language performance among students aged 5 to 13 years with EBD ($N = 838$) was 81%.

Growing evidence shows that students with EBD respond to effective reading instruction (Benner et al., 2020; Gresham, 2014; Nelson et al., 2005). Efficacy studies of phonological awareness (i.e., understanding of the structure of oral language) programs in beginning reading skills of elementary students with EBD document large effects (Benner et al., 2010; Nelson et al., 2005). The extant literature points to moderate-to-large effects for reading intervention studies (Benner et al., 2010; Nelson, Stage et al., 2008). Students with EBD respond to core, supplemental, and individualized curriculum programs, with positive impacts on engagement, motivation, and self-management skills (Conroy et al., 2008).

Federal law (Every Student Succeeds Act, 2015; Individuals with Disabilities Education Act, 2004) and state initiatives (National Governors Association Center for Best Practices, Council of Chief State School Officers, 2010) mandate effective reading instruction for all students. Educators struggle to implement evidence-based reading practices (Lemons et al., 2016; Slate et al., 2019)—and yet many students with EBD do not receive effective reading instruction (McKenna & Ciullo, 2016). Compared with other middle school students with disabilities, those with EBD demonstrate slower growth in reading over time, and in high school the reading achievement gap between them and their peers is typically multiple grade levels (Yakimowski et al., 2016).

Gaps in Classroom Social Skills Instruction

For students with EBD, attention and behavioral problems interfere with reading instruction (e.g., Al Otaiba & Fuchs, 2002). Misbehavior elicits distracting negative emotions, which negatively impact teaching (Sutton, 2004) and can contribute to teacher stress and burnout (Carson et al., 2006). A report drawing from the Schools and Staffing Survey from the National Center on Education Statistics (NCES) indicated that about a third of America's new teachers leave teaching sometime during their first 3 years of teaching; almost half leave in the first 5 years (Barnes et al., 2007). An inordinate amount of schools' human and fiscal capital is consumed by the constant process of recruitment and replacing teachers who leave before they have mastered the ability to create a successful learning environment for their students.

Research-based practices to reduce student misbehavior and educator stress (Jennings & Greenberg, 2009; Schaubman et al., 2011) include interventions focused on social and emotional learning (SEL), which are effective for students with EBD (Gresham, 2014). Social skills instruction goes beyond classroom management; it involves explicitly teaching students prosocial behaviors, such as cooperating with others, following directions, and exhibiting self-control. Gresham (2014) reported nine meta-analyses of SEL interventions with a grand mean effect size (Hedges's *g*) of 0.60, indicating that about 65% of students receiving SEL instruction improved, compared with 35% of controls.

Gaps in Teacher Professional Development

Improving the literacy and social and emotional wellness of students with EBD—and reducing teacher stress, burnout, and turnover—can only occur when teachers are equipped

with knowledge and skills to manage their classrooms and deliver effective instruction (Durlak et al., 2011; Nelson, Benner et al., 2008). Educators need a high-quality professional learning program that addresses the social, emotional, and behavioral issues inhibiting instruction, and equips them with effective reading routines. Effective professional learning programs can hasten the translation of research to practice, enhance educator knowledge and skills, and boost student outcomes (Didion et al., 2020; Yoon et al., 2007). Recent research supports this need for evidence-based training, along with intensive and ongoing support for teachers of students with EBD (Slate et al., 2019).

Five hallmarks of effective professional learning include (a) focus on student outcomes (DuFour & Eaker, 2005), using a research-based approach with emphasis on outcomes; (b) integration of conceptual and procedural knowledge (Gersten et al., 2010), promoted via teacher discussion of research-based instructional practices and video-recorded rehearsal of how to implement them; (c) easily applied, step-by-step instructions (Gersten et al., 2010); (d) modeling and active learning, including the ability to observe others successfully adopting and performing routines (Bandura, 1986), video examples of effective instructional approaches (Koehler, 2002; Pianta et al., 2008), interactive practice and feedback (Gersten et al., 2010; Joyce & Showers, 2002), and multiple access points to various training formats (e.g., modeling, coaching, and resource libraries; Kalinowski et al., 2019); and (e) sufficient duration and intensity for lasting impact (Basma & Savage, 2018), with a minimum of 14 hours of focused activities to have significant sustained impacts on teacher practice (Gersten et al., 2010; Yoon et al., 2007). Short-cycle professional instruction—which researchers describe as relatively less intensive and less than 30 hours—can have a greater impact on student reading performance and educator learning than longer, more-intensive professional learning programs (Garrett et al., 2019).

Educator preparation programs provide little instruction in SEL for general education students (Schonert-Reichl et al., 2017)—about 8 hours of training on classroom management strategies and even less on supporting students with behavior problems (National Council on Teacher Quality, 2014), leaving teachers unprepared to effectively instruct students with EBD (Slate et al., 2019). In-service teachers have few professional learning opportunities for reading instruction and SEL geared to students with EBD (Bradley et al., 2008). One reason for this is that continuing professional development historically has been carried out with face-to-face formats, often involving on-site workshops or large live audiences (e.g., seminars). Initiating and sustaining face-to-face approaches place a significant human and fiscal burden on schools (Bartley & Golek, 2004), which is amplified in rural and remote areas where continuing professional development opportunities are more limited and more costly.

Increasingly, and particularly during the COVID-19 pandemic, educators are turning to web-based professional learning opportunities to improve their skills (Bartley & Golek, 2004; Parsons et al., 2019). Although research is limited (Dede, 2006), there is evidence that online learning produces comparable or better results than face-to-face training (Means et al., 2009). Its appeal includes (a) flexibility to access materials at any time, (b) ability to tailor the pace to fit individual or group needs (Bartley & Golek, 2004; Parsons et al., 2019), (c) access to resources not locally available, and (d) extended learning opportunities (Dede, 2006; Treacy et al., 2002).

Teacher study groups (TSGs) can enhance professional development by making the experience more interactive and engaging. Through TSGs, educators work collaboratively with their colleagues to reflect on their current practices, plan classroom intervention implementations, and give feedback. In-person TSGs are an evidence-based, empirically validated professional learning approach for building capacity to implement and sustain effective classroom practices (Desimone, 2009; Gersten et al., 2010), including SEL interventions. Although research on online TSGs is lacking (Brown & Munger, 2010), the

web-based interface can offer convenience, ongoing instruction, and support for educators that traditional approaches cannot provide (Doolittle et al., 2007).

As with TSGs, personal coaching can add value to professional development and improve quality of classroom implementation (Joyce & Showers, 2002). Coaching gives teachers individualized feedback (Diamond & Powell, 2011) that can potentially produce larger impacts than structured feedback (Garrett et al., 2019); coaching also provides modeling and opportunities to practice. Personal coaching has been shown to be effective in improving educator reading instruction (Kraft et al., 2018). Intensive, ongoing coaching can be facilitated through an online professional development interface, and may be particularly critical for teachers of students with intensive reading and behavioral needs (Slate et al., 2019).

Purpose of the Study

To assess the feasibility of implementing the *ILSG* online professional learning program in typical elementary school settings by the intended users, we addressed the following three research questions:

Research Question 1: What impact did *ILSG* have on teacher knowledge of evidence-based reading and behavioral supports for students with EBD?
Research Question 2: What impact did *ILSG* have on teacher self-efficacy and burnout?
Research Question 3: How did teachers perceive *ILSG* in terms of usability and satisfaction?

Method

In this study, we assessed the feasibility of implementing *ILSG* using a within-subjects, pre–post design with 13 teachers of students with EBD. Determinants of feasibility were teacher feedback, and measured changes in teacher knowledge, self-efficacy, and practice. Teachers were randomly assigned to one of three *ILSG* study groups with four to five teachers in each. Institutional review board approval was obtained and human subjects protections were enforced.

Participants

Fourteen elementary school teachers were recruited in the Pacific Northwest for the 12-week, single-sample *ILSG* program evaluation. About two thirds were classroom teachers, whereas about one third were behavior specialists. Teachers averaged 45.2 (SD = 11.6; range = 25–66) years old with an average of 17.9 years of teaching experience (SD = 8.6; range = 2–32). One teacher dropped out for personal reasons. Demographic descriptive statistics of the 13 participating teachers are presented in Table 1.

One teacher reported working with a mean instructional group size of two students, five with a mean group of four students, three with a mean of five students, one with a mean of six students, and three with a mean of more than six students. Ten teachers reported previous experience in TSGs and/or professional learning communities, whereas two had none and one teacher did not report on experiences. At pretest, when teachers answered a single Likert-type item about confidence in meeting the needs of students who have or are at risk of EBD, six said they were "slightly confident," five were "moderately confident," and two were "highly confident."

Measures

Three sets of dependent measures were collected to align with the three research questions: teacher knowledge (Research Question 1), teacher self-efficacy and burnout (Research Question 2), and teacher perceptions of program usability and satisfaction (Research Question 3). Educators completed assessments in the fall and spring. Also documented were teacher characteristics, including demographics, teaching history and experience, and use of other curriculum and intervention materials.

Table 1. Participating Teacher Demographic Characteristics ($N = 13$).

Characteristic	*n*	%
Education		
Undergraduate	3	23.1
Postgraduate credits	4	46.2
Master's degree	6	100
Ethnicity		
Non-Latino/a or Hispanic	13	100
Race		
White/Caucasian	12	92.3
Asian	1	8.8
Position		
Classroom teacher	8	61.5
Behavior specialist	5	38.5
Grades of students taught[a]		
Kindergarten	3	
First	8	
Second	6	
Third	5	
Fourth	5	
Fifth	4	

[a]Some participating teachers taught multiple grade levels.

Teacher knowledge. To measure teacher knowledge of evidence-based reading and behavioral practices for students with EBD, we used a 28-item knowledge assessment created during the development of the *ILSG* program (available from the researchers on request). Items assess knowledge of best practices in reading instruction and behavior intervention. For example, "Asking students to identify the sounds in the word 'cat' is an example of": with the correct answer being "Phoneme segmentation," and incorrect answers being "Phoneme blending," "Alphabetic blending," and "Alphabetic segmentation." Internal consistency statistics for the teacher knowledge measure were $\alpha = .83$ at pretest and $\alpha = .87$ at posttest.

Teacher self-efficacy and burnout. In this study, we employed three measures of teacher self-efficacy and one measure of burnout.

To document general teacher self-efficacy, we used the 24-item Teacher Sense of Efficacy Scale (TSES; Tschannen-Moran & Woolfolk Hoy, 2001). The TSES was developed for educators to assess their confidence in three areas of teaching: (a) classroom management, (b) instructional strategies, and (c) student engagement. Example items include "How much can you do to get through to the most difficult students?" (efficacy in student engagement), "How much can you gauge student comprehension of what you have taught?" (efficacy in instructional strategies), and "How much can you do to control disruptive behavior in the classroom?" (efficacy in classroom management). Respondents answered items on a Likert-type scale ranging from 1 (*nothing*) to 9 (*a great deal*). The developers reported an internal consistency value of $\alpha = .94$ for the overall scale (the present study obtained reliabilities of $\alpha = .95$ at pretest and $\alpha = .93$ at posttest). Published construct validity and discriminate validity data (Tschannen-Moran & Woolfolk Hoy, 2001) indicated the scale to be psychometrically sound. We also used two assessments of self-efficacy specific to the skills taught in the *ILSG* program (available from the researchers on request): (a) the Teacher Reading Self-Efficacy Scale (TRSES), a seven-item Likert-type scale that measures confidence in teaching reading skills to students with EBD, and (b) the Teacher Behavior Self-Efficacy Scale (TBSES), an eight-item Likert-type scale reflecting teacher confidence using behavior-management skills with their students with EBD. We developed the two measures during the development phase of the *ILSG* program. In this study, internal reliability statistics were $\alpha = .97$ at pretest and $\alpha = .88$ at posttest for the TRSES, and $\alpha = .94$ at pretest and $\alpha = .93$ at posttest for the TBSES. Also in this study, the two instruments were significantly correlated with the established TSES, which provided evidence of concurrent validity (Lin & Yao, 2014): TRSES $r_{(72)} = .54$, $p < .001$, and TBSES $r_{(72)} = .65$, $p < .001$.

To understand the impact of the *ILSG* program on teacher burnout, we used the 20-item Likert-type Teacher Burnout Scale (TBS; Richmond et al., 2001). The TBS has four subscales: career satisfaction, perceived administrative support, coping with job-related stress, and attitudes toward students.

Internal consistency reliability for the TBS was $\alpha = .91$ at pretest and posttest.

Program usability and satisfaction. A 21-item survey documented teacher perceptions of *ILSG* usability and satisfaction, for the program as a whole as well as specific aspects of the program and content. Items were categorized by relevance (three items, rated on a Likert-type scale from 1 = *extremely relevant* to 5 = *not at all relevant*), practicality (four items, rated on a Likert-type scale from 1 = *a great deal* to 5 = *none at all*), usability (five items, rated on a Likert-type scale from 1 = *extremely useful or helpful* to 5 = *not at all useful or helpful*), ease of use (three items, rated on a Likert-type scale from 1 = *extremely easy* to 5 = *extremely difficult*), engagement (one item, rated on a Likert-type scale from 1 = *extremely engaging* to 5 = *not at all engaging*), level of detail (two items, rated on a Likert-type scale from 1 = *too much detail* to 3 = *too little detail*), and program content and duration (three items, rated on a Likert-type scale from 1 = *too long* to 3 = *too short*).

Intervention

Our research team used focus groups, interviews, and observations to collect stakeholder input and iteratively develop the online *ILSG* course over 2 years, with ongoing feedback from teachers of students with EBD. The program incorporated evidence-based components of professional learning known to impact instruction and student achievement (Desimone, 2009; Garrett et al., 2019; Lemons et al., 2016). It also relied on principles of adult learning to help learners understand why they need to learn, to give learners the freedom to learn in their own way, to make learning experiential/hands-on, to show that the time is right for learning, and to provide a positive and encouraging learning process (Knowles et al., 2015).

Reading instruction content. Reading instruction content for the *ILSG* course was drawn from Enhanced Core Reading Instruction (ECRI; Benner & Zeng, 2016; Fien et al., 2015). It features educator explanations, educator models of the skill or strategy, signaling for individual and group responses, practice for students, error corrections, and checks for understanding. Instructional videos focus on teaching routines to increase the effectiveness of elementary school reading instruction (Fien et al., 2015; Nelson-Walker et al., 2013). The intervention is designed to enhance the quality of instructional interactions between educators and students by prioritizing academic content and making instruction more explicit. Core activities related to vocabulary, comprehension, reading fluency, phonics, and phonemic awareness emphasize (a) clear learning objectives; (b) modeling of key content through visual models, verbal directions, and clear explanations; (c) explicit connections between new and previously learned content; (d) opportunities for guided and independent practice; and (e) deliberate review of previously learned content (Carnine et al., 2017; Coyne et al., 2011). The instructional routines give teachers the language for explicitly modeling content, with frequent practice opportunities and immediate feedback (Baker et al., 2010). The National Center on Intensive Intervention rated ECRI (Fien et al., 2015) as having ”convincing evidence” of effectiveness, based on a rubric that rates the technical rigor of the intervention’s evaluation research design (e.g., random assignment, lack of attrition bias, unit of analysis matching random assignment; https://charts.intensiveintervention.org/aintervention). Studies funded by the U.S. Department of Education Institute of Education Sciences have found significant impacts on the reading achievement of at-risk readers in first grade (Benner & Zeng, 2016), and positive effects on educator quality of explicit instruction (Fien et al., 2015; Nelson-Walker et al., 2013).

SEL content. SEL content for the *ILSG* course was developed in response to educator input. The *ILSG* program focused initially on reading only, but educators indicated that it did not meet the needs of students with EBD. We incorporated evidence-based SEL and behavioral

"kernels"—activities shown to change behavior (Bailey et al., 2019; Embry & Biglan, 2008). Because kernels are common elements in widely adopted, evidence-based social, emotional, and behavioral interventions, we considered them active ingredients which would account for improved student outcomes. Many strategies, such as response cost, precision requests, and verbal praise, are high-leverage practices known to positively impact students with EBD (McLeskey et al., 2018). *ILSG* provides a range of strategies to help teachers identify the most appropriate kernel for a given student and situation. Strategies include routines for teaching clear behavioral expectations, responding to unwanted student behavior, organizing the learning environment, and maximizing engagement.

Course structure. The *ILSG* course is structured into 10 online learning modules to be completed in 10 weeks. See Table 2 for reading and behavior topics covered in the modules. Each topic includes routines teachers could use with their students. Reading instructional content featured teacher explanations, teacher modeling of the skill or strategy, signaling for individual and group responses, practice for students, error corrections, and checks for understanding. For example, reading instructional content in Modules 3 and 4 focused on phonemic awareness and sound spelling and continuous blending routines, respectively. SEL strategy content included routines for teaching clear behavioral expectations, organizing the learning environment, responding to unwanted student behavior, and maximizing student engagement. For instance, SEL strategy content in Modules 3 and 4 focused on welcoming routines prior to reading instruction and bringing the lesson or instructional activity to an optimistic closure, respectively. One module was released each week; teachers averaged about 1.5 hours per module to complete the activities.

Module 1 begins with an introduction to *ILSG*. Participating educators learn about TSGs and why *ILSG* was created—to address the specific needs of students with EBD around reading. Modules 2 through 9 follow a systematic learning sequence: (a) introduction, (b) reflection question, (c) new content, (d) guided practice, (e) application activities, and (f) discussion questions. Each module includes two video segments, one for reading routines and one for behavioral routines (see Table 2). Teachers reflect and discuss the week's content using an online discussion forum. In Module 2, educators learn about the reading content of explicit and systematic instruction and the SEL strategy content of boosting student engagement with SEL strategies. Module 3 focuses on the reading content of phonemic awareness and the SEL strategy content of warm welcomes prior to instruction and having a positive start to reading instruction. Module 4 targets the reading content of sound spelling and continuous blending routines and the SEL strategy content of ending lessons and specific instructional activities optimistically. Module 5 reading content covers advanced sound spelling and blending strategies and the SEL strategy content of engagement practices. In Module 6, reading content focuses on word reading routines and SEL strategy content addresses how to differentiate SEL support for youth who engage in power-seeking behaviors. The foci of Module 7 include the reading content of decodable text routines and SEL strategy content of differentiating SEL support for students who engage in avoidance-seeking behaviors. In Module 8, the reading content focus is vocabulary instruction and the SEL strategy content consists of more strategies for differentiating SEL support for students who engage in avoidance-seeking behaviors, a continuation of the SEL content from Module 7. Module 9 includes vocabulary instruction reading content and SEL content focused on differentiating SEL supports for learners who may engage in attention-seeking behaviors during instruction. For Modules 2 to 7, participants record themselves practicing a selected routine, with peers giving feedback online. In Modules 8 and 9, instead of a practice video, teachers prepare a lesson plan for use with their students; this assignment was designed to help teachers apply what they learned and personalize it for their own classrooms. In Module

Table 2. *Integrated Literacy Study Group* Modules, Reading Topics, and Behavior Topics.

Module	Reading topics	Behavior topics
1	Introduction to *ILSG* • Overall goal • Audience • Module structure • Why *ILSG*? • How does *ILSG* work? • How to navigate through *ILSG* • What will I gain from *ILSG*?	Introduction to *ILSG* • Overall goal • Audience • Module structure • Why *ILSG*? • How does *ILSG* work? • How to navigate through *ILSG* • What will I gain from *ILSG*?
2	Explicit and systematic instruction *Routines taught* • Letter naming *Content/Skills* • Introduction to systematic and explicit instruction	Supporting student engagement *Strategies* • Clear expectations • Anchor chart (SLANT) • Clear responses to behavioral issues
3	Phonemic awareness *Routines taught* • Phonemic blending • Phonemic segmentation *Content/Skills* • Development of phonemic awareness	Welcoming routines *Strategies* • Emotion check • Brain breaks • Seating students successfully: Seating students with EBD in the action zone
4	Sound spelling and continuous blending routines *Routines taught* • Sound spellings • Continuous blending *Content/Skills* • Beginning sound and blending strategies	Optimistic closure *Strategies* • Affirmations • End of lesson Reflection • End of lesson: Look forward to next lesson
5	Advanced sound spelling and blending *Routines taught* • Sound spelling review • Advanced sound spelling routine • Sound-by-sound blending • Spelling-focused blending *Content/Skills* • Advanced sound and blending strategies	Engagement practices *Strategies* • Nonverbals • Group brain breaks
6	Word reading routines *Routines taught* • Regular word routine • Irregular word routine • Dictation routine 1: Beginning *Content/Skills* • Regular and irregular word reading • Beginning dictation strategies	Responding to power-seeking students *Strategies* • Ending power struggles • Two by ten • Motivate just before instruction (MJB4) • Youth leadership
7	Decodable text routines *Routines taught* • Decodable text routine • Decodable text fluency practice *Content/Skills* • Supporting reading fluency and comprehension using decodable text	Responding to avoidance-seeking students: Part 1 *Strategies* • Self-monitoring • Goal setting • Breaking tasks into smaller parts • C5 routine (Challenge, Circle, Commit, Circulate, and Celebrate)

(continued)

Table 2. (continued)

Module	Reading topics	Behavior topics
8	Vocabulary instruction *Routines taught* • Choral responding routine • Partner responding routine • Specific word routine *Content/Skills* • Vocabulary instruction and student participation strategies	Responding to avoidance-seeking students: Part 2 *Strategies* • Mo breaks • Breaks are better
9	Text routines *Routines taught* • Narrative routine • Expository routine *Content/Skills* • Reading comprehension: Routines for narrative and information texts	Responding to attention-seeking students *Strategies* • Re-direct • Catch phrase
10	Setting students up for success • Real-world application of *ILSG* reading strategies • Implementing *ILSG* reading routines in real-world K–3 classroom settings • Creating a feasible step-by-step implementation plan	Review of SEL kernels • Real-world application of *ILSG* SEL strategies • Implementing *ILSG* SEL strategies in real-world K–3 classroom settings • Creating a feasible step-by-step implementation plan

Note. EBD = emotional and behavioral disorders; SEL = social and emotional learning.

10, teachers focus on real-world application of *ILSG* reading and behavioral strategies to help them prepare to set up their students for success. For example, participating educators are provided implementation supports to apply reading and SEL strategies in real-world K–3 classroom settings. Educators work together to create feasible step-by-step implementation plans.

TSGs and personalized coaching. TSGs and personalized coaching were incorporated into the *ILSG* program to promote interactivity, engagement, and effectiveness. After participating teachers completed pretest assessments online and they were randomly assigned to one of three *ILSG* study groups with four to five teachers in each. Each teacher accessed the *ILSG* program online and created a personal profile. Each week, teachers used the discussion forums to communicate with other team members. To document use of the modules, they also kept a journal, which included a biweekly assessment of usage and feasibility. *ILSG* teachers could request personalized coaching from study group members or a virtual coach. Over the course of *ILSG* implementation, there were eight requests for this personalized coaching.

At the intervention midpoint and at the end of Module 10, trained researchers conducted structured interviews with teachers about the *ILSG* course. After finishing the program, teachers completed posttest assessments, which included the pretest measures as well as user satisfaction questions. Participants received US$500 stipends at the end of the study to compensate for their time and effort, regardless of whether they completed all aspects of the research project.

Analyses

Data were entered and cleaned prior to analysis. Descriptive statistics were calculated, distributions were plotted, and reliability

Table 3. Mean Pretest and Posttest Scores on Teacher Knowledge, Self-Efficacy, and Burnout Scales ($N = 13$).

Scale	Pretest *M* (*SD*)	Posttest *M* (*SD*)	*z*	*p*	Cohen's *d*
Teacher Knowledge	21.54 (2.30)	23.54 (1.81)	2.41	.016	0.64
Teacher Sense of Efficacy Scale	6.65 (1.20)	7.57 (0.81)	2.87	.004	0.77
Student Engagement Subscale	6.27 (1.37)	7.35 (0.96)	3.07	.002	0.82
Instructional Strategies Subscale	6.58 (1.14)	7.69 (0.88)	3.19	.001	0.85
Classroom Management Subscale	7.12 (1.28)	7.67 (0.72)	1.94	.053	0.52
Teacher Reading Self-Efficacy Scale	3.05 (0.85)	3.86 (0.58)	2.42	.016	0.65
Teacher Behavior Self-Efficacy Scale	2.67 (0.80)	3.88 (0.61)	3.06	.002	0.82
Teacher Burnout Scale	2.62 (1.00)	2.44 (1.02)	1.70	.089	0.45

Note. Cohen's *d* of 0.20 or greater is considered an educationally meaningful effect.

analyses were conducted to characterize the data. In this study, we used nonparametric analytic methods appropriate for the small sample size. To address Research Questions 1 and 2, Wilcoxon signed-rank tests were used to evaluate whether there were statistically significant differences in participant pretest and posttest scores (Siegel & Castellan, 1988). Effect sizes (Cohen's *d*; Cohen, 1988) were calculated to determine whether changes in scores from pretest to posttest were educationally meaningful. The effect size statistic was calculated by subtracting the mean pretest score from the mean posttest score and then dividing the result by the pooled standard deviation. According to Kraft (2020), based on findings of recent meta-analyses, effect size values of 0.20 or greater are interpreted as educationally meaningful. To address Research Question 3, descriptive statistics were calculated.

Results

Research Question 1: What Impact Did ILSG *Have on Teacher Knowledge of Evidence-Based Reading and Behavioral Supports for Students With EBD?*

In this study, we found statistically significant improvement in teacher knowledge ($z = 2.41$, $p = .016$) from pretest to posttest (see Table 3). The effect size ($d = 0.64$) was educationally meaningful (≥ 0.20).

Research Question 2: What Impact Did ILSG *Have on Teacher Self-Efficacy and Burnout?*

Results demonstrated statistically significant improvements on self-efficacy measures (see Table 3) documented by the TSES ($z = 2.87$, $p = .004$), the TRSES ($z = 2.42$, $p = .016$), and the TBSES ($z = 3.06$, $p = .002$). On the TSES, we found statistically significant changes in the student engagement ($z = 3.07$, $p = .002$) and instructional strategies ($z = 3.19$, $p = .001$) subscales. Educationally meaningful (≥ 0.20) effect sizes were found for general teacher self-efficacy ($d = 0.77$), reading self-efficacy ($d = 0.65$), and social and emotional self-efficacy ($d = 0.82$), as well as for the TSES student engagement ($d = 0.82$) and instructional strategies ($d = 0.85$) subscales. Effect sizes were educationally meaningful for teacher burnout ($d = 0.45$) and for the TSES classroom management subscale ($d = 0.52$), but not statistically significant (burnout $p = .089$; TSES classroom management $p = .053$).

Research Question 3: How Did Teachers Perceive ILSG *in Terms of Usability and Satisfaction?*

Usability and satisfaction scales ranged from 1 to 5, with lower values reflecting more positive attitudes. In general, teachers gave moderately positive ratings for program usability and satisfaction. Quantitative results are detailed below and summarized in Table 4.

Table 4. Mean Usability and Satisfaction Ratings at Posttest ($N = 13$).

Survey item	*M* (*SD*)
Relevance[a]	
How relevant were the behavioral strategies to your instruction?	2.69 (0.95)
How relevant were the reading strategies to your instruction?	3.23 (1.01)
How relevant were the reading strategies to your students' needs?	3.00 (1.23)
Practicality[b]	
How much did the behavior skills help in the teaching of the reading skills?	3.31 (1.11)
How helpful was creating the practice videos in aiding your understanding of the *ILSG* content?	3.54 (1.33)
How useful was it to watch other study group participants practice the weekly routines?	3.54 (1.45)
How useful was it to create a lesson plan during Modules 8 and 9 for use with your students?	2.92 (1.12)
Usability[c]	
How helpful were the discussion questions in furthering your understanding of the *ILSG* content?	3.15 (0.86)
How helpful were the reflection questions, in which you discussed how you currently teach reading skills or concepts?	3.08 (0.86)
How useful was responding to your peers' discussion posts?	3.15 (0.90)
How useful was responding to your peers' reflection posts?	3.15 (0.99)
How helpful was the study group format in aiding your understanding of the *ILSG* content?	2.92 (0.94)
Ease of use[d]	
How easy was it to access the four sections of the *ILSG* program?	1.46 (0.85)
How easy or difficult was it to upload videos?	2.23 (0.93)
How easy or difficult was it for you to apply the reading routines with your students?	2.86 (1.35)
Engagement[e]	
How engaging were the instructional videos in the Learn section of each module?	3.00 (1.08)
Level of detail[f]	
How do you feel about the level of detail presented for the reading routines?	1.92 (0.28)
How do you feel about the level of detail presented for the behavior skills?	2.08 (0.28)
Program content and duration[g]	
How would you rate the average length of the videos?	1.69 (0.48)
How do you feel about the amount of time (10 weeks) you were given to complete the course?	1.92 (0.49)
How would you rate the amount of information you were required to access for each module?	2.00 (0.41)

Note. Items were rated on Likert-type scales, with lower ratings indicating more positive perceptions.
[a]Rated from 1 (*extremely relevant*) to 5 (*not at all relevant*). [b]Rated from 1 (*a great deal*) to 5 (*none at all*). [c]Rated from 1 (*extremely useful or helpful*) to 5 (*not at all useful or helpful*). [d]Rated from 1 (*extremely easy*) to 5 (*extremely difficult*). [e]Rated from 1 (*extremely engaging*) to 5 (*not at all engaging*). [f]Rated from 1 (*too much detail*) to 3 (*too little detail*). [g]Rated from 1 (*too long*) to 3 (*too short*).

Behavior and reading strategies. Most teachers indicated the behavior strategies were relevant to their instruction, but they believed the reading strategies were slightly less relevant to their instruction and to their students' needs. Most teachers found the reading routines easy to apply, although two teachers said the routines were too rigid. One teacher commented that it would have been useful to see different approaches; another suggested that grade-specific content would improve the *ILSG* program. Most teachers thought the behavior

skills did not help in teaching the reading skills. One teacher said the behavior strategies were too "garden variety" to be useful with very challenging students.

Practice videos. Most teachers indicated that making the practice videos did not help their understanding of the *ILSG* content and that watching other participants practice their routines in these videos was unhelpful. Six teachers thought the least enjoyable part of the program was recording the practice videos, and four said it did not help them improve their teaching practice. Only one teacher found an assignment—the practice videos—to be difficult. A slight majority found that creating lesson plans during Modules 8 and 9 was moderately useful. Ten teachers stated that responding to two discussion prompts was "just enough," whereas three thought there were "too many."

TSGs. Teachers believed the discussion and reflection questions were moderately helpful in furthering their understanding of the *ILSG* content, as was responding to their peers' posts. Seven teachers said that connecting and learning from other teachers was the most enjoyable aspect of the *ILSG* program. Most teachers found the study group format very or extremely helpful to understanding the *ILSG* content. Two teachers said they would have preferred to meet with study groups in person, and one teacher would have preferred to have more teachers in the group from different schools and districts to learn their approaches. One teacher said more open-ended questions would have improved course interactions. Another would have preferred professional dialog with peers rather than practice in copying teaching routines.

Program content and duration. Ten teachers perceived the 10-week training period to be about the right length of time; two thought it was too long and one said it was too short. Four teachers reported that some weeks they were asked to do too much—especially Week 5 ($n = 4$) and Week 6 ($n = 3$). Three teachers said they fell behind in the program, but were able to catch up. Eleven teachers thought the amount of information for each *ILSG* module was just about right, although one teacher said it was too much and one said it was too little. Most teachers ($n = 12$) reported that both the reading routines and behavior skills trainings had the right amount of detail. Nine teachers thought the videos were about the right length, and four said they were too long.

Ease of use. When asked, "How engaging were the instructional videos in the Learn section of each module?" responses averaged around "slightly engaging." When asked how easy it was to access the four sections of the *ILSG* program (Reflect, Learn, Practice, and Discuss), all but two teachers found it easy. Internal consistency reliability for the four items was $\alpha = .93$.

At the start of the *ILSG* program, some teachers reported problems uploading practice videos, due to the lack of a web camera on their computers, issues with the browser they used to access the course, and restrictive settings on school-district computers. At posttest, when asked how easy or difficult it was to upload videos, most teachers said it was very easy. Four teachers were frustrated by the lack of internal navigation within a module. Only two teachers reported using the help features on the *ILSG* website. One of these teachers needed support in uploading a practice video to the course site. Both rated the quality of help positively. Of the 11 teachers who did not use the help features, five said they received assistance elsewhere and six did not need help. Two participants said they did not know help features were available.

Discussion

The results of this study support the feasibility of *ILSG*, an adaptable, digitally delivered professional learning program for elementary school educators. The course design incorporates evidence-based components of effective professional development and adult learning principles, and provides teachers with explicit strategies for classroom behavior support with high-quality reading instruction to increase educational outcomes for students with EBD. In this study, we provided

evidence that *ILSG* promotes teacher knowledge of evidence-based reading and behavioral supports for students with EBD, enhances teacher self-efficacy, and reduces burnout. Teachers find the *ILSG* program usable and are generally satisfied with it.

In this study, we demonstrated the potential of *ILSG* to help fill a recognized gap in research and practice by preparing educators to manage and meet the literacy needs of students with EBD. Because professional learning opportunities for teachers to serve this population are limited, educators struggle to incorporate evidence-based practices into their classroom routines. The digitally delivered aspect of the *ILSG* program addresses concerns of lack of accessibility of effective practice content for use by teachers of students with EBD (McKenna & Ciullo, 2016). The explicit teaching routines (e.g., consistency, clarity, guided practice, and corrective feedback) used in the *ILSG* modules have been previously shown to benefit students with EBD and were designed to overlay with existing reading curricula being used by teachers. The routines are flexible so that teachers can personalize them for their classrooms, making adjustments to the wording, pacing, and amount of practice and feedback used to meet their students' needs.

Educators were generally satisfied with *ILSG*. Most teachers found the online SEL and reading strategy content in the course to be relevant and beneficial, appropriate to their needs and those of their students, with about the right amount of detail. Many teachers, however, perceived the behavior skills presented in the *ILSG* course as unhelpful for reading instruction and most teachers expressed dissatisfaction with the practice videos. These concerns are important and should be considered in future revisions, implementations, and evaluations of *ILSG.* For example, behavior skills more helpful for reading instruction could be substituted by seeking teacher-created scenarios and researching classroom observation scenarios. *ILSG* is a package approach, but it is designed to be flexible; refinements in its components—based on research evidence and stakeholder input—could be made to improve the product without harming its overall integrity of effectiveness.

Closing the Gap: Preparing Teachers to Enhance Literacy of Students With EBD

Our findings increase the evidence base on professional learning of educators. Recent meta-analytic reviews have found that the number of hours of professional learning moderates student reading outcomes and teacher reading instruction (Basma & Savage, 2018; Garrett et al., 2019). Short-cycle professional learning—which researchers describe as shorter and less intensive—allows for a narrow, targeted focus and produces larger impacts on student reading performance and teacher instruction than longer and more intensive interventions (Garrett et al., 2019). Researchers have also found that professional learning must include at least 14 hours of focused activities to have positive and significant sustained impacts on teacher practice (Gersten et al., 2010; Yoon et al., 2007). *ILSG* provides about 15 hours (1.5 hours per module) of focused activities on reading instruction and behavioral routines sustained over 10 weeks. The asynchronous nature of the web-based *ILSG* program allows educators to increase duration and intensity based on their own personal professional development needs as they review, reflect, and practice within each module.

Professional development is more effective when educators are actively engaged in learning, rather than passively listening to lectures (Garrett et al., 2019; Gersten et al., 2010). Being able to observe people similar to oneself successfully adopting and performing useful behaviors enhances learning and motivation (Bandura, 1986). In addition, evidence suggests that narrative and video-based examples of effective instructional approaches can support teachers' acquisition and appropriate use of these skills in teacher–student interactions (Koehler, 2002; Pianta et al., 2008). Joyce and Showers's (2002) research on practice and skill acquisition stresses the positive impact that interactive practice and feedback

adds to instruction. *ILSG* provides video modeling of real classroom teachers using the strategies with youth with EBD. Moreover, by uploading a short video implementing a specific strategy, teachers provide models for each other. They also give feedback to members of their study group and receive feedback from group members on their use of the strategy. Personalized coaching, available as needed in the *ILSG* program, is another evidence-based professional learning approach that can improve quality of implementation, teacher instruction, and student outcomes (Joyce & Showers, 2002; Kraft et al., 2018). Face-to-face or virtual peer coaching has been shown to be effective in groups of individuals with different strengths and weaknesses (Papay et al., 2016), although this feature was not used by most teachers in the present study.

Limitations and Future Directions

Results of this feasibility study are positive, but should be interpreted with caution due to several limitations, including a small sample size from one geographical area, a non-experimental research design, and the use of researcher-created measures with limited psychometric information. Future researchers should revise and evaluate the *ILSG* program with larger and more diverse samples, employ standardized and validated measures when available and possible, and consider experimental designs less liable to threats to internal validity. This study is most useful in demonstrating that teachers find the *ILSG* intervention acceptable, and in showing that teachers using the program gain knowledge and self-efficacy. Further inquiry is needed to demonstrate effectiveness of *ILSG* on teacher behavior in the classroom, and on changes in student reading and behavior as a result.

Implications for Research and Practice in Teacher Education and Special Education

Improving literacy for students with EBD requires educators equipped with the knowledge and skills to deliver effective instruction. *ILSG* addresses this need with a short-cycle, interactive, job-embedded, adaptable, and digitally delivered professional development program that prepares teachers to enhance reading instruction and SEL support for students with EBD.

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