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Original Paper

Perceptions from Educators of Implementing Science of Teaching Reading Curriculum: Preparing Teachers to be Dyslexia Therapists

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Abstract

Teachers enter the educational field with a commitment to helping students learn. Their students are the direct recipients of educators who actively participate in professional development opportunities. Opportunities for professional development in how to evaluate learning to read curriculum are not as common as needed. Using the Connections: OG in 3D®, a structured literacy curriculum, in-service educators who were working toward becoming a certified dyslexia therapist were given surveys to determine their perceptions of such professional development.

Keywords

curriculum, evaluation, teachers, professional, development

1. Introduction

Teachers enter the educational field with a commitment to helping students learn. Their students are the direct recipients of educators who actively participate in professional development opportunities. Teachers spend their careers modeling life-long learning. While teachers might acquire current information and instructional strategies on their own, teachers rely on professional development through outside agencies as well. Teachers are assigned specific professional development by their school district, school administrator, or instructional coaches to learn new curriculum materials and practices. Adopting a new curriculum is a significant process for teachers and students because teachers learn how to implement the curriculum, and students have opportunities to gain experience, current information, and ways of learning. A new curriculum can transform classrooms, students, and schools. In the realm of learning to read, research has been done to determine that learning to read curriculum should follow the science of teaching reading. Opportunities for professional development abound in

preparing educators to teach students to read, but do these opportunities focus training on the science of teaching read research? *Connections: OG in 3D*® is a structured literacy curriculum that systematically provides instructional strategies and materials that teachers use to teach any age student to read, even those with learning differences such as dyslexia. It is important to note such an important curriculum should not just be handed out on the first day of school to any teacher. For any curriculum to be beneficial, those who implement it must be skilled in how to use it correctly, purposefully, and effectively.

2. Method

2.1 Review of Literature

Professional Development (PD) designed for educators is identified as a selection of focused preparation, formal preparation, and specialized professional learning that is meant to provide professional knowledge to teachers, and administrators to expand knowledge, ability, expertise, and efficacy (Ed Glossary, 2013). Professional development consists of workshops, professional learning communities, professional book clubs, and content specific training such as history museum tours. While teachers can search for professional development on their own to fulfill licensing requirements or certification requirements, most PD is chosen by school districts and local campuses. The use of professional development has been part of the culture of schools for a substantial number of years and has evolved since. According to Bayar (2014), in the past, professional development has focused on teacher professionalism rather than evolving their instructional strategies of promoting student learning. In a survey of more than 8,000 teachers nationwide, thirty-nine percent state they engage collaboratively in PD weekly (RAND, 2023).

PD has grown to be a process of individual educators or educator groups engaging in either a formal or informal experience within a school setting (Marcelo, 2009). According to Lichtman (2017), a gap exists between the needs of K-12 schools and what teachers are taught to do during training opportunities. A study conducted by Burke (2013), included four public school teachers and four university staff who provided their notes from PD, reflections from PD, observations, and questionnaires to determine how effective the PD was in terms of implementing innovative instructional strategies. It was determined that educators who are afforded more learning opportunities at their campuses were better able to initiate new strategies into classroom practice. Burke (2013) also determined that educators who are given opportunities to practice various strategies and then reflect on the success of the strategies were more likely to continue to implement the information and materials that were learned in PD. They were also more likely to be receptive to feedback and coaching related to the new materials and information. When educators are encouraged to be actively engaged in their own learning, they are apt to work collaboratively with others towards a common goal (Stewart, 2014). In addition, PD is more successful when teachers have a connection to a community of practice or work along with others toward the same purpose.

A community of practice for educators who teach in public schools is the science of teaching reading. This commonality has become the standard of reading instruction nationwide in the last few years. The science of teaching reading is researched-based instructional practices and materials for effective teaching of students to read. Years of research and evidence compiled determines what is important and what works in reading instruction (Jiban, 2024). Based on this plethora of research, effective reading instruction consists of the five pillars: phonemic awareness, phonics, fluency, vocabulary, and comprehension (National Reading Panel, 2000). Phonemic awareness is necessary to understanding an alphabetic language (Wagner, Torgesen, & Rashotte, 1994). Phonemic awareness is recognizing that spoken words consist of distinct parts of sound that meld together to make words. By identifying the point to which children develop phonemic awareness, researchers can detect who would learn to read easily and who would have difficulty (Share, Jorm, Maclean, & Matthews, 1984). Phonemic awareness is important in learning to read.

The second pillar of effective reading instruction is phonics. Phonics is a relationship between letters and sounds from a spoken language that follow a specific set of rules. Phonics is the combining of graphemes (letters and letter combinations) with phonemes (smallest unit of sound). Instructional strategies should highlight the way spellings are related to speech sounds in a methodical manner (Snow, Burns, & Griffin, 1998). According to Foorman et al., (1998), phonics may not be consistent in its rules, however it is consistent enough to aid young readers in decoding unknown words.

The third pillar of effective reading instruction is fluency. Fluency is comprehension based on automatic word recognition, reading words accurately, inflection, and expression (Moats & Tolman, 2009). Regardless of reading silently or aloud, fluency is significant because it permits the reader to concentrate mental attention on comprehension rather than word pronunciation (Perfetti, 1985, 1988; Pikulski & Chard, 2005). A reader's fluency should continually progress as he/she reads more complex texts. Fluency is based on effective and efficient reading instruction. Kilpatrick (2019) explains that the crucial element to fluency is a reader's sight word vocabulary. Without a sight word vocabulary, reading is effortful and often incorrect.

The fourth component in effectual reading instruction is vocabulary. To communicate with others, students must have a working vocabulary. Vocabulary comprises four types: listening, speaking, reading, and writing (Learning Point, 2004). Relevant instructional strategies for improving student comprehension are long-term vocabulary instruction that is ongoing (Beck, Perfetti, & McKeown, 1982) as well as teaching vocabulary terms prior to a reading assignment. (Brett, Rothlein, & Hurley, 1996; Wixson, 1986). Scarborough (2001) claims scope and depth as vital during vocabulary study. Scope affects reading understanding while depth affects fluency (Tannenbaum, Torgeson, & Wagner, 2006). Vocabulary knowledge is vital to becoming a successful reader.

The final pillar of effective reading instruction is comprehension. Understanding what one reads is comprehension. Gough and Tunmer (1986) describe reading comprehension as decoding or word recognition, in addition to language comprehension. The skills a reader needs, word reading,

vocabulary, syntax, background knowledge, inferencing, and attention, for comprehension must be taught (Kilpatrick, 2015). The National Reading Panel (NRP) (2000) states that all the five pillars of effective reading instruction should be taught. The NRP also states that effective reading instruction is done in a systematic and explicit manner. As most schools rely on a curriculum that includes all the 5 components to meet the reading needs of their students and the teaching needs for their teachers, this research investigation used *The Connections: OG in 3-D® (Connections: OG in 3-D) (Frierson & Scholtens, 2014)* curriculum.

Connections: OG in 3-D® is a learning to read curriculum designed with the five pillars of effective reading instruction in a systematic, explicit teaching approach. This curriculum is a structured literacy curriculum that encompasses the entire structure of the English language (Klages & Scholtens, 2020). Each lesson provides direct, explicit instruction that is cumulative and sequential. This curriculum follows a scope and sequence process that includes the alphabetic principle with the order of rate of use; simplest to most complex. Each concept is taught from the most concrete to abstract, via hands-on lessons using 3-D resources. 3-D resources developed from the Orton-Gillingham method of teaching reading which is a multisensory approach (Gillingham & Stillman, 1960, 1997). Students can physically hold a 3-D object which promotes understanding and manipulation of sounds, letters, and words that they are reading. For illustration, a 3-D object used in this literacy curriculum would be an actual banana or a plastic banana that would represent the consonant sound /b/ sound in the word. The student can hold this banana, smell the banana, even taste the banana to internalize the sound the letter "b" makes. Of course, eating the banana is only with parent permission. The curriculum Connections: OG in 3-D® was created on the philosophy and content of a multisensory structured language methodology. However, *Connections: OG in 3-D*®, moves beyond other Orton-Gillingham curriculums because it includes phonemic objects such as the banana mentioned above in the review of literature. As the reader is holding the object which represents the sound, he/she is learning, the student can "feel" the sound, supporting connections to the brain to recall the sound (Klages & Scholtens, 2020). Additionally, *Connections: OG in 3-D*® curriculum incorporated visual, auditory, tactile, and kinesthetic learning opportunities while, also utilizing sounds, smells, and tastes which are senses often forgotten in other multisensory learning to read curriculums.

Connections: OG in 3-D® teaches readers to pay attention to sound, spelling, meaning, and etymology along with phoneme-grapheme relationship and orthographic mapping. Readers are taught to be aware that the English language is morphophonemic because layers of etymology and morphology are included. Nonsense and real words, phrases, sentences, and connected texts are included to apply sound to symbol knowledge, spelling rules and patterns, grammar, and comprehension in each lesson. To guarantee automaticity, repeated distributive practice and checkpoints for mastery are designed within each lesson. Cognitive energy is used to promote higher level comprehension as students learn syntax and semantics with the curriculum materials. *Connections: OG in 3-D*® created its name from the connectivity of the neural pathways in the brain that form a reader's orthography, phonology, and

semantics abilities based on Seidenberg's (2017) research. The foundation of effective reading instruction is "connected" and works together to produce reading success.

2.2 Purpose of the Investigation

The purpose of this investigation is to identify the perceptions of in-service educators while learning a new, comprehensive reading curriculum to use in the upcoming school year. The learning to read curriculum is from *The Apple Group Connections: OG in 3D*® (Frierson & Scholtens, 2014) that reflects science-based reading research.

2.2.1 Research Design

This research investigation is qualitative in design. A qualitative investigation collects, codes, and analyzes survey data to understand personal experiences (Jansen, 2010). For this investigation, the word *survey* denotes the examination of specific people through lens of its members as practicing educators. This investigation utilizes a survey of in-service educators and their perceptions of utilizing a new learning to read curriculum (Groves et al, 2004). The use of qualitative data requires some method to understand the data. For this investigation, open coding allowed unorganized data to be systematically ordered (Punch, 2013). A code is a term or brief phrase that gives description to what is happening within the data collected. For this investigation, open codes were determined after examining the survey responses. A code was attached to the response (Groves, 2004). This investigation used the same survey questions three times throughout the first training year.

The participants were surveyed at the completion of year one of their dyslexia training course which involved learning, applying and evaluating the *Connections: OG in 3-D*® curriculum. This curriculum a learning to read curriculum designed with the five pillars of effective reading instruction in a systematic, explicit teaching approach. The survey was taken prior to the start of training, during the training or the end of the first year, and finally at the end of training, which was at the completion of the training or year two. The same survey questions/statements were given each time. What the in-service educators or participants responded to each survey question/statement was collected, analyzed, coded, and categorized for organization and understanding.

2.2.2 Participants

The participants in this investigation are all certified in-service educators within the state where they teach, each working to obtain training specific to becoming a certified dyslexia therapist. Each participant agreed to a two-year commitment to complete the program. Participants are from the following states: Arkansas, Missouri, and Texas. A total of seventeen participants in this investigation began in the fall of 2017. As certified teachers, the range of grade levels taught was kindergarten to twelfth grade. Only two participants voluntarily attended as the rest of the group were sent by a school/district administrator. All participants were females with a minimum of two years teaching experience apart from the participant who had a child at home that showed characteristics of dyslexia.

2.2.3 Context of the Investigation

All participants had a minimum of seven days of hands-on training with the *Connections: OG in 3-D*® curriculum prior to the beginning of the Certified Dyslexia Therapist program. This training was face to face with all participants working together. Participants spent time listening to lectures about the science of teaching reading and Oroton-Gillingham multisensory teaching research, practicing teaching reading lessons from the curriculum, small group discussions and practice.

The seventeen participants spent two years training how to become Certified Dyslexia Therapists by attending face to face classes, completing required readings, pre and posttests, homework assignments, presentations as well as engaging in a practicum with at least two students who showed the characteristics of dyslexia. This practicum required initial screening of K-12 students, analyzing the screener results, applying the *Connections: OG in 3-D*® curriculum, recording video tapes of teaching, writing lesson plan, and taking formative and summative assessments. Successful completion of these requirements as well as a final exam leads to the title of Certified Dyslexia Therapist. *Connections: OG in 3-D*® curriculum is an accredited Plus Program by The International Dyslexia Association. All potential therapists had to complete a notebook with the results of screeners, lesson plans, video tapes of lessons, and analysis of student work. In addition to application of curriculum, the potential therapists had class assignments to complete such as, reading reflections, oral presentations, surveys, written reflections, and discussion group dialogues. For this investigation, a pre-survey was given prior to the beginning of the training, after the first year of the two-year training period, and at the completion of the two-year training. All required work for the in-service teachers was collected in a case study notebook. The surveys were only one aspect of the training. For this research investigation, the survey responses are the only elements analyzed.

2.2.4 Data Sources

Three data sources were identified as useful pieces of information to analyze within the context of the in-service teachers' experiences. Each participant was given survey questions before starting the program, during the program, and at the end of the program that were evaluated to identify patterns. A checklist was used to determine completion of all items required in the case study. The participant was to identify one or two students and conduct a screener with them to determine if they had a learning difference in reading. The participant used the *Connections: OG in 3-D*® curriculum to teach reading to the identified student (s). All lesson plans, testing data, student work, progress monitoring, and student biography (s) were collected within the case study. In addition, participant completion of program was noted along with identifying current employment status. Only survey responses were analyzed for this research investigation and participant responses are provided as they were originally written. The following questions were used:

<u>Before the training</u>

What do you wish you knew before you started?

Did you explain to the child why you were using multisensory methods?

How did you explain the Orton-Gillingham approach used in *Connections: OG in 3-D®?*

During the training

What are you glad you knew before you started?

Was it hard to fit a lesson into one day?

Were you surprised that the lessons went slower or faster than expected?

After the training

What was the most difficult challenge you faced?

Have you had any parent reactions yet?

Teacher reactions?

3. Result

In qualitative research, one priority prior to coding the data is to recognize what information is significant, locate that information, and organize that information in a manner that makes it easy to provide understanding (Groves et all, 2004). The cohort group began training in *Connections: OG in 3-D®* curriculum in the summer of 2017. A total of seventeen participants began the program and eleven completed the program. Two participants requested to move to the next year's program, three did not finish the program. Important to note, one of the participants did not have a case study on file for The Apple Group because she used it as a graduate course assignment. Eleven participants of this cohort successfully completed the training earning the Certified Dyslexia Therapist license.

Since the participant had training related to the science of teaching reading as well as multisensory teaching, the survey question asked, "Did you explain to the child why you were using multisensory methods? How did you explain the Orton-Gillingham approach used in *Connections: OG in 3-D®* curriculum?" The participants had one week of training with the curriculum and related research prior to beginning their work with a student (s). All eleven participants stated that explaining *Connections: OG in 3-D®* curriculum to the student was important. Students understand what they are to learn, how they will learn it, and demonstrate their skills. The in-service educators mostly provided comments of positivity:

> His brain works differently than other people's brains
>
> I used a brain mold with stickers to show the rewiring of the brain
>
> I talked about how the brain remembers touch and hold objects to learn better
>
> Most did not seem to care
>
> The younger did not seem interested

While all did state they explained the curriculum to the student, two identified their students did not seem interested. It is not known why the students were not interested other than the participants' perceptions.

The before, during and after the training survey questions of the thirteen participants were analyzed. The first survey question given asked what they (participants) wished they knew prior to the beginning of the *Connections: OG in 3-D*® training. Four categories of responses emerged: teacher-focused concerns versus student-focused concerns, and content-knowledge concerns versus application concerns. Eleven responses to the question were teacher-focused concerns:

The patience I needed

Organization skills

Clear understanding of the science of teaching reading

Stronger foundation in phonics and reading skills

While it is important that participants, who are classroom teachers, want to focus on the teaching of reading for their students, most of the participants indicated their concerns regarding their confidence. Since all but two participants were practicing educators, the level of confidence is low for a group who works with K-12 students on a regular basis. It is not known if the lack of confidence developed due to a new curriculum, *Connections: OG in 3-D*®, to learn or the actual topic of teaching students to read. The two comments directed to student concerns were a desire to know earlier when the student was having problems with reading and knowledge of student organizational skills. These concerns were specific to two of the participants' prior experiences with a specific student rather than students in general.

The next pattern that emerged was that of content-knowledge of reading curriculum versus application skills of reading curriculum. Seven participants addressed the need for more content knowledge prior to the curriculum training. Five of the participants commented on the desire for more application skills for teaching reading. Some of the responses from the survey:

I wish I knew the materials better so I would not be nervous

Some teaching of reading background knowledge

Blending

Dyslexia laws in our state

Another survey question posed before beginning the training, participants were asked what they were happy they already knew. Again, the patterns of teacher-focused concerns versus student-focused concerns, and content-knowledge concerns versus application concerns were discovered. Of the thirteen responses, seven of those were teacher-focused versus six student-focused responses. Some of the teacher-focused comments made were:

I'm glad I had a positive reading background

I'm glad I have some knowledge of teaching kids

I am glad I know the importance of hands-on

In addition to teacher and student focused statements, content knowledge and application knowledge were identified within the responses. Six of the participants made comments that were teacher-focused, such as, "I am glad I knew this curriculum was successful." This statement is also considered to be

application-focused as a curriculum provides the information or content to teach as well as how to teach the content which is application focused. Three of the responses were application-based. An example of this responses is, "I'm glad I have some knowledge of teachings kids." There were five responses to this question that did not fit into any category. Below are these responses:

I'm glad I know I will get support.

I'm glad I knew a dyslexia therapist.

I already knew students.

I'm glad I have done research on a student's academic background.

I was able to teach the older sister, so I had a student relationship already.

The participants had to complete a case study using the *Connections: OG in 3-D*® curriculum. The survey questions related to applying the curriculum were analyzed. Part of the case study is to teach reading lessons from the curriculum and reflect on the delivery. The survey questions posed were done while the participant was working with the student (s). This information was collected for the case study. The question posed at this point "Was it hard to fit a lesson into one day?" All thirteen responded with yes. Based upon fidelity, the *Connections: OG in 3-D*® curriculum should be used for a minimum of forty-five minutes to an hour. As such, not one participant was able to complete a lesson in the designated school day. Some of the responses from this question were:

Even though I did not complete a lesson in an hour, there was improvement

My student said, "You've got to listen to me read"

The curriculum is influential in teaching students to read

It takes longer than expected

It moves slower than I thought

Rarely able to do more lesson in an hour

Connections: OG in 3-D® lessons are not designed to be completed in one hour of teaching. As such, no one completed any lessons in one hour or designated school time. The lessons were divided up based upon student mastery. Yet, the participants added comments that the time spent on the lessons was not as important as the learning to read. Student growth surpasses time taught teaching this curriculum.

Another application-based survey question was "What was the most difficult challenge you faced?" Only one participant stated she had no challenges at all. The rest of the responses were categorized as a teacher challenge or a student challenge. Seven of the responses were identified as teacher-related challenges and two student-related challenges. Teacher-related challenges were based on curriculum concerns such as:

Confidence in my knowledge with the curriculum

Specific lessons: VCCV and VCV

Staying upbeat when a student is stuck in one lesson

Working with ED (Emotional Differences) students who need to learn to read

Blending

Working with too many students at one time

Two responses were student related. The participants stated that they faced challenges with discipline and the child's self-esteem. Although, both challenges do have an element of teacher input. The last responses were beyond the control of the participant as it related to the amount of time spent working with students which neither teacher nor student had input. The survey question posed about student learning while using the curriculum were all affirmative. Not one participant stated stagnation or loss of reading ability. All thirteen participants saw reading growth with their student (s).

The final survey question was given at the end of the training when case studies were due. This question was "Have you had any parent reactions yet? Teacher reactions?" All participants responded to at least one of the given questions. Eleven participants responded they had some type of positive reaction from the parent or parents of the student. Some of the parent responses were:

Our son isn't the same. He actually does his homework now. He wants to

come to school. He doesn't cry every night. Who's to blame for this?

Who do we need to thank?

My son went from the 12% to the 85%

Parent said she could see a difference after two months

Five participants shared comments from their fellow teachers regarding how the curriculum affected them. Some of those responses were:

Several teachers came to see me, and they went to the principal because

They wanted the training.

It's too much for a classroom

Several teachers have stopped by my classroom to watch a lesson

The supervising administrator complimented the work and the curriculum

Eleven participants submitted a completed case study in their path to being a Certified Dyslexia Therapist. As such, eleven of the original seventeen participants earned the Certified Dyslexia Therapist accreditation from The Apple Group. The Apple Group makes a point to stay abreast with these eleven therapists. Eight of the therapists stayed active in teaching students to learn to read. One retired and then worked with The Apple Group part- time. One participant works as a dyslexia advocate for the state of Arkansas while another one has moved to Indonesia and trains teachers there using the *Connections: OG in 3-D*® curriculum.

4. Discussion

The purpose of this investigation was to identify the perceptions of in-service educators while they learn a new, comprehensive reading curriculum as a pathway for a dyslexia therapist certification. Based on the prior knowledge and experiences of these participants, they have a sense of efficacy in their knowledge of teaching students. They understand the importance of learning to read. This

understanding is demonstrated in the survey question of what they already knew before coming to training. Previous positive knowledge does set the expectations for learning a new curriculum.

Stated previously, educators are more likely to utilize strategies and ideas that they see are successful. Examples of this continued use of C*onnections: OG in 3-D*® curriculum is tied to the survey responses from the educators who felt confident in their new knowledge of this learning to read curriculum. Several educators mentioned that their colleagues want the training, as well as the concept of continued support. All these factors contribute to the successful use of the curriculum for the future.

An important element of professional development is the idea of one actively engaging in one's own learning. Each of the participants demonstrated this idea by completing the three surveys (pre, during, and post). Statements such as:

> I'm glad I had a positive reading background
>
> I'm glad I have some knowledge of teaching kids
>
> I am glad I know the importance of hands-on
>
> Recognizing one's own learning is important because the next step
>
> leads to identifying what one does not yet know.

A community of practice was established based upon the survey questions related to parent and other teacher reactions to the curriculum. This community of practice was further cemented when all participants responded to the survey that the curriculum does work. The science of teaching reading can be applied using the correct curriculum. In this case, C*onnections: OG in 3-D*® was the curriculum learned, applied, and evaluated. Other educators watched the curriculum in action, then asked administrators to be a part of it. One educator learning something new and useful has a positive influence on educators around them. Within the community of practice, it is important to include parents or guardians. In this case, not one parent or guardian had a negative response or reaction to his/her child learning with this curriculum.

4.1 Future Research

While this investigation into the perceptions of educators learning, applying and evaluating a learning to read curriculum was based upon the three surveys that were given, entire case studies were required and completed. Within these case studies, much more data is waiting to be discovered. Future investigations could look to how educators apply a new curriculum in a reading classroom as the participants had to actively participate with teaching lessons from the curriculum. Additional requirements for the case study such as book reports, presentations, and group discussions can be analyzed and evaluated for educator perceptions and applications.

This cohort worked together prior to the Covid pandemic, so all interactions were done in face to face at The Apple Group headquarters in Jonesboro, Arkansas. After the pandemic, all trainings and interactions are completed through synchronous and asynchronous applications. Future investigations could address the differences in survey responses between face-to-face cohorts and the virtual cohorts.

This group of participants completed their training in 2019. Other new groups of educators have completed their Certified Dyslexia Therapist training while others are in the process of completing theirs. Thus, additional investigations can be organized to see these later group perceptions of the curriculum. As most of the participants in this survey shared positive perceptions of the curriculum, future research could be completed to determine if the curriculum is still active in the various classrooms.

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