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Teachers' Impressions of an Innovation Configuration for Vocabulary Instruction

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Abstract

As part of a mixed-methods reconnaissance action research study, I assessed the impressions teachers had of using an innovation configuration for vocabulary instruction at an English education center in China. The quantitative data strand consisted of lesson artifacts and documents. The qualitative data strand consisted of semi-structured interviews with two teachers of English as a foreign language. Integrating both the quantitative and qualitative strands of data provided the following insights: (1) teachers had a positive impression of using the innovation configuration to address what they should cover for vocabulary instruction, (2) they used the innovation configurations to identify strengths and areas for improvement, and (3) they rethought how to structure their lessons to better engage students. These findings will be used to inform subsequent cycles of this action research project. These initial results, though, indicate that providing appropriate resources to stimulate teachers may prove beneficial in expanding their pedagogical knowledge.

Introduction

Reading in English at higher cognitive levels provides a myriad of opportunities for those who develop that ability (Grabe & Stoller, 2020; Taylor et al., 2006). In an increasingly global society, users of English who can read at such levels distinguish themselves (Avalos et al., 2007; Burkins & Croft, 2017; Grabe & Stoller, 2020). Yet these learners must develop the fundamental skills required to start that process. A significant component in developing those skills, especially in a foreign language, is building a robust vocabulary and cultivating the conceptual skills needed to comprehend what is read. Both require time and instructional guidance, such as from teachers.

How teachers develop themselves and their abilities to instruct students in building their vocabulary is crucial in ensuring students succeed in developing their English reading abilities. For teachers to achieve this goal, they have to have the knowledge and confidence to foster that growth. That ability comes with their initial teacher training, experience in the classroom, and ongoing professional learning (Li, 2016; Nguyen & Yang, 2018; Valencia et al., 2009; Yan & Yang, 2019; Yang & Bernat, 2011). Yet many teachers at English education centers within China are asked to guide students without proper knowledge or understanding of English reading pedagogy for first or foreign language instruction. The breadth of their

knowledge and abilities is based on the emphasis their instructors placed on developing those skills during their education and training (Barnawi, 2016; Hobbs, 2013; Stanley, 2013). For many of these teachers who work in English education centers, the approach they learned was based on communicative language teaching with an emphasis on speaking and listening skills development (Anderson, 2020; Butler, 2011; Scrivener, 2011). These teachers, thus, come with minimal knowledge concerning vocabulary instruction in English, which requires that they develop that knowledge and ability through further educational pursuits.

This study is an attempt to address this concern. It was conducted with two teachers at an English education center in southern China to understand their impressions in using a tool—an innovation configuration for vocabulary instruction—to help them better instruct vocabulary. Innovation configurations are tools that describe the possible variations of how an innovation may be implemented (Hall & Hord, 2020; Hord et al., 2006). Those using such a tool can identify where their practices lie within the configuration and which variations they wish to work toward to improve themselves. Thus, the focus of this study was to learn whether the innovation configuration for vocabulary instruction helped these two teachers develop their pedagogical knowledge and skills. As such, I used these three questions to guide me in this learning process:

1. What impressions do teachers have of the use of innovation configurations?
2. How and to what extent did teachers use the innovation configurations to inform their classroom instruction related to higher-order thinking skills development?
3. In what ways did teachers see their students affected by their use of the innovation configurations?

To appreciate the complexity involved with this study, I first discuss the history of this action research project. I then present a review of the literature concerning innovation configuration maps and their use for teacher development. I then explain the theoretical framework that informs my conception of learning and development and how that influenced this study. I next detail the methodology used to study the teachers' impressions of using the innovation configurations and share their findings. I discuss the findings and then conclude with my insights on the importance and usefulness of innovation configurations in helping develop teachers at English education centers.

Action Research and Previous Cycles

This study is part of a larger action research project focused on teacher development at English education centers in China. I work as the curriculum director for the organization that manages these English education centers. My duties include researching, developing, reviewing, and revising courses and curricula materials related to English literacy for children ages 6 to 14. As part of my duties, I work with teachers to help with their understanding of the different courses they teach and the related materials available for them to use. In the course of those interactions, I came to recognize that many teachers were finding it difficult to implement the guided reading program. Many of these teachers, I realized, lacked the specific knowledge and training that comes with studying English literacy pedagogy. I decided to conduct an action research

project to address this problem of practice: *What support and experiences increase the teacher pedagogical knowledge and skills needed to enact a guided reading curriculum?*

Action research is a means for individuals to understand and improve concerns within their situated contexts through a cyclical and iterative process (Creswell & Guetterman, 2019; Herr & Anderson, 2005; Ivankova, 2015; Mertler, 2020). Multiple steps are involved, including identifying a problem, reconnaissance, planning, acting, evaluating, and monitoring (Ivankova, 2015). Reconnaissance research is an important step in which the researcher conducts small research projects to better understand the nature and context of the problem under investigation (Ivankova, 2015; Mertler, 2020). Multiple reconnaissance research projects may be undertaken based on the needs of the overall project (Buss, 2018, 2019). Individuals who choose to conduct an action research project do so in an attempt to improve their work practices and contexts. Action researchers ground their work in theory, their reading of the literature, and the knowledge that emanates from their unique contexts. Those affected by action research play varying roles as participants who help inform and, in many cases, direct the progression of that research.

To begin this process, I conducted a cycle 0 reconnaissance study in spring 2020 (Buss, 2018, 2019; Ivankova, 2015; Mertler, 2020). With this cycle, I focused on better understanding the problem of practice and ascertaining whether people within my work context viewed it as worthy of study. I interviewed four teachers in my organization to gain their insights on their experience in reading training, their preferences of training methods, and their ways of developing their ability to instruct their students to read. Through an inductive analysis of their responses (Strauss & Corbin, 1998), I identified the following four themes: (1) the importance of formal and informal education in preparing teachers, (2) preference to learn and train interactively, (3) consistent guidance in pedagogic and professional training, and (4) relevant expectations for how to develop oneself. All four teachers indicated that there was a need to better understand how to support teachers in learning about the curriculum and how to implement it with students. Based on the analysis of their insights and an examination of the literature, I focused my attention on using innovation configurations as a mediating tool.

Innovation Configurations and Teacher Development

In summer 2020, a colleague and I developed an innovation configurations map to help define an ideal guided reading program and the possible variations of how teachers might implement it (Hall & Hord, 2020; Hord et al., 2006). Innovation configurations are “word-picture” descriptions of how an innovation may be applied from the intended version, various modified and adapted forms, or nonuse of the innovation (Hall & Hord, 2020; Roy & Hord, 2004). Each configuration focuses on a core component the innovation. Innovation configurations are then combined to create a map, typically composed of 8 to 15 items; each component typically has two to six variations for each component (Hall & Hord, 2020). These maps are created in consultation with relevant stakeholders to the map and reflects their understanding of how the map should be used to ensure that the innovation is effectively implemented. Like a map, innovation configurations are a way to understand how teachers may traverse the implementation process so they may move toward the idealized variations of components.

My colleague and I based the development of the innovation configurations map on our prior experiences teaching guided reading courses, our observations of teachers, our discussions with teachers and associated staff members, and our reading of the literature on guided reading for first and foreign language instruction. Based on our research, we identified six core components of the guided reading course: (1) use of prior knowledge, (2) vocabulary instruction, (3) reading skill and strategy instruction, (4) reading comprehension, (5) class discussion, and (6) written expression. Each configuration is comprised of three to six variations. We anticipated that as teachers executed the program, they would modify and adapt their instruction based on their understanding of guided reading and contextual factors. We hoped that an awareness of what the ideal lesson is would assist our teachers in determining how they could structure their classes (Roy & Hord, 2004).

The planned use of innovation configurations as a guided mediating tool is a novel one that moves beyond the intended use as a way to help implement an innovation. As envisioned, the innovation configuration map should work as a means to mediate teachers' learning and development of how to plan and instruct the guided reading program. Using them in this manner is to reimagine their purpose. Yet, there is some precedent for the use of innovation configurations themselves this way.

In one of the few known applications of innovation configurations for teacher instructional improvement, Blamey et al. (2012) used them to help teachers develop their ability to reflect on and improve classroom practices related to vocabulary instruction in the United States. The researchers studied four teachers in how they implemented their vocabulary lessons with preschool students to determine how the teachers reflected on and evaluated their instructional practices. Their data sources included observations and transcripts of teachers' video self-observations of their lessons. The authors concluded that the teachers used the innovation configuration for vocabulary instruction to reflect on and evaluate their instructional practices. After the teachers had watched the videos of their lessons, they assessed their lessons against the innovation configuration to identify their strengths and the areas where they needed to improve. With that information, they then modified their lessons and instructional practices. Such a use of an innovation configuration proved beneficial to these teachers, as they had a mediating tool to guide and reflect on their instructional practices.

Within educational contexts, facilitators charged with teachers' learning and development may also use innovation configurations to assess how teachers implement an introduced innovation. From this knowledge, these facilitators can devise ways to support teachers based on where teachers are in their understanding of how to implement the innovation. When working with elementary school teachers in Hong Kong, Yeung (2012) employed an innovation configurations map to ascertain where teachers were in their implementation of a mandated curriculum focused on higher-order thinking activities. After observing teachers in this elementary school, an innovation configurations map was created based on what teachers were doing compared to the curricular standards. This map then was used to determine how teachers were implementing the new curriculum. When the research was conducted, most teachers were still developing their comprehension of the curricular standards and how they could implement them. The majority of teachers in this school, then, needed guidance and practice to foster their use of the new curriculum.

In both of these studies, the researchers used the innovation configurations as a mediating tool to help them comprehend the situation. Having used them, they were better positioned to determine what course of action they should next take. The researchers in these two studies thus leveraged the innovation configurations as a tool to push changes forward in the contexts they studied.

Mediating tools are important as a way to guide individuals to build their knowledge and skills (Benzehaf, 2016; Warford, 2011). März et al. (2017) studied how teachers were influenced by a document to help facilitate the transition of students between primary and secondary school in Belgium. Teachers at the primary level were required to fill out this document, the Transition from Primary to Secondary School File, with pertinent information to communicate to parents about their students. Parents would have the option of sharing this information with teachers and staff at the secondary school where they would enroll their children. Primary and secondary educators informed parents of the benefits of sharing this document and of how the secondary teachers could use it to help ease students' transition between school levels. The secondary school teachers would have information on students' needs, past practices to meet those needs, and suggestions for continued care and instruction. The researchers observed that the document's construction influenced how teachers reconceptualized student care and the importance of continuity as they completed the document. Implementers of this new process used the document as a way to mediate teachers' understanding of the importance of continuity in students' transition between primary and secondary school.

Mediation tools, thus, are an important consideration in individuals' learning and development. Innovation configurations maps are one such mediating tool that may prove beneficial in teachers' learning and development. Yet learning and development is a deeply social endeavor. How teachers understand and implement the innovation configurations map for guided reading is important, as they and their students are affected the most in being asked to use them. Therefore, I developed this cycle 1 reconnaissance study to explore how teachers responded to the use of innovation configurations in guiding their instructional practices.

Theoretical Framework

Addressing the research questions guiding this study requires a framework that adheres to my epistemological perspective that people are social beings who learn with others or, in the absence of others, within ephemeral, contextual situations. I ground this study, thus, in sociocultural theory based on the work of Lev Vygotsky. I apply this theory based on how scholars have applied it to teacher education, specifically with second language teacher education.

Teachers have distinct ideas about education that influence how they interpret and apply in their classrooms what they learn in teacher education and training (Freeman & Johnson, 1998). The understanding each person brings to what they learn is based on the premise that there are different concepts people synthesize into a true concept they may use (Golombek & Johnson, 2019; John-Steiner & Mahn, 1996; Johnson, 2015; Johnson & Golombek, 2016; Smagorinsky, 2013). The everyday concepts teachers have are based on their experiences as learners and what they observed their teachers doing during their schooling, as well as other factors that occur in their lived experiences. When they start their formal schooling to be teachers, though,

they are presented with academic concepts based on empirical research that may prove novel to these teachers. Thus, there may exist a fundamental tension between what they know from their everyday experience and what they learn as academic concepts. Each individual, then, begins a process of reconciling both concepts into one true concept. How people achieve those true concepts is unique to each individual.

As people are learning to develop these true concepts, they do so within situated contexts. Teachers may develop their true concepts with the assistance of others and of mediated tools, as well as in the absence of either or both (Johnson & Golombek, 2016; Vygotsky, 1978; Warford, 2011). As with any learner, teachers need guidance to achieve true concepts of how to approach the learning process, of what is relevant to learn, and of how to apply that knowledge. Thus, there is a distance between what one knows and what one is capable of knowing, which is called the zone of proximal development (Vygotsky, 1978). To bridge the distance, responsive guidance from others or the use of mediated tools provides learners a path to develop their knowledge. Expanding on Vygotsky's zone of proximal development, Warford (2011) used the term *zone of proximal teacher development* to recognize that teachers have developed cognitive abilities beyond those of young children. These teachers benefit from guidance provided by others. In addition, they benefit from the mediating tools they have accumulated, such as their inner resources based on true concepts they developed from prior learning experiences (Johnson & Golombek, 2016; Smagorinsky, 2013).

From this theoretical perspective, I ground my work in an understanding that continued professional teacher learning and development is a social activity among individuals situated in distinct social systems.

Positionality

I, too, am impacted by my everyday, academic, and true concepts. My understanding of the data from this study is informed by the cultural, historical, contextual, and social factors I have lived through and continue to live through. The combination of all these factors has shaped my worldview, which in turn affects how I interpret and comprehend the world and those within it. This awareness is important in action research, as I am studying my work context with colleagues. What I learn impacts not just me but also those I work with and our organization. While I have taken care to consider how this study may impact participants, I realize that an imbalance exists between participants and myself. I have provided participants opportunities to voice their insights and concerns throughout the research process (Tracy, 2010). Yet ultimately, I still have the final say in how the research is interpreted and presented. How I comprehend that data, then, is based on my everyday, academic, and true concepts.

Methodology

To understand the methodology I used for this cycle 1 study, I first describe the work setting where this study was conducted. I next present a brief introduction of the participants of this study. I follow with an explanation of the data strands I collected and how I analyzed the data.

Setting

I conducted this cycle at an English education center in the southern province of Guangdong in China. It is part of a for-profit organization that focuses on the learning and development of English literacy skills for students ages 6 to 14. There are an additional 10 centers located in eastern and southern China. This center first started teaching classes in 2016. Students attend classes one to two times a week for 90-minute sessions to develop their skills related to English literacy. These classes include foundational English classes with a focus on synthetic phonics development, group guided reading classes to develop reading skills, and instruction on literature and writing for practical applications. Approximately 200 students were enrolled in these programs in fall 2020. Native English speakers teach these lessons. The teaching staff in fall 2020 consisted of a head teacher, three senior teachers, and two junior teachers.

Participants

Three teachers initially agreed to participate in this study. During the implementation of the innovation configurations, however, one teacher was unable to complete all of the specified tasks. As a result, I only report on the two teachers who fulfilled all requirements. I have used pseudonyms to protect their identities (Cohen et al., 2018; Gibbs, 2007). These two teachers, Dylan and Riley, have taught English as a foreign language for multiple years. Both teachers are expatriates in China; Dylan is from the United Kingdom and Riley is from the United States. Both hold bachelor's degrees and certificates to teach English as a foreign language.

Upon our first meeting, I presented the innovation configurations to the three teachers and went over the particulars of this study. I answered any questions they had and asked them to select one of the six configurations they wished to use. After discussing between themselves, they determined that they would focus on the innovation configuration for vocabulary instruction (see Appendix A).

Data Strands

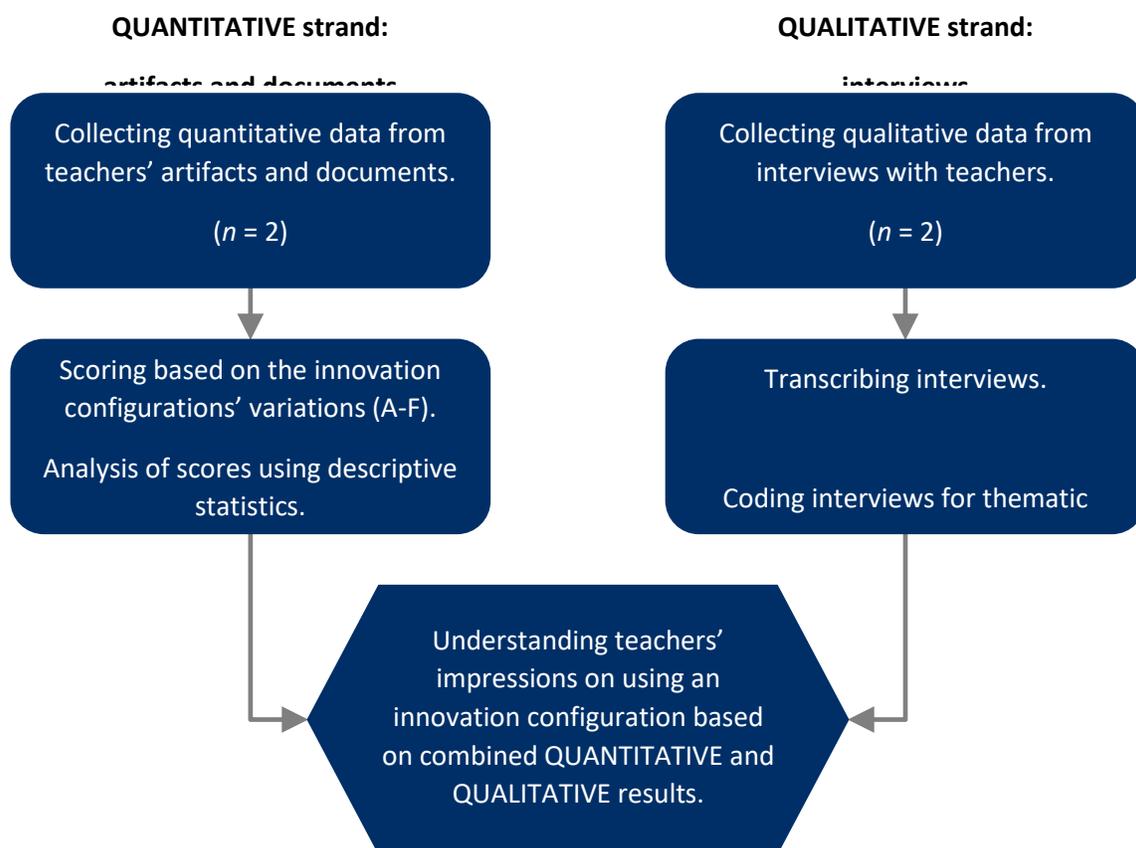
To discern how teachers perceived the innovation configurations, I implemented a concurrent quantitative-qualitative mixed-methods study comprised of two data strands (Creswell & Guetterman, 2019; Ivankova, 2015). The quantitative strand consisted of data collected from teacher-generated artifacts and documents, and the qualitative strand consisted of data from semi-structured interviews (see Figure 1). Data collection commenced after Arizona State University’s Institutional Review Board exempted my research from review.

Quantitative Strand

I collected the quantitative data from lesson documents and associated artifacts the teachers provided. I asked each teacher to select one class they would focus on during this cycle. They would use the innovation configuration for vocabulary instruction to inform their planning and instruction for this one class over four weeks. The quantitative strand sought to understand the conceptualization each teacher had concerning the

Figure 1

Diagram of the Concurrent Quantitative-Qualitative Mixed-Methods Study



innovation configuration and its application to their vocabulary lessons. In essence, I sought to understand how they reconciled their everyday concepts of teaching vocabulary with the academic concepts presented in the innovation configuration to form true concepts.

Combined, the two teachers submitted eight flipcharts used for interactive whiteboard presentations, sixteen pictures of activities related to vocabulary instruction, and four lesson guides explaining the structure and flow of their lessons. Both teachers sent me their materials weekly.

I assessed these materials against the innovation configurations to see where they were placed within the different variations for vocabulary instruction (Blamey et al., 2012; Yeung, 2012). I read and looked through each material first to develop my initial impressions. I then attempted to evaluate each piece of evidence against the innovation configuration. Because of the fragmented nature of the materials when assessed individually, I concluded that it would be best to collectively analyze them as components of a whole lesson. Looking at them in this way helped me to properly appreciate how the teachers used the innovation configuration. I made this analytic choice due to the interdependent nature of the innovation configurations (Yeung, 2012). If I had only assessed material associated with an activity in which students practiced vocabulary, I would have been limited to covering only one of the seven components. Moreover, such an activity would depend on how the new vocabulary words were presented and taught. It thus made sense to focus on all the artifacts and documents of a lesson as the analytic unit.

I used descriptive statistics to analyze the data. Because of the nature of the data, I determined the mode as the most appropriate measure of central tendency (Salkind & Frey, 2020). To determine the mode of the artifacts and documents from each lesson, I went through all the materials for that lesson and began to assess them against the innovation configuration for vocabulary instruction. I first identified the key components that each artifact and document were associated with and ascertained how the material was to be used in the class. I then compared that determination with the different variations for the corresponding component and identified the best variation for that component. For example, regarding "Component 4: Guide Students to build connections among related words," I assessed Dylan's materials for week 2 as "B: Inconsistently guides students to make connections between targeted vocabulary and associated words, such as synonyms or domain-related words." I made this determination because there were indications of guidance during sections of the lesson related to vocabulary; in sections without a vocabulary focus and where an opportunity existed to make connections, however, they were absent. I followed this procedure for the artifacts and documents Dylan and Riley produced for each lesson.

I additionally developed a fidelity score for each teacher based on where their artifacts and documents fell within each component of the innovation configuration (Green & Salkind, 2017). These scores provided a more balanced understanding of how the teachers used the innovation configurations over the four weeks. To develop the score, I converted each variation to a numeric score to generate the scores. For example, the A (ideal) variation was given a score of 6, while the F (least ideal) variation was given a score of 1. I totaled the scores of each of the seven components over the four weeks for each teacher. Thus, for Component 1, each of the four scores assessed over the four weeks was totaled to generate the fidelity score.

I submitted my initial findings to each teacher to provide them the opportunity to confirm the accuracy of my assessment (Cohen et al., 2018; Ivankova, 2015). Neither teacher indicated any disagreement with how I scored their materials.

Qualitative Strand

For the qualitative strand, I conducted semi-structured interviews with the two teachers after they had used the innovation configurations for four weeks. With these interviews, I sought to understand their impressions of using the innovation configurations to plan and instruct their lessons, as well as how they affected their students (Brinkmann & Kvale, 2015).

Based on the interview protocol, I asked the teachers 10 primary questions and several follow-up questions based on their responses (see Appendix B). The first four questions sought to understand their experiences and thoughts on reading instruction and higher-order thinking development in English. An example question is, “Why do you think it is important for students to develop higher-order thinking skills?” I then asked four questions related to innovation configurations and how they used them throughout the trial. One example of these questions is, “What changes in your instruction have resulted from using the innovation configurations?” The remaining two questions solicited ideas on what additional training would benefit them and whether they had anything more to share.

I recorded each of these interviews using the Otter voice meeting notes app on an iPhone Xs Max, which provided an audio recording and rough transcript of the interview. All data was downloaded from the iPhone onto a secure cloud server that is password protected. After I had completed the interviews, I listened through the recordings and corrected the initial transcripts.

I used the constant comparative method from grounded theory to analyze the interviews within HyperRESEARCH (Charmaz, 2014; Strauss & Corbin, 1998). I started by listening to each interview to develop a sense of what the teachers explained to me. I then developed initial codes based on each teacher’s responses. I applied these codes to each teacher individually to develop a vertical perspective of their thoughts and understandings before comparing the two teachers with one another (Vermeir et al., 2017). From these initial codes emerged categories. I then refined these categories and assessed them against the transcripts to see whether they appropriately reflected the data. From these categories, I formulated themes.

I wrote and distributed these themes to the two teachers to provide them the opportunity to check the accuracy of my interpretations (Cohen et al., 2018; Creswell & Guetterman, 2019; Ivankova, 2015; Saldaña, 2021). The two teachers indicated that they deemed my interpretations and my use of their words appropriate.

Data Integration

I then took both strands of data and integrated and analyzed them. With a focus on interpretive consistency, I worked to ensure that the conclusions generated from the analysis emerged from the data (Ivankova, 2015). Finally, I used the integrated data to answer the research questions for this project.

Results

Quantitative Strand

Each teacher generally designed and structured their lessons and materials within the acceptable range of variations for each component of the vocabulary instruction innovation configuration over the four weeks (see Table 1). For both teachers' artifacts and documents, the mode was $Mo = B$. The mode for Dylan's score was generally high. His most consistent area was with "Component 3: Judiciously selects words in the reading that are important to understand the text and not all unknown words." The mode for this component over the four weeks was $Mo = "A: Chooses to explain only words that are needed to understand the meaning of the text when students encounter an unknown word while reading."$ Riley's scores were equally high, with his most consistent area being "Component 1: Directly instructs vocabulary to facilitate and guide students in understanding the meaning of targeted vocabulary." The mode for this component over the four weeks was $Mo = "A: Consistently introduces all targeted vocabulary words and allows students to begin to make connections of their meaning through a variety of oral, visual, and physical materials."$

However, both teachers inconsistently applied some of the other components. Dylan's scores indicated that more awareness was needed with "Component 6: Promotes the use and review of new vocabulary throughout the lesson and across lessons in writing and orally." The mode for this component over the four weeks was $Mo = "D: Points out new words during the lesson they were taught and has students actively identify and use the new words in writing and orally; does not have students work on new vocabulary across lessons."$ Riley, similarly, needed to pay more attention to "Component 3: Judiciously selects words in the reading that are important to understand the text and not all unknown words." Riley's mode for this component over the four weeks was $Mo = "D: Chooses to explain all words that are needed to understand the meaning of the text even if students don't show signs that these words are unknown to them."$

Table 1

Weekly Placement of Teachers on the Vocabulary Instruction Innovation Configuration

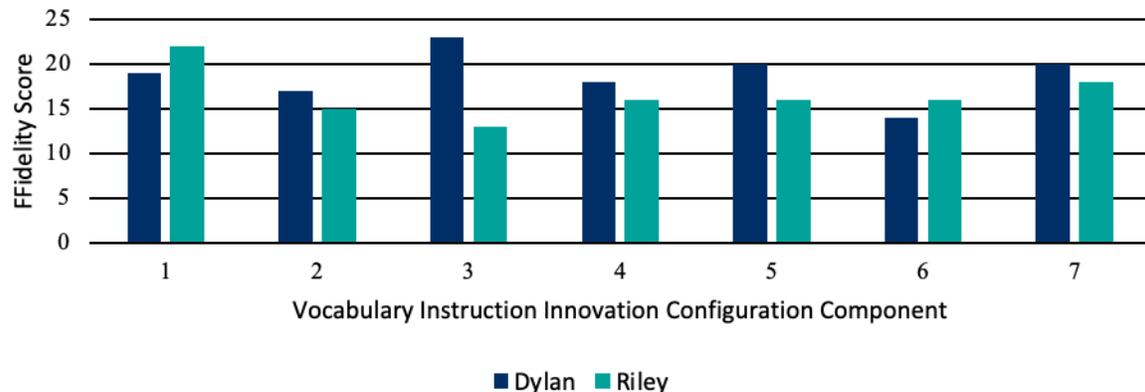
Week 4	Component 2				Component 3				Component 4				Component 5				Component 6			
	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4	Week 1	Week 2	Week 3	Week 4
A	B	B	B	E	A	B	A	A	C	C	B	B	B	B	A	C	D	B	D	
A	C	B	C	E	D	C	D	D	B	B	D	B	B	C	E	B	B	C	F	

For both teachers' materials, there was variability among the weeks for each component. Dylan had a mode of $Mo = A$ for Component 1. Of the four scores over the four weeks, though, two scores were A, one score B, and one score E. The E score indicated an absence of that component for that week. Riley also had components that ranged in scores. For example, with "Component 7: Efficiently instructs students in the allotted time for vocabulary instruction," Riley's artifacts and documents were scored with one A, two Bs, and one E. In this instance of an E score, the teacher did not devote any class time to vocabulary instruction.

The fidelity scores paralleled the descriptive statistics and indicated that both teachers instructed vocabulary within an adequate range (see Figure 2). The mean score for Dylan's artifacts and documents was $M = 18.71$, and the mean score for Riley's was $M = 16.57$. The highest score either's materials could have received would have been 24. Considering each component individually, each teacher was within a few points of the other. The one exception was with Component 3, which is related to how teachers select key vocabulary to help understand the text. Dylan's artifacts and materials were scored at 23, whereas Riley's were scored at 13. This marked a difference of 10 points, which exceeded the next highest gap of 4 points with "Component 5: Provides opportunities for students to practice vocabulary appropriately."

Figure 2

Teachers' Fidelity Scores on Using the Vocabulary Instruction Innovation Configuration



Qualitative Strand

From Dylan's and Riley's interviews, the following three themes emerged relevant to answering my research questions: (1) knowledge of what to develop professionally, (2) structured collaboration, and (3) understanding the innovation configuration.

Knowledge of What to Develop Professionally

The use of the innovation configurations for vocabulary instruction provided teachers the opportunity to identify areas of strengths and areas where they could improve. After having used the innovation

configurations for four weeks, Dylan questioned whether he provided students opportunities to use vocabulary within and across lessons (Component 6: Promotes the use and review of new vocabulary throughout the lesson and across lessons in writing and orally). He indicated, "Probably the providing opportunities for students to actually use the vocabulary, practice the new words, because I think that's something that maybe I don't do much." After going through the innovation configuration, Dylan recognized that for this component he still had room for improvement. As he said, "And maybe that's something I need to kind of think about."

For Riley, he recognized a need to be mindful of how he structured his lessons. He indicated he wanted to focus on how he timed activities with the objectives he had for his students (Component 5: Provides opportunities for students to practice vocabulary appropriately; Component 7: Efficiently instructs students in the allotted time for vocabulary instruction). When identifying how the innovation configuration influenced his decisions for engaging his students, he noted a desire to maintain "a timed structure where they're using words in new ways." In this way, he could "make sure the students [were] focusing on words that are useful to them." Ultimately, as Riley specified, "What I'm trying to do now is go through this and see if the activities that I planned for vocabulary instruction are allowing the kids to try to find the meanings of these words on their own."

Structured Collaboration

Both teachers also expressed a desire to collaborate with other teachers to make sense of the innovation configuration for vocabulary instruction. However, they recognized that they lacked the time to work with other teachers due to their schedules. During these four weeks, they had limited discussions with each other. Riley when asked if he collaborated simply said, "No, not really," and explained that he lacked the time to do so. Dylan shared, "I've had some conversation with [Riley] about his understanding of the configuration, and what he's been doing in his classes. But we've been probably working a little bit more independently, I would say."

Given the issue with time, using an innovation configuration offers the potential to help structure collaborations between teachers. Dylan stated:

But I think having a three or four week focus, like, we're going to focus on vocabulary, or we're going to focus on a particular other component or another configuration, then I think that is probably easier for a teacher to really think about their own practices, and their own approach.

These teachers have the potential to co-construct their understanding of how to use the innovation configuration together. Riley expressed a desire to work with colleagues so they may develop "learning goals together" for their classes. He recognized that he could learn from his colleagues' experiences, which had the potential to benefit his instructional development.

Understanding the Innovation Configuration

Dylan and Riley expressed two concerns they had when they worked to understand the innovation configuration for vocabulary instruction. The first concerned the general design of an innovation configurations map. Riley shared that he would find it daunting if he had to go through every component. He stated:

I think I would get a bit overwhelmed if I looked through every component, every type of instruction for this because I think there are five or six components for each one and there are six instructions for configuration in total. I'm looking at somewhere between 30 and 50 different components and for me; that would be overwhelming.

Dylan was more positive if he was able to focus on just one component at a time. He said, "Highlighting one particular configuration was quite useful in terms of focusing my lesson." Yet he still asserted:

I think, probably there's a bit of the wording of it, where probably there needs to be a little bit more clarification. I think there's one or two things I underlined and highlighted that I'm not sure exactly what that means.

Partial understanding of the innovation configuration is related to the second issue of how teachers are expected to develop that awareness. Because the innovation configurations are based on the work of others, the teachers wished for explicit instructions on how they should implement them. Dylan explained, "I need to get into [the designer's] head a little bit about like, okay, I think kind of what [this person] means from that." In trying to comprehend how he could apply the innovation configuration in his lessons, he first needed to determine the intent of each component. As he said, "I'm trying to kind of understand where I fit within that, to a certain extent within a particular component." Riley expressed a similar sentiment regarding how he could better use the innovation configuration if he could visualize the variations better. He explained, "I think I'd like to see [the information] a bit more visually and a little less like me reading."

Discussion

The integration of both of these strands of data has proven beneficial in answering the three research questions I developed for this study.

Teachers' Impressions

In answer to the first question concerning the teachers' impressions of using the innovation configuration for vocabulary instruction, both teachers found potential in its use. They indicated that the innovation configuration would provide opportunities for teachers to collaborate in developing lessons and learning from one another. They also suggested that they could learn from the innovation configuration by themselves. What the two teachers described was how innovation configurations could support their development through established and research-based parameters to guide them from the level where they are to a higher level they could achieve (Benzehaf, 2016; Warford, 2011). For example, Dylan demonstrated a more ideal implementation of "Component 3: Judiciously selects words in the reading that are important to understand the text and not all unknown words" compared with Riley, whereas Riley exhibited a more ideal implementation of "Component 1: Directly instructs vocabulary to facilitate and guide students in understanding the meaning of targeted vocabulary" than Dylan. These two teachers could work with each other to leverage each other's strengths.

For the innovation configurations map to benefit teachers, they need to engage with it in a way that is meaningful to them. Both teachers explained that it was challenging to go through the innovation configuration because of how it was presented as word pictures. Given the time concerns they had, they indicated a preference for a more visually appealing design that would allow them to concentrate on the ideal variations instead of going through all variations. Additionally, clearer and more concise wording would benefit the teachers (e.g., Beauchat et al., 2009). Their concerns about applying the innovation configurations to meet the needs of their classes also were seen with their artifacts and documents. Both teachers emphasized components they felt comfortable using.

Use of Innovation Configuration for Vocabulary Instruction

In answer to the second question concerning the teachers' use of the innovation configuration for vocabulary instruction, both teachers recognized what they should address in their classes for vocabulary instruction. Based on their interview responses and the analysis of the artifacts and documents, both teachers used the innovation configuration as a means to reflect on those less-than-ideal areas. They started identifying ways they could address them to improve their instruction. This practice of using innovation configurations as a reflective tool is a specified use for this resource (Hall & Hord, 2020; Hord et al., 2006). With this awareness, teachers knew what areas they should emphasize as they work to further develop themselves. The innovation configuration, thus, served as a mediating tool (Benzehaf, 2016; Vygotsky, 1978; Warford, 2011).

Yet these teachers require time to understand how to use the innovation configurations map as well as for a sustained reflection on their application to their instructional practices. Both teachers mentioned that they exerted a minimum amount of time using the innovation configuration, and when they did, they focused on specific areas. As seen in their artifacts and documents, the teachers unevenly approached their lessons weekly as they emphasized other objectives for their classes. Continued exposure to and practice in using the innovation configurations map may allow them to further develop their ability to employ it more adeptly and confidently, which may benefit their students. If teachers witness positive effects with their students, they may be more inclined to continue using the innovation configurations (Guskey, 1985, 2002). Through these incremental and meaningful steps in development, teachers have the potential to build on the progress they achieve in learning how to use the innovation configurations (Weick, 1984).

Effects on Students

The answer to the third question, how using the innovation configurations affected students, is based on how the teachers perceived what the students needed to learn. The teachers indicated that looking through the innovation configuration for vocabulary instruction nudged them to rethink how they structured their classes. Specifically, they sought to address the varied needs of their students based on the learning objectives delineated in the innovation configuration. Choosing specific areas to focus on allowed the teachers to spend time on those aspects instead of trying to address all aspects of vocabulary instruction. The teachers also explained that going through the innovation configuration presented opportunities for them to identify areas where they could implement new ideas to engage their students at a later date when they had addressed the foci they were currently working on during this period (Blamey et al., 2012). The materials analysis corroborates this need. Over the four weeks, the teachers unevenly applied the innovation

configuration and overlooked some of the components. For teachers to maximize the impact of a guided reading program, they need to attend to all aspects of it (Burkins & Croft, 2017; Fountas & Pinnell, 2012).

Reflection

A critical component of action research is for the practitioner-researcher to learn from each cycle and apply that knowledge to subsequent cycles (Ivankova, 2015; Mertler, 2020). In my reflection for this cycle, I focus on (1) the research process, (2) limitations of this study, and (3) recommended actions for subsequent cycles.

Research Process

Because I work for a small organization, recruitment for participants was a concern. I am acutely aware that the teachers' participation was not fully voluntary, as the request for their participation came from within my organization. As a result, there was an intermixing of my roles as a staff member with my organization and as a graduate student. With this situation in mind, I reminded the three teachers that they retained certain rights based on the ethical guidelines I used for this study.

The start of the project went well. Over the four weeks, however, I noticed that one of the teachers was disengaged from the process. Specifically, this teacher neglected to submit any artifacts or documents. When I asked this teacher about the situation, I was assured that I would receive them soon. That never happened, even with additional entreaties. Regretfully, I had to recuse this teacher from the study. I thus concentrated on the remaining two teachers. Moving forward, I need to be mindful of the contextual situation my colleagues are facing and how that may affect their ability to participate. I also need to consider the feasibility of working with teachers at other centers, which would better represent the diverse perspectives of our teachers (Creswell & Guetterman, 2019).

Related to the structure of a mixed-methods study, I have learned that some methods are more suited for a longer period of study. Identifying patterns in the artifact and document analysis within four weeks proved challenging. Yet there was potential to use these artifacts and documents with qualitative methods similar to what I used for the interviews (Charmaz, 2014; Prior, 2008). For the short period of this study, that might have provided useful insights.

Finally, I am aware I am still learning about the application of mixed methods in action research. The integration of the quantitative and qualitative strands remains a challenge for me. While I have endeavored to do my best, I acknowledge that I need additional practice. Through each cycle of my action research project, I become more adept and confident in my abilities. That, however, takes time.

Limitations

The impressions of the two participating teachers offer a glimpse into the potential of using innovation configurations within our organization. Yet there are limits to what can be extrapolated from the experiences of two teachers. Each of these teachers works at the same location and interacts with the other regularly. There are 10 additional centers my organization manages, with distinct workplace cultures. The impressions these teachers may have would likely differ to some extent from those of the two teachers in this study. Given the limited nature of this cycle 1 study (Buss, 2018, 2019), the four weeks the teachers had using the innovation configuration provided them only an opportunity to develop their initial impressions. Additional time and experience with the innovation configurations map would allow for a deeper and fuller understanding of their thoughts on using this resource and how it affected their instructional practices.

In terms of analysis, I alone assessed the teachers' artifacts and documents. While I did provide opportunities for the teachers to review my scoring of their materials, the insights of another researcher would have proved useful to ensure reliability and validity (Creswell & Guetterman, 2019). The same is true of the interviews and how they were transcribed, coded, and analyzed (Brinkmann & Kvale, 2015; Charmaz, 2014; Saldaña, 2021).

Recommended Actions

Based on the findings of this cycle 1 study, there are structural concerns I will need to address in future cycles of this action research project. The first matter concerns how to manage teachers' work schedules to ensure they are able to work on understanding how to use the innovation configurations and how to collaborate with one another. I will need to consult with relevant stakeholders, such as academic administrators, to guarantee that teachers have the time to do so. Including a specific slot in teachers' schedules for group planning is one possibility (Yan & Yang, 2019).

An associated need is to consider the layout of the innovation configurations that would allow teachers to distinguish ideal components from less ideal components, as well as the different configurations from each other (Hord et al., 2006). Visual markers within the innovation configurations could ease teachers' use of them.

To learn how to use the innovation configurations, interactive training and collaboration may prove useful for teachers as they co-construct their understanding with each other (Freeman & Johnson, 1998; Johnson, 2015; Warford, 2011; Yeung, 2012). Encouraging the development of a professional learning community within each center to foster collaboration is one possibility (Edwards & D'arcy, 2004; Hord & Sommers, 2008; Yan & Yang, 2019). Teachers also would need to think of the innovation configurations as an actor or actant. The innovation configurations are more than a tool to wield. Teachers need to negotiate with them to decide how to enact the information found within them in ways meaningful to them individually, as a group, and for their students (März et al., 2017; Prior, 2008; Vermeir et al., 2017). Because the teachers are

at distinct stages in their professional development, they can learn from each other's strengths to help develop one another in the areas they identified as needing improvement (Hord & Sommers, 2008; Valencia et al., 2009).

Conclusion

How teachers develop professionally is based on what resources they have, the time they have to spend on such endeavors, the encouragement of leaders, and the personal desire to do so. This study examined one resource teachers may use to further gain the knowledge needed to engage students in developing higher-order thinking skills through English literacy. For any innovation to take root, teachers need to deem it as a legitimate and useful resource. Based on what I learned from Dylan and Riley, the use of innovation configurations has the potential to help teachers develop that awareness. While working to support and engage them in their development, these two teachers have taught me as well. Through our mutual collaboration, I hope we continue to develop the innovation configurations as a mediating resource that benefits our teachers and students.

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Appendix A

Innovation Configurations for Vocabulary Instruction

Vocabulary instruction: Vocabulary is taught explicitly through direct instruction and implicitly through indirect instruction. Students have opportunities to co-construct knowledge with the teacher and fellow students. Students are given opportunities to practice engagingly using the new vocabulary. Students actively use the new vocabulary throughout the lesson and across lessons in writing and orally. Through this process, students enhance their vocabulary and expand their ability to communicate using more precise and exact words in writing and orally.

Component 1: Directly instructs vocabulary to facilitate and guide students in understanding the meaning of targeted vocabulary.

A	B	C	D	E	F
Consistently introduces all targeted vocabulary words and allows students to begin to make connections of their meaning through a variety of oral, visual, and physical materials.	Consistently introduces all targeted vocabulary words through direct instruction in which students listen to the teacher and copy the information and/or listen to the meaning.	Inconsistently introduces targeted vocabulary words with some words not being taught but allows students to begin to make connections of the meaning through a variety of oral, visual, and physical means.	Inconsistently introduces all targeted vocabulary words through direct instruction in which students listen to the teacher and copy the information and/or listen to the meaning.	Does not instruct vocabulary directly in class.	Directly instructs vocabulary unrelated to the lesson.

Component 2: Encourages students to co-construct their understanding of non-targeted, but novel (i.e., key), words throughout a lesson.

A	B	C	D	E	F
Consistently encourages students to co-construct knowledge of non-targeted words when they are encountered throughout the lesson by using context clues,	Inconsistently encourages students to co-construct knowledge of non-targeted words when they are encountered throughout the lesson by using context clues,	Consistently defines non-targeted words for students when they are encountered and does not encourage using context clues and/or vocabulary skills to	Inconsistently defines non-targeted words for students when they are encountered.	Does not work on non-targeted words throughout the lesson.	

analyzing meaningful word parts, and/or consulting reference materials.	analyzing meaningful word parts, and/or consulting reference materials.	decipher meaning.
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Component 3: Judiciously selects words in the reading that are important to understand the text and not all unknown words.

A	B	C	D	E	F
Chooses to explain only words that are needed to understand the meaning of the text when students encounter an unknown word while reading.	Chooses to explain all words that are needed to understand the meaning of the text when students encounter an unknown word while reading.	Chooses to explain only words that are needed to understand the meaning of the text even if students don't show signs that the word is unknown to them.	Chooses to explain all words that are needed to understand the meaning of the text even if students don't show signs that these words are unknown to them.	Chooses to not explain any unknown word while reading the text.	

Component 4: Guides students to build connections among related words.

A	B	C	D	E	F
Consistently guides students to make connections between targeted vocabulary and associated words using a variety of connections, such as synonyms or domain-related words.	Inconsistently guides students to make connections between targeted vocabulary and associated words, such as synonyms or domain-related words.	Guides students to make connections between targeted vocabulary and associated words, but only emphasizes one form of connections.	Directly instructs students on how words are connected without allowing students the opportunity to make the connections themselves.	Does not guide students.	Guidance is not done well; inappropriate connections are made.

Component 5: Provides opportunities for students to practice vocabulary appropriately.

A	B	C	D	E	F
Creates and facilitates opportunities for students to use the new vocabulary engagingly, as well as requiring students to understand the meaning of the new words and how to use them correctly.	Creates and facilitates opportunities for students to use the new vocabulary engagingly, but does not emphasize understanding the meanings of the words and/or using them correctly.	Creates and facilitates opportunities for students to use the new vocabulary that are unengaging, but does require students to understand the meanings of the new words and how to use them correctly.	Creates and facilitates opportunities for students to use the new vocabulary that are unengaging, as well as not emphasizing that students understand the meanings of the words and/or use them correctly.	Opportunities to practice new words are absent.	Opportunities to practice the target vocabulary are inappropriate for students in terms of academics and/or safety.

Component 6: Promotes the use and review of new vocabulary throughout the lesson and across lessons in writing and orally.

A	B	C	D	E	F
Throughout the lesson and across lessons has students actively identify and use the new words in writing and orally.	Occasionally throughout the lesson and across lessons has students actively identify and use the new words in writing and orally.	Points out the new words during the lesson and across lessons but does not encourage students to actively identify and use the new words in writing or orally.	Points out new words during the lesson when they were taught and has students actively identify and use the new words in writing and orally; does not have students work on new vocabulary across lessons.	Points out new words during the lesson when they were taught but does not have students actively identify and use the new words in writing or orally.	Does not point out the new words during the lesson.

Component 7: Efficiently instructs students in the allotted time for vocabulary instruction.

A	B	C	D	E	F
Uses the time to instruct students well, as well as accomplishes the task in the allotted time.	Uses the time to instruct students well but goes over the allotted time.	Does not use the time well to instruct students but does accomplish the task in the allotted time.	Does not use the time well to instruct students and does not accomplish the task in the allotted time.	Does not use any time to instruct students on the targeted vocabulary.	

Appendix B

Semi-Structured Interview Questions Used for Teachers' Interviews

1. Tell me about your current position and how long you have been in that position.
2. What are the advantages of teaching reading in English to students?
3. Tell me about your experience in teaching higher-order thinking skills.
 - Specifically, what is your experience of teaching these skills through reading? (Will only be asked if not mentioned in the initial question.)
4. Why do you think it is important for students to develop higher-order thinking skills?
 - Why is it important that they develop these skills when reading? (Will only be asked if not mentioned in the initial question.)
5. What are your impressions of using the innovation configurations?
6. What have you done to understand how to use the innovation configurations?
 - How are you collaborating with colleagues to use the innovation configurations? (Will only be asked if not mentioned in the initial question.)
7. Describe how you have incorporated the innovation configurations into your instruction.
 - What are the challenges of using innovation configurations?
8. What changes in your instruction have resulted from using the innovation configurations?
 - How has your view of your abilities and strengths changed over time? (Will only be asked if not mentioned in the initial question.)
9. What additional training would benefit you?
10. Is there something more you would like to add?