Chapter 3
Using Action Research to Transform a Traditional Reading Practicum:
Developing Preservice Teachers as Researchers

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ABSTRACT

This chapter describes how faculty from the University of Central Florida collaboratively worked to transform an undergraduate reading practicum course utilizing action research and case study methodology. Seeking to develop preservice educators as teacher researchers, the reading faculty responded by developing and implementing the Action Research Case Study Project. This semester-long project required faculty to redesign the course to reflect this emphasis. This chapter includes the modifications made to the course content, the creation of rubrics for evaluating the project, and feedback mechanisms employed to facilitate student success. The project has been implemented for two semesters; various data sources are shared to document the effectiveness of the project including faculty input, survey data, student work examples, and student reflections.

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INTRODUCTION

Teacher preparation programs have received criticism for their preparation of teacher educators, especially in the area of reading (Greenberg, McKee, & Walsh, 2013). Moats (2020) has suggested that teacher preparation programs use research to guide instruction by specifically providing better and more "deliberate instruction in reading, spelling, and writing" (p.25). Moats (2020) further recommended that internships be designed to allow preservice teachers opportunities to collaborate with peers and mentors. Similarly, in 2015, the International Literacy Association (ILA) published a preliminary report on teacher preparation recommending that practica focus on developing preservice educators' "ability to design literacy instruction and monitor growth" (p.8). Additionally, the ILA (2018) suggested that teacher educators rethink their own teaching practices and disrupt "the divisions between theory and practice (courses and practicum) and ensure that practice-based work is part of every course experience" (p.5). The ILA further proposed that teacher educators prepare preservice teachers to ask questions and use research to grow their practices.

But how do those who prepare teacher educators perceive their preservice teachers' preparedness to teach reading? To determine how "internal experts" (Lacina & Block, 2011, p. 326) viewed the preparedness of preservice literacy teachers who completed their teacher education program, Sharp, Raymond, and Piper (2018) purposively sampled literacy teacher educators using a survey aligned to the ILA's (2010) standards for classroom teachers. Their study revealed that in the area of assessment, over 50% of literacy educators believed their preservice teachers were only slightly or somewhat prepared to select, develop, administer, and interpret assessments for specific purposes, likewise over 50% felt their preservice teachers were only slightly or somewhat prepared to communicate literacy assessment results and implications to a variety of audiences.

Concerned with mounting criticism towards literacy teacher preparation programs, the ILA and the National Council of Teachers of English (2017) gathered a task force to examine and analyze research on literacy instruction in teacher preparation programs. The task force found "substantial evidence documenting the impact of teacher preparation courses and field-based experiences" (ILA/NCTE, 2017, p.2). They identified four critical quality indicators that contribute to improved preservice teacher learning and performance: knowledge development, application of knowledge in authentic contexts, ongoing teacher development, and ongoing assessments. The Action Research Case Study Project (ARCSP) described in this chapter meets all of these indicators and is a response to criticism and concerns regarding the preparation of preservice teachers, particularly in the area of assessment and instruction. Through a focused field experience, engagement in a professional learning community, and explicit guidance and mentoring, preservice teachers purposely assessed, planned, and monitored a school-aged student using case study methodology through an action research process. Engaging in the ARCSP resulted in preservice teachers increasing their data literacy and yielded their development of a teacher as researcher mindset.

The decision to move to an Action Research Case Study Project grew out of an attempt to address the ILA/NCTE indicators while also increasing the integration of research in undergraduate education. Reading faculty from the University of Central Florida reflected on their current course assignments and responded to these concerns and recommendations by redesigning an upper division elementary education reading course to be research-intensive using an action research process with case study methodology. The University of Central Florida is a large urban university situated in Orlando, Florida. One of the largest teacher preparation programs in Florida, the Elementary Education program places preservice teachers

as interns in up to 22 counties across the state. At the University of Central Florida, "research-intensive" is a section or course level designation that faculty are granted by a committee of peers based on the transformation of an undergraduate course using research-intensive practices (Undergraduate Research, 2020). This high impact practice (Kuh, 2008) actively engages preservice teachers in pursuing a line of inquiry that employs academic research under the guidance of qualified faculty.

COURSE CONTENT

The course transformed by faculty was a senior level course for Elementary and Exceptional Education Majors entitled, "Practicum in Assessment and Instruction of Reading." This course is a corequisite for an internship in which preservice teachers are placed in K-6 classrooms two days a week during an entire semester. The course is also the third in a series of three reading education courses that are required for preservice teachers to be compliant with the required Florida Department of Education Reading Endorsement. The major focus of this course has traditionally been a case study in which preservice teachers assess a K-12 student, interpret data, develop and implement an instructional plan, conduct post assessment, and draw conclusions about the effectiveness of their instruction plan. While case study methodology helps preservice teachers build their pedagogical knowledge and skills about how children develop as readers using a problem-solving process and how children respond to reading instruction (Kindle & Schmidt, 2011), faculty believed that preservice teachers could benefit from more guidance and mentoring through the process using an inquiry stance. To obtain the research-intensive course-level designation, reading faculty from the University of Central Florida chose to formalize the case study process using an action research design with an emphasis on inquiry rather than mere compliance. This chapter describes the development, transformation, and implementation of the Action Research Case Study Project (ARCSP) with faculty and preservice teachers' feedback, reflections, and examples included

LITERATURE REVIEW

Action Research

Action research is known by many names, including participatory research, collaborative inquiry, action learning, contextual action research, and practical research (Creswell & Guetterman, 2019; Kemmis & McTaggart, 1982). Action research is a tool that is used to help educators uncover strategies to improve teaching practices (Sagor, 2011). Gillis and Mitton-Kükner (2019) describe action research as a formalization of reflection whereby teachers systematically analyze data which results in action. Action research in education involves a teacher designing a study in an area of interest by examining one's own practices through collaborative inquiry, reflection, and dialogue. While there is not one specific model for conducting action research (Black, 2021), it is cyclical in nature (McNiff, 2016). Most often, action research is viewed as an approach in which theory and practice are explored by posing questions, collecting data, and testing hypotheses through several cycles of action (Pelton, 2010). Action research typically begins with a research question and ends with the application of knowledge gained, resulting in a new question to explore (Black, 2021).

The primary attribute separating action research from other types of research is the researcher's active involvement in examining an issue or problem (Pelton, 2010). The research takes place in real-world situations and aims to solve real problems (Carboni, Wynn & McGuire, 2007). The situation of the researcher in their own environment distinguishes action research from professional practices, consulting, or just daily problem-solving. The researcher systematically studies the problem and makes informed changes based on evidence collected, ultimately sharing the results of that research publicly (Pelton, 2010).

Manfra (2019) conducted a meta-analysis of action research in English Language Arts classrooms and found that when teachers engage in systematic and intentional reflection about practice it improves teacher pedagogical and content knowledge and positively affects student learning outcomes. Cochran-Smith and Lytle (2009) coined the term "inquiry as a stance", explaining that action research can be used as sustained and embedded professional learning to build knowledge. With the emphasis on inquiry and situating the teacher at the center of research into practice, Manfra (2019) suggests that action research can be the conduit to sustained professional learning and changing teaching practice to improve student learning.

Action Research With Preservice Teachers

The use of action research in teacher preparation is not new (Black, 2021). Action research allows preservice teachers to meaningfully connect theory learned in coursework to field experience (Clarke & Fournillier, 2012). Black (2021) implemented an action research assignment over a four-year period with over 500 preservice teachers and found that through conducting research to inform their practice, teachers candidates developed a research mindset and became reflective practitioners. After the implementation of action research over a 10-week period, Kennedy-Clark, Galstaun, Reimann, and Handal (2020) reported that preservice teachers' perceived benefits of action research included observing student learning, a better understanding of differentiation based on students' needs, and a more meaningful application of learning strategies.

Case Study Methodology

Case study methodology in education has a variety of applications including the description of learner growth and development with or without teacher intervention. Case study with intervention through a problem-solving approach is a form of action research (Carboni, Wynn & McGuire, 2007). Case studies in educational research often use qualitative data, but many also use quantitative data. Quantitative data in education might include scores from assessment tools such as informal assessments, formal test scores, and scores on rubrics (Creswell & Guetterman, 2019. The use of case study methodology through an action research process helps preservice teachers develop the mindset of a researcher (Pelton, 2010), as it involves the identification of a challenge of practice, data collection (pre-assessment), literature review (research, evidence- based practices), implementation of a plan of action, assessment of that plan, and drawing conclusions about whether the action plan solved the problem/challenge of practice through analysis and reflection. The reading faculty at the University of Central Florida believed that remodeling the traditional case study approach with an action research design would develop preservice teachers as researchers for their future classrooms.

THE ACTION RESEARCH CASE STUDY PROJECT

The ILA (2017) emphasized that highly effective literacy teacher education programs provide coherence across course work and field experience. At the University of Central Florida, preservice teachers complete a teacher work sample, a form of action research increasingly used in teacher education programs (Leleune, Smiles, Wojcikiewicz, & Girad, 2010), as part of their culminating internship. The teacher work sample is a multi-subject case study with pre-assessment, instruction, post-assessment, data analysis, and a discussion of the results. Therefore, using case study methodology with an action research design in the reading practicum helps scaffold and prepare preservice teachers at the University of Central Florida for the teacher work sample they will employ in their final internship and helps them to further develop a researcher mindset. In the summer of 2020, a team of instructors of the Practicum in Assessment and Instruction of Reading, collaborated to develop the Action Research Case Study Project (ARCSP), depicted in the Figure 1 flowchart, and redesigned curricula to support preservice teachers through the ARCSP. Table 1 presents a comparison of the traditional case study to the ARCSP and demonstrates the key modifications faculty made to the case study assignment in order to align the project with an action research framework. The transformation of the case study assignment to the ARCSP required faculty to think differently about how they would evaluate and provide feedback to preservice teachers and resulted in the need to develop a variety of rubrics, curricular and feedback supports, as well as a new structure and process for showcasing the project.

The ARCSP is a semester-long project. At the very beginning of the course, faculty introduce the purpose and elements of action research and case study methodology using an online module and a face-to-face class. Through the online module and class, faculty walk through a model of a completed ARCSP and break down each step and the overall goal of the project. Table 2 provides an overview of the six ARCSP steps with a brief description of what happens at each of the steps. Additionally, prior to launching into the ARCSP, preservice teachers complete two modules developed by the University of Central Florida's library to aid them in conducting the ARCSP. One module is focused on using discipline specific terms to search for peer-reviewed materials which they need for the mini-literature review in step 3. The other module is related to APA (American Psychological Association) format for citations and references, which are also used in step 3 of the ARCSP.

Faculty created a researcher log template in Google Slides for each preservice teacher to document the six steps of the ARCSP. This is a digital notebook with a cover and six color-coded tabs representing the six steps of the ARCSP. Once a tab is selected, it takes you to the section labeled on the tab where there are directions embedded in the log based on the assignment expectations for that step and aligned to the rubric faculty developed reflecting these expectations. There are also template pages included for each step and the preservice teachers can add pages as needed. The color-coding of the steps (or sections) is a helpful visual reference for faculty and the preservice teachers as they work through each step of the ARCSP. Appendix 1 is the ARCSP rubric with specific criteria and descriptors used by faculty to evaluate each step of the ARCSP, once a step has been completed. Faculty direct preservice teachers to make a copy of the researcher log and have them insert their name on the cover. They are also free to personalize their log as they see fit. Rather than assume that all preservice teachers are technology savvy, on the first slide of the researcher log, faculty have included directions on how to make a copy of the log in Google Slides, how to set faculty as an editor or reviewer, and how to share the log with others. Once preservice teachers have set up their researcher log they delete the directions slide and use the log to document each step of the ARCSP. Once a step is completed, they upload a link to the log in

the University of Central Florida's learning system platform for faculty evaluation. Peer feedback is also embedded throughout the ARCSP through small group meetings and technology tools such as Google docs and Jamboard. Additionally, as mentioned previously, faculty have developed a mock researcher log of a completed ARCSP that serves as another layer of support for preservice teachers as they complete each step.

Table 1. Comparison of case study to ARCSP

Case Study	ARCSP	Key Modifications
	Action Research Module: Introduction to Action Research	Creation of the action research framework/context and building background knowledge related to discipline specific literature review and APA guidelines.
	Use of a Researcher Log	Researcher Log is used throughout the project and each step of the ARCSP is given feedback and evaluated using a rubric.
Data Collection Plan	Data Collection Plan	Use of contextual information to inform assessment selection and development of protocol and parent communication if virtual.
Data Conference with Instructor and Data Interpretation: Strengths, Needs, Instructional Goals	Data Conference with Instructor Data Collection and Analysis & Data Informed Instructional Goals and Research Questions	Development of research questions to connect data collected to potential types of instruction.
	Mini-Literature Review: Focus on evidence-based practice	Selection and synthesis of peer-reviewed articles related to elements in research questions. Conclusions and implications for instruction are included.
Instruction Plan	Implementation Plan	Development of an instructional plan with direct connections to mini-literature review and data (including what motivates the student).
Implementation of Instruction / Intervention	Implementation of Instruction / Intervention	Instruction /intervention focused on the research question (as compared to broader focus in Case Study).
Instruction/Intervention Log	(Use of a Researcher Log as indicated above)	Ongoing monitoring centered on research question.
Post-Assessment: Draw Conclusions	Results and Findings: Discussion and Impact Citing Post-Assessment Data	Conclusions more focused on research question; added implications for future research.
Reflection	Limitations and Reflection	Describe limitations to the research and the role of action research and relationship to MTSS and the instruction process.
"Parent /Teacher" Conferences: Either in person, TeachLive (avatars), or role played in class.	Research Presentation	Create visual presentation of the action research project as compared to case study with oral presentation of instruction/intervention and final results/conclusions,as well as recommendations for parents..

Table 2. ARCSP Steps and descriptions

Step	Description
Project Precursors: Completion of 2 Online Modules Research Log Organization	An online module on action research and faculty presentation introduces the concept of action research. Library modules are completed by the preservice teachers that address how to conduct discipline related research and how to cite using APA style. A researcher log is created which is a Google Slides template that includes a section for each step of the ARCSP.
Step 1. Data Collection Plan	Includes relevant contextual information, description of each assessment tool, protocol for unique context (ex: virtual).
Step 2. Data Collection and Analysis	Includes examiner copies from assessment tools, charts that support data interpretation; identification of reading strengths, needs, and goals; development of a data-informed research question to connect instruction to a student need/goal.
Step 3. Identification of Evidence Based Instruction Through Mini-Literature Review	Includes the use of a data-informed research question to determine literature search descriptors used to identify peer-reviewed articles; synthesis of articles, conclusions related to research question, and paper written in APA style.
Step 4 Development and Implementation of Intervention/Instructional Plan	Includes a plan for intervention/instruction based on results from mini-literature review; implementation of that plan with ongoing monitoring and artifacts.
Step 5. Results and Findings	Includes the collection of post assessment data and discussion of impact of instruction and implications for future instruction and research.
Step 6. Reflection on Limitations and Action Research Process	Describes limitations of instruction plan and/or post assessment; addresses role of assessment and action research in instructional process.
Culmination: Presentation of ARCSP	Visual and oral presentation of Steps 1-6

Step 1: Developing a Data Collection Plan

In step 1 of the ARCSP, selecting a focus and creating a data collection plan, preservice teachers are provided with an overarching research question that guides their determination of data they want to collect and the assessments they will select to make instructional decisions. Faculty describe the question as a challenge of practice, "How do teachers make data-based instructional decisions to support students as readers?" In this step, preservice teachers identify a student from their internship placement to work with as they conduct the ARCSP. Once selected, they name potential contextual factors that they use to guide them as they develop a data collection plan. The contextual factors include, but are not limited to:

1. What grade is the student in? How old are they?
2. Based on the grade level/age, what are some assessments that make sense to employ?

How will they assess motivation? Which spelling inventory will they use? Would it be appropriate to assess phonemic awareness and/or phonics? How will they assess comprehension?

3. Is there background information that might influence assessment selection? Is the student on, above, or below grade level based on teacher input? Does the student have an IEP (Individualized Education Plan)? Is the student in the MTSS/RTI process? Tier 2, or 3? Is there previous data that

might inform assessment selection (such as standardized test information, teacher anecdotal records, parent observations, or other data sources)?

4. How will the preservice teacher work with the student (virtually or face to face, a consequence of Covid-19)? Will the mode of work require parent communication?

In this step, preservice teachers also include the name and a summary of each assessment they have chosen based on the contextual factors they have identified. In this chapter, the researcher log examples shared to illustrate the ARCSP steps are based on Brody, a six year-old in the spring of 1st grade. Figure 2 shows some of the assessments the preservice teacher selected for Brody based on the contextual factors she identified. In this step, preservice teachers also describe the protocol for giving each assessment and if needed adaptations for a virtual environment. Once step 1 is completed, faculty evaluate the assessment plan using the ARCSP rubric, provide feedback on the appropriateness and efficacy of each assessment chosen, and if necessary, guide students to better data collection instruments. The areas assessed in step 1 of the ARCSP include: contextual information, professional description of each assessment, protocol for unique context, parent/guardian/caretaker communication (if needed), and mechanics. Writing mechanics, including APA format, grammar, punctuation, and spelling, are assessed at each step of the ARCSP.

Step 2: Collecting and Analyzing Data

In Step 2, collecting and analyzing data, preservice teachers review and embed their student's assessments into their log, synthesize their data, and look for patterns across assessments. In their log they identify what the data tells them about their case study student, whether the student is on, above, or below grade level expectations, and potential areas of intervention and/or instruction using an if/then format. Figure 3 shows a preservice teacher's informal reading inventory data, and Figure 4 is their analysis of this data. This portion of the ARCSP researcher log is uploaded, and faculty review this data prior to a data conference meeting. The data conference is an in-person or virtual meeting in which faculty meet individually with each preservice teacher. In the data conference, preservice teachers share the highlights of their data and faculty review and verify the data collected. During the data conference, faculty may also recommend additional assessments if the data collected does not point to a focus area for intervention or instruction and/or there is a concern over the trustworthiness of the data collected, such as inconsistency among assessments or inappropriate assessment selection. A sentence frame is provided to help preservice teachers craft two research questions based on the data they collected. If I _____ (take this action), then will the student demonstrate improvement in _____ (the issue/concern)? If needed, during the data conference, faculty assist preservice teachers in editing their research questions that stemmed from their data analysis as the research question will be used in Step 3 to guide their mini-literature review. Using the ARCSP rubric, faculty evaluate whether the data is complete, correctly analyzed, interpreted accurately, and if two research questions are written based on the data.

Step 3: Identifying Evidence-Based Instruction

There are two parts to Step 3, with the goal of having preservice teachers thoughtfully identify evidence-based instruction based on data and having them think more deeply about the effects of instruction via a mini-literature review. In part one of Step 3, preservice teachers choose one of their refined research

questions from step 2 to guide their inquiry and they brainstorm search terms based on the selected research question. This was the research question that was selected for Brody, "If I model how to make predictions based on the text, then the student will learn how to gain a deeper understanding of the text which will allow him to more accurately answer implicit questions". The research question can also be stated in the form of an objective, as in this case. The search terms used for this literature review included: making predictions, reading comprehension, implicit understanding, and implicit questions. In part two of Step 3, preservice teachers conduct a mini-literature review by locating resources, articles, and books that can help them better understand the research question they are exploring and help them develop an evidence-based intervention and/or instructional plan based on their data. To assist preservice teachers with the mini-literature, faculty have developed a tip sheet with advice such as recommended journals, like *The Reading Teacher, Language Arts, Elementary School Journal, Educational Leadership,* and *Reading Research Quarterly* and suggestions for notetaking and synthesizing readings, rather than only summarizing. Additionally, faculty model the process of conducting a discipline specific search in class, using a sample research question. Faculty demonstrate the search terms they would use and access databases from the University of Central Florida's library to identify pertinent peer-reviewed articles for the sample research question. At this point, faculty organize preservice teachers into teams according to their research questions, placing those with similar research questions together. This provides another layer of support as they collaborate to identify resources, articles, and books they can use in their mini-literature review. In their researcher log, preservice teachers synthesize the information they found showing how the concepts from their readings are similar and different, and they draw conclusions that include implications for instruction related to their research question. Figure 5 provides a snippet of a finished mini-literature review based on the data-informed research question for Brody. The purpose of this mini-literature review is to steer preservice teachers away from the use of unvetted websites, like Teachers Pay Teachers, and to have them more critically choose evidence-based instructional approaches to employ with students. In this section, preservice teachers are expected to use in-text citations and include a reference page in APA format; therefore, the ARCSP rubric criteria for this step includes this, the synthesis and analysis of resources based on the selected research question, and relevant search terms.

Step 4: Development of Intervention/Instructional Plan

Depending upon whether the student is on or below grade level, in Step 4, the preservice teacher develops either an intervention or instructional plan. In this step, preservice teachers also identify at least three activities they will employ guided by their research question and mini-literature review. In the researcher log, preservice teachers provide a detailed description of each activity they will implement and include visual support of the activity, such as materials or artifacts. They also include how each activity connects to their assessment data and how they will engage and/or motivate their student while employing the activities. Figure 6 is an example of an activity a preservice teacher selected based on Brody's data and evidence-based practices. The activity also had the text cover for the activity and the graphic organizer she was going to use embedded in the log. The ARCSP rubric at this step has the faculty critiquing the activities selected, the alignment of the activities to the mini-literature review, whether they included an artifact or materials for each activity, and how they will engage and motivate their student while implementing the plan.

Step 5: Results and Findings

In Step 5, preservice teachers describe the results and findings from the implementation of their instructional plan. The focus of this section is to describe the impact of their plan and include visual support in terms of pre- and post-assessment data, anecdotal records, and other evidence collected (such as student artifacts and observations). Preservice teachers are encouraged to include a table or graph to visually present pre- and post-assessment as depicted in Figure 7. In addition, preservice teachers include recommendations for future instruction based on the effectiveness of their plan and the data they collected. They also provide suggestions for parents to support students at home as depicted in Figure 8. While they are not required to directly share these suggestions with parents, several preservice teachers have shared that their supervising teachers have had them communicate their findings and recommendations with the parents in their placement. Faculty use the ARCSP rubric for step 5 to look for post-assessment data and a discussion of the impact the plan had on the student as it relates to the research question, as well as recommendations for future instruction.

Step 6: Reflection

Action Research includes implementing and reflecting on practice to increase knowledge and improve instruction (Carboni, Wynn, & McGuire, 2007; Kemmis & McTaggart, 1982). Step 6 is the last section of the ARCSP researcher log and in this section preservice teachers are asked to reflect on their ARCSP and identify limitations of their research. Having preservice teachers identify their limitations causes them to reflect on the entire ARCSP and factors which may have impacted their effectiveness. Figure 9 demonstrates some of the limitations that a preservice teacher experienced. In step 6, the preservice teacher also includes a reflection on the role of informal assessment and motivation in the teaching process and the use of action research as a way to explore a suspected issue/problem as exemplified in Figure 10. The ARCSP rubric criteria used by faculty to assess step 6 reflects this focus.

Professional Presentation

The ARCSP culminates with preservice teachers' presentation of their action research. As an essential step, they make their project public (Phillips & Carr, 2010). Through preparation of a professional presentation, the preservice teachers view the project as a meaningful whole rather than a checklist of steps. They highlight the processes and products of their project in a professional presentation utilizing a multimedia platform of their choice. They include their research question based on data collection and analysis, conclusions from mini-literature review, instructional plan, artifacts from instruction, post assessment results and findings, and key points from final reflection. For those in need of technology support, a presentation template in Google Slides and a poster presentation template in PowerPoint are provided. The preservice teachers share their presentation with their peers as though presenting at a professional conference. There are opportunities for peers to ask questions and respond from a peer teacher perspective, similar to what occurs at a professional conference. Reflective questions are provided to facilitate these peer interactions. Some sample questions include: What would you say is the most important thing you learned personally? How does your project relate to real-world situations and problems?

What would you do differently if you were to approach the same problem again? How would you communicate your findings with parents? How will you use what you've learned in the future? COVID-19 adaptations during 2020-2021, focused on synchronous virtual presentations; however, post-Covid-19, instructors plan for preservice teachers to share poster presentations to a class and perhaps larger groups of preservice teachers and faculty.

PRELIMINARY FINDINGS

Preservice Teachers' Reflections on Learning

My major takeaway from my Action Research Case Study Project is that I discovered that the roles of assessment, motivation, and action research are all intertwined in the instructional process and used to strategically assess the student and accurately gather data to help the educator best help the student in an impactful way (Spring 2021 Preservice Teacher Reflection).

Fall 2020 and Spring 2021 marked the first academic year of implementation of the ARCSP. In seven course sections of the reading practicum course, over 200 preservice teachers completed the ARCSP, including the written reflection and the final presentation.

For preliminary data analysis, faculty instructors used NVivo Software to identify the words that preservice teachers used most frequently in their reflections to describe the role of informal assessment and how action research can be used to explore a suspected problem or issue. Additionally, a word cloud was generated using NVivo to create a landscape code (see Figure 11). Words with the highest frequency in the reflections were further analyzed by context to identify emergent codes, which were then used to generate and define themes and subthemes, as depicted in Table 3. Excerpts from preservice teachers' reflections are included in Table 3 to illustrate each theme. Two themes and five subthemes were identified.

Building Knowledge of Reading Education

Preservice teachers' perceived benefits of their participation in the Action Research Case Study Project indicated that engaging in the process of action research itself contributed toward an increase in their knowledge of reading education. This aligns with Cochran-Smith's and Lytle's (2009) findings that explained that action research can be used as an embedded form of professional learning to build knowledge, as well as Manfra's (2019) finding that engaging in action research increases pedagogical knowledge. By serving as the anchor assignment for the duration of the Reading Practicum course, preservice teachers adopted "inquiry as a stance" (Cochran-Smith & Lytle, 2009) to increase their own understanding of administering and interpreting reading assessments to inform instruction, incorporating student data, including reading interests and motivation, to differentiate learning experiences, and gaining a deeper understanding of the reading process as a whole. This multifaceted knowledge building is similar to the findings of Kennedy-Clark, Galstuan, Reimann, and Handal (2020), but offers a specific example for preservice teachers in reading education at the elementary grades. The sections that follow further outline how action research contributed to knowledge building among the participating preservice teachers.

Table 3. Themes and subthemes from preservice teachers' reflections on the role of assessment and action research

Themes	Subthemes	Preservice Teacher Reflection Excerpts
Theme 1: Building knowledge of reading education (Cochran-Smith and Lytle, 2009; Manfra, 2019): Data literacy, Differentiating students' needs, and Meaningful application of learning strategies (Kennedy-Clark, Galstaun, Reimann, and Handal, 2020)	1a: Importance of informal assessments used to inform reading instruction	*"Taking part in Action Research for the first time helped me to truly realize the importance of using assessment data to identify student needs. After assessing my student I was able to pinpoint the specific areas of need that I could plan to help him improve on. Looking at student work can help teachers determine areas where students need some support, but the assessments I administered (QRI, ESI, PMS) provide specific data that helps show the root of the students' needs."* *"Conducting informal assessments opened my eyes to understanding what my student was having trouble with in reading and I would have not known this if it was not for action research and informal assessments."*
	1b: Role of reading motivation when planning for instruction	*Through my time conducting this ARCS project I learned just how important motivational assessments are as well. For me personally when I hear the word "assessment" I picture strictly academic work, but motivational assessments are just as important. Getting to know your students and what they do and do not like is extremely vital in creating an instructional plan…* *"While I already had a conviction going into this on how motivation and student relationships are important to learning, this further solidified it. When I used the information given to me by my students' interest survey to provide the interventions in a way she would be interested in, she was much more engaged and willing to read."* *"I know based on Megan's motivation assessments I would find what she had interest in, however, I did not realize just how much this would directly impact her improvements. A specific aspect I am confident in following this process was my text selection."*
	1c: Complexity of the reading process as a whole	*"My student was such a fluent reader, I was in disbelief that she could not comprehend what she was reading. Thanks to my research I was able to experiment with different strategies to see what could best help her comprehension improve. It also worked as a resource for my student, who can now use the techniques she learned in any of her reading classes and beyond. I know if this were my first year of teaching, and I did not know of all the resources I used throughout this research, I would have been lost on where to start helping my student."*
Theme 2: Development of a research mindset while becoming a reflective practitioner (Black, 2021)	2a: Importance of research process for planning and determining if students learned as intended	*"I was quite motivated to conduct the post-assessment on Student I because subjectively, I could tell she was improving her short vowel skills, but it wasn't until I completed the BPST and analyzed the results where I felt the satisfaction of my hard work."* *"At every step of this project, my assessments let me know if what I was teaching stuck with her or if I needed to adjust as I went along. For example, I thought that the choral reading would be helpful but it only distracted her and she had trouble following along so I had to limit the amount of times I did it. Without assessments, we wouldn't be able to check in with ourselves and our students to make sure that learning is taking place."*
	2b: Applying action research process in future classrooms	*"Over time, I realized that this is called an "action" research case study because the point of the research is to take action. Our job is to learn about each of our students and the only way to confirm any suspicions of an issue with a student's learning is to assess but also interview to find their motivation, analyze the data, and research peer reviewed research articles for ways to support the student. While we may not have time to complete research logs as detailed as the one done in this course, I would still keep a digital notebook or document with similar data and information for each of my students so that I can be better equipped to support each student and any choices I make for their learning…"* *"I can help them [my future students] with an action research process much like this one for any content area to support them in their academics. Another reason to use my knowledge of action research is to test out new strategies for students who would benefit from them as well. This would help me improve my instruction as an educator and learn various strategies to add to my teacher tool box because what works for one class may not always work for another."*

Importance of Informal Assessments to Inform Reading Instruction

Preservice teachers identified the role of assessment as a key factor in providing targeted reading instruction. While preservice teachers learned about the role of assessment and how to select, use, and interpret a variety of informal reading assessments in their previous reading courses, nearly all of their written reflections referenced the significance of informal reading assessment. Many preservice teachers described the importance of using teacher-administered informal assessments as a key instructional decision-making practice, even beyond district- and school-mandated reading screener assessments. In many cases, they also noted increased confidence in administering and interpreting informal assessments as a result of the ARCSP and expressed confidence in integrating this practice in their future classrooms.

Role of Reading Motivation When Planning for Instruction

The significance of attending to students' reading motivation was another common theme across preservice teachers' written reflections. Considerations included: using reading interest inventory data to guide text selection, using reading attitude survey data to consider when and how to determine genre selection (including seeking opportunities to expand students' interest in genres in some instances), and using results from both of the previously mentioned informal assessments to select instructional strategies that would be appealing for one-on-one instruction across the ARCSP. Additionally, many preservice teachers identified reading motivation as one of the most challenging obstacles when planning for instruction. Despite having a clear focus for instruction and research questions, reading motivation played a larger factor than many preservice teachers anticipated. By recognizing this, preservice teachers made thoughtful implications for instructional planning beyond the ARCSP, when they will be working with more than a single child.

Complexity of the Reading Process as a Whole

While the ARCSP offered the opportunity to generate a single research question, narrowing the focus for reading instruction/intervention for the duration of the project, preservice teachers' reflections revealed their awareness of the interconnectedness of reading processes as a result of their assessment, instructional planning, and observations of student learning. One example of this theme was a preservice teacher's focus on increasing accuracy and automaticity of a student's word recognition which was noted as a positive outcome of a series of lessons, yet further observation and reflection suggested a shift in focus toward language comprehension processes of predicting and/or inferring to support the students' understanding of the text. In another example, a preservice teacher who was focusing on building a students' oral reading fluency further recognized the role of fluency as a bridge between word recognition and comprehension when she realized that, despite improved reading rate, accuracy, and prosody, the student with whom she was working lacked expression and intonation to convey the tone of what was begin read. In this case, she shifted her focus on fluency to consider how fluency itself supports the maintenance of meaning when reading text. Each of these examples, in addition to many other reflections offered by preservice teachers, highlight how preservice teachers' understanding of the complexity of the reading process was strengthened. Yet, while recognizing reading as complex and multifaceted, preservice teachers also described an increased confidence in knowing where and how to focus their instruction/intervention for a student.

Development of a Research Mindset While Becoming a Reflective Practitioner

While the Action Research Case Study project was specific to reading education both through coursework and the various research questions explored, many participating preservice teachers reflected on their development of a research mindset and their own reflective practices with connections beyond reading or any single subject area which was our second major theme. These findings align to Black's (2021) longitudinal study yet offer promising results after only two semesters of action research implementation. Preservice teachers recognized the importance of the research process to guide the cycle of teaching and learning, and they readily identified ways that their newly developed research mindset would impact their teaching practices in their future classrooms. In planning areas for future research, preservice teachers were also readily forming new research questions to explore, another consistent element to the work described by Black (2021). In the sections that follow, further examples will be provided to highlight how the preservice teachers' mindset and dispositions as researchers will have a lasting impact beyond their single reading practicum experience.

Importance of the Research Process for Planning and Measuring Student Learning

An additional theme from students' written reflections was the importance of the research process as a whole when planning instruction and gauging whether or not there was evidence of intended student learning outcomes. As novice undergraduate student researchers, many preservice teachers initially described the action research process as intimidating due to their lack of familiarity with the process. However, reflections at the end of the semester revealed an appreciation for the process, especially related to later steps (Steps 4, 5, and 6) of the ARCSP, and the cyclical, recurring nature of the research process. Preservice teachers felt confident in their students' evidence of learning because it was anchored by progress monitoring/post-assessment data. As such, not only were they able to confidently reflect on the reading progress of their students, but they were also able to plan for future instruction that built on their students' recent evidence-based learning outcomes.

Applying Action Research in Future Classrooms

Preservice teachers were able to explain how their experiences conducting action research in the course will have an impact on their future students' learning when they apply practices of action research in their own classrooms. In this theme, they elaborated on how the research process itself not only became more concrete for them, but that they could see it becoming more automatic as part of their own instructional inquiry. Some even made generalizations as to how the process could be applied to other content areas and/or in an interdisciplinary approach to explore teaching/learning practices in their future classrooms.

Preservice Teachers' Perceptions of the ARCSP

In fall 2020 and spring 2021, faculty sought to further evaluate the ARCSP through voluntary feedback from preservice teachers via a Google Form that posed three questions. The first question asked what they perceived as the most challenging aspect of the ARCSP (see Table 4). The second question asked what they perceived as the easiest part of the ARCSP (See Table 5). The final question asked them what advice they would give to preservice teachers completing the ARCSP for the next semester. 217 students completed the survey. The most challenging step preservice teachers identified across all sections was

the mini-literature review (46%), followed by the instructional plan (19%). For most preservice teachers, this is the first time they have conducted a literature review; therefore, faculty anticipated that they would find this step difficult. For this reason, faculty developed several supports to assist students with the mini-literature, such as the tip sheet, in class modeling, and peer planning, as mentioned earlier. However, the faculty did not expect that the preservice teachers would find the instructional plan challenging since the Elementary Education program at the University of Central Florida emphasizes lesson planning throughout the program. Upon reflection, most of the required lesson planning is not based on data and real children, so this may be the reason for this finding. Furthermore, the mini-literature review required the preservice teachers to focus on evidence-based practices reflective of the mini-literature findings and their data which may have limited their activity selection, thus making this step more challenging than they may have anticipated.

Table 4. Most challenging part of ARCSP (N=217)

ARCSP Step	Percentage Who Perceived Step Most Challenging
Literature Review	46%
Instructional Plan	19%
Creating a Research Question	11%
Data Analysis	11%
Data Collection Plan	10%
Findings & Results	3%

Table 5. Easiest part of the ARCSP (N= 217)

ARCSP Step	Percentage Who Perceived Step Easiest
Data Collection Plan	50%
ARCS Project Presentation	12%
Reflection	11%
Findings & Results	11%
Instructional Plan	10%
Literature Review	2%
Creating a Research Question	2%
Data Analysis	1%
Post-Assessment	1%

Overwhelmingly, 50% of the preservice teachers identified the data collection plan as the easiest part of the ARCSP. This was not surprising to faculty as the preservice teachers completed a course focused on reading assessment prior to enrolling in this course. In the previous course, the reading assessments taught included the areas of motivation, phonemic awareness, phonics, fluency, and comprehension. In addition, preservice teachers learned about a variety of observational tools, the role of oral language, and how to do running records. The focus of the previous course was when and how to give each assessment,

as well as how to analyze results. Therefore, the preservice teachers had prior knowledge of and experience with reading assessments which could account for their confidence with this step of the ARCSP.

Thematic coding of the preservice teachers' advice for future students yielded 3 distinct themes. The first and most prevalent theme was the importance of time management. Their advice included: start early, do not procrastinate, and plan ahead. The second theme, use your professors, included advice such as: ask questions, listen to them, review the exemplars, and attend class. The final theme, one step at a time, referred to not getting overwhelmed, focusing on one part of the project at a time, and telling them that every step is important. As one preservice teacher wrote,

Advice I would give to students doing this next semester is to not procrastinate! I would also advise them to choose your student within the first or second week so you can assess them and have ample time to complete all the necessary requirements for this project. Time goes by quicker than you think, but if you follow the examples given and turn everything in on time you will be on track!

Several preservice teachers recommended that students create a calendar and stick to it, as well as share that calendar with their supervising teacher. Many of the preservice teachers also noted that faculty are available to support them throughout the project and that there are several resources and tools on webcourses that they should take advantage of for further guidance and help.

After the fall 2020 semester, the faculty wanted to find out more information about what supports were considered valuable by the preservice teachers; therefore, two additional questions were added to the feedback survey in the spring 2021. One question was used to determine what supports preservice teachers identified as helpful to their completion of the ARCSP. The supports included on the survey were: breaking the project into steps, an exemplar for each step, rubrics for each step, face-to-face class sessions with instructor, and one-on-one conference with the instructor. The preservice teachers could check multiple supports. Overwhelmingly, the preservice teachers identified exemplars (94%) and breaking the project into chunks (91%) as the most helpful, followed by the rubrics (74%), face to face session with instructor (70%), and one on one conferences with the instructor (60%). It was evident from this question, that the supports embedded throughout the ARCSP served as supports for most preservice teachers and therefore were integral to their overall success with the project. The second question was whether the preservice teachers believed they received enough feedback from faculty throughout the ARCSP. Since faculty intentionally planned for feedback across the ARCSP, this question was especially important to ask. 98% responded yes, demonstrating that they recognized and appreciated the feedback faculty provided.

Faculty Reflections and Next Steps

The faculty researchers at the University of Central Florida recognized that the traditional case study they had employed for over ten years needed an overhaul if "the responsibility of teacher educators is to prepare teachers to introduce and transform teaching practices that are more powerful for learners and more responsive to the changing forms of literacy in our society" (ILA, 2018, p. 1). In addition, with the desire to develop preservice teachers as researchers, remodeling the traditional case study approach with an action research design was the approach faculty chose to employ through the research-intensive course designation process.

The development and implementation of the ARCSP led faculty to make major changes to course curriculum and delivery. First, the addition of a mini-literature review to the practicum experience was implemented with several goals in mind. Conducting a mini-literature review increases time for preservice teachers to prepare for instruction or intervention prior to starting with their assigned student. The faculty researchers found that this had a positive impact on preservice teachers' discernment about which tools and strategies to select and implement in their teaching. Based on faculty observations and reflections, this step offered a critical connection to evidenced-based practices and yielded higher quality lesson sequences, compared to previous semesters of practicum instruction. Additionally, the reading faculty advocated for an elementary education program-wide change to reduce the Internship I experience, the internship for which this reading practicum course is a co-requisite, from two classroom placements to one classroom for the duration of the semester. The reading faculty considered the single placement to be more supportive of the research methods in the ARCSP. The single placement also offered preservice teachers more time and opportunity to build a relationship with the ARCSP student in their internship placement.

After a full year of implementing the ARCSP, the faculty researchers have pinpointed opportunities for improvement to the ARCSP and course experiences based on the limitations preservice teachers identified, their reflections, and their final presentations. From this analysis, several trends emerged: challenges with the timeframe for providing instruction/intervention, the need for more intentional text selection for instruction, and a lack of consideration for motivation as a key factor in instructional planning. Since faculty realized that some preservice teachers did not address how their plan was motivating or how they were promoting engagement, one revision to the ARCSP rubric would be to allocate additional points for appropriate and engaging text selection for students. Additionally, faculty plan to add a prompt in culminating sections of the ARCSP that asks preservice teachers to explain how they engaged the student throughout their instruction/intervention plan and how they considered the students' reading motivation when planning and facilitating instruction.

As the faculty continue to engage in their own scholarship of teaching and learning efforts related to the ARCSP in the reading practicum course, next steps include additional data collection efforts that are program-wide in scope. Faculty plan to develop and administer two surveys to obtain additional data about the long-term impacts of preservice teachers' action research experiences from the ARCSP. The first survey would be administered in the semester immediately following the reading practicum course in which the ARCSP was completed, which is also the final internship semester in the elementary education program. During this semester, as previously described, preservice teachers complete a Teacher Work Sample project that contains many of the same action research elements as the ARCSP. Faculty intend to determine if and how preservice teachers' perceive their engagement in the ARCSP to be helpful preparation for the Teacher Work Sample. Further, faculty will collect survey data from recent graduates to determine the impact of the ARCSP on their self-efficacy to administer and interpret informational reading assessments, plan for differentiated reading instruction and/or intervention, and apply tenets of action research in their own classrooms.

Implications for Teacher Educators

Considering the input from both preservice teachers and instructors of the newly designed reading practicum with an action research focus, the faculty researchers offer the following suggestions to those who are planning an action research focus in their teacher education programs:

- Develop the concept of "action research" early in a teacher education program; introduce concepts such as research problem/question and data collection as part of the assess - teach - assess cycle.
- Provide experiences with reading and synthesizing professional literature throughout the program to frontload the literature review process.
- Provide a course on reading assessment just prior to a reading practicum to prepare students to be ready for data collection plan and process and scaffold how to develop relevant research questions.
- Provide multiple supports during the ARCSP process: exemplars, division of project into chunks, rubrics, and faculty feedback after each section of the project.
- Emphasize time management and semester planning in a course such as a reading practicum. If students have developed research process skills throughout the program, they will be better able to "hit the ground running", rather than procrastinate or wait until absolute deadlines.
- Provide alternative opportunities (e.g. supervised reading clinic or other course embedded service learning) for preservice teachers who are placed in subject only internship placements that may not be ideal for completing the action research project.

CONCLUSION

Overall, this action research case study has taught me how to become a better teacher. I am pleasantly surprised that this one single assignment has made such a big impact on my development as a teacher. I feel more prepared on how to give assessments, how to use the data in the assessments to drive instruction, and how to create appropriate intervention activities (Spring 2021, Preservice Teacher Reflection)

The ILA (2015) called for teacher preparation programs to "design and enact instruction that increases the literacy performance of K-12 students" (p. 8). The ILA (2018) further noted, "We simply cannot expect changes in the practices of teachers in classrooms without changing our own practices as teacher educators" (p.4). Moving from the traditional case study approach to the ARCSP caused reading faculty at the University of Central Florida to redesign content and their practices, including providing more frequent and targeted feedback. The implementation of the ARCSP not only prepared preservice teachers in research-based practices, but the project also prepared "them to do research in their own classrooms to grow their future practices" (ILA, 2018, p. 5). Evidence demonstrates that engaging in the ARCSP has helped transform preservice teachers into teacher researchers. The reading faculty at the University of Central Florida initially implemented the ARCSP to strengthen the research component of the reading practicum, but the impact has been felt at the program level, as plans are underway to weave elements of the research process throughout the program. Reinventing the reading practicum to be research-intensive has led faculty to reconceptualize how to support preservice teachers' development as researchers throughout their program and ultimately in their future classrooms.

It's one thing to read about research done by other people but to conduct your own and put to use resources from other people was an experience all by itself. I feel like it gave me the opportunity to step into a teacher's shoes and actively decide what the next steps for instruction were. It also allowed me to see the effectiveness of the strategies that I found through my earlier research...Bringing action research into our teaching lets us be more effective by allowing us time to reflect on our own methods and bring only best practice strategies into our classrooms (Spring 2021 Preservice Teacher Reflection).

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KEY TERMS AND DEFINITIONS

Action Research: The process of examining and solving a real-life problem of practice.

Case Study: A research methodology that provides an in-depth description of a person, or group of people over a period of time.

Evidence-Based Instruction: Methods and materials that have been proven to be effective for large groups of diverse students.

Instruction: Teaching that supports the development of processes, strategies, and/or skills for a student who is performing at or above grade level expectation.

Intervention: Teaching that addresses the needs of a student who is performing below grade level expectations.

Limitations: Characteristics of a study that may have impacted the results of a study.

Literature Review: An overview/synthesis of previous research on a specific topic.

Reflection: Interpreting one's practices.

Research-Intensive: A section or course level designation that faculty are granted by a committee of peers based on the transformation of an undergraduate course using research-intensive practices at the University of Central Florida.

APPENDIX 1

Table 6. The ARCSP rubric

Criteria	Unsatisfactory	Acceptable	Exemplary
Step 1: Data Collection Plan- 50 Points			
Contextual Information (5 pts)	Lacked contextual information. 1pt.	Relevant contextual information included, but some background information missing. 3 pts.	All relevant contextual information included (age, grade, gender, background information such as previous testing, MTSS status). 5 pts.
Professional Description of Each Assessment (20 pts)	Lacked assessments and/ or description of appropriate assessments based on contextual information. 1 pt.	The majority of assessments chosen and described were appropriate based on contextual information. 3 pts.	All assessments chosen and described were appropriate based on contextual information. 5 pts
Protocol for Unique Context (15 pts)	Lacked the protocol for the many assessments and/or assessments do not reflect the context described. 5 pts.	The protocol for the majority of assessments are included and reflect the context described. 10 pts.	All assessment protocols are included and reflect the context described. 15 pts.
Parent/Guardian/Caretaker Communication (5 pts)	If needed, parent/guardian/caretaker communication was either not included and/or inappropriate. 1 pts.		If needed, parent/guardian/caretaker communication was included and appropriate. 5 pts.
Mechanics (5 pts)	More than 3 errors. 1 pt.	1-3 errors. 3pts.	No errors. 5 pts.
Step 2: Data Collected and Analyzed- 60 Points			
Data is complete. (10 pts.)	Missing data outlined in the Data Collection Plan.1 pt.	Most of the data outlined in the Data Collection Plan has been included..5 pts.	All of the data outlined in the Data Collection Plan has been included.10 pts.
Data is correct. (10 pts.)	Assessments were not accurately scored.1pt.	Most of the data is accurately scored. 5 pts.	All of the data is accurately scored. 10 pts.
Data is analyzed. (10 pts.)	Most of the data is not analyzed. 1pt.	Most of the data is analyzed. 5 pts.	All of the data is analyzed. 10 pts..
Data interpretation is accurate. (10 pts.)	Most data is not accurately interpreted. 1 pt.	Most data is accurately interpreted.5 pts.	All data is accurately interpreted. 10 pts.
Research Questions (5 pts.)	Research questions are not drafted. 1 pt.	One research question was drafted. 3 pts.	Two research questions were drafted. 5 pts.
Research Questions are data-informed. (10 pts.)	Research questions are not drafted and do not reflect the data. 1 pts.	Research questions reflect the data. 5 pts.	Research questions thoughtfully reflect the data. 10 pts.
Mechanics (5 pts)	More than 3 errors. 1 pt.	1-3 errors. 3pts.	No errors. 5 pts.
Step 3: Identifying Evidence Based Instruction- 50 Points			
Research Question and Search Terms (5 pts)	A data-informed research question and appropriate search terms are not included. 1 pt	A data-informed research question and appropriate search terms are included. 3 pts	A thoughtful, data-informed research question and appropriate search terms are included. 5 pts
Synthesis of Resources (15 pts)	Less than three peer reviewed resources have summarized. 5 pts	At least three peer reviewed resources have been summarized (not synthesized). 10 pts	At least three peer reviewed resources have synthesized (not just summarized). 15 pts
Analysis of Resources (15 pts)	Resources have been analyzed but do not truly assist with the research question. 5 pts	Resources have been analyzed to assist with the research question. 10 pts	Resources have been analyzed and any commonalities have been identified to assist with the research question. 15 pts
APA Citations and Style (5 pts)	APA citations and style throughout the mini-literature review includes more than three errors. 1 pts	APA citations and style throughout the mini-literature review includes three or less errors. 3 pts	APA citations and style throughout the mini-literature review are accurately used. 5 pts
References in APA (5 pts)	3 or less references with more than three errors in APA are included.1 pts	At least 3 references with three or less errors in APA are included.3 pts	At least 3 references in accurate APA are included.5 pts

Criteria	Unsatisfactory	Acceptable	Exemplary
Mechanics (5 pts)	More than 3 errors. 1 pt.	1-3 errors. 3pts.	No errors. 5 pts.
Step 4: Intervention/Instruction Plan- 60 Points			
Intervention/Instruction (15 pts.)	Less than 3 interventions are included. 5 pts.	3 interventions are included. 10 pts.	A detailed description of at least 3 interventions. 15 pts.
Intervention Alignment (15 pts.)	The interventions included do not align with the literature review and research question. 5 pts.	The interventions included primarily align with the literature review and research question. 10 pts.	The interventions included align with the literature review and research question. 15 pts.
Artifacts (15 pts.)	There are no artifacts and/or materials included with each activity. 5 pts.	There is an artifact and/or materials included with at least 2 of the activities. 10 pts.	There is an artifact and/or materials included with each activity. 15 pts.
Engagement (10 pts.)	Student engagement and/or motivation is not included for each activity. 1 pt.	Student engagement and/or motivation is included for at least 2 activities. 5 pts.	Student engagement and/or motivation is included for each activity. 10 pts.
Mechanics (5 pts)	More than 3 errors. 1 pt	1-3 errors. 3pts.	No errors. 5 pts.
Step 5: Results and Findings- 50 Points			
Post-Assessment Data (20 pts.)	Post-assessment data is not included. A pre-post comparison is not included. 1pt.	Post-assessment data included is appropriate and includes the name of the assessment and scores (or observations). A pre-post comparison is included, but not as a graph or table. 10 pts.	Post-assessment data included is appropriate and includes the name of the assessment and scores (or observations). A pre-post comparison as either a graph or table along with a description is included. 20 pts.
Impact (10 pts.)	A discussion of the impact of the intervention plan is not included. 1 pts.	A discussion of the impact of the intervention plan is included. 5 pts.	A discussion of the impact of the intervention plan as it relates to the research question is included. 10 pts.
Future Recommendations (15 pts.)	Neither future instruction recommendations or suggestions for parents to support at home are included. 10 pts.	Future instruction recommendations are included or suggestions for parents to support at home. 10 pts.	Future instruction recommendations are included and suggestions for parents to support at home. 15 pts.
Mechanics (5 pts)	More than 3 errors. 1 pt	1-3 errors. 3pts.	No errors. 5 pts.
Step 6: Reflection- 30 Points			
Limitations (10 pts.)	Limitations of the Intervention Plan and/or results are not included. 1 pts.	Limitations of the Intervention Plan and/or results are included. 5 pts.	Limitations of the Intervention Plan and/or results are thoughtful and insightful, and are clearly informed by the assessment data and overall context in which the action research project was conducted. 10 pts.
Reflection (15 pts.)	Reflection does not address either the role of assessment, motivation, and action research in the instructional process. 5 pts.	Reflection addresses the role of assessment, motivation, and action research in the instructional process. 10 pts.	Reflection thoughtfully addresses the role of assessment, motivation, and action research in the instructional process. 15 pts.
Mechanics (5 pts)	More than 3 errors. 1 pt	1-3 errors. 3pts.	No errors. 5 pts.

APPENDIX 2

Figure 1.

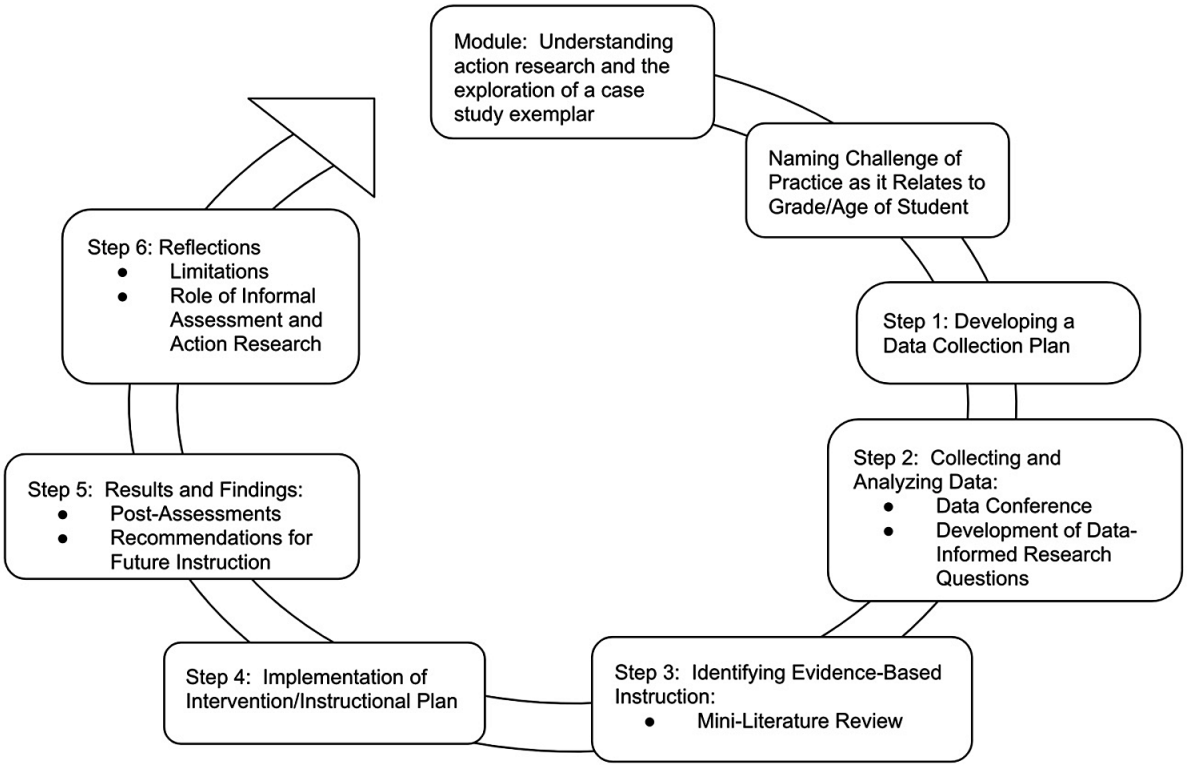


Figure 2.

Phonics/Spelling/Word Knowledge

Phonics Mastery Survey (PMS)– This is an informal assessment that focuses on several different elements of phonics. It assesses the student's ability to recognize consonant sounds, rhyming words, consonant digraphs, long vowel sounds, words with CVC patterns, consonant blends, other vowel sounds, and syllables in each word. The student completes each section in that order, stopping if there are a certain number of errors based on the section. This will show me what my student may need to work on when it comes to phonics.

Primary Spelling Inventory (PSI)– This assessment is appropriate for grades K-3rd. This spelling assessment contains a list that begins with easy words and progresses to more difficult words. Through this, I will be able to see what my student does correctly, what my student uses but confuses, and what is absent in my student's spelling. Along with determining the overall score, I will determine their power score, which is how many words they spelled correctly. The scores will then help me determine my student's current spelling stage.

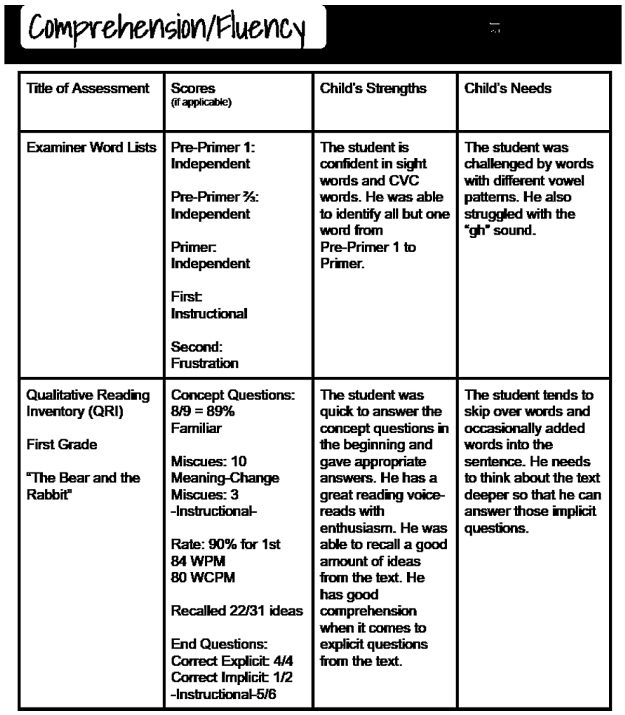
Comprehension and Fluency

Qualitative Reading Inventory (QRI)– To find out my student's instructional level, I will administer this informal reading inventory. To determine which level to administer, I will go through some of the Examiner Word Lists first. The appropriate QRI will allow me to check for fluency as they read and check for comprehension with the check questions at the end. The assessment starts by having the student answer some concept questions. Then, they will read the passage and as they read, I will mark miscues and self corrections. The student is timed so that an accurate rate can be calculated. After reading, the student is asked to retell the story in which they are being scored for each detail they remember. The last section in this assessment includes comprehension questions.

Other

Concepts of Print Test– This assessment is appropriate because my student is in 1st grade. It is used to determine what a student understands about reading, writing, and concepts of print. The student is given a book and asked to do a series of tasks such as finding the front of the book, pointing to where the reading should begin, showing which way the book is read, etc.

Figure 3.



Comprehension/Fluency

Title of Assessment	Scores (if applicable)	Child's Strengths	Child's Needs
Examiner Word Lists	Pre-Primer 1: Independent Pre-Primer ⅔: Independent Primer: Independent First: Instructional Second: Frustration	The student is confident in sight words and CVC words. He was able to identify all but one word from Pre-Primer 1 to Primer.	The student was challenged by words with different vowel patterns. He also struggled with the "gh" sound.
Qualitative Reading Inventory (QRI) First Grade "The Bear and the Rabbit"	Concept Questions: 8/9 = 89% Familiar Miscues: 10 Meaning-Change Miscues: 3 -Instructional- Rate: 90% for 1st 84 WPM 80 WCPM Recalled 22/31 ideas End Questions: Correct Explicit: 4/4 Correct Implicit: 1/2 -Instructional-5/6	The student was quick to answer the concept questions in the beginning and gave appropriate answers. He has a great reading voice- reads with enthusiasm. He was able to recall a good amount of ideas from the text. He has good comprehension when it comes to explicit questions from the text.	The student tends to skip over words and occasionally added words into the sentence. He needs to think about the text deeper so that he can answer those implicit questions.

Figure 4.

Comprehension/Fluency

What is the story told by these data? Is the student below, on or above grade level expectations? What is your evidence?

I used the Examiner Word Lists to determine what level QRI to give my student. The data shows that he is on a first grade level. The evidence is that he was able to successfully read most words from the pre-primer 1, pre-primer ⅔, and primer word lists at an independent level. As we moved on to the first grade level, he struggled a bit and scored at an instructional level. I decided to administer the second grade level as well and it was too challenging which put him at a frustration level. The assessments accurately proved that I should administer a first grade level QRI.

The data that I got from the QRI was that my student can grasp concepts and comprehend text, however, he doesn't think deeply about the text to truly understand it. I believe he gave appropriate answers for the concept questions in the beginning and read the text at a good pace. Quite a few of his miscues came from skipping or adding a word in the sentence. I also believe some words that he mispronounced were because he was speeding up his reading. He was able to accurately summarize the text in the end with a good amount of detail which shows his level of comprehension. The student was also able to correctly answer all 4 explicit questions which is another demonstration of comprehension. He struggled to answer the implicit questions which is a sign that he needs to think about the text deeper and ask questions throughout reading. According to the chart found on page 263 of DeVries' book, "Literacy Assessment and Intervention for Classroom Teachers," first grade students in the 75 percentile should be reading 82 WCPM by spring of their school year. My student read 80 WCPM which puts him just below this 75 percentile.

Figure 5.

Mini-Literature Review Synthesis

The research question that will be addressed in this literature review is, "If I model how to make predictions based on the text, then the student will learn how to gain a deeper understanding of the text which will allow them to accurately answer implicit questions." The search terms I used were to help narrow down articles to show me effective ways to teach prediction so that implicit questions can be answered. The Metacognitive Teaching Framework, which follows an "I do, we do, you do" format, lowered the percentage of students at an instructional level in prediction by 55% (Kelley & Clausen-Grace, 2008). Two articles that I chose to analyze for my research are written by my professor, Dr. Kelley and her colleague, Nicki Clausen-Grace. The third article that I chose to use is an action research case project that focuses on how to enhance comprehension in first and second graders using different strategies including predicting. All of these articles are appropriate for my student because they focus on elementary level strategy and show data from elementary students.

First, it is important to understand that when students predict, they are setting a purpose for reading (Kelley & Clausen-Grace, 2013). Critical thinking is enhanced when students have to support their predictions with textual evidence, therefore, they make connections and learn new information. Figure 5.7 on page 121 from *Comprehension Should Not be Silent* stood out to me and looks like something that would be easy to incorporate into many literature activities. It is called the "Preview, Read, Question Think Sheet." This sheet has three columns, one for before reading, one for during reading, and one for after reading. The first column is where students will write questions they have after previewing the text but before reading. The second column is where students will write why they wrote those questions and in the third column they will write the answers to their questions using textual evidence (Kelley & Clausen-Grace, 2013). This encourages deeper thinking because not all questions will have a clear answer within the text. Those types of implicit questions will require deeper thinking and making connections to personal experiences.This specific sheet would be a good resource for my student because he struggled with answering implicit questions from the passage.

The Collaborative Strategic Reading (CSR) strategy is a way to teach comprehension using four main reading strategies, one of which includes predicting. This strategy is called the "Preview" and focuses on previewing and predicting the story. It is used to get students excited about the text, activate background knowledge, and make predictions (Hollingsworth & Zaugra, 2007). It is important that students understand how to look at the title, pictures, headings, and key words so that they can actively think ahead and ask questions that will keep them focused on the text. CSR encourages students to learn and think throughout their reading. During the "preview" stage of CSR, teachers can incorporate think alouds to demonstrate what predicting looks like. After ten weeks of intervention using this strategy, students who felt that they often or always understood the text went up by 6% according to their data documentation (Hollingsworth & Zaugra, 2007).

Figure 6.

Focus of Intervention/Instruction- The student will use a graphic organizer "think sheet" while reading aloud to preview, read, and question.

Activity-

The student will be given the book "Surfing Safari" by Precious McKenzie to complete this activity. This book can be found on "Epic! Books for Kids." I chose this book because my student, Brody, stated in his Personal Interest Survey that he loves surfing with his dad on the weekends. His interest in surfing will increase motivation to read this book.

Before reading, I will have the student flip through the book and examine the pictures and the cover. We will then begin filling out the "think sheet" (shown below) together. I will model how to ask an appropriate question based on what I've observed and write it down in the first column. The student will then come up with 2 questions on their own.

During reading, we will continue to fill out the "think sheet' by focusing on the middle column. In Brody's Reading Attitude Survey, he stated that he loves to read aloud. I will have him read the story to me and stop him when we get to the page that is relevant to my question so that I can model how to fill out the middle column by explaining why I asked my question and what page it correlates with. He will do the same thing with his 2 questions.

After reading, we will look back at the questions and write our answers in the last column based on what we read. I will have Brody answer all three questions and assist if necessary.

Figure 7.

Post-Assessment Data

Activity#1 Results– The first activity was the "Think-aloud Checklist." Brody was very excited about the book I chose and was engaged while I explained the checklist. After listening to the think aloud I completed with his favorite book that he brought, he was able to understand the checklist. As I started reading the book and thinking aloud, he needed reminders to check the checklist. After a few reminders, he was getting most of them on his own. At the end, he said he felt like he was doing a scavenger hunt listening for the checklist words.

Activity #2 Results– For the "Think Sheet" activity, he was able to flip through the books and come up with 2 great questions on his own. He came up with "Where are the campers going?" and "Will the people see a shark in the ocean?" I told him to look out for the reasons why he asked these questions as he read. During reading, he pointed out that the people are getting on a bus for camp. He also pointed out that they were heading into the water with their surfboards where they could potentially see sharks. When he finished the book, we looked at his questions and he was able to articulate answers for me to write down. I encouraged him to use information from the book to support his answers. Brody's answers were appropriate for the questions asked.

Activity #3 Results– For the last activity, I had Brody use a graphic organizer to predict what was going to happen by the look of the cover and title. He had to explain why he made that prediction and illustrate a picture. His prediction was, "I think the boy, girl, and monkey are going to tape the map together to find the treasure because they are both holding pieces of paper." I had to help him spell several words in his prediction but he articulated it on his own. His picture included the boy, girl, and monkey smiling over the opened treasure chest. After reading the story, I asked if his prediction was correct. He knew that he was partially correct. In the story, they did indeed put both halves of their map together but they did not find treasure. The map led them to a waterfall. I explained that predictions are not always correct but it's important that we understand why we made those predictions.

Post-Assessment: To reassess Brody's ability to deeply comprehend text enough to answer implicit questions, I readministered the Qualitative Reading Inventory (QRI.) I used a different story, "The Surprise," that is also a level one like the pre-assessment QRI. Brody improved in the area that we focused on. In the post-assessment, he scored 6 out of 6 questions (100%) correct in the comprehension question section of the assessment.

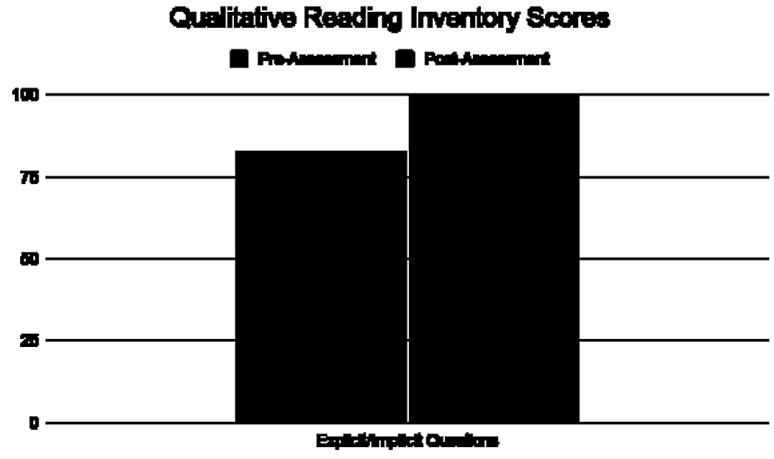


Figure 8.

Results– Brody's results showed improvement from the first assessment in which he scored a 5 out of 6 (83%) on the comprehension questions section of the Qualitative Reading Inventory (QRI). The one question he missed was an implicit question. My goal was to work on gaining a deeper understanding of text so that he could successfully answer implicit questions. When I readministered the QRI on the same level, he was able to answer 6 out of 6 (100%) questions correct. He did not miss either explicit or implicit questions. These results showed that through predicting, students can gain a greater understanding of not only what is in the text but what the text may be implying. Brody seemed to be more engaged in reading and excited about the stories as we completed the intervention activities.

Recommendations for Future Instruction/Research– After working with Brody on the pre-assessments, interventions, and post-assessment, I feel confident that he will continue working on his prediction skills and this will improve his comprehension. I believe the next steps for him would be to work on fluency. In both the pre and post assessment, his miscues came mostly from skipping over small words. The words he skipped didn't typically change the meaning of the sentence but did cause the sentence to be read with improper grammar. Brody began skipping words as he sped up his reading. I think he would benefit from working on rate and prosody. If he is able to read at an appropriate pace and use expression, I believe his comprehension will improve even more as well. Because he is homeschooled, I told his mom my opinion on what he could work on. I made sure to preface my opinion with stating that I am not a professional but I am able to understand the data I acquired from his assessment. I think that choral reading will help him improve both his rate and prosody as well as listening to modeled read alouds. Notecards with sentence trees would be beneficial in helping brody improve his fluency. It allows him to focus on each word and think about the expression used when reading that sentence. Another thing that might help him slow down his reading to an appropriate speed would be to use a word pointer or line tracker. This will allow him to stay focused on one line at a time without speeding up as he gets closer to the end. I would be interested to see if after some interventions focused on fluency, he would have less miscues on the QRI.

Figure 9.

The first limitation that I would like to point out is that my first Qualitative Reading Inventory (QRI) seemed to be more difficult as far as comprehension questions. Although the pre and post assessment QRI were the same level, I felt that the second QRI had much less challenging questions. In hindsight, I definitely should've read the questions at the end of each passage available to see which would be the most similar in difficulty. I chose this passage because he likes animals and got a dog for his birthday just like the boy in the text. I think my results would have been different if I had chosen a passage with more challenging questions and did not relate to any of Brody's interests.

Another limitation that I came across was the amount of time in between the pre-assessment and the interventions. I pre-assessed my student in February of 2021 and was not able to get back with my student to implement these interventions until April of 2021. During the long period of time in between, Brody was completing school work at home through his homeschool program. I would love to think that it was my interventions that contributed to his improvement, however, the reality of it is that through the 2 months in between, he was learning and improving at home as well. I believe my results would've been different if I had implemented the interventions and reassessed that following week.

I focused on prediction in my intervention plan. Learning how to predict takes time and practice. Based on the data from the post-assessment QRI, prediction had helped my student master the comprehension question section scoring at an independent level. Although he completed the prediction intervention activities with little help, I think it is something that he needs to continue practicing and using as he progresses in school.

Figure 10.

This action research case study confirmed for me how important it is to implement assessments. Assessments not only assess previous instruction but guide future instruction as well. Through formal and informal assessments, we can create the perfect instructional plan for students individually or as a class. It is important, as future teachers, to know what different assessments are out there and the benefits of each one. By understanding the different assessment options, we can choose what is appropriate for each student. Before this case study, I had never thought of an interest survey as a necessary assessment. I now know, that these types of informal assessments are crucial when it comes to motivating the student.

Motivation is one of the most important things to keep in mind when creating a lesson or intervention plan. This is what drives the students to stay engaged and be excited about the learning process. When we incorporate their interests into assessments, we receive a better outcome. Intervention plans are so important for students when they need that additional help. It gives them a different way to learn and understand a concept. I learned through this case study, that creating intervention activities that relate to the students' interest make it more fun, not only for the student, but for the teacher as well. It is more enjoyable teaching to a student who is having fun and is engaged rather than a student who is not cooperative and distracted.

I had never done a literature review before this case study. I've learned that it is a great strategy that allows you to take research from multiple sources and dig deep to see how they relate. It is so important to use teaching strategies that are proven to be beneficial to the students. As a teacher, we should strive to be the best teacher by using only the best techniques. We owe it to our students to eliminate strategies that do not work and implement new ones that will lead them to success. Now that I understand how to complete a literature review, it would be beneficial to me to use this strategy to find the best teaching techniques to use as a first year teacher.

Overall, this action research case study has taught me how to become a better teacher. I am pleasantly surprised that this one single assignment has made such a big impact on my development as a teacher. I feel more prepared on how to give assessments, how to use the data in the assessments to drive instruction, and how to create appropriate intervention activities.

Figure 11.