Research

Intentional Lesson Study Using a Reflection Model for Preservice Teacher Preparation: Observation, Reflection, Creation, Application (ORCA)

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Abstract

Amid declining enrollment in teacher education programs (Will, 2022), effective preservice preparation is increasingly critical. Research indicates that the context of student teaching significantly influences future employment outcomes (Goldhaber et al., 2017). This qualitative study, grounded in Bandura's self-efficacy theory (1977, 1986, 1997), explores how lesson study supports the development of self-efficacy in 12 preservice teachers through the ORCA model—Observation, Reflection, Creation, and Application. In addition to traditional mentor, teacher, and university supervisor triadic support, participants engaged in teacher learning communities with peers to guide their growth in self-selected areas of practice. Data were collected through observations, reflective journals, and a focus group interview. Findings reveal that structured collaboration, peer mentoring, feedback, and intentional lesson planning within the ORCA framework enhanced participants' self-efficacy, instructional knowledge, and professional agency. This study offers a replicable model for teacher preparation programs and/or districts to strengthen teachers' self-efficacy, promote K–12 student success, and address ongoing challenges related to teacher stress and workforce shortages.

Keywords

reflection; lesson study; teacher self-efficacy; preservice teachers; teacher learning community; supervision

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Introduction

Evidence points to teacher quality as the most important school-based factor that impacts student achievement (Vagi et al., 2018). The context of a teacher's preservice teaching is associated with long-term PK–12 student outcomes indicating that teacher preparation programs, specifically student teaching experiences, are essential platforms for providing preservice teachers (PST) with the opportunity to research and apply effective instructional practices (Darling-Hammond et al., 2017; Goldhaber et al., 2017). The PST seminar occurs during the last semester or year of teacher preparation in the United States in an immersive field-based placement where a PST is matched with a mentor teacher and a university supervisor in a triadic relationship.

Practicum is a pivotal component in PST professional development, and instrumental in fostering self-efficacy (SE). Several factors have been shown to support preservice teachers' SE including lesson-related practices and positive mentoring experiences (Nikoçeviq-Kurti, 2022). Nikoçeviq-Kurti (2022) found that intentional mentoring fostered preservice teachers' SE in three particular areas: classroom management, student engagement, and instructional strategies. Additionally, research has shown that PST who participated in intentional and reflection-based mentoring demonstrated more instructional skills, developed more interactive lessons, and were more inclined to engage in reflection on their own practice (Lejonberg et al., 2018; Nikoçeviq-Kurti, 2022).

The intentional lesson study (LS) and reflection model utilized in this study focused on observation, reflection, creation and application (ORCA) of lessons that addressed specific areas of effective instruction. The LS and ORCA model combined with a triadic support system fostered intentional and purposeful mentoring to PST in designing effective and equitable instruction. For the intent of this study, effective instruction was defined as instruction that engages students, encourages critical thinking, and fosters K–12 students' success. Equitable instruction was defined as instruction that provides each K–12 student with the resources and support that they need to succeed. In addition to the triadic mentoring relationship, a teacher learning community (TLC) was established among PST participants. PST observed experienced teachers and peers in specific content and instructional areas and reflected on their observations in their TLC. Research has shown the value of peer-group mentoring; however, there is a gap in the literature of this practice among PST that our project seeks to address (Pennanen et al., 2020).

Prior research confirms that PST value training in classroom environment and student engagement (Loose & Jagielo-Manion, 2023; Voss & Kunter, 2020), yet new teachers frequently report that rigid district curricula and scripted programs stifle creativity and limit their autonomy to adapt lessons for diverse learners, risking the alienation of underserved students (Calvert, 2016; Voss & Kunter, 2020). This study addresses a gap by offering PST extensive triadic and peer-mentoring opportunities focused on embedding engagement strategies and critical thinking into scripted programs. Using an adapted form of LS, PST engaged in self-selected observations and in-depth dialogue to develop problem-solving and creative teaching skills often suppressed by "boxed curricula" — with the goal of increasing teacher autonomy and improving K–12 learning outcomes.

Theoretical Framework

The study is grounded in Bandura's (1977, 1986, 1997) self-efficacy theory to examine PST preparation, mentoring experiences, and the impact on PST self-efficacy (SE). According to Bandura (1977, 1986, 1997), SE is an individual's belief that they can perform the behaviors required to produce a desired outcome (Mahler et al., 2018). One's SE beliefs influence their thoughts and actions related to motivation, effort, persistence, goals, and coping (Bourne et al., 2021). If one believes they will achieve success with a specific task, they are more likely to experience success due to resulting effort and persistence (Bourne et al., 2021).

Bandura posited that efficacy expectations are based on four sources of information: mastery experiences, vicarious experiences, social persuasion, and physiological states. Mastery experiences refer to previous successful or unsuccessful performance of a behavior, which in turn increases or reduces one's personal efficacy beliefs. Vicarious experiences refer to observations of others' successful performance of a behavior. Social persuasion refers to others' perceptions of a person and their statements related to whether a person has the ability to successfully accomplish the behavior through comparison, encouragement, and feedback. Physiological states include factors such as emotion or fatigue that might influence one's belief in their capabilities (Bandura, 1977, 1986, 1997).

With a design grounded in Bandura's self-efficacy theory, this study aimed to answer the following research questions: (1) How does the use of an intentional lesson study with a reflection model (ORCA) impact preservice teachers' self-efficacy? (2) How does the use of an intentional lesson study with a reflection model (ORCA) influence preservice teachers' use of engagement strategies? (3) How does participation in a peer-based professional learning community, beyond the triadic supervisory relationship, shape preservice teachers' reflective practice?

Literature Review

Broadly, SE is a person's belief that they are capable of doing something. Consequently, teacher self-efficacy (TSE) is a teacher's belief in their ability to succeed in a teaching-related environment by performing specific behaviors (Mahler et al., 2018). A teacher's belief that they can influence how well all students learn, including those with diverse learning needs, is essential. Without effective training and support of early career teachers, they often feel lost, which impacts their success and student success as well (Skytterstad, et al., 2025).

When teachers have high SE, students and the overall classroom environment benefit. An emerging body of research shows that TSE is associated with student factors like achievement and motivation (Klassen & Chiu, 2010; Schipper et al., 2018). Additionally, high-efficacy teachers tend to effectively cope with classroom behaviors, use student-centered behavior strategies, and establish positive relationships with students (Zee & Koomen, 2016). Studies have also shown that TSE impacts the ways in which teachers teach, often using learner-centered, constructivist instruction and more supplemental activities (Zee & Koomen, 2016).

LS and peer mentoring are techniques to improve TSE. Participating in LS contributes to the quality of teaching and learning as well as awareness of the diverse learning needs of pupils (Schipper et al., 2018). Teachers learn from their colleagues during LS, helping to improve their confidence in their own teaching practices.

Preservice Teacher Preparation

There are many vital elements in PST preparation programs, most importantly ensuring PST are prepared to lead their own classrooms (Livers et al., 2021, p. 29). However, studies have found there are missing ingredients, in particular, coherence between the PST preparation program outcomes and the practices that PST are attempting in the classroom environment (Darling-Hammond, 2006, Sandoval et al., 2020). Scholars have generated a range of principles for structuring teacher preparation programs to address coherence problems, such as a common vision of teaching, a stronger emphasis on connecting theory and practice, and centering PST development of core practices (Sandoval et al., 2020).

Field experiences are essential in PST preparation as PST with more teaching experience tend to have higher levels of SE (Ciampa & Gallagher, 2021). Nevertheless, research has pointed to a decrease in PST SE later in their teacher preparation programs and even into their first year of teaching, "as they accumulate more classroom experiences, have a more realistic understanding of what they are able to accomplish in a classroom and start to realize what they do not yet know" (Ciampa & Gallagher, 2021, p. 656). If PST have limited experience with adapting lessons to support diverse needs, increasing student engagement, or considering culturally relevant pedagogy, they may feel unprepared to do this in their own classroom.

Scripted Curriculum and Teacher Self-Efficacy

Scripted curriculum has been adopted with increasingly more frequency in an effort to standardize programs to improve student learning outcomes, provide access to evidence-based instruction and reduce opportunity gaps (Brandt et al., 2026; Hanks et al., 2021). Benefits of scripted programs include the structure and clarity they provide, which can be especially useful for PST and new teachers (Brandt et al., 2026). However, teachers criticize scripted programs for their lack of flexibility and adaptability in being responsive to students' needs as well as challenges related to student engagement (Brandt et al., 2026).

Overreliance on scripted curriculum often has the opposite of its intended effect, with compliance to curricular implementation and instructional practices taking precedence over student-centered instruction and resulting learning and achievement (Hanks et al., 2021). Some researchers posit that rather than professional development (PD) that is centered on a program, the focus should shift to PD that centers teachers as the most valuable resource; teachers "need the invitation, permission, and time to implement their plans with their students, discuss and collaborate with colleagues, reflect, and make instructional adjustments" (Hanks et al., p. 10). This goal is precisely what LS aims to achieve.

Lesson Study

Lesson study is a PD approach, originating in Japan, where teachers examine the ways in which their students learn and use what they have observed to improve their own teaching practices (Widjaja et al., 2015). Ultimately, it aims to improve teaching by increasing teachers' attention to student learning through collective engagement in the process of planning, teaching, observing, and discussing a lesson (Gonzalez et al., 2021). LS is hands-on and grounded in actual classroom practice (Lee, 2008). It follows a five-step cycle: identify a research focus, study the curriculum, design a detailed research lesson, teach and observe it, and evaluate it in a post-lesson discussion (Schipper et al., 2019).

Through LS, teachers examine what worked or did not work in the lesson design, as well as students' success in meeting learning outcomes. The explicit focus on student learning in LS is believed to support teachers' awareness of students' learning needs, leading to adaptations of their teaching and curriculum to these needs (Erickson & Makowski, 2023; Kager et al., 2022; Schipper et al., 2019). Post-lesson discussions address the area(s) that teachers should focus on and what needs to be addressed to improve lessons (Shimizu & Kang, 2022). LS supports PD for teachers but can also be used as a reflective tool for PST. Through LS, PST can put what they have learned into practice, reflect on their own beliefs and teaching practices, and design lessons with more asset-based approaches that appeal to students' interests and abilities. Schipper et al. (2018) note that PST often struggle to meet K–12 students' unique learning needs and also lack the confidence and/or preparedness to implement instruction that meets these needs. According to Schipper et al. (2018), the explicit focus on student learning that is central to LS helps to foster the necessary skills and self-efficacy needed for PST to support their students' learning and success.

Teacher Self-Reflection

Self-reflection is an integral part of being a teacher (Nielsen, 2014). When teachers reflect on their own teaching practices, they see strengths and areas of growth. PST need opportunities to reflect on their own teaching practice to enhance their professional growth. After self-reflection, PST may utilize different methods or styles and may find improved ways to support their students.

One important element to consider when going through the process of self-reflection is the difference between reflecting and reflecting *critically* on one's own teaching practices. Reflection is looking back into one's teaching and drawing some general conclusions about lessons taught such as, "I had a creative lesson today," whereas critical reflection is when teachers reflect on their practice and reasons for lesson outcomes (Gün, 2010, p. 127). It is important for teachers to not just reflect in a superficial way on what they are doing while teaching, but to also reflect critically on ways they could improve and what might be best for their students.

An effective way to self-reflect and self-assess comes about through dialogue and collaboration with one's colleagues. Social interaction acts as a catalyst for learning in adults (De Felice et al., 2022). Engaging with peers supports teacher learning as it is often isolating trying to prepare

lessons and develop classroom management, all while staying on top of the latest theories and best practices.

Peer Mentoring/Collegiality

Research points to the value of mentoring in the PD of teachers, specifically PST and novice teachers (Skytterstad et al., 2025; Tynjälä et al., 2021). Various structures for mentoring can be employed, such as an experienced teacher mentoring a novice or PST or even larger groups of educators mentoring each other (Pennanen et al., 2020; Tynjälä et al., 2021). Traditional mentoring relationships are hierarchical with the more experienced teacher transmitting knowledge to the novice teacher (Korhonen et al., 2017; Tynjälä et al., 2021).

In their research with PST, Korhonen et al. (2017) found that, although participants benefited from mentoring experiences in a variety of ways, including informal discussions and relationship building, peer support, and identity construction, the hierarchical nature of the interactions prevented some PST from reaching the level of *participation* in a professional community. Korhonen et al. (2017) attribute this to lack of confidence in the PST sharing their own expertise and viewpoints during discussion. For PST to benefit from this process, they need to participate in collaborative conversations among experienced teachers and peers in their initial attempt at dialogue within a professional community. A combined triadic and peer-mentoring approach enhances the level of support for PST to include not only mentor teachers and supervisors but peers as well.

Methodology

This study was a qualitative case study which allowed for in-depth description and analysis of PST. In case study research, the researcher examines "a real-life, contemporary case(s) over time, through detailed, in-depth data collection involving multiple sources of information" (Creswell, 2013, p. 97) where the researcher serves as an interpreter rather than a neutral observer (Stake, 1995).

The study occurred at a suburban public university in the northeastern United States. Purposive sampling, as recommended by Merriam (1998), was used to recruit participants with specific characteristics. Participants were female undergraduate students in a yearlong program, spending nine or more hours weekly in their classroom during Fall 2023 before student teaching in the same classroom during Spring 2024. All participants were Early Grades Preparation (PK–4) or Middle Grades Preparation (4–8) majors. The 12 participants were placed in three elementary schools and one middle school in a suburban district with placements in kindergarten (4), 1st grade (1), 2nd grade (2), 4th grade (2), 5th grade (1), 6th grade geography (1), and 8th grade science (1).

Participants met weekly for two-hour in-person seminar sessions during their 16-week Spring semester where they learned about LS using the book *Lesson Study Step by Step: How Teacher Learning Communities Improve Instruction* (Lewis & Hurd, 2011), the ORCA model, and the Danielson Framework (The Danielson Group, 2022). Small group Teacher Learning Communities (TLC) were developed to cultivate a reflective, collaborative, and dialogic

environment. Throughout the 16-week semester, opportunities for mastery experiences, vicarious experiences, and social persuasion (Bandura, 1977, 1986, 1997) were included to support participants' SE.

The first six weeks focused on the Observe and Reflect steps of the ORCA model. Participants learned about LS and the Danielson Framework (The Danielson Group, 2022) domains, conducted focused observations of experienced teachers, and reflected on these observations and their own practice. Weeks 7 through 9 asked participants to use what they had learned in previous weeks to reflect on their practice, determine a focus area pertaining to student success, and develop a research question related to their practice. Participants then created a research lesson with this focus area/research question in mind and determined what support and feedback they would like to receive from their TLC peers regarding this focus area/research question. Four main focus areas were identified and self-selected by participants, including K–8 student collaboration, engagement, movement, differentiation and social-emotional learning. Several areas were chosen specifically to enhance scripted lessons and target K–8 students' learning outcomes. Examples of participants' self-selected focus areas and specific LS research questions are found in Table 1.

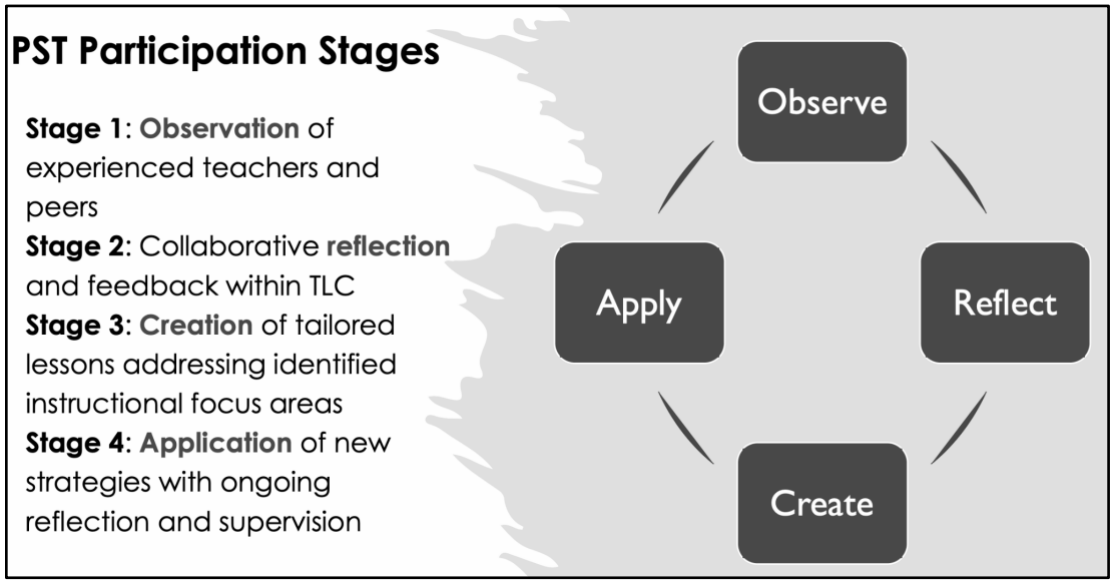
Table 1. *Participants' Lesson Study Focus Area*

Focus Area	Specific LS Research Question
Student Collaboration/ Engagement	In what ways do aligned tasks and activities provide opportunities for students to meaningfully engage with content?
Differentiation	What are ways that individualized strategies/approaches are used to support student success?
Movement	Identify how movement-based learning enhances comprehension, boosts engagement, and increases memory retention for all students.
Social-Emotional Learning	What evidence indicates that students monitor and reflect on their behavior and the impact it has on their classmates' learning?

In weeks 10–14, participants conducted in-person observations of TLC partners, with video observations used as necessary. The observed participant's focus area/research question was the foundation of each observation. TLCs met to share feedback, reflect on practice, and consider professional growth. A focus group interview in week 15 expanded participants' reflection and application, examining the entire ORCA model and process, LS, SE, and implications for future teaching practice. Figure 1 provides a visual of the ORCA process in action.

During the Observe (O) stage, the PST visited several classrooms to observe practicing teachers in general areas, such as classroom environment. From these observations, the PST engaged in Reflection (R) on their own classroom environment, targeting a more specific focus area in their instruction such as student engagement and developed a research question to explore in their

Figure. *The ORCA Model in Action*



practice: In what ways do aligned tasks and activities provide opportunities for students to meaningfully engage with content? Next, the PST collaborated with their TLC to Create (C) their LS research lesson, which included particular activities to foster student engagement and collaboration, such as moving to certain parts of the classroom to show responses to questions, use of guided notes, and a Kahoot review game. During the Apply (A) stage, the research lesson was taught and observed by the TLC partner with a focus on the research question. The TLC partner provided written and oral feedback on the research lesson/question in the form of "notices" and "wonderings" to continue to support their professional reflection and development beyond just this lesson study experience.

Data Collection

Case study research uses multiple data collection sources to provide in-depth understanding of the topic (Creswell, 2013). According to Merriam (1998) and Stake (1995), triangulation of multiple data sources in case study research ensures validity of results. Therefore, this study employed various qualitative methods to examine PST experiences with LS, the ORCA model, self-reflection, TLC participation, and SE.

Using a modified Danielson Framework (The Danielson Group, 2022), participants completed three observations of veteran teachers (i.e., vicarious experiences) addressing planning and preparation, classroom/learning environments, and instruction. Participants observed scripted curriculum lessons, science lessons with hands-on/inquiry-based learning, math or literacy

learning centers, or specialist lessons and documented observations and reflections on designated ORCA Observation Tools with guided questions and specific observation areas.

Participants formed TLC groups based on Danielson domain focus areas. Within groups, participants partnered for peer observations focusing on specific areas identified by the observed participant. Observers recorded notices and wonderings on the TLC Lesson Study Observation Form, which served as a feedback tool for partner and larger TLC groups (i.e., vicarious experiences and social persuasion).

Participants kept digital journals documenting LS perspectives, classroom comfort, and knowledge gains in reflection, collaboration, and lesson design. Reflections informed seminar topics based on observed needs, with prompts addressing different ORCA model aspects throughout the semester and exploring participants' perspectives, experiences, and SE feelings. Sample journal prompts aligned with the ORCA model guided PST through progressive reflection, asking them to observe and identify areas for growth in their own instruction, articulate a personal research question and consider its impact on K–8 students, and apply feedback from their TLC to refine and improve their teaching practice.

After completing the LS and ORCA process, participants reflected on their experience during a 25-minute focus group (FG) interview with questions that addressed the impact on their teaching practice and lesson development, effects on K–8 student engagement and SE, TLC influence during student teaching, and what they would carry into future practice. FG interviews were audio-recorded and transcribed with all identifiable information removed. Recordings were deleted following transcription.

Data Analysis

Merriam's (1998) approach to data analysis, namely "consolidating, reducing, and interpreting what people have said and what the researcher has seen and read" (p. 178), was utilized in this study. Data analysis began with repeated readings of collected data, followed by in vivo coding using Dedoose. Qualitative data from participants' digital reflective journal, ORCA observations, TLC observations, and FG interview underwent thematic analysis using constant comparative data analysis (Fram, 2013). This method systematically compared all data within the dataset, ensuring all data collected was evaluated rather than possibly disregarded on thematic grounds. Dedoose software coded and examined data for patterns across reflective journals, FG interview, and observation documents.

Initial themes included teacher self-reflection, SE, lesson planning, K–8 student collaboration and engagement, differentiation, movement, peer collaboration, and professional growth. Based on emerging patterns, researchers used Bandura's (1977, 1986, 1997) self-efficacy theory to anchor data and relate findings to research questions. Moving recursively between data and self-efficacy theory, themes developed that merged and pointed to critical factors supporting TSE and professional reflection: critical conversations, peer mentoring, feedback, intentional planning and implementation, teacher collaboration value, and professional growth/application. These themes were aligned to Bandura's SE sources to match theory with practice and allowed researchers to

"make sense out of the data" (Merriam, 1998, p. 178). Table 2 presents Bandura's (1977, 1986, 1997) SE sources aligned with themes that emerged.

Researchers coded data individually and then compared their results for reliability. The coding and analysis of qualitative data was strengthened by triangulation of multiple data sources, thereby increasing the validity and reliability of the results.

Table 2. *Themes Aligned with Bandura's SE Sources*

Bandura's Self-Efficacy Source	Theme
Mastery Experiences	● Critical conversations ● Peer collaboration and collegiality ● Triadic and peer feedback ● Intentionality in instructional planning and implementation
Vicarious Experiences	● Critical conversations ● Peer collaboration and collegiality ● Triadic and peer feedback ● Intentionality in instructional planning and implementation
Social (Verbal) Persuasion	● Critical conversations ● Triadic and peer feedback ● Peer collaboration and collegiality
Physiological/ Psychological States	● Peer collaboration and collegiality ● Triadic and peer feedback

Findings

According to research on TSE, it is imperative that new teachers and PST recognize how they can influence student learning. This realization not only impacts early career teachers, but student success as well (Skytterstad et al., 2025). LS and the ORCA model were essential in participants' training as they learned to document observations and then apply newly learned instructional methods to their own lesson development. Researchers examined data from digital reflective journals, lesson observation notes, and audio-recordings of the FG interview to address the research questions: (1) How does the use of an intentional lesson study with reflection model (ORCA) impact preservice teachers' self-efficacy? (2) How does the use of an intentional lesson study with reflection model (ORCA) influence preservice teachers' use of engagement strategies? (3) How does participation in a peer-based professional learning community, beyond the triadic supervisory relationship, shape preservice teachers' reflective practice? Data revealed four overlapping themes related to the research questions: the value of critical conversations, peer collaboration and collegiality, triadic and peer feedback, and intentional instructional planning and implementation.

Critical Conversations

Critical conversations are invaluable for the support of PST development. Participants valued time for critical conversations about planning and instructional decisions impacting future classroom environments. Observation tools required participants to become more reflective as they observed other classrooms and their peer teaching. This focused analysis resulted in more critical and thoughtful dialogue pertaining to lesson development and application. Participant 8 noted, "It [LS] helped me take more of a backwards approach on my lesson planning . . . It also highlighted the importance of using an instructional strategy [movement] as an inspirational main part of a lesson instead of a small detail/impulse inclusion" (Reflective Journal).

Scripted programs can impact teacher creativity. Participants appreciated the observations and conversations that resulted in consideration of engaging activities to add instructional impact on scripted programs. One participant revealed, "I feel like with scripted curriculums, all of us are trying really, really hard to figure out ways that we can customize it more and make it more exciting and fun for the kids . . . So any time that we see each other doing creative things, then it's really easy for us to implement it into our class" (FG Interview). Engaging in collaborative critical conversations throughout the LS process fostered SE by allowing participants to feel more motivated and confident in their own lesson design (Schipper et al., 2019).

Peer Collaboration and Collegiality

Using the TLC Lesson Study Observation Form, participants were asked to observe their peers and discuss these observations in their TLC, offering a plethora of instructional ideas and also raising awareness of what was happening in other grade levels. According to Ridge and Lavigne (2020), peer observation and feedback can lead to instructional improvement by providing teachers with opportunities to reflect on their practices, share effective strategies, and receive support from colleagues. The intentionality of the TLC LS Observation Form required participants to reflect on their observations and then create suggestions or next steps, applying newly acquired knowledge. It provided PST with opportunities to grow in their understanding of classroom practices through observation of multiple classroom contexts and shifted the typical triadic relationship of PST, mentor teacher, and supervisor to include peer support. One participant noted the importance of viewing other classrooms during the LS process: "And then on a professional growth level, hearing different grade level perspectives made it a little bit less scary to envision yourself being in a different grade. In student teaching your only experience is in one grade, so being able to see what it's like in other grades was helpful" (FG Interview).

One participant appreciated the "shared camaraderie" that their TLC offered (FG Interview) and the opportunity to learn from peers at the same place with the same struggles. Observing TLC members allowed participants to reflect on classroom management: "I have learned that you can learn so much when watching other teachers (especially novice teachers) teach lessons. All classes present their own challenges and watching other teachers' management style gives me ideas for my own classroom management" (Participant 9, Reflective Journal).

The responsive nature of TLC to participants' unique needs was also a major asset. As Participant 8 explained, "I am very grateful for being part of a professional learning community!

It gave us a chance to discuss very specific topics in depth that are not usually prioritized in the discussion list. We had very reflective conversations and shared advice and personal experience which I thought was so helpful and will remember as I need lesson ideas in my future teaching." (Reflective Journal).

Participants took an active role in peer mentoring through hands-on PD grounded in classroom practice (Lee, 2008) which, in turn, fostered collegiality with their TLC (Korhonen et al., 2017). This sense of collegiality provided space for participants to reflect on specific wonderings in their practice and contemplate possible areas of future PD. Some participants reflected on the use of future instructional practices, such as student collaboration: "I wonder how can you get all students to collaborate during vertical board work. Can you set expectations, give group members jobs, or maybe set a time restriction?" (Participant 1, Reflective Journal). Others wondered about particular elements of their focus area: "How could I have gotten each [student] to practice the measuring skills (timekeepers and writers)? How could I use [student] interest/engagement in the post-activity discussion to take it further?" (Participant 6, Reflective Journal).

Lastly, several participants suggested that leaning on people like reading specialists and instructional coaches would be important to their future success. One participant commented, "As a first year teacher, your mentor that you're given, and other grade level teachers in the building are good resources who have experience. Asking them questions for advice is good to get other perspectives" (FG Interview). PST valued the importance of having the support of colleagues inside the school in the future.

Triadic and Peer Feedback

Participants valued the different types of feedback, including from their peers and mentor teachers, as an integral part of LS. Working with a mentor provided invaluable support and what participants labeled as "expert support." Peer-based feedback in groups is valuable and can enhance the quality of teaching and learning, especially when there is critical reflection about actual teaching practices (de Lange & Wittek, 2022). Engaging with peers during the LS process provided participants constructive feedback pertinent to improving instruction.

Data from reflective journals and the FG interview revealed that feedback during LS and the ORCA process was integral to participants' reflection on their practice, including in planning and instructional decisions related to K–8 student needs and in sharing ideas and resources. Participant 2 noted, "I loved hearing another opinion that has fresh eyes on my ideas." (Participant 2, Reflective Journal). Discussion with others and peer observations motivated participants to be more intentional about instruction (Schipper et al., 2018). Another participant remarked, "Peers can help give ideas and give feedback that is always useful to improve instruction" (Participant 10, Reflective Journal).

The benefits of peer feedback in fostering participants' SE were observed in the effort devoted to their focus areas and their professional growth. Participant 10 noted, "Some things I noticed about my partner's teaching was that the use of manipulatives seemed beneficial for students to use especially when regrouping multiple digit numbers." (Reflective Journal). Participants

became critically aware during their observations and thus more reflective. Possessing knowledge and skills related to effective teaching impacts TSE (Jerrim et al., 2023).

Engagement with their TLC also encouraged participants to reflect on how they might approach planning in the future and fostered participants' SE. "My TLC reminded me that we don't need to make a lesson from scratch just for this. In other words, we are aiming to improve and inspire an existing lesson with movement." (FG Interview). One participant stated, "I definitely think it built my self-efficacy, at least for my subject that I was focusing on, which is differentiation, because before I felt like I struggled with brainstorming ideas for differentiation" (FG Interview). As can be seen through participants' responses, the feedback aspect of LS developed their SE especially related to their particular focus areas.

Intentionality in Instructional Planning and Implementation

Research shows the importance of PST content and pedagogical knowledge in supporting K–8 students' success (Ciampa & Gallagher, 2021; Livers et al., 2021). PST must feel that what they have learned related to theory in their teacher preparation programs supports their teaching practices with intentionality for fostering student engagement and working with different curricula or instructional programs, including scripted curricula (Sandoval et al., 2020). Self-reflection is an integral part of a teacher's professional growth and development of their SE (Gün, 2010).

The theme of intentionality surfaced in the findings with regard to general lesson planning and instructional decisions related to both content and pedagogy. Participant 4 synthesized the importance of the intentional planning and reflection built into LS and the ORCA model: "Lessons are very complicated and complex. Breaking it down allows you to think about the process and ways the lesson will succeed" (Reflective Journal). Other participants considered how to include specific practices, such as having students "do the science when discussing topics that you can't physically see" (Participant 3, Reflective Journal). Participants discussed intentional thinking regarding specific content lessons, such as Participant 1, who noted: "I am thinking about how [to] implement student engagement during my Europe unit specifically for my Renaissance lesson" (Reflective Journal). Findings showed the internal dialogue that some participants engaged in regarding their instructional planning, such as "Why am I doing this, does it serve a purpose for my overall lesson? Is it doing what I want it to do? And if it doesn't, either ask myself, okay, do I even need this or how can I change it?" (FG Interview).

Intentionality related to K–8 student engagement was a recurring theme in the data. LS and the ORCA model caused participants to be mindful of what engagement looks like in a classroom setting and encouraged participants to explore different strategies for and possible effects of student engagement, including retention of content, fostering student agency, and building a positive classroom environment. Participant 2 shared, "In my future classroom, I want to give students agency by picking tasks that suit their interests and needs" (ORCA Observation Tool). Another participant stated, "I love having specific hand movements to match academic exercises/phonological awareness skills. It matches having a whole-body learning approach and keeps students engaged" (Participant 8, ORCA Observation Tool). Professional growth was

evident when participants set goals specific to their K–8 students' learning needs (Kager et al., 2022; Schipper et al., 2019).

Limitations

There are potential limitations to this study. First, as one of the researchers was also the participants' supervisor, researcher bias must be considered. To mitigate researcher bias, data sources were triangulated, and all researchers coded and interpreted the data and compared their analyses to validate findings.

As this was a case study with a small sample size, the generalizability of results is limited. All participants were placed in the same suburban school district and were yearlong PST. To address this limitation, future research could be conducted with PST across different school districts, in more traditional 16-week student teaching contexts. Future research might also include additional data sources such as ratings/scales to measure SE in a more quantitative manner.

Discussion

In training PST, the student teaching experience plays a central role in career preparation as they encounter real-world classroom challenges with guidance from mentors and university supervisors. The current study included peer support through a collaborative TLC, leading to deeper conversations and reflective practices (Azevedo et al., 2024). Expanding support beyond the triadic relationship of PST, mentor teacher, and supervisor to include peers proved to be empowering for participants. Empowerment is a vital component of TSE (Ali & Tatlah, 2022).

Through this experience, PSTs learned how to develop lessons with extensive engagement strategies in a variety of content areas. This compliments research by Nunez-Regueiro and colleagues (2024), revealing the need to support candidates with relationships among peers and mentors to support resource development, advances in technology, and personalized learning environments. Critical conversations among PST led to increased comfortability in curricular adjustments, in particular with scripted curriculum. Increasing opportunities for PST to converse with one another raised their awareness and repertoire of instructional strategies leading to more confidence in their ability to create enriching learning environments.

Part of TSE is being able to take constructive feedback and utilize it to make instructional improvements. Completing observations of peers also caused PST to rethink their own teaching. By processing instructional design with peers, they grew in their comfort levels pertaining to creation of lessons and reflecting through journaling on how to improve their instruction through intentionality regarding student engagement.

Teacher preparation programs often include observations of experienced teachers and professional reflection with mentor teachers. However, this study revealed that a structured, systematic approach embedding mastery experiences, vicarious experiences, and social persuasion supports PST not just during their semester but in building habits for future professional experiences. Reflection, both individual and in TLC, was essential for professional growth and SE. This intentional process might be replicated to increase PST and novice teachers'

SE, particularly given current teacher shortages and burnout concerns (Voss & Kunter, 2020) and with the rise of scripted curricula and reduction of teacher instructional autonomy (Hanks et al., 2021). In their research, Schipper et al. (2018) discovered that "LS is a powerful PD approach that enables teachers to become more self-efficacious and competent in certain teaching behaviour" and "that the explicit focus on pupil learning and the unique opportunities to collaboratively experiment with new teaching elements play a vital role in enabling this" (p. 118). Similarly, the combination of LS and ORCA with triadic support found in the present study resulted in purposeful mentoring which allowed PST to develop SE in their ability to positively influence the learning of their students through effective and equitable instructional approaches.

As indicated by Ciampa and Gallagher (2021), PST SE regresses during their first year of training and continues into their first year of teaching. Peer mentoring can be utilized as a method of supporting PST and beginning teachers. These early years are ripe for learning potential, but without effective supportive systems, teachers struggle and student success can be negatively impacted.

Ongoing lesson analysis, rather than one-time PD, proved more impactful for participants in this study and could be utilized as beneficial training for novice teachers, especially when connected to problems arising in practice. This job-embedded learning approach has been found to contribute to higher teacher self-esteem (Ali & Tatlah, 2022) and supported the development of collegiality among PST within our study.

Critical factors must be considered when designing similar models for supporting preservice and/or novice teachers. First, a yearlong experience is ideal for the immersive experience described for PST. The first semester allows PST to learn curricula, students, school climate, and develop relationships with mentor teachers and peers. Additionally, as de Lange and Wittek (2022) demonstrated, trust is essential in any professional growth model group, and time is needed to develop group trust. With trust, curricular knowledge, and a semester of pedagogical experience, PST can delve more deeply into LS and critical reflection on teaching practices in the year's second half. While not impossible, LS and the ORCA model would be more challenging to implement in traditional one-semester experiences.

Additionally, encouraging self-selected focus areas is important for PST or novice teachers to benefit most from LS and ORCA. Peer observations should target specific areas of professional growth, such as increased student engagement or culturally responsive learning environments. Opportunities for individual and collaborative reflection and discussion must be included before, during, and after planning and teaching.

Conclusion

In conclusion, research underscores the importance of providing teachers with meaningful support to enhance their effectiveness. This responsibility begins with teacher preparation programs and extends to school districts, which must be intentional in designing robust training and PD opportunities. Given the variability in teacher preparation, district mentoring programs should be tailored to address the diverse needs of new educators, particularly in areas such as

navigating scripted programs and planning instruction to meet the diverse needs of their student populations. Better support and PD for teachers leads to better outcomes for K–12 students.

To foster growth, schools should cultivate a culture of collaboration, collegiality, and reflective practice. Encouraging peer observations and open dialogue about classroom dynamics can strengthen TSE. It is important to acknowledge that teachers are at different stages in their professional journeys, and many may feel vulnerable or apprehensive about receiving feedback. However, every teacher brings valuable strengths to the table. By identifying these assets and addressing individual challenges through intentional, supportive practices, schools can help reduce burnout, improve teacher retention and support K–12 students' success.

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