



Choctaw Nation Partnership of Summer School Education (POSSE)





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POSSE Overview

The Choctaw Nation Partnership of Summer School Education (POSSE) program works with 86 school districts inside the 10.5 counties of the Choctaw Nation of Oklahoma to facilitate remedial reading and math at 46 designated sites. POSSE is for students in kindergarten through third grade who need intervention in the main subject areas of math and reading. POSSE curriculum also introduces students to other areas, such as STEM, art, music, nutrition, Choctaw culture and physical education. The students attend field trips that align with the curriculum. This summer program is sponsored by the Choctaw Nation at no cost to the families of the students. All necessary school supplies are provided, along with trade books, a camp shirt, and daily breakfast, lunch, and snacks. In 2019, POSSE provided summer education to more than 3,500 students and employed over 600 Oklahoma teachers, aides, and other educational support staff. The following link is a summary video of the POSSE program: <https://youtu.be/kli8PUvEKJc>



Research Overview

The summer learning program has been immensely successful and tribal leadership has explored its successes by conducting qualitative and quantitative research, such as surveys of parents and teachers. In 2019, POSSE staff took the research to the next level when the tribe collaborated with Oklahoma State University on quantitative analysis of student assessment scores and qualitative focus group interviews of POSSE principals and teachers. Future research is planned, including a survey of past and present POSSE leadership, focus groups of POSSE students and their parents, and surveys of POSSE principals and teachers. The results and conclusions of the 2019 research projects are discussed at length in this document.



**Qualitative Research Summary: Focus Groups of Principals and Teacher, May 2019.
“Perceptions of Teachers and Principals about the Influence of the Choctaw Nation
Partnership of Summer School Education (POSSE) on Teacher Practices and Student
Outcomes”**

Qualitative research methods explored stakeholders’ perceptions about the Partnership of Summer School Education (POSSE), the highly successful remedial education program sponsored by the Choctaw Nation of OK and its elementary school partners in Southeastern OK. Focus group interviews of principals and teachers occurred at the onset of the remedial summer school program in May 2019, on the eve of the Choctaw Nation-sponsored Professional Learning Conference for early childhood educators. The research subjects were from small and large schools in the tribal jurisdiction and included novice and veteran principals and teachers.

Several perceived benefits emerged from the research including increased student confidence and engagement, decreased academic regression, relaxed learning environment, small class sizes, and opportunities for innovative teaching and enrichment. Perceived challenges included attendance issues and greater selection of appropriate grade level reading materials. Additionally, participants expressed appreciation for the high-quality Professional Learning Conference that was free to educators.



Source:

Vasinda, S., Pulliam, J., & Utley, J. (2019). Choctaw Nation Partnership of Summer School Education (POSSE): Influence on Reading and ELA Evaluation Report (CRSTL-2019-003). Stillwater, OK: Center for Research on STEM Teaching and Learning, Oklahoma State University.



Quantitative Research Summary: Assessment Score Analyses, 2015-2018.

“Choctaw Nation Partnership of Summer School Education (POSSE): Influence on Reading and ELA Evaluation Report”

These quantitative research methods examined the trends in percentile rank for reading (two years) and English language arts (three years) scores across four groups of students who attended a K-3, remedial summer school program sponsored by the Choctaw Nation. Students who score below the 40th percentile on a standardized reading assessment were eligible for summer school. The findings revealed that initially, a significant gap existed between students that qualified and attended POSSE and students who did not qualify and did not attend. By the end of the first session of summer school, the gap appeared to be narrowing and a steady growth trend was evident in both groups of students who attended summer school. The 2015 mean scores were 73 percent for both reading and ELA, but by 2017, both mean scores were at 88 percent. Overall, the POSSE program had a positive impact on student learning, with the most significant gains during the first year, although subsequent years in POSSE helped the students maintain their progress.

Source:

Mwavita, M., Davenport, J., Utley, J., & Banks, E. (2019). Choctaw Nation Partnership of Summer School Education (POSSE): Influence on Reading and ELA Evaluation Report (CRSTL-2019-002). Stillwater, OK: Center for Research on STEM Teaching and Learning, Oklahoma State University.



Appendix A: Qualitative Research

Perceptions of Teachers and Principals about the Influence of the Choctaw Nation Partnership of Summer School Education (POSSE) on Teacher Practices and Student Outcomes

Funded by Choctaw Nation of Oklahoma

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Project Title: Choctaw Nation Partnership of Summer School Education (POSSE): Influence on Reading and ELA

Context (Directly from <https://www.choctawsummerlearning.org/>): The Choctaw Nation Partnership of Summer School Education (POSSE) partners with local school districts within its tribal jurisdiction to provide a 24-day summer learning program for qualifying kindergarten, 1st, 2nd, and 3rd grade students identified by an approved Oklahoma Reading Sufficiency Act assessment as students in need of intervention. POSSE utilizes a hands-on, engaging educational environment to deliver intense reading and math intervention and enrichment activities. Morning sessions focus on reading and math, and afternoon enrichment activities aim to deliver instruction in STEM, art, music, nutrition, and physical education.

POSSE operates at no cost to families. Each day, students receive a nutritious breakfast, lunch, and an afternoon snack. Students are provided basic school supplies, a camp shirt, and trade books for continued reading practice at home. Also, students attend at least three field trips that align with each bi-weekly educational theme.

POSSE has expanded across the Choctaw Nation to support over 80 school districts in 10 southeastern Oklahoma counties. A total of 3,586 qualifying students in grades kindergarten through 3rd participated in the 2018 summer session, and 600 Oklahoma teachers and educational support staff were employed to administer the program.

Program Evaluation Objectives

A purpose of this program evaluation is to ensure continuous improvement of the POSSE program and its educational approach and, now that it has been in operation for 7 years, to explore possible evidence of impact on students and classroom practices during the regular academic year from the perspectives of participating principals and teachers. Another purpose is to share the results of the POSSE program, so other school districts or sovereign nations may implement similar programs. Often stories of success are impactful to funders and others seeking ways to maximize the impact of programs' professional development.

In addition to the quantitative data that POSSE regularly collects, stakeholders are interested in administrator and teacher perceptions of the potential impact of the program through

stories/descriptions of student and teacher change because of participation in POSSE as well as the impact of the Professional Learning Conference.

The overall goals of this program evaluation included exploring the perceptions of teachers and administrators involved with POSSE on potential impacts of the program on student achievement, teacher practice, and possible school-wide innovation at home campuses. The evaluation focused on impact and change in:

- POSSE teachers’ practices as a result of teaching in the summer learning program;
- POSSE students attitude, behavior, attendance and academics;
- parental involvement in POSSE;
- school-wide innovations;
- overall experiences teaching in POSSE including benefits and challenges;
- use of trade books;
- potential changes in POSSE students’ attitude, behavior, attendance and academics; and
- use of reading/literature strategies highlighted during the summer Professional Learning Conference.

Additionally, teachers and principals were asked about their perceptions about the impact of the Professional Learning Conference on their practice or school in terms of student achievement and shifts in teaching practices.

Qualitative Evaluation of Grant Objectives

Teacher Focus Groups

Questions	Answers
Describe some of your experiences with POSSE, both positive and negative. What were some of the benefits and what are some of the challenges or drawbacks?	Overall, teachers noted students enjoyed participating in the POSSE summer school program and looked forward to getting their invitation. Another common benefit was smaller teacher to student ratios, and the ability to collaborate with teachers from across campuses and districts. This enabled more time and opportunities for personalized instruction with hands on activities that focused on what students need rather than state test preparation. The schedule and movement between teachers and varied activities in the POSSE summer school schedule supported student engagement and differentiated instruction. Both groups of teachers noted the POSSE summer school program provided an opportunity for continuous student learning, which prevented the summer slide. Teachers from the smaller districts mentioned the POSSE summer school program provided meals and childcare, as well as provided the opportunity for summer school that would not have been available

	<p>without the POSSE support. One teacher stated the POSSE summer school program was a “huge gift” for their school district.</p>
<p>What are some of the challenges or drawbacks?</p>	<p>Only the smaller districts noted challenges and drawbacks in the POSSE summer school program. Overall, these teachers noted the challenge of time before POSSE begins. Many teachers noted they had a very short transition time between the regular school year and the six-week POSSE summer school program. For many this transition was one or two days at school and a weekend, which made it difficult for school year teachers to get their belongings out of classrooms and POSSE teachers to get their summer school classrooms ready for students. Additionally, the short transition time left teachers and students feeling stressed and tired, without enough break time between the end of the school year and summer school. Some teachers expressed a frustration that there was not enough flexibility in the schedule to move the six-week program out to a later start date, while others believed there was flexibility in this schedule. One teacher said that when summer school starts right after the end of the regular school year, teachers are tired and exhausted and it is sometimes hard to jump right in with enthusiasm for summer school right at first. Also, “the kids need a little bit of a break.” Teachers also noted a challenge to the POSSE summer program is attendance. Student vacations can interrupt the summer school schedule and as the six-week program draws to a close absenteeism increases significantly.</p> <p>Additionally, teachers noted the lack of resources for activities was a challenge. Teachers felt they had few engaging activities available that were at the instructional level of the students. This was a problem when the activities were too difficult for the students or when students had previously attended the POSSE summer school program and had used the same materials / activities previously. One teacher stated she often turned to Pinterest to find supplemental activities, but this required a lot of research or prep-work to get the activities ready for the kids. The teachers felt it would be beneficial if they had an activity teacher with more resources available. Lastly, one teacher noted she would like to see the POSSE program expanded to higher grades because students who have attended in the past would continue to benefit from the program and are often frustrated when they are not able to continue attending.</p>
<p>How do you support these readers and writers and how is it the same or</p>	<p>Overall, teachers noted an increased focus on instruction driven by student needs as opposed to state benchmarks or high stakes testing. Teachers noted they first assessed students and then planned according to</p>

<p>different than how you would support them during the regular academic year? Thinking about those struggling readers, what are you doing now that is different or the same for those struggling students in the regular academic year?</p>	<p>the needs of students in the classroom. This increased focus on student needs included an increase in one-on-one, small group, and learning center instructional opportunities. Often students are grouped based on ability levels in the classroom. However, many teachers felt it would be beneficial to assess prior to grouping students. One teacher noted during the POSSE summer school program students are grouped based on ability levels and the content was departmentalized in math and reading. After working in the POSSE summer school program this teacher took ability grouping and departmentalizing of content back to their regular school site to adjust teaching practices during the academic school year.</p>
<p>What effective strategies did you bring to POSSE summer school from your regular teaching assignment? So, what were you doing already that you brought in when you started teaching POSSE? What are some of those strategies?</p>	<p>Overall, both groups of teachers noted the use of small group instruction and learning centers in the reading and math classrooms was carried over from their regular teaching assignments. One teacher noted, these small group instruction opportunities and learning centers were guided by the data from the initial assessments. In reading, classroom teachers spoke of utilizing kinesthetic strategies. These strategies included the Phonics Dance, HeidiSongs videos (YouTube), and other dancing games. Another strategy many teachers discussed was the use of authentic, high-interest, and non-leveled literature. One teacher stated she encouraged students to just spend time with high interest books, rather than being told to stay away from books not on their level. Teachers also noted they used shared reading and writing, guided reading, and journaling in their summer school classrooms. One teacher noted journaling was particularly helpful because it encouraged the children to write for the sake of writing, without attaching a grade. Two teachers shared the Heggerty Method for teaching phonemic awareness, this is a strategy their home schools adopted, and the teachers brought it with them to the POSSE classroom. In the math classroom, teachers shared their manipulatives and math tubs from their home classrooms.</p>
<p>What strategy/ies impact student learning outcomes the most?</p>	<p>Teachers in both the larger and smaller districts noted strategies that included physical movement were among the most impactful in improving learning outcomes. Strategies discussed by the teachers included the Phonics Dance, Hunk and Chunk, flyswatter games, and HeidiSongs. Along with movement, the use of manipulatives was discussed as making positive impacts on learning outcomes. Another impactful strategy discussed was small group instruction and learning centers. Teachers expressed these strategies were often difficult during the regular school year because of the larger class sizes, however, during the POSSE summer school program class sizes are significantly smaller</p>

	<p>making these strategies more manageable, because of the co-teaching organization (two teachers per class). Teachers noted the smaller class sizes also made whole group discussions and guided reading more manageable. One teacher articulated that during the school year there was not enough time to allow students to talk to activate prior knowledge, but during the POSSE summer school program talk and discussion was her most valued strategy.</p>
<p>How are the trade books used by the kids? Are they used during the program? Are used in your regular classroom? Do they get to take them home?</p>	<p>Overall, the teachers noted the children were thrilled to be able to take the books home and become book owners. One teacher stated that this ownership helped her students gain confidence and fostered continued reading practices. Some of the teachers stated they used the trade books as the basis for thematic units, building the skills development lessons around the trade books given each year. The teachers also shared that they used the books for comprehension, shared reading, guided reading, read aloud and think aloud. The teachers also questioned the age appropriateness of some of the trade books. In both groups the teachers felt there needed to be more incrementally leveled books available to the lower grade students, especially kindergarten, so that students had books that they can read independently and have authentic practice in word identification. These teachers stated they used the provided trade books as read aloud and discussion starters, which are good for vocabulary and oral language development, but expressed a need for independent reading books for students to read on their own. These need to be what is called “just right” texts that students can read with 95% accuracy or better. There is a need for books that stretch students’ vocabulary and those they can read independently to build reading fluency. The teachers noted they would like to have more input in selecting trade books each year.</p>
<p>What kinds of changes do you notice if any in children who participate in the POSSE summer program?</p>	<p>Overall, teachers noted increases in student confidence and their enjoyment of or excitement about school. Prior to the school year students feel frustrated and overwhelmed in school. As they engage in the POSSE summer school program, they gain confidence as they experience new learning opportunities in the smaller classroom setting. Teachers attributed improved confidence and excitement for school was achieved because students were gaining new experiences, working in more relaxed atmospheres, and developing new relationships with teachers and students in the classrooms of the POSSE summer school program. Many teachers noted there was a change in student mindsets. Prior to the POSSE summer school experiences students were unwilling</p>

	<p>to try if they were not sure about what was being asked. After participating in the POSSE summer school program students are more willing to try and to persevere. One teacher stated, the POSSE summer school program helped students develop grit and change their thinking from “I can’t” to “I can!” Teachers also noted the POSSE summer program helped prevent the “summer slide”, that is, the students were better able to retain the content and skills taught during the school year than they would have if they were sitting at home.</p>
<p>How has the Professional Learning Conference (PLC) impacted your teaching?</p> <p>What PLC strategies impacted your teaching in summer school?</p>	<p>The biggest impact the PLC had on teachers was the opportunity to learn about new or fresh ideas for teaching. Both groups of teachers were excited by the possibility of learning these fresh ideas and then taking them back to try them out on their POSSE summer school classrooms. The teachers felt it was beneficial because it gave them time to figure out what worked and what did not work for them with a smaller group of students before trying it out with a large class during the academic school year. Teachers also noted the speakers at the professional learning conference were motivational, inspiring them to make changes and take a chance, or risk, on something new. The teachers shared that this was the only real professional development they attend because their schools do not have the funds for other professional development opportunities. Additionally, one teacher noted they appreciated the keynote speakers giving out their contact information because it gave them additional resources when they went back to their campuses to try the new ideas learned at the conference.</p>
<p>Which strategies that you’ve learned through the professional conference and through POSSE have you used through your regular teaching assignment?</p>	<p>Overall, teachers noted they have implemented the Phonics Dance, Hunks and Chunks, and Cara Carroll’s Teachers Pay Teachers resources as the most widely implemented strategies and tools. One teacher stated, “She’s from Texas so we feel like she’s our neighbor and we know her” when describing Cara Carroll and her teacher resources. Additionally, some teachers shared they have implemented Tunstalls’ guided math into their regular teaching assignment. One teacher stated they implemented Go Noodle (movement app/resource) into their curriculum after attending the conference in a previous year.</p>

<p>What additional support if any do you need to implement strategies learned at the professional learning conference?</p>	<p>The teachers noted it would be beneficial to have something tangible, perhaps a flash drive or Google Drive, with the information presented at all of the sessions for the professional conference. There are often times when they are interested in a session, but unable to attend because it conflicts with another session they wish to attend. One teacher also noted it would be beneficial if the Professional Learning Conference occurred prior to the start of POSSE summer school. The teacher felt this would help her better implement the strategies learned at the professional learning conference.</p>
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Principal Focus Groups

Questions	Answers
<p>What changes, if any, have you noticed in POSSE teachers' practices in teaching reading and /or math as a result of teaching in the summer learning program?</p>	<p>Overall, principals noticed an increase in flexible, small group instruction focused on student needs in reading. These needs were identified through formative assessment, which provided more opportunities for differentiated instruction. Teachers learn from each other in the co-teaching environment and bring new ideas and strategies back to their home campuses. They also noticed POSSE teachers engaging in more risk-taking of trying out new ideas and strategies. Regarding changes in math instructional practices, principals reported more use of manipulatives and hands-on instruction through the use of math stations. One principal noticed an increased focus on mathematical understanding rather than only procedural knowledge. Another noticed an increase of critical thinking.</p>
<p>What changes, if any, do you notice in the students who attend the POSSE summer program?</p>	<p>The most reported changes noted in students was in their confidence, sense of agency (believing that they are capable of the summer school work) and the avoidance of the "summer slide". Principals attributed the focused and flexible small group instruction as confidence boosters for the students, which attributed to both confidence and agency. Students who participate in POSSE do not experience the summer slide, or loss of school year gains during the summer. Because students are engaged with an engaging summer learning program, they maintain their end of school year progress. Principals notice students' positive attitude about attending POSSE and that attendance is only an issue when there is a conflicting sports camp or another type of summer experience. Positive teacher-student relationships and engaging lessons and experiences were often attributed to these changes in student confidence and agency as well as very few discipline problems.</p>

<p>What changes, if any, do you notice in terms of parents involvement?</p>	<p>POSSE parents seem to participate in the field trips more than during the school year with one principal noting that often the parents learn through the field trips alongside the children. Principals noted that parents participated in breakfast with their children, opening routines, and volunteer for the afternoon enrichment classes. Parents seem more relaxed about communicating with the summer school teachers. Summer school parent nights are better attended than similar school year parent nights.</p>
<p>What innovations have you / has your campus implemented as a result of the POSSE Summer Learning Program?</p>	<p>Reported innovations were diverse, but one consistent theme throughout the interviews was the notion of trying out new ideas in summer school and then bringing it to the home campus/ district with one principal calling summer school an “incubator for new ideas”. The most often mentioned of the new ideas / strategies tried included a variety of small group instructional strategies. These included focused needs and fluid groups. Other innovations included collaborations within grade-level teams and across grade-levels, more hands-on math and science instruction, higher quality assessment and grading strategies, the Phonics Dance, math “estimystery”, buddy reading, and co-teaching. They also talked about how POSSE teachers become leaders on their campus and how they depend on them for bringing new ideas and mentoring other teachers to support innovations that come from POSSE. Principals also noted the appreciation of networking opportunities with other POSSE principals. They noted how much they learn from each other.</p>
<p>In what ways, if any, is the Professional Learning Conference beneficial to teachers?</p>	<p>Principals expressed great appreciation for the quality of the PLC and the well-known speakers that keynote and present. They said that teachers are excited about the conference each year and that they do not have the resources to provide an event of this quality. They noted that the PLC is motivating, and that teachers and principals have the summer to reflect on and plan for what they learn at the conference. The Make & Take session was specifically noted as valuable as well as having both nationally well-known speakers as well as successful classroom teachers. Many small districts feel isolated and the conference provides high-quality professional development that they are unable to duplicate on their own. Principals also noted that this is professional development for them, as well, and that they do not have the opportunity for this type of professional development and networking. Although the majority like the beginning of summer date, one or two suggested it would be motivating right before school and one also suggested another similar event mid-year. The conference site and amenities was also noted as a plus as well as the reasonableness of the conference hotel rate.</p>

<p>How have the POSSE Summer Learning Program’s methods of teaching and learning changed or affirmed your perspective of elementary education?</p>	<p>Participating in POSSE is a reminder of the mission and vision of helping children. The importance of teacher and principal collaboration and the sharing of successful strategies and ideas was affirmed through participation in POSSE. The sharing of strategies and resources has been valuable. One principal and his/her school has been transformed by co-teaching. S/he elaborated on the benefit of “growing” teachers this way and the great benefit to both teachers and the students. Administrators appreciated the focus on learning without all the stress and paperwork of the school year. The relaxed nature of POSSE was often noted and identified as “the way school should be.” The POSSE experience supports the notion that education can positively change a generation.</p>
<p>What else would you like to tell us about your perspectives of POSSE and any impact on your students, teachers, parents, or school that I didn’t ask?</p>	<p>The appreciation of and attribution for the Choctaw Nation’s contribution to the southeast region of Oklahoma was mentioned throughout the interviews. The Choctaw Nation and POSSE are considered an important resource, idea incubator, and place to “grow” teachers and students. A sense of both pride and trust exists between district leaders and the Choctaw Nation. Principals view POSSE and the Professional Learning Conference as an investment in their districts, their teachers, and their students. Material and professional development resources benefit districts during the school year. They appreciate the opportunity POSSE offers to supplement their teachers’ incomes, as well, as it is difficult to attract teachers to southeastern Oklahoma.</p>

Overall Findings

The findings reported in this section reflect seven main cross-cutting themes across principals and teacher focus groups, some of which did not come directly from focus group questions, but emerged from conversations in the focus groups. The main themes are listed as follows:

Perceived Benefits of POSSE:

Increase in Student Confidence: Both teachers and principals noted that student confidence and sense of agency are the most evident changes they see in students who participate in POSSE. One teacher articulated this change as “they change their thinking from “I can’t” to “I can!”

Avoiding Academic Regression (“Summer Slide”): The most current research on the loss of school skills over the summer is mixed indicating that children from mid to high SES families experience growth over the summer and high percentages of children from low SES homes experience a loss of academic growth made over the school year often referred to as “the summer slide” (Slate, S. L., Alexander, K. L., Entwisle, D. R., & Olson, L. S., 2012). How low-income children spend their summers can determine a loss of growth made during the school year, maintenance of growth, or increased reading levels (Allington, et al., 2010). Access to books of interest increased book reading and reading comprehension over a period of three summers among children with fewer resources (Allington, et al., 2010). Both principals and teachers indicated that POSSE students avoided the “summer slide” and attributed that maintenance to both the morning focused reading and mathematics instruction and the afternoon enrichment.

Co-teaching Environment Provided a Smaller Teacher-to-Student Ratio with Three Distinct Opportunities: *Collaboration, Differentiation, and Small Group Instruction.* Having two teachers in classrooms of 20 students provided a 1:10 teacher to student ratio which afforded more opportunities for collaboration, small group work, and differentiation.

Collaboration: Both teachers and principals recognized the co-teaching opportunities to be a strength, not just to POSSE, but to their school-year districts/classrooms. Teachers from small districts in which there is only one teacher per grade level have the opportunity to collaborate and learn from each other. All teachers, regardless of the district size said they also take new practices back to their school-year classrooms and colleagues. This creates a professional learning network that is noted as a strength.

Small Group Instruction: The co-teaching environment also affords smaller teacher to pupil ratio, most often reported as 1:10. With smaller numbers, teachers were able to divide students into smaller instructional groups, which provided more opportunities for differentiated instruction.

Differentiated Instruction: The combination of use of formative assessments, collaboration for instructional ideas and approaches, and smaller teacher/student ratios allowed for more targeted small groups as well as individual instruction.

Positive and Relaxed Learning Environment Contribute to Success: The summer school environment was described over and over again as “relaxed”. Because there is no high-stakes assessment associated with the summer school program, teachers and administrators felt more relaxed about the pace and scope of the program, which could also contribute to reduced anxiety. The morning classes focused on reading and mathematics, and the instruction was described as focused on students’ learning needs rather than test preparation. The afternoon enrichment classes supported an atmosphere of exploration and experimentation in an unhurried manner. Participants report that this relaxed and engaging atmosphere extended to both the students and their parents or caregivers. Students were more relaxed, yet engaged and focused and parents seemed more willing to talk to the teachers in this context. Teachers also felt more comfortable taking risks and trying new ideas during summer school.

POSSE as an Idea Incubator and Pilot Space: POSSE serves as a place to pilot or “incubate” new ideas or approaches. Both teachers and principals noted that new ideas are piloted during POSSE to determine effectiveness prior to implementing during the school year as part of their regular practice. As mentioned above, teachers are more inclined to take risks during POSSE because of the smaller group size, relaxed atmosphere, and inspirations from the Professional Learning Conference or from co-teachers.

Enrichment / STEAM Add Additional Benefits: In addition to maintaining school year progress, the afternoon enrichment provided opportunities that were unavailable during the school year. The STEAM focus provides both enrichment and concrete experiences that bring important background knowledge for both content knowledge in math and science, but also offers background knowledge that students can bring to disciplinary reading as a potential for better reading comprehension. Recent research indicates that the enrichment that many middle-income and high-income families provide for their children in the summer actually results in increased

academic achievement over the summer, along with reading books of interest (Allington, et al, 2010; Slate, S. L., Alexander, K. L., Entwisle, D. R., & Olson, L. S., 2012).

Summer School Structure / Schedule Contributes to Engagement: Principals and teachers discuss engagement and the structure of summer school as positive and attributed it as a factor in its success. Students have reading and mathematics classes in the morning with small group instruction for both, engaging isolated skill work in reading and math manipulatives and stations for skills practice. The afternoon focuses on STEAM exploration, experiments and field trips with the benefits described above. The inclusion of meals was also noted as a positive part of the structure and resources that POSSE provides. According to principals and teachers, this structure has worked well over the 7-year history of the program. Often morning and afternoon teachers are different sets of teachers, so most teachers teach ½ day during the program which was also identified as a positive in terms of a summer break for faculty.

Perceived Challenges and Struggles:

Overall, both principals and teachers are enthusiastic about and genuinely appreciative of the opportunities, support, and resources provided through POSSE. Challenges that did surface were as follows:

Attendance: There are some issues of attendance due to competing camps and other summer activities that some students and families have access to. Some principals leveraged participating in the field trips as incentive to attend each day. Transportation was an issue affecting attendance for some.

Independent Reading Books for Students: All teachers expressed an appreciation for the trade books that POSSE provides to the student and that book ownership was appreciated by the students, too. These books are used for reading aloud and shared reading to support the summer school theme, but teachers expressed the need for books that are written at the reading level of the students, too. There are few books that are easy readers for kindergarteners and first graders to practice independent reading and many of the books are too easy for third graders.

Other Notable Findings: Although most conversations in these interviews focused on reading processes and skills, the use of manipulatives in mathematics was frequently mentioned as a positive instructional practice fostered and maintained during POSSE. “Two overwhelming reasons for the use of manipulatives are teachers believe that the materials benefit children’s mathematics learning and that children enjoy using them” (Perry & Howard, 1997, p. 27). However, Puchner and colleagues (2008) found that in three of their four classrooms they studied, manipulatives were not a tool to learn a concept but that the “focus for students became figuring out how to use the manipulative to come out with the answer they already knew, and do what the teachers expected” (p. 321). In other words, teacher may teach students how to directly use the manipulative as direct instruction rather than using the tools to help student make conceptual sense of the mathematics and how/why the procedure worked. Thus, professional development is recommended to support teachers’ use and understanding of tools used to enhance student learning, particularly conceptual learning.

Recommendations

Academic Growth as a Goal: Neither teachers or principals mentioned academic growth as an outcome of participation in POSSE, only maintenance and the avoidance of the summer slide. While avoiding the summer slide is definitely an important benefit, students who are summer school candidates have already been identified as needing more instruction and are often behind their peers. An additional 6-weeks of instruction could provide growth and is a reasonable and desirable goal. Teachers noted that there are few books available at the students' reading level. Growth in guided reading groups is dependent upon having two types of books: 1) books in the instructional zone (level just slightly above their current capabilities) and 2) books that are at their current reading level (Fountas & Pinnell, 2016). The first type of books is used in small group instruction to highlight new levels of text complexity and develop new reading strategies at higher levels of text complexity. The second type of book is at or slightly below current reading level to practice fluency. Readers become more fluent when they have lots of practice with books that are easy for them. Recommendation to invest in guided reading libraries at each site so that students have many books written at their reading level and just above their reading level for small group instruction. Professional development to support explicit and engaging small group instruction is also recommended. This will support student growth in reading more complex texts. Focusing on possible growth during the summer program rather than simply a way to keep students from regressing has the potential to shift the teachers' and principals' thinking from summer school as combatting the summer slide to considering how students might exceed where they ended the school year.

Leveraging the Power of the Professional Learning Conference: The Professional Learning Conference (PLC) was continually cited as a powerful and positive influence on practice. Both teachers and principals expressed great appreciation for the caliber and quality of the keynotes and session presenters.

Date. There were requests for the date to be prior to the start of summer school so that new ideas / strategies could be developed from the beginning of POSSE. Overwhelmingly, participants preferred the beginning of summer time frame which gives time for reflection prior to the regular school year. Teachers indicated they would like to have more time to reflect and implement ideas prior to summer school, but for many the PLC happens after POSSE begins.

Summer School Orientation: Moving the date to prior to the start of POSSE could also be leveraged to provide a summer school orientation for teachers. After the interviews, some teachers mentioned that they felt a bit lost at the beginning of summer school and would appreciate a face-to-face orientation. Consider providing a POSSE orientation / professional development the day or ½ day before or after Professional Learning Conference or develop a video-based orientation, which may need to be site specific. Consider a PD focus on different strategies for working with students who have struggled in a summer school setting.

Sustained Professional Development. Another accolade for the PLC was sustained professional development. Teachers and principals appreciated that several of the same types of sessions were offered more than one year so that proficiency and confidence in the new strategies could be developed. Consider surveying teachers for a sustained professional development focus based on a practice they would like to grow, such as reading comprehension strategy instruction, guided reading, guided math, or project-based learning. Most of the strategies that were acknowledged

for reading by name were phonemic awareness and phonics focused. While these are important for word identification, additional focus on appropriate fluency, vocabulary, comprehension, and motivation would support growth in reading comprehension and reading enjoyment. Focus on sustained professional development in these areas could provide opportunities for growth, rather than maintenance only.

Leverage the Afternoon Enrichment to Facilitate Evidence-based Findings on Enriched Summer Learning of Middle and High-Income Families: POSSE should continue to invest in the STEAM enrichment and concrete experiences because of the important background knowledge it provides for the students. Learners bring this background knowledge to their next grade level a high probability that this knowledge will be an advantage in the STEAM subject areas and also in reading and writing proficiencies. Because of recent research that points to academic gains during summer because of enrichment activities, the enrichment afternoons have the potential to increase academic achievement.

Although the Choctaw Nation of Oklahoma is the over-arching community partner, school districts need to continue local community partnerships for enriched summer school success such as field trips and success celebrations described by principals. Community partnerships are often underutilized and require thoughtful planning to best organize and implement (Epstein, 2019; Sanders, 2001). Epstein (2019) refers to these partnerships as “little extras that make a big difference” and the focus group data supports this notion. Principals, in particular, were interested in the types of field trips taken at various sites. Field trips provide experiences and background knowledge for content areas that are not a regular part of the school year experience. This background knowledge also supports better reading comprehension (Taberski, 2011). Students look forward to these opportunities, and parents volunteer to attend. According to some principals, there are parents who appreciate the experiences as much as their children, thus community partnerships have the potential to support two generations of community members. Consider including time for principals and teachers to share community partnership successes and/or add sessions at the PLC on ways to further develop local partnerships and ways for rural communities with fewer resources to partner with universities or neighboring districts via video conferencing to develop more community partnership (White, Morsink, Shira-Hagerman, & Hartman, 2019).

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Appendix A

Teacher Focus Group Questions

The first few questions are about the POSSE summer school experience.

- Describe some of your experiences with POSSE, both positive and negative.
 - What are the main benefits of POSSE?
 - What are some challenges or drawbacks of POSSE?
- So much of summer school is about supporting students who have struggled and not made the expected progress. How do you support these readers and writers, and how is it the same or different than how you teach in the regular academic year?
- For these next few questions, please use index cards to jot down ideas. Label them 1 to 4.
Card 1. What effective strategies did you bring to POSSE summer school from your regular teaching assignment?
- Card 2. Which strategies seem to impact student learning outcomes the most?
 - Please give an example.
- How are the trade books donated by POSSE used in the classroom for instruction?
 - How are the trade books used by the children?
 - During the program?
 - In your regular classroom?
 - At home? (do they take them home?)
- Card 3. What kinds of changes do you notice, if any, in children who participate in the POSSE Summer Program?

The next questions are about the Professional Learning Conference.

- How has the Professional Learning Conference impacted your teaching?
 - In the POSSE Summer Program?
 - In your regular teaching assignment?
- Card 4. Which strategies you've learned through the Professional Learning Conference and POSSE have you used in your regular teaching assignment?
- What additional support, if any, do you need to implement strategies learned in the Professional Learning Conference?
- Where do you get support when you need help with teaching or learning a new strategy?
- What innovations have you implemented as a result of participating in POSSE or the Professional Learning Conference?
- Is there anything that I haven't asked you about the impact of POSSE or the Professional Learning Conference?

Appendix B

Principal Focus Group Questions

The Choctaw Nation is interested in knowing if you've noticed any differences in teachers, students, or parents after being part of the POSSE Summer School Program. So, you have 3 index cards. Please put teachers on one, students on another, and parents on one so you can jot down any thinking as I ask you some questions.

1. What changes, if any, have you notice in POSSE teachers' practices in teaching reading and /or math as a result of teaching in the summer learning program?
 - a. What readings practices have changed?
 - b. What mathematics practices have changed?
2. What changes, if any, do you notice in the students who attend the POSSE summer program?
 - a. What types of academic changes, if any, have you noticed?
 - i. What kinds of reading changes, if any?
 - ii. What kinds of mathematics changes, if any?
 - b. What kinds of behavioral changes have you noticed, if any?
 - c. What kinds of attitude changes have you noticed, if any?
 - d. What kinds of attendance changes have you noticed, if any?
3. What changes, if any, do you notice in terms of parents involvement?
 - a. What changes in the amount of time spent with children at school, if any?
 - b. What changes in support of school work or homework, if any?
4. What innovations have you / has your campus implemented as a result of the POSSE Summer Learning Program?
 - a. How did it go?
 - b. What kinds of support did teachers who haven't participated get to move them toward this practice / innovation?
5. In what ways, if any, is the Professional Learning Conference beneficial to teachers?
 - a. What differences, if any, do you note in the classrooms of teachers who participate in the Professional Learning Conference?
 - b. What are some strengths of the PLC, please be specific?
 - c. What are some weaknesses of the PLC, please be specific?
 - d. How could the PLC be improved?
6. How have the POSSE Summer Learning Program's methods of teaching and learning changed or affirmed your perspective of elementary education?
7. What else would you like to tell us about your perspectives of POSSE and any impact on your students, teachers, parents, or school that I didn't ask?



Appendix B: Quantitative Research

Choctaw Nation Partnership of Summer School Education (POSSE): Influence on Reading and English Language Arts - Evaluation Report

Funded by Choctaw Nation of Oklahoma

PIs: Juliana Utley, Mwarumba Mwavita, and Sheri Vasinda, Oklahoma State University

Project Title: Choctaw Nation Partnership of Summer School Education (POSSE): Influence on Reading and English Language Arts

Context: The Choctaw Nation Partnership of Summer School Education (POSSE) partners with local school districts within its tribal jurisdiction to provide 23-days of instruction in a summer learning program for qualifying Kindergarten, 1st, 2nd, and 3rd grade students identified by an approved Oklahoma Reading Sufficiency Act assessment as students in need of intervention. The educators in the summer learning program participate in a full day of professional development during the Professional Learning Conference. POSSE utilizes a hands-on, engaging educational environment to deliver intense reading and math intervention and enrichment activities. Morning sessions focus on reading and math, and afternoon enrichment activities aim to deliver instruction in STEM, art, music, nutrition, and physical education.

POSSE operates at no cost to families. Each day, students receive a nutritious breakfast, lunch, and an afternoon snack. Students are provided basic school supplies, a camp shirt, and trade books for continued reading practice at home. Also, students attend at least three field trips that align with each bi-weekly educational theme.

POSSE has expanded across the Choctaw Nation to support over 80 school districts in 11 southeastern Oklahoma counties. A total of 3,788 qualifying students in grades Kindergarten through 3rd participated in the 2019 summer session, and over 800 Oklahoma teachers and educational support staff were employed to administer the program.

Program Evaluation Objective

The overall objective of this program evaluation was to explore the influence of the Choctaw Nation Partnership of Summer School Education (POSSE) program on students' reading and English Language Arts (ELA) achievement. Specifically, the research question guiding this evaluation was what are the trends in percentile rank for reading and ELA scores across four groups?

Background Literature

Summertime is often a time when students are no longer engaged in traditional school activities, specifically related to increasing academic gains. Consequently, students face what is referenced as the “summer slide.” Defined in the current literature, the summer slide is the loss of academic knowledge over the summer when school is not in session (Borman & Dowling, 2006). Since all students face the summer slide, current research seeks to explore best practices towards alleviating it. One specific intervention illustrated throughout current literature is the implementation of summer school interventions. Summer school often receives a negative connotation as individuals may assume summer school as necessary only for students at risk for failing or not passing the previous year’s courses. However, all students can gain from summer school as a prevention and intervention tool for reading, math, behavior, and additional academic and social emotional support.

Effectiveness of Summer School

In his policy brief on summer school, Cooper (2001) points to the significant growth of summer school programs and participation across school districts within the U.S. One of the main components policymakers look toward when implementing summer programs stems from the research regarding summer learning loss. Since students are on summer break for two to three months without required academic stimulation, retention of information from the previous school is lost. Specific studies have found that test scores dropped in the fall from when students left in the spring (Cooper, 2001). In a meta-analysis of the literature, Cooper, Nye, Charlton, Lindsay and Greathouse (1996) found that:

- on average, children lose one month on achievement test scores over the summer vacation;
- summer loss is greater in math facts and spelling;
- summer loss is greater in math than reading; and
- summer vacation increases disparities between middle-class and disadvantaged students’ reading scores. (p. 3)

To further promote effectiveness, studies demonstrate that the most effective summer school programs need funding to address reading and mathematics, while also attributing funds to foster participation of disadvantaged youth such as transportation and food. Lastly, to produce effective summer school programs, there must be knowledgeable teachers to help students as well as rigorous formative and summative assessments (Cooper, 2001).

Achievement Gap

Students enter the school system with various academic backgrounds. Specifically, discrepancies appear between low socio-economic status (SES) students when compared to their more affluent counterparts. Recent literature attests that individual student academic trajectory remains constant throughout one's academic career (Edmonds, O'Donoghue, Spano, and Algozzine, 2009). This implies that students who enter school further behind than their counterparts will often stay behind unless meaningful, explicit interventions and preventive measures are implemented to ensure the student’s overall success. In line with previous literature, Zvoch and Stevens (2015) also point out that maintaining learning presents concerns when children go on a three-month summer break. Research has shown that these long summer breaks can be problematic particularly for disadvantaged students resulting in declines in learning (Alexander et al., 2001; Cooper, Nye, Charlton, Lindsay, & Greathouse, 1996). Summer school has been one method that practitioners, legislators, and teachers utilize in efforts to minimize the achievement gap.

Teach Baltimore is an example of a summer school program implemented with low-SES students in an urban populated district in efforts to alleviate the summer slide demonstrated by all students, particularly focusing on increasing gains amongst students from low-SES backgrounds. Teach Baltimore promotes summer learning opportunities for students in high-poverty communities and seeks to improve teacher recruitment and retention within the city of Baltimore through use of teacher candidates. A key component of Teach Baltimore was to train instructors (preservice teachers) for three weeks prior to the summer program. Program evaluation of Teach Baltimore found that with regular attendance the achievement gap can be improved (Borman, et al, 2006).

Reading Deficits

One of the biggest academic deficits practitioners and teachers face among students is reading and low literacy rates. These deficits are commonly seen among students from low-socioeconomic status (SES) with limited access to resources (Denton, et al., 2010) and as literature reports the best time to intervene with reading disabilities is during one's early elementary years (Christodoulou, et al., 2017). Nonetheless, many students face reading deficits and disabilities specifically during early elementary years (Torgesen, 2002). A recent study (Christodoulou, et. al., 2017) found that an intensive summer school reading intervention for students with reading disabilities and deficits resulted in students making academic gains specifically in oral reading fluency and symbol imagery.

In addition to alleviating reading deficits illustrated during the early elementary years, reading deficits are often demonstrated among low-SES population with limited access to resources. Consequently, students with reading disabilities and deficits that are unaddressed continue to struggle in many academic subjects where reading is crucial for understanding. Kim (2004) explored whether students reading books during summer vacation and increasing their access to books during summer would increase their fall reading proficiency. Findings from this study, indicated that, in fact, summer reading programs do encourage students to read more over summer, thus are a beneficial way to alleviate reading loss (Kim, 2004).

In summary, summer school programs serve as a tool to prevent and intervene with students who may have academic deficits and behavioral or social emotional problems. As demonstrated through current literature, the best time to intervene with students is when they are young, during elementary years to ensure higher rates of success over time.

Evaluation of Grant Objectives

General Descriptives

Table 1 provides an overview of the number of students for which scores for reading and English language arts were available. For reading report card scores, data were available for two years of summer school with the initial year of 2015. Year 3 for reading was eliminated from analysis because students stopped receiving a reading grade after 4th grade, which resulted in too few scores in data set. For English Language Arts (ELA) report card scores, the initial year of 2015 and three years of data were included in the analysis. Approximately one-third of the qualified students attended summer school each year. To “qualify” for summer school, a student would score below the 40th percentile on the Standardized Test for Assessment of Reading (STAR) by Renaissance©.

Table 1**Number of Students by Qualification, Attendance, and Assessment Type**

	Not Qualified		Qualified	
	Did Not Attend	Attended	Did Not Attend	Attended
Reading (2015-2017)	420	31	152	47
ELA (2015-2018)	405	30	139	46
Normed Reading PR (2015-2018)	419	31	153	47

Table 2 provides a summary of the means and standard deviations for both reading and ELA report card scores by year. Inspection of data in Table 2 reveals a large gap between students that qualified and attended POSSE versus those who did not qualify and did not attend initially. For both reading and ELA report card scores, by the end of one year of summer school this gap appears to be closing. Further statistical analysis was conducted to confirm these observations.

Table 2**Descriptives for Reading and ELA Report Card Scores for Student Groups by Year**

Group	<i>n</i>	2015	2016	2017	2018
		M (SD)	M (SD)	M (SD)	M (SD)
Reading:					
Not Qualified, Did Not Attend	420	91.06 (5.63)	90.31 (5.83)	90.16 (6.39)	
Not Qualified, Attended	31	84.35 (8.50)	85.87 (7.34)	87.74 (5.83)	
Qualified, Did Not Attend	152	80.53 (9.68)	85.86 (6.82)	85.53 (7.82)	
Qualified, Attended	47	73.72 (12.39)	88.51 (6.83)	87.97 (4.41)	
ELA:					
Not Qualified, Did Not Attend	405	89.97 (6.37)	92.20 (5.96)	92.45 (5.74)	90.20 (6.55)
Not Qualified, Attended	30	82.00 (6.62)	85.93 (7.77)	88.93 (6.74)	86.40 (7.70)
Qualified, Did Not Attend	139	81.37 (10.90)	86.51 (7.91)	86.81 (6.86)	85.50 (8.26)
Qualified, Attended	46	73.22 (13.55)	88.15 (5.22)	88.54 (6.40)	88.74 (7.34)

Table 3 provides a summary of the means and standard deviations for students' normed reading percentile rank scores by year. Inspection of data in Table 3 reveals what appears to be a significant increase for students who qualified and attended in comparison to smaller increases by other groups. Further statistical analysis was conducted using trend analysis.

Table 3

Descriptives for Normed Reading PR scores for Student Groups by Year

Group	n	Year			
		2015 Mean (SD)	2016 Mean (SD)	2017 Mean (SD)	2018 Mean (SD)
Not Qualified, Did Not Attend	420	56.70 (25.12)	58.73 (21.47)	59.08(22.94)	53.08(23.32)
Not Qualified, Attended	31	38.26 (23.47)	44.55 (25.64)	45.45 (21.88)	40.83(22.25)
Qualified, Did Not Attend	152	20.20 (17.52)	27.39 (23.91)	28.04 (24.22)	26.55(22.46)
Qualified, Attended	47	21.68 (15.05)	41.36 (25.02)	38.21 (21.05)	37.13(22.01)

Trend Analysis - Reading

We used trend analysis to examine the impact of the program on reading assessment scores over the three years (see Figure 1).

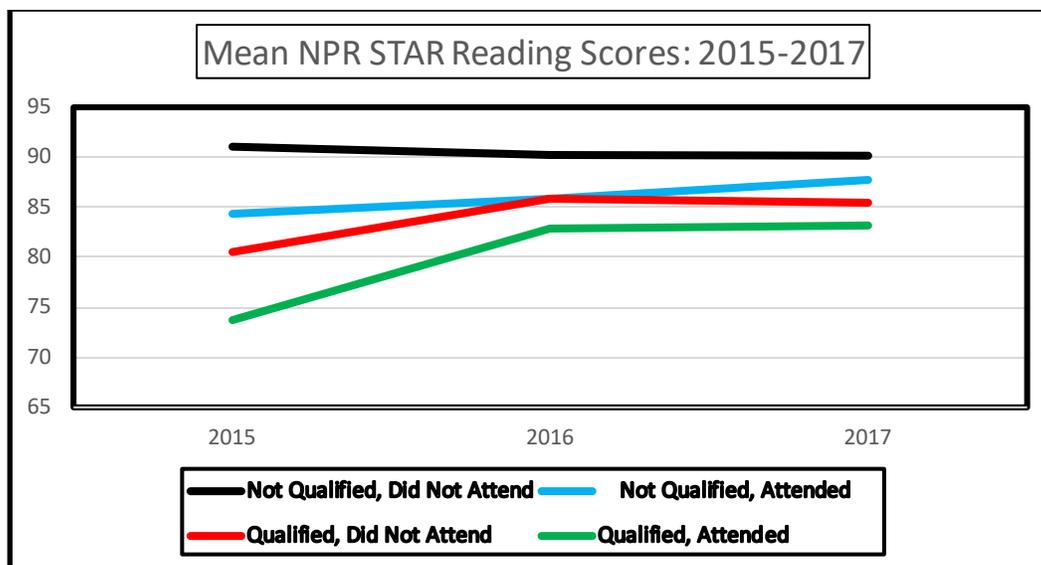


Figure 1. Line graph comparing the change in STAR reading score means across all three years for each group of students.

We analyzed reading scores for students over the course of three years starting in 2015, the year before the implementation of the POSSE summer program. Figure 1 displays the growth trends for each group from 2015 to 2017. From this figure, we see that groups that either qualified for or attended the POSSE summer program raised their average reading report card score the following year. The mean scores also had a smaller range than the previous year with the minimum mean reading score above 85.

Comparisons between the two qualified groups measure the impact of attending summer school on the students' reading report card scores. To identify any significant differences, we performed independent t-tests for each year between the two groups.

During the original year, the students who qualified based on their STAR reading normed assessment and did not attend the POSSE summer program ($M = 80.45$, $SE = 0.78$) had higher scores on average than those who qualified and did attend ($M = 73.72$, $SE = 1.81$). This was a significant difference $t(200) = 3.90$, $p < .001$. In 2016, the first year following the POSSE summer school program implementation, the students who qualified and attended ($M = 86.03$, $SE = 1.00$) on average had a higher reading score than those who qualified and did not attend ($M = 86.03$, $SE = 0.55$). This difference was significant $t(200) = -2.18$, $p = .031$. In 2017, students who qualified and attended ($M = 87.98$, $SE = 0.64$) had higher average reading scores than those who qualified and did not attend ($M = 85.53$, $SE = 0.63$). The scores were significantly higher $t(138.81) = -2.72$, $p = .007$.

Both groups showed steady growth after the original year. The students who attended the POSSE program gained significantly higher scores than those who did not and maintained these scores in the following year.

Identifying the level of significant differences between the highest average scoring group and those who qualified based on reading normed assessment scores and attended the POSSE program allows us to gauge the program's ability to bring the two groups to the same average score level. The average mean scores in 2015 for the highest performing group, those who did not qualify and did not attend POSSE ($M = 90.97$, $SE = 0.28$), were significantly higher than those who qualified and attended the summer program ($M = 73.72$, $SE = 1.81$) $t(48.26) = 9.43$, $p < .001$. In 2017, those who did not qualify and did not attend ($M = 89.98$, $SE = 0.33$) still maintained a higher average score than those who qualified and attended ($M = 87.98$, $SE = .64$); this difference is not significant $t(472) = 1.96$, $p = .051$. These two scores are statistically equivalent at 95% confidence.

While both groups started with significantly different average scores, by the second year of participation in POSSE, the group who qualified and attended had higher average reading scores that were close to those from the highest performing group. This implies that the POSSE summer program had a positive impact on closing the performance gap between the two groups.

To measure the practical significance of this study, a measure of strength of association between those who attended versus those who did not attend the POSSE program was calculated. This measure of association, which is an indicator of practical significance known as omega, squared (ω^2) is not

affected by variations in sample size (Carroll & Nordholm, 1975). Omega squared indicates the proportion of variance in report card scores that is accounted for by attending the POSSE program. Omega squared ranges from zero to one. Using Kirk (2013) suggestions, $\omega^2 = .010$ is a small association; $\omega^2 = .059$ is a medium association; and $\omega^2 = .139$ or larger is a large association. Thus, the values of association between those who qualified and did not attend POSSE program versus those who qualified and attended POSSE in the three years ranged from small (.018) to medium (.066) (see Table 4).

Table 4

Comparison of Reading Scores for Qualified Students by Year Based on Attendance.

Year	<i>n</i>	Qualified Did Not Attend Mean (SD)	<i>n</i>	Qualified Attended Mean (SD)	<i>t</i>	<i>p</i>	ω^2
2015	155	80.45 (9.67)	47	73.72 (12.39)	3.897	<.001**	.066
2016	155	86.03 (6.86)	47	88.51 (6.83)	-2.176	.001*	.018
2017	152	85.53 (7.82)	47	87.98 (4.41)	-2.715	.007*	.031

** $p < .001$; * $p < .05$

The measure of association between those who did not qualify and did not attend versus those who qualified and attended ranged from .005, which is basically no association for the 2016 comparison, to large (.157) for the 2015 comparison (see Table 5).

Table 5

Comparison of Reading Scores of Not Qualified-No Attendance with Qualified-Attended by Year.

Year	<i>n</i>	Not Qualified Did Not Attend Mean (SD)	<i>n</i>	Qualified Attended Mean (SD)	<i>t</i>	<i>p</i>	ω^2
2015	423	90.97 (5.80)	47	73.72 (12.39)	9.431	<.001*	.157
2016	425	90.26 (5.91)	47	88.51 (6.83)	1.892	.059	.005
2017	427	89.98 (6.86)	47	87.98 (4.41)	1.955	.051	.006

* $p < .001$

Trend Analysis - ELA

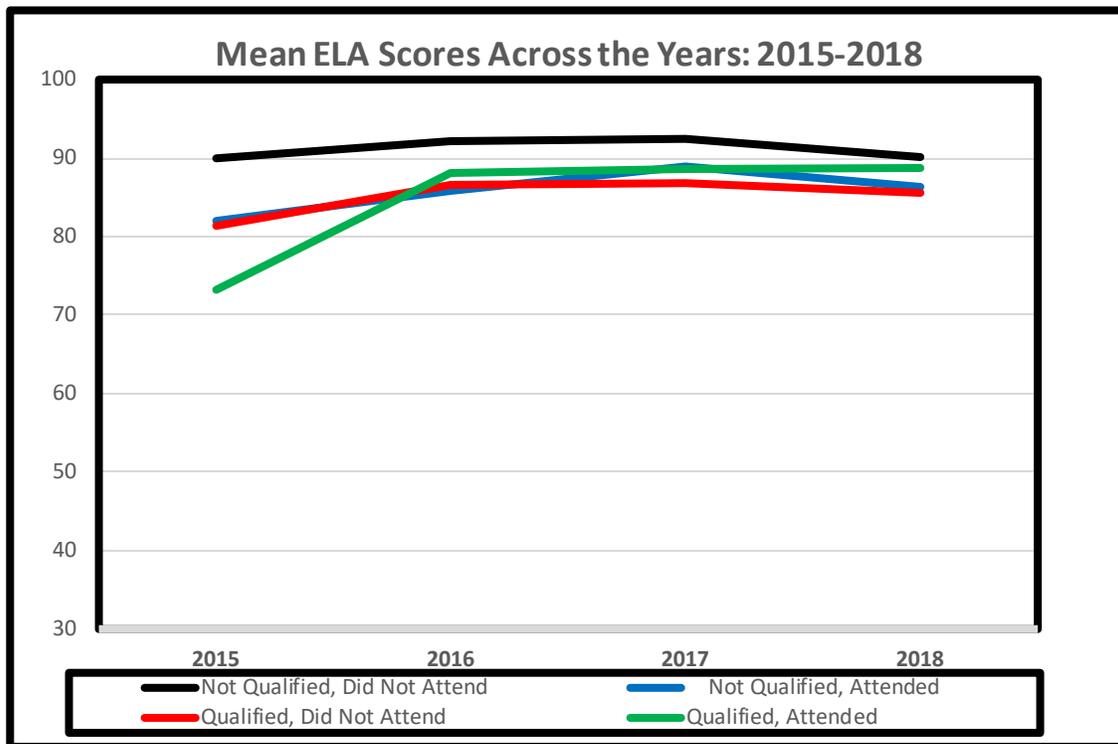


Figure 2. Line graph comparing the change in ELA report card score means across all three years for each group of students.

We analyzed ELA report card scores of students over the course of four years with the original year being 2015, before the first POSSE summer program. Figure 2 displays the growth trends for each group from 2015 to 2018. In 2015, the group means show differences among the groups on the ELA scores. After the implementation of the summer program, the mean report card score for each group increased and the range decreased. The scores continued to increase above 85 from 2016 to 2018.

To understand the effectiveness of summer school on those who qualified, a series of one-way ANOVAs were run to identify the significant differences between the groups normed reading percentile rank scores. Any significant ANOVA test was followed by a Tukey Post Hoc test. Results revealed that in 2015, the group of students who qualified and did not attend the POSSE summer school ($M = 81.18$, $SE = .858$) had a higher average ELA score than those who qualified and attended summer school ($M = 73.45$, $SE = 1.97$). The mean was significantly larger $t(64.43) = 3.60$, $p = .001$. In 2016, students in the qualified and attended group ($M = 87.68$, $SE = 0.88$) had on average higher scores than those who qualified and did not attend ($M = 86.69$, $SE = 0.63$). This difference was not significant $t(95.84) = -0.91$, $p = .364$. In 2017, the group that attended ($M = 88.32$, $SE = 0.95$) had higher average scores than the group that did not attend ($M = 86.67$, $SE = 0.55$); this difference was not significant $t(197) = -1.48$, $p = .142$. In 2018, the attended group ($M = 88.74$, $SE = 1.08$) had higher

average scores than those that did not attend ($M = 85.63$, $SE = 0.69$). This difference was significant $t(186) = -2.42$, $p = .023$.

Both groups showed steady growth in their average ELA report card scores after the implementation of the POSSE summer program. Both groups stabilized after this growth with the group that attended having a positive trend in scores over the next two years. In 2016 and 2017, the two groups had statistically equivalent ELA scores. In 2018, the attended group had on average significantly higher scores than those who did not attend.

Comparing the differences between the average ELA scores of the qualified and attended POSSE group and the not qualified and did not attend POSSE group will help determine if the program had a positive effect on minimizing the average score differences between the two groups.

In 2015, the not qualified, did not attend group ($M = 89.80$, $SE = 0.32$) had the highest average scores of all four groups. The qualified, attended group ($M = 73.45$, $SE = 1.97$) had the lowest average score. This was a significant difference in average scores $t(48.45) = 8.20$, $p < .001$. In 2018, the not qualified, did not attend group ($M = 90.06$, $SE = 0.33$) had higher on average scores than the qualified, attended group ($M = 88.74$, $SE = 1.08$). This difference was not significant $t(455) = 1.26$, $p = .207$. Thus, these two scores are not statistically equivalent at 95% confidence.

In 2015, the highest scoring group had, on average, significantly higher scores than those in the qualified and attended POSSE group. In 2018, this difference was no longer significant, with the second group having increased their average scores until they were statistically equivalent to those in the first group. This suggests a positive impact on the average ELA report card scores of the students who attended the POSSE summer program.

The measures of association between students who qualified and attended the POSSE program versus those who qualified and did not attend on the ELA report card scores from 2015 to 2018 are provided in Table 6. The values range from very small (.001) in 2016, which also did not show statistical significance differences between the two groups, to moderate (.056) in 2015.

Table 6

Comparison of ELA Scores for Qualified Students by Year Based on Attendance.

Year	<i>n</i>	Qualified Did Not Attend Mean (SD)	<i>n</i>	Qualified Attended Mean (SD)	<i>t</i>	<i>p</i>	ω^2
2015	155	81.18 (10.68)	47	73.45 (13.50)	3.602	.001*	.056
2016	155	86.69 (7.79)	47	87.68 (6.09)	-0.911	.364	.001
2017	152	86.67 (6.75)	47	88.32 (6.51)	-1.475	.142	.006
2018	142	85.63 (8.24)	46	88.74 (7.34)	-2.284	.023*	.025

* $p < .05$

Similarly, the measure of association between those who qualified and attended versus those who did not qualify and did not attend POSSE on the ELA report card scores are provided in table 7. The values range from very small (.001) in 2018, in which there were no statistically significant differences between the groups, to large measure (.124) in 2015.

Table 7

Comparison of ELA Scores of Not Qualified-No Attendance with Qualified-Attended by Year.

Year	<i>n</i>	Not Qualified Did Not Attend Mean (SD)	<i>n</i>	Qualified Attended Mean (SD)	<i>t</i>	<i>p</i>	ω^2
2015	423	89.80 (6.57)	47	73.45 (13.50)	8.199	<.001*	.124
2016	425	92.12 (5.95)	47	87.68 (6.09)	4.841	<.001*	.046
2017	427	92.17 (6.02)	47	88.32 (6.51)	4.127	<.001*	.033
2018	411	90.06 (6.66)	46	88.74 (7.34)	1.264	.207	.001

* $p < .001$

Trend Analysis for Normed Reading Percentile Rank

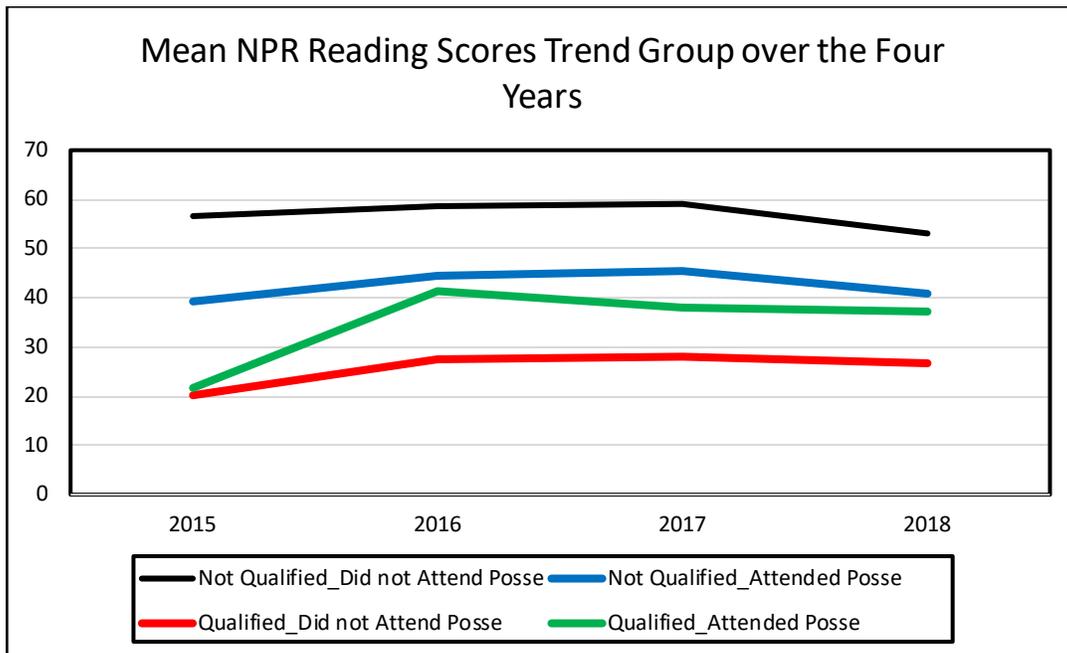


Figure 3. Line graph comparing the change in normed Reading PR score means across all three years for each group of students.

One-way ANOVAs revealed that in all the years following the baseline, there were statistically mean differences in the normed reading percentile-rank scores between students who qualified and attended versus those who qualified and did not attend. In 2016, (Mean Qualified and Attended = 41.36, Mean Qualified, Did Not Attend = 27.40, SE = 21.35, $p < .001$); 2017 (Mean Qualified and Attended = 38.28, Mean Qualified, Did Not Attend = 28.03, SE = 3.81, $p < .01$) and 2018 (Mean Qualified and Attended = 37.13, Mean Qualified, Did Not Attend = 26.55, SE = 3.88, $p < .001$).

The average normed reading percentile-rank scores for the students in the four categories over the four-year period are presented in Figure 3. The students who qualified for POSSE and attended outperformed the students who qualified but did not attend POSSE for the three years after the baseline. These results suggest that students who qualify to attend POSSE and do attend, on average tend to score higher than students who qualify but do not attend POSSE. In addition, students who do not qualify to attend POSSE but attend, on average tend to maintain their scores over the time.

In year three after the baseline (i.e., 2018), there was a statistically significant difference in average normed reading percentile-rank scores between students who qualified and attended POSSE ($M = 37.13$) versus those who qualified and did not attend POSSE ($M = 26.55$, SE = 3.88, $p < .01$). Similarly, there were statistical differences on the average normed reading percentile-rank scores between students who did not qualify and did not attend ($M = 53.08$) versus those who qualified and attended ($M = 37.13$). However, there were no statistically significant differences on the average

normed reading percentile-rank scores between students who did not qualify but attended ($M = 40.83$) versus those who qualified and attended ($M = 37.13$).

Summary of Findings and Conclusions

The Choctaw POSSE program has had a positive impact on student learning that was sustained after year one. The measure of association between those who attended POSSE on Reading and English Language Arts report card scores as well as normed reading percentile rank suggest that the program had an impact. Participation in the POSSE program explained a small to large proportion of variances on reading and ELA report card scores. Additionally, these results suggest that the greatest impact is during the first year, but subsequent years help struggling learners to maintain their progress. Examination of these results and the literature of successful summer school programs suggests that POSSE should continue to serve disadvantaged students, focus on struggling learners in reading and mathematics, continue the extended length of the summer school program, and include an enrichment time that includes field trips to which most disadvantaged students do not have access.

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