

# Education Professors Awarded Grants to Explore Math and Literacy Teaching Methods of Utah's Exceptional Teachers



Assistant Professors Qi Si and Tye Campbell

Tye Campbell and Qi Si, assistant professors in the School of Teacher Education and Leadership (TEAL) within the Emma Eccles Jones College of Education and Human Services, were recently awarded ULEAD (Utah Leading through Effective, Actionable, and Dynamic Education) grants from the Utah State Board of Education to explore the literacy and math teaching practices of the most exceptional fourth-grade teachers in Utah's public school system.

"Drs. Campbell and Si are advancing evidence-based understanding of instructional excellence," said Steven Camicia, department head of TEAL. "These projects have the potential to inform and impact teacher development and policy across the state of Utah and beyond."

Campbell explained that ULEAD does initial data analysis for researchers on projects like theirs by drawing from data already compiled on students and teachers throughout Utah. In this case, the state's analysts identified the most exceptional teachers in Utah using a specific set of criteria: fourth-grade teachers whose students were in the 90th percentile or above for growth in English Language Arts (ELA) and math over the last three years in the annual RISE (Readiness Improvement Success Empowerment) state assessments. Out of 1,545 teachers identified, only 10 teachers in the state of Utah met that criteria.

Together, Campbell and Si conducted Zoom interviews with eight of the 10 teachers, who represent eight elementary schools across six school districts in both rural and urban Utah communities.

"I think it's really important to learn from practice," said Campbell. "Teachers have so much expertise. It's good to go to teachers who have demonstrated exceptional growth and just learn from them. We wanted to see what they're doing and what they believe is contributing to student growth. Then we can disseminate whatever those practices are to other teachers in the state."

Because both Campbell and Si were awarded separate ULEAD grants, they focused their lines of inquiry during the interviews on their respective research questions, looking exclusively at math and English Language Arts (ELA) methods. Campbell focused on specific classroom teaching practices the educators felt best supported student growth. Si looked closely at how teachers are using technology in the classroom.

"We focused on English Language Arts and math because those are the most important subjects for students' future success," explained Campbell. "They're predictive of how well students will do in high school."

## Unique Teaching Practices

Campbell explained that he intentionally did not explore patterns in his data analysis, knowing that those results would identify practices that are already familiar to teachers. Instead, he sought *unique* teaching practices because they are more likely to impact other teachers.

Campbell's interviews yielded several standout teaching practices. The first was pre-teaching math concepts through a daily spiral review. In this method, students spend about 10 minutes each day independently working out several problems, initially without having been taught the concept. Then the teacher guides students through the problems with the entire class. "Students continuously see the same type of problem throughout the year, which helps them learn complex skills, such as long division, over the entire school year rather than attempting to learn a single topic at one point in time during the school year," explained Campbell.

Next, although daily intervention is a common practice in Utah schools, these teachers were more systematic in using data, such as daily quiz scores, to form small groups and provide targeted small-group intervention instruction. The educators carefully planned the intervention groups

and treated intervention as an important part of the learning process.

Teachers also invited parents to the classroom to lead book clubs, participate in reading groups, or guide high-performing students. This extra support allowed teachers to focus more on individual student needs. It also strengthened parent-teacher and parent-student relationships.

Finally, some teachers incorporated a form of teacher-student journaling. In this practice, students wrote in a journal weekly about any topic they chose, and the teacher wrote comments back to them. Teachers believe the practice helped students feel more connected to their teacher, and vice versa, and seemed to elicit positive behavior in the classroom as a whole.

### **Use of Technology**

Si explored the technology-based tools and methods that these eight teachers frequently utilized in their classrooms, along with the intensity and frequency of students' technology use.

"Because young children nowadays are largely exposed to technologies, it is more natural for classroom instruction to integrate various technologies to facilitate student learning and practice," explained Si. "We need to understand teachers' perspectives of technology integration to better identify the benefits and challenges of using technology in classroom instruction."

Teachers reported that without much effort on their part, some classroom technology makes it easy for students to work at their own pace and level. For example, to both learn and review multiplication and division math facts—a standard for fourth graders—these teachers incorporate online educational games to make learning more interesting and motivating for the students. The platforms track what each student is missing and automatically adapt to review challenging areas so students can master the required math facts.

The teachers reported using some type of technology at least three times per week for various purposes, including group instruction, independent practice, and assessments. Overall, they found many benefits of using technology in their classrooms: to facilitate instruction and interaction, enable personalized learning, conduct diagnostic or formative assessments, and engage students with game-based learning.

However, each educator also reported challenges and the need to continually adapt to address the challenges. "Issues such as internet connection problems and unstable programs needed to be addressed by the teachers, which took away from valuable teaching time," explained Si. "Some teachers believe that the visual features of technology-based tools may distract young children so they cannot stay focused on tasks. Also, students at young ages have less self-monitoring and self-regulation abilities, so they misbehave or misuse the features, which can lead to low-quality learning."

Si concluded that effectively integrating technology in the classroom requires intentional strategy. "The availability of technology-based tools does not necessarily mean effective integration," she said, adding that she sees an opportunity for school districts and administrators to implement hands-on professional development workshops, to align curriculum to correlate with appropriate platforms, and to provide ongoing support to teachers.

Campbell and Si have submitted their comprehensive written reports to ULEAD, which will be posted to the organization's website for public access. Campbell will also present his finding at the Utah Council of Teachers of Mathematics Conference in January 2026. Both researchers are hopeful that their results will give teachers new strategies and practices to support the important work they are doing in Utah's classrooms.